8 FINANCIAL ANALYSIS

This chapter describes the initial financial analysis and planning for the construction and operations of the Locally Preferred Alternative (LPA).

The alternative formerly known as “LPA Phase 1” in the October 2003 *Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation* has been renamed the Wiehle Avenue Extension in this Final EIS and is expected to begin operations in 2011. This change reflects the federal approach to the project’s funding under the Federal Transit Administration’s New Starts program. It will assure consistency among the environmental, engineering and financial documents during the project’s development.

In the October 2003 *Supplemental Draft Environmental Impact Statement and Section 4(f) Evaluation* as well as this Final EIS, the term “full LPA” represents the Wiehle Avenue Extension and the second phase of the Dulles Corridor Rapid Transit Project. This second phase would extend west from Wiehle Avenue to Washington Dulles International Airport and Route 772 and is expected to begin operations in 2015.

The term “LPA”, “proposed action”, or “selected LPA” refers to both the Wiehle Avenue Extension and the full LPA collectively.

Section 8.1 is the Capital Funding Strategy. It describes the capital cost estimate, presents the expenditure schedule of capital costs, identifies the capital funding sources and shares, and describes the financing approach for the Wiehle Avenue Extension and the full LPA.

Section 8.2 is the Operating Funding Strategy. It describes the methodology of the operating and maintenance cost estimates and of Metrorail revenue forecasts, presents the Metrorail operating costs, revenues and deficit for the opening year and the forecast year, and explains the allocation of the Metrorail operating subsidy among WMATA Compact jurisdictions.

Section 8.3 is the Risk Assessment of the capital and operating funding strategies. Possible approaches for addressing these risks are also discussed.

The financial analysis and planning documented in this Final Environmental Impact Statement (EIS) reflects a level of detail appropriate for a project in the planning phase. The next phases of project development - preliminary engineering and final design - will define the project in detail, produce more reliable cost estimates and result in a final financial plan. In accordance with the Federal Transit Administration (FTA) guidance for its New Starts program, the general content of the financial plan remains the same throughout the planning and project development process.

Based on guidance from FTA, phased construction of the full LPA is necessary to spread the capital costs over a longer period of time and reduce annual Federal funding needs. Although the entire project is being evaluated for potential environmental impacts and FTA expects to issue a single Record of

Decision, only the Wiehle Avenue Extension will be advanced in the New Starts program at this time. Any FTA decision on funding the construction of the Wiehle Avenue Extension will be made without regard to future completion of the full LPA. FTA may consider the remainder of the full LPA for Federal funding in the future, but has made no commitment to do so. In that context, this chapter of the Final EIS focuses on capital and operating funding strategies for both the Wiehle Avenue Extension and the full LPA.

8.1 CAPITAL FUNDING STRATEGY

This section describes the methodology of estimates, the project construction expenditure schedule, funding sources and shares, and financing approach.

8.1.1 CAPITAL COST ESTIMATE

The capital cost estimates for the Wiehle Avenue Extension and the full LPA presented in this Final EIS are preliminary and are based on the level of engineering detail included in the Final General Plans (Volumes IV and V). The capital cost estimate is based on an implementation schedule that assumes an opening date for the Wiehle Avenue Extension in 2011; and an opening date of the full LPA in 2015. Capital costs are estimated in year 2004 dollars, and then escalated to fiscal year-of-expenditure (YOE) dollars. All references to fiscal year (FY) refer to FTA's fiscal year (October 1 through September 30). Inflation projections are used to convert 2004 dollars into year-of-expenditure amounts. The Final EIS cost estimates assume an annual 3 percent rate of inflation for all costs using the assumed construction schedules for the Wiehle Avenue Extension and the full LPA. Future refinements to the project's financial plan will apply regional inflation projections based on construction industry indices.

Tables and 8.1-1 and 8.1-2 summarize the capital costs for the Wiehle Avenue Extension and the full LPA. For planning purposes, the capital cost of the Wiehle Avenue Extension is estimated to be approximately $1.5 billion (YOE), and the capital cost of the full LPA is estimated to be approximately $3.5 billion (YOE). Any financing costs necessary to cover delays or shortfalls in funding once construction begins are not included in these estimates. A more detailed implementation schedule and refined cost estimates will be developed during preliminary engineering. The cost to complete the National Environmental Policy Act of 1969 (NEPA), as amended, environmental review process, to prepare General Plans on all alternatives of the Draft EIS, Supplemental Draft EIS, and Final EIS, and to conduct various analyses related to advancing the project in FTA's New Starts process is not included in the capital cost estimate for the Wiehle Avenue Extension or the full LPA.

Development of the capital cost estimate methodology and categories is consistent with FTA guidelines. FTA's updated standard cost categories, released in early 2004, are used for capital cost reporting. The Guideway and Track category includes the surface, aerial and subway/tunnel construction costs, including trackwork for Metrorail. The Stations, Stops, Terminals and Intermodal category includes the stations, platforms, parking lots, access roads, parking garages, pedestrian overpasses, and support infrastructure associated with the passenger stations (e.g. bus park-and-rides, Kiss & Ride). The Yards, Shops and Administrative/Support Facilities category includes vehicle storage yards and maintenance buildings, office support buildings and shop equipment. The Sitework and Special Conditions category includes anticipated costs for environmental mitigation, roadway modifications, utility modifications and demolitions. The Right-of-Way, Land, and Existing Improvement category includes land, property rights, and relocation costs, if required. The Systems category includes costs for control systems, electrification, communications, revenue collection, and vertical access (escalators and elevators). Vehicle costs

Table 8.1-1: Capital Cost Estimate and Expenditure Forecast – Wiehle Avenue Extension (Millions YOE Dollars)

FTA Standard Cost Category	Total	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Guideway and Track Elements	**$362.8**	$0.0	$0.0	$0.0	$51.6	$88.5	$109.4	$93.9	$19.3	$0.0	$0.0
Stations, Stops, Terminals, Intermodal	**$268.7**	$0.0	$0.0	$0.0	$25.3	$65.3	$80.7	$83.1	$14.3	$0.0	$0.0
Yards, Shops, Admin/Support Facilities	**$57.2**	$0.0	$0.0	$0.0	$5.4	$13.9	$17.1	$14.7	$6.1	$0.0	$0.0
Sitework and Special Conditions	**$51.0**	$0.0	$0.0	$0.0	$32.8	$18.2	$0.0	$0.0	$0.0	$0.0	$0.0
ROW, Land, Existing Improvements	**$88.7**	$0.0	$0.0	$52.6	$36.1	$0.00	$0.0	$0.0	$0.0	$0.0	$0.0
Systems	**$172.7**	$0.0	$0.0	$0.0	$24.4	$33.5	$43.1	$44.4	$27.4	$0.0	$0.0
Vehicles	**$189.5**	$0.0	$0.0	$0.0	$1.6	$18.1	$26.6	$21.8	$102.6	$12.5	$6.3
Soft Costs [1]	**$265.1**	$9.4	$24.1	$24.9	$38.4	$39.6	$46.2	$42.0	$35.6	$5.9	$0.0
Contingency[2]	**$65.8**	$0.0	$0.0	$0.0	$6.1	$12.7	$16.3	$16.8	$13.8	$0.0	$0.0
Total Project Costs [3]	**$1,521.5**	**$9.4**	**$24.1**	**$77.5**	**$221.7**	**$289.8**	**$339.5**	**$316.7**	**$218.1**	**$18.4**	**$6.3**

Notes:

1. *Soft Costs* include preliminary engineering, final design, construction management, project management, owner administration, FTA and other agency coordination, insurance, and project start-up and testing.
2. *Contingency* costs include allowances for change orders.
3. Costs shown are preliminary and subject to change based on the results of preliminary engineering, design-build negotiations, and funding availability.

Table 8.1-2: Capital Cost Estimate and Expenditure Forecast – Full LPA (Millions YOE Dollars)

FTA Standard Cost Category	Total	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Guideway and Track Elements	**$805.4**	$0.0	$0.0	$0.0	$51.6	$88.5	$109.4	$93.9	$82.3	$108.0	$133.5	$114.6	$23.6	$0.0	$0.0
Stations, Stops, Terminals, Intermodal	**$610.9**	$0.0	$0.0	$0.0	$25.4	$65.3	$80.7	$83.1	$46.6	$83.1	$102.7	$105.8	$18.2	$0.0	$0.0
Yards, Shops, Admin/Support Facilities	**$186.4**	$0.0	$0.0	$0.0	$5.4	$13.9	$17.1	$14.7	$18.2	$31.3	$38.7	$33.3	$13.7	$0.0	$0.0
Sitework and Special Conditions	**$130.0**	$0.0	$0.0	$0.0	$32.8	$18.2	$0.0	$0.0	$50.8	$28.2	$0.0	$0.0	$0.0	$0.0	$0.0
ROW, Land, Existing Improvements	**$117.3**	$0.0	$0.0	$52.6	$36.1	$0.0	$0.0	$8.4	$11.5	$8.7	$0.0	$0.0	$0.0	$0.0	$0.0
Systems	**$431.1**	$0.0	$0.0	$0.0	$24.4	$33.5	$43.1	$44.4	$63.8	$50.0	$64.4	$66.3	$27.3	$14.1	$0.0
Vehicles	**$393.3**	$0.0	$0.0	$0.0	$1.6	$18.1	$26.6	$21.8	$104.4	$23.1	$38.9	$27.9	$82.6	$40.6	$0.0
Soft Costs	**$631.2**	$9.4	$24.1	$24.9	$38.4	$52.5	$79.5	$76.3	$87.7	$60.6	$63.8	$58.0	$47.8	$8.2	$7.6
Contingency	**$154.5**	$0.0	$0.0	$0.0	$6.2	$12.7	$16.5	$16.8	$22.1	$17.1	$22.0	$22.7	$18.7	$0.0	$0.0
Total Project Costs	**$3,460.1**	**$9.4**	**$24.1**	**$77.5**	**$221.7**	**$302.7**	**$372.8**	**$359.5**	**$487.4**	**$410.1**	**$464.0**	**$428.5**	**$231.9**	**$62.9**	**$7.6**

Notes:

1. *Soft Costs* include preliminary engineering, final design, construction management, project management, owner administration, FTA and other agency coordination, insurance, and project start-up and testing.
2. *Contingency* costs include allowances for change orders.
3. Costs shown are preliminary and subject to change based on the results of preliminary engineering, design-build negotiations, and funding availability.

include new Metrorail vehicles that would operate on the Dulles Corridor line. The vehicle cost estimates are derived from a planned WMATA procurement of its Series 7000 rail cars. *Soft Costs* include preliminary engineering, final design, construction management, project management, owner administration, FTA and other agency coordination, insurance, and project start-up and testing. *Contingency* costs include allowances for change orders.

8.1.2 WIEHLE AVENUE EXTENSION CAPITAL FUNDING STRATEGY

FTA, the Commonwealth of Virginia, and Fairfax County will provide capital funding for the Wiehle Avenue Extension. WMATA and its member jurisdictions will be responsible for funding the operations and maintenance of the system, including the operating subsidy, as described in Section 8.2.

The required funding amounts from FTA, the Commonwealth of Virginia and Fairfax County for the Wiehle Avenue Extension are shown in Table 8.1-3. The share of capital funding proposed for each jurisdiction is approximate, pending the completion of preliminary engineering and a final cost allocation agreement.

That allocation agreement would outline the level and timing of funding required from each jurisdiction, and would be used to support the request to begin final design and negotiation of a Full Funding Grant Agreement (FFGA). Prior to FTA approval of final design and the FFGA, each jurisdiction will have taken the steps necessary to fully commit the funding through their respective legislative or administrative processes. This could include legislative appropriations or authorizations, board actions, and/or administrative approvals.

Table 8.1-3: Sources of Capital Funding – Wiehle Avenue Extension (Millions of YOE Dollars)

Source	Funding Level	Funding Share
Federal Sources		
5309 New Starts	$760.7	50.0%
Total Federal Funds	**$760.7**	**50.0%**
Non-Federal Sources		
Virginia Transportation Act of 2000	$75.0	5%
Dulles Toll Road Revenues	$305.4	20%
Dulles Rail Transportation Improvement District	$380.4	25%
Total Non-Federal Funds	**$760.8**	**50.0%**
TOTAL WIEHLE AVENUE EXTENSION BUDGET	**$1,521.5**	**100.0%**

8.1.2.1 Federal Transit Administration

DRPT and its funding partners are seeking $760.7 million in Federal funding for the Wiehle Avenue Extension through FTA Section 5309 New Starts program. This funding level represents 50 percent of the estimated project costs, consistent with FTA's recent practice for major transit capital investments.

A. FTA Section 5309 Funds

FTA's discretionary New Starts (Section 5309) program is the Federal government's primary financial resource for supporting locally-planned, implemented, and operated "fixed guideway" transit capital investments. FTA provides grants through this program to state and local governments for the development of new and improved transit facilities and services. The program is discretionary and FTA's funding decisions are made on a project-by-project basis.

The New Starts program is authorized in multi-year budget cycles. For FY 1998 to 2003, the Transportation Equity Act for the 21st Century (TEA-21) authorized approximately $8.2 billion for the New Starts program. Based on the Administration's current proposal and congressional proposals, FTA expects this level of funding to be maintained in the transportation reauthorization. Therefore, continued funding of the New Starts program at these levels to support the Dulles Corridor Rapid Transit Project and other major transit capital investments in the years to come is expected. Based on guidance from FTA, an annual maximum of $100 million in New Starts program funding could be provided to support construction of the Wiehle Avenue Extension.

Section 380 of the FY 2001 Department of Transportation and Related Agencies Appropriation Act makes available additional FTA contingent commitment authority in the amount of $217.8 million specifically for the Dulles Corridor Rapid Transit Project. Contingent commitment is a tool used by the FTA to provide funding for New Starts projects beyond the limits of the current authorization. Of that contingent commitment, a total of $163.5 million in New Starts funding has been appropriated for the Project through FY 2004 to support project planning, environmental review, and engineering activities. An additional $20 million of New Starts funding for the project is expected in FY 2005. In addition to these appropriations, DRPT has requested that $600 million in additional New Starts funding be authorized for the Dulles Corridor Rapid Transit Project in the pending transportation reauthorization.

A FFGA will be required to secure any authorized federal New Starts funding for construction of the Wiehle Avenue Extension. The terms of the FFGA, including the level and timing of federal funding participation, will be finalized following completion of preliminary engineering activities.

8.1.2.2 Commonwealth of Virginia

The Commonwealth of Virginia will be responsible for funding 25 percent of the Wiehle Avenue Extension capital costs, approximately $380.4 million (YOE), using Virginia Transportation Act (VTA) of 2000 and Dulles Toll Road revenues.

A. Virginia Transportation Act of 2000

In May 2000, the Virginia General Assembly passed the Virginia Transportation Act of 2000. This legislation created the Priority Transportation Fund and authorized the Commonwealth Transportation Board (CTB) to issue Federal Reimbursement Anticipation Notes (FRANs) in the maximum aggregate principal amount of $1.2 billion outstanding at any one time. FRANs are a revolving line of credit used by the Commonwealth to fund construction of transportation improvements.

Since 2000, the CTB has issued $547.7 million in FRANs for specific public transportation, rail, highway, port, and aviation projects throughout the Commonwealth. A total of $75 million in FRAN revenues have been allocated to the Dulles Corridor Rapid Transit Project and are programmed in the *FY 2005-2010 Virginia Transportation Six-Year Program.* DRPT intends to use these funds for the local share of preliminary engineering costs.

B. Dulles Toll Road Revenues

The Dulles Toll Road, which opened in 1984, was constructed by the Virginia Department of Transportation (VDOT) and financed using Transportation Facilities Bonds issued by the Commonwealth of Virginia. Existing toll rates for automobiles range from $0.25 to $0.85, depending upon the length of the trip. Electronic toll collection is available at all toll plazas for cars equipped with transponders. Per

CTB policy, any available revenues, once debt service and operating expenses are paid must be used to finance transportation improvements within the Dulles Corridor. In September 2001, the CTB directed that a minimum of 85 percent of available revenues be dedicated to public transportation initiatives in the Dulles Corridor. These funds have been used to support construction of new transit facilities and operate the current Express Bus Service in the corridor.

To fund the Commonwealth's share of the Dulles Corridor Rapid Transit Project with available revenues and limited use of short-term financing, a toll increase is planned. Based on an initial analysis of current traffic and growth projections, a toll of $0.75 at the main toll plaza and $0.50 at each interchange ramp toll plaza provides sufficient revenues to meet the Commonwealth's obligations for the Wiehle Avenue Extension. A final decision on the revised toll structure would be made by the CTB after the completion of a formal traffic and revenue study and its administrative review process.

The Commonwealth is currently conducting a rate adjustment study for the Dulles Toll Road. This study will evaluate various tolling options and be used to secure financing supported by the Dulles Toll Road revenues. The results of the study and formal recommendations are expected in late 2004. Following this, a final decision on a revised toll structure would be made by the CTB. Any approved toll increases would be implemented in advance of construction to begin building reserves for the project, perhaps as early as January 2005.

8.1.2.3 Fairfax County

Approximately $380.4 million (YOE), representing 25 percent of the capital costs for the Wiehle Avenue Extension, would be provided by Fairfax County using revenues from the newly formed Dulles Rail Transportation Improvement District, and if necessary, General Obligation bonds.

A. Fairfax County Dulles Rail Transportation Improvement District

During the 2001 session, the Virginia General Assembly passed legislation that authorized the establishment of special transportation improvement districts within Fairfax County and the Town of Herndon to support construction of the Dulles Corridor Rapid Transit Project. In January 2004, a landowner's group submitted a petition to the Fairfax County Board of Supervisors to establish a Dulles Rail Transportation Improvement District for the Wiehle Avenue Extension. This district would support Fairfax County's share of the Wiehle Avenue Extension capital costs. The Petitioners proposed to contribute the full amount of the County's net share for the Wiehle Avenue Extension through the imposition of a voluntary tax on commercial and industrial properties within the proposed district, which includes all of the facilities needed to construct and operate the Wiehle Avenue Extension. The petition was approved by the Fairfax County Board of Supervisors in February 2004, and a commission comprised of local elected officials and a member of the CTB was appointed to govern the district. A board of landowners has also been created to advise the Commission on the management of the district.

Fairfax County and the landowners group have structured the district to provide sufficient revenues to cover the County's share of costs for the Wiehle Avenue Extension. Although payments will not be due until December 2004, on July 1, 2004, Fairfax County began charging commercial landowners an additional 22 cents per $100 of assessed value for their properties on top of the base real estate tax rate of $1.13. Fairfax County projects that the tax rate could eventually increase to 29 cents per $100 of assessed value once a Full Funding Grant Agreement is reached. The actual levy will be established each year based on current assessments and the amount of outstanding debt. The district, which had an assessed value of $6.8 billion in June 2004, is expected to generate up to $400 million for the construction of the Wiehle Avenue Extension.

State law allows Fairfax County several options for issuing debt that would be supported by the Dulles Rail Transportation Improvement District tax levy. At this time, specific details on the structure of any bond issue have not been finalized, though Fairfax County is pursuing a strategy that would achieve an investment grade rating on the bonds.

B. Fairfax County General Obligation Debt

If Transportation Improvement District revenues are not sufficient, Fairfax County may consider supporting its capital obligations for the Dulles Corridor Rapid Transit Project through a voter approved general obligation debt offering. The County is actively examining options for increasing debt capacity in the future. Fairfax County has shown a strong commitment to fund Metrorail construction by issuing $125.3 million in general obligation bonds through voter approval. In FY 2004, Fairfax County issued approximately $83.7 million in General Obligation debt, of which $14.8 million was for Metrorail construction. Fairfax County commonly issues tax-exempt general obligation bonds to finance major capital projects.

8.1.3 FULL LPA - CAPITAL FUNDING STRATEGY

The Federal Transit Administration, Commonwealth of Virginia, Fairfax County, Loudoun County, and the Metropolitan Washington Airports Authority (MWAA) would provide capital funding for the full LPA. WMATA and its member jurisdictions will be responsible for funding the operations and maintenance of the system, including the operating subsidy, as described in Section 8.2.

The capital funding strategy for the full LPA would consist of the financial plan for the Wiehle Avenue Extension, as well as a separate financial plan for the remainder of the full LPA. The latter funding plan will be similar to that of the Wiehle Avenue Extension, with the addition of MWAA and Loudoun County as funding partners. Table 8.1-4 outlines the anticipated levels of capital funding required from each funding partner for construction of the full LPA. This allocation of capital funding reflects the current status of ongoing discussions among the non-federal funding partners. The share of capital funding proposed for each jurisdiction is approximate, pending the completion of preliminary engineering and a final cost allocation agreement. That allocation agreement would outline the level and timing of funding required from each jurisdiction, and would be used to support the request to begin final design and negotiation of a FFGA. Prior to FTA approval of final design and the FFGA, each jurisdiction will have taken the steps necessary to fully commit the funding through their respective legislative or administrative processes. This could include legislative appropriations or authorizations, board actions, and/or administrative approvals.

Table 8.1-4: Sources of Capital Funding – Full LPA (Millions of YOE Dollars)

Sources of Funds	Funding Level	Funding Share
Federal Sources		
5309 New Starts	$1,730.0	50.0%
Total Federal Funds	**$1,730.0**	**50.0%**
Non-Federal Sources		
Virginia Transportation Act of 2000	$75.0	2.2%
Dulles Toll Road Revenues and Future Transportation Appropriations	$790.0	22.8%
Fairfax County Dulles Rail Transportation Improvement Districts	$557.1	16.1%
Loudoun County Public Transportation Fund	$1.9	0.1%
Loudoun County BPOL Bonds	$164.2	4.7%
MWAA Passenger Facility Charges	$141.9	4.1%
Total Non-Federal Funds	**$1,730.1**	**50.0%**
TOTAL PROJECT BUDGET	**$3,460.1**	**100.0%**

8.1.3.1 Federal Transit Administration

The FTA is being requested to fund 50 percent of the Dulles Corridor Rapid Transit Project's total capital costs through the FTA Section 5309 New Starts program, for a total estimated amount of $1,730 million (YOE). Additional information on the New Starts program is provided in Section 8.1.2.1.

8.1.3.2 Commonwealth of Virginia

Virginia will be responsible for funding 25 percent of the Dulles Corridor Rapid Transit Project's total capital costs, approximately $865 million (YOE). In addition to the Virginia Transportation Act of 2000 funds and Dulles Toll Road revenues that are planned to fund the Wiehle Avenue Extension, the Commonwealth may consider additional sources, including future transportation appropriations, to fund construction of the remainder of the full LPA. Additional information on the Commonwealth's proposed funding sources is provided in Section 8.1.2.2.

8.1.3.3 Fairfax County

Approximately $557 million (YOE), representing 16.1 percent of the project's capital costs, will be provided by Fairfax County. Fairfax County's portion of the capital costs for the Wiehle Avenue Extension would be funded by the Dulles Rail Transportation Improvement District. It is expected that Fairfax County will utilize a second tax district that includes properties west of Wiehle Avenue to fund the remainder of its share of the full LPA.

A new landowner's group, called the Western Alliance for Rail to Dulles (WARD), has formed to explore the potential of developing another tax district, similar to the Dulles Rail Transportation Improvement District, that would include properties within Fairfax County west of Wiehle Avenue. WARD has drafted a petition and began circulating it among landowners in July 2004. This petition envisions an initial rate of 5 to 7 cents per $100 of assessed value that would be used to build reserves and a rate stabilization fund. This rate would increase in later years when debt supported by the district's revenues is issued. WARD anticipates that the maximum tax rates will be similar to those projected by Fairfax County for the Dulles Rail Transportation Improvement District.

8.1.3.4 Metropolitan Washington Airports Authority

In 1987, the operating responsibility for the Washington Dulles International Airport (Dulles Airport) and Ronald Reagan Washington National Airport (National Airport) was transferred by long-term lease from the U.S. Department of Transportation (U.S. DOT through FAA) to MWAA. The Authority was created by legislation enacted by the Commonwealth of Virginia and the District of Columbia, consistent with federal legislation authorizing the lease. The majority of the project alignment is in MWAA-controlled property in the median of the Dulles International Airport Access Highway (DIAAH). MWAA is considering the following capital funding source for its share of the full LPA.

A. Passenger Facility Charges

In 1990, Congress approved the Aviation Safety and Capacity Expansion Act, which authorized domestic airports to impose a Passenger Facility Charge (PFC) on enplaning passengers. In May 1991, the FAA issued the regulations for the use and reporting of PFCs. PFCs may be used for airport projects that must meet at least one of the following criteria: preserve or enhance safety, security, or capacity of the national air transportation system; reduce noise or mitigate noise impacts resulting from an airport; or furnish opportunities for enhanced competition between or among carriers. MWAA was granted permission to begin collecting a $3 PFC effective November 1, 1993, at National Airport and January 1, 1994, at Dulles Airport. The charges, less an administrative processing fee charged by the airlines, are collected by the airlines and remitted on a monthly basis to MWAA. Due to their restricted use, PFCs are categorized as non-operating revenue and are accounted for on the accrual basis.

In February 2001, MWAA applied for and received the authority to increase the PFC collection from $3.00 to $4.50, effective May 2001. Historically, PFC cashflows have not matched the airport's construction spending schedule. Therefore, MWAA entered into agreements to provide lines of credit. As of June 30, 2004, MWAA has utilized $187 million of a $255 million line of Flexible Term PFC Revenue Notes. These notes are rated AA-1/A-1 by Standard & Poor's. MWAA expects to redeem all the Notes by November 2009.

MWAA's PFCs are currently committed through 2017 for its current expansion program at Dulles Airport. However, MWAA anticipates it may be able to provide its share of capital funding by borrowing against future PFC revenues beyond 2017. FAA approval would be required for any use of MWAA funds towards the project.

8.1.3.5 Loudoun County

Loudoun County is a jurisdictional member of the WMATA Compact. However, because Loudoun County does not currently receive WMATA service, it does not contribute to the operations or capital budget. The introduction of the Dulles Corridor Rapid Transit Project is anticipated to add Loudon County to the other Virginia jurisdictions contributing to the WMATA budget. Loudoun County does operate its own transit services, and in FY 2002 created the Office of Transportation Services and a Public Transportation Fund to provide resources for its increasing transportation responsibilities.

Loudoun County presently funds the local share of transportation projects through the use of the local gasoline tax and the Business Professional and Occupancy License (BPOL) revenue. In FY 2004, the adopted six-year Capital Improvement Plan (CIP) allocated $1.9 million from the County Public Transportation Fund and $23 million from BPOL pledge bonds for FY 2005-2010 to the Dulles Corridor

Rapid Transit Project. Loudoun County is proposing the use of these funding sources for its share of the full LPA capital costs.

A. BPOL Bonds

BPOL bonds in the amount of $23 million have been programmed for construction of the full LPA between FY 2004 to 2008, with an additional $139.6 million in BPOL bonds programmed for FY 2010 - 2015. The County plans to divert BPOL revenues from the General Fund to provide a dedicated source of funding for the project. The loss of BPOL revenues from the General Fund is expected to be compensated through growth in other sources (largely real property taxes) resulting from continued residential and commercial development in the County.

The County currently carries a debt load of $712 million and the Notes are rated by Moody's as AAA, Standard & Poors as AA+ and Fitch as AA+. By the end of FY 2010, the level of outstanding debt is anticipated to be $988 million. County debt service has been held at a relatively constant level over the past two years. The increased debt load is anticipated to increase the debt service obligation from $96 million in FY 2005 to $145 million by FY 2010.

B. Loudoun County Public Transportation Fund

Funds in the amount of $1.9 million were programmed for full LPA construction-related activities in FY 2004.

8.1.4 FUNDING SECURED TO DATE

To date, federal and state funding sources for the Dulles Corridor Rapid Transit Project include both appropriations and future funding commitments. Funds secured, or authorized to date for the project total over $650 million. This includes $163.5 million in Section 5309 New Starts funding for the project appropriated between FY 1999 and FY 2004, $75 million in VTA 2000 funding, $3 million in excess Dulles Toll Road revenues, and $10.6 million in allocations from Commonwealth Transportation Fund sub-accounts. Another $400 million was recently authorized with the formation of Fairfax County's Dulles Rail Transportation Improvement District.

To date, $32 million in federal funding and $13.6 million in Commonwealth funding has been used to complete the NEPA environmental review process, to prepare General Plans on all alternatives of the Draft EIS, Supplemental Draft EIS and Final EIS, and to conduct various analyses related to advancing the project in FTA's New Starts process. No funds from the Dulles Rail Transportation Improvement District, Loudoun County or MWAA have been used to date.

8.1.5 CAPITAL FINANCING APPROACH

The capital financing approach for both the Wiehle Avenue Extension and the full LPA is discussed below.

8.1.5.1 Wiehle Avenue Extension

During preliminary engineering, DRPT will prepare a final financial plan for the Wiehle Avenue Extension and negotiate funding agreements with its non-federal funding partners, all in support of a FFGA with FTA. A preliminary financial plan for the Wiehle Avenue Extension was prepared by DRPT in August 2003 in support of its request for preliminary engineering approval. That plan identified the financing tools and capital financing approaches (which are summarized below) most likely to be used for construction.

An updated and more detailed capital financing plan will be prepared during preliminary engineering to support the FFGA, local funding agreements, and any required debt issues.

Federal Funding. For the Wiehle Avenue Extension capital plan, federal New Starts funding of $100 million per year is assumed to be available for construction expenditures between FY 2006 and 2011. These funds would be combined with prior federal appropriations and non-federal funding to match the construction expenditure schedule. No long-term financing of federal funds for the Wiehle Avenue Extension construction is anticipated. Short-term financing, through a letter of credit or similar mechanism may be required if annual federal funding levels do not match the terms of the signed FFGA.

Commonwealth of Virginia Funding. With the proposed toll increase, the excess Dulles Toll Road revenues available through 2015 are sufficient to fund the Commonwealth's share of the Wiehle Avenue Extension capital costs on a "pay-as-you-go" basis. However, to meet the proposed implementation schedule, debt financing would be used for a portion of the construction expenditures. New Commonwealth debt (revenue bonds) issued on behalf of the Dulles Corridor Rapid Transit Project would be repaid with future Dulles Toll Road excess revenues. A variety of debt financing instruments, including short-term, long-term, and variable rate debt, are available to the Commonwealth. The terms and repayment schedules would vary depending on the type of debt instrument used. In the past, the CTB has issued debt on behalf of the Commonwealth for transportation projects. The Commonwealth may also consider a Transportation Infrastructure Financing and Innovation Act (TIFIA) loan or issuance of additional FRANs to finance a portion of its capital contribution. A final determination on the most appropriate type of debt financing will be made during preliminary engineering based on an evaluation of statewide transportation needs and current market conditions.

Fairfax County Funding. Fairfax County's primary contribution to the construction costs of the Wiehle Avenue Extension would be supported by tax revenues generated by the Dulles Rail Transportation Improvement District. New long-term debt would be issued. Fairfax County anticipates that this debt would be issued in two installments in FY 2007 and FY 2008. State law allows Fairfax County several options for issuing debt that would be supported by the Dulles Rail Transportation Improvement District tax levy. At this time, specific details on the structure of any bond issue have not been finalized, though Fairfax County is pursuing a strategy that would achieve an investment grade rating on the bonds. The final terms and timing of any new debt supported by the Transportation Improvement District will be determined by Fairfax County and the District Commission.

8.1.5.2 Full LPA

Because FTA is now advancing only the Wiehle Avenue Extension in the New Starts program, a detailed financing approach has not been developed for the full LPA. A preliminary financial plan for the full LPA will be developed subsequently, when DRPT seeks approval from FTA to advance that portion of the project into preliminary engineering. As with the Wiehle Avenue Extension, a more detailed financial plan would then be developed to support an FFGA for the remainder of the full LPA.

8.2 OPERATING FUNDING STRATEGY

Upon its acceptance of the Dulles Corridor Rapid Transit Project, WMATA will operate Metrorail service in the Dulles Corridor. WMATA's acceptance of the project is contingent upon fulfillment of the following seven conditions:

1. Satisfactory completion of the Final EIS;

2. Issuance of a Record of Decision (ROD) by FTA;

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

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

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

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

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

As DRPT prepares the final financial plan for the Wiehle Avenue Extension during the preliminary engineering (PE) phase, DRPT will work closely with WMATA on the final operating funding plan of operating costs, revenues and subsidy. At this time, operation of the Dulles Corridor Rapid Transit Project consists of Metrorail service for a system that has a reconfiguration of lines and longer headways and that has the Wiehle Avenue Extension in 2011 and the full LPA in 2015, and existing and enhanced local and express bus services by Fairfax and Loudoun Counties and WMATA as feeders to the proposed Metrorail extension.

8.2.1 OPERATING AND MAINTENANCE COSTS

The estimated, annual incremental Wiehle Avenue Extension and full LPA operating and maintenance (O&M) costs in year of expenditure (YOE) dollars for the opening years and forecast year (2025) for Metrorail are presented in Tables 8.2-1 and 8.2-2. For the Wiehle Avenue Extension at the time of its opening in 2011, the increment is $47.47 million, rising to $67.64 million in 2025. These costs are a 6.8 percent increase over the costs of the No Build Alternative in 2025.

Systemwide costs for Metrorail were developed by using WMATA’s new operating and maintenance cost model calibrated for WMATA FY 2004 data, based on costs by WMATA management center and by object class.

Tables 8.2-1 and 8.2-2 present the annual, incremental changes to the O&M costs, revenue and subsidy allocation to WMATA Compact jurisdictions for the Wiehle Avenue Extension and the full LPA. Opening year and forecast year results are provided for comparison.

Table 8.2-1: Compact Member Incremental Subsidy Requirements for the Wiehle Avenue Extension (Millions of YOE Dollars)

	Wiehle Avenue Extension	
	Opening Year 2011	Forecast Year 2025
Metrorail O&M Costs	$ **47.47**	$ **67.64**
Metrorail Operating Revenue	$ **(27.52)**	$ **(39.48)**
WMATA Compact Member Subsidy		
District of Columbia	$ **4.64**	$ **5.60**
Virginia[1]	$ **9.75**	$ **15.56**
Alexandria	$ 0.67	$ 0.85
Arlington County	$ 1.45	$ 1.86
Fairfax City	$ 0.09	$ 0.12
Fairfax County	$ 7.48	$ 12.63
Falls Church	$ 0.07	$ 0.11
Loudoun County	$ -	$ -
Maryland[1]	$ **5.55**	$ **7.01**
Montgomery County	$ 2.88	$ 3.80
Prince George’s County	$ 2.67	$ 3.21
Total Subsidy	$ **19.95**	$ **28.17**

[1] Internal totals may not tally precisely due to rounding.
Operating subsidies distributed to Virginia jurisdictions are supported with state formula assistance.

Table 8.2-2: Compact Member Incremental Subsidy Requirements for full LPA (Millions of YOE Dollars)

	Full LPA	
	Opening Year 2015	Forecast Year 2025
Metrorail O&M Costs	$ **93.92**	$ **117.88**
Metrorail Operating Revenue	$ **(63.42)**	$ **(79.37)**
WMATA Compact Member Subsidy		
District of Columbia	$ **3.91**	$ **2.96**
Virginia[1]	$ **21.52**	$ **30.83**
Alexandria	$ 0.63	$ 0.56
Arlington County	$ 1.37	$ 1.26
Fairfax City	$ 0.09	$ 0.11
Fairfax County	$ 11.35	$ 16.32
Falls Church	$ 0.09	$ 0.10
Loudoun County	$ 8.00	$ 12.46
Maryland[1]	$ **5.08**	$ **4.73**
Montgomery County	$ 2.71	$ 2.70
Prince George’s County	$ 2.37	$ 2.03
Total Subsidy	$ **30.50**	$ **38.51**

[1] Internal totals may not tally precisely due to rounding.
Operating subsidies distributed to Virginia jurisdictions are supported with state formula assistance.

8.2.2 OPERATING REVENUES

Several operating funding sources are proposed as revenue streams for the Dulles Corridor Rapid Transit Project. The majority of operating revenues would come from farebox revenues and the annual operating subsidy provided by member jurisdictions of the WMATA Compact. The WMATA Compact is an agreement among Virginia, Maryland and the District of Columbia that governs the management and operation of the Washington region's Metrorail, Metrobus, and MetroAccess systems. The annual incremental Metrorail subsidy is allocated among its members using an established and approved formula. As an extension to the existing Metrorail system, the Project will add Metrorail operating revenue but it would not be sufficient to cover the costs of the project, thus increasing the Metrorail subsidy. Existing and potential sources of operating funds are described below.

8.2.3 PASSENGER FARE REVENUES

Fare revenues have been estimated for the Metrorail system with the Wiehle Avenue Extension and with the full LPA, based on ridership projections, FY 2005 fare structure and periodic fare increases. The impacts of fare increases on projected ridership are included, adjusted for fare elasticities. These elasticities account for the fare increase impact on ridership characteristics and the resulting revenue yields. This approach generates a conservative estimate of passenger fare revenues.

8.2.4 OTHER SYSTEM REVENUES

Joint Development Revenues: This will include potential development above transit stations, station facilities, and line as well as connections to development on adjacent properties. WMATA already has a successful joint development program that has generated revenue contributions to the operating budget for many years. Projection of these revenues will be based on development opportunities identified during the design process and in the outreach with stakeholders, including major property owners and real estate developers in the Dulles Corridor. Joint development income is an important source of operating revenue for WMATA, amounting to $11 million of the total $473 million Metrorail operating budget in FY 2003.

Parking Revenues: WMATA is one of the few rapid transit systems in the U.S. that charges for parking at its stations. Parking fees are determined as part of the WMATA Tariff and through fare policy discussions with the WMATA Board and local jurisdictions. The parking fee has two components: a) the cost of daily operations and maintenance of the parking facilities, and b) a parking surcharge that, in coordination and consultation with local jurisdictions, is used to construct additional parking facilities at Metrorail stations.

Advertising: This includes revenues generated from advertising on vehicles and in stations. Advertising revenues are generally based on contract rates negotiated with national advertising firms. The Dulles Corridor Rapid Transit Project will contribute incrementally to the existing WMATA program.

Concessions: This includes income from telephones, vending machines, and (potentially) retail operations within stations.

8.2.4.1 Federal Funds

Federal funding to support Metrorail operations may be provided from two programs.

1. **Section 5307 Urbanized Area Formula Funds**: These grants are applied to capital projects and preventive maintenance; that is, maintenance activities in the operating budget that may be classified as capital for the purpose of qualifying for Section 5307 grants.

2. **Congestion Mitigation Air Quality (CMAQ) Funds**: Allocation of these resources is based on regional consensus through the region's Transportation Planning Board. CMAQ funds may be used for operations in the first three years of new transit service.

8.2.4.2 State Funds

The Commonwealth of Virginia may support Project operations with funding from the DRPT Formula Assistance. DRPT administers this formula assistance program to local transit operators throughout the Commonwealth. The Northern Virginia Transportation Commission annually receives at least 60 percent of total program funds, which it passes through to Northern Virginia localities to support local transit operating needs, including Metrorail operations. In FY 2005, DRPT will provide $51.6 million in formula assistance.

8.2.4.4 Projected WMATA Subsidy Allocation

For FY 2005, WMATA's budget for operating and maintenance costs of Metrorail, Metrobus, and MetroAccess is $872.3 million, of which Metrorail costs will account for about 57 percent of the total. WMATA Compact jurisdictions contribute to the agency's annual operating budget deficit in accordance with Board-approved allocation formulas that reflect ridership and service levels for Metrorail, Metrobus, and MetroAccess service. The Compact jurisdictions' contribution to WMATA's FY 2005 operating deficit for Metrobus, Metrorail, and MetroAccess is $402.2 million.

The WMATA policy for the funding of operating deficits for extensions to the Metrorail system, such as the proposed Dulles Corridor Rapid Transit Project, is stated in the WMATA Board of Directors Resolution #2000-35, dated May 25, 2000:

> "The operating deficit of an extension will be allocated among all the Compact member jurisdictions in accordance with the formula in effect for the funding of the Metrorail operating deficit in the years that such deficit occurs."

The rail subsidy consists of two separate allocation formulas: the rail maximum fare formula and the base rail subsidy formula. The total maximum fare subsidy is deducted from the total rail subsidy and the result is allocated based on the base rail subsidy formula. The base rail subsidy allocation formula determines the subsidy share of the Compact jurisdictions, based on three elements in the following proportions:

1. One-third of the relative number of stations in operation in each jurisdiction.

2. One-third of the subsidy is distributed on the basis of a **weighted average of urbanized area population and population density** using census data and the census population definition of the urbanized area.

3. One-third of the subsidy is distributed on the basis of the **weekday Metrorail passengers by jurisdiction of residence.**

The maximum fare subsidy is one-half the revenue differential between what riders traveling more than six composite miles actually pay and what they would have paid without a tapered mileage charge or a fare limit. The allocation of this subsidy by jurisdiction is determined from the Metrorail passenger survey.

The charge to each jurisdiction reflects the residence of the riders receiving the benefit of the reduced regular fares and the value of the benefit received. The estimated amount of the max-fare subsidy for FY 2005 is $4.5 million (less than one percent of the operating budget). The results presented in this section have been allocated solely by the base subsidy formula.

The systemwide revenues from fares and the other operating revenue previously described are subtracted from systemwide costs to yield the operating subsidy for WMATA Compact member jurisdictions. The WMATA Compact subsidy allocation is based on the Metrorail Subsidy Allocation Formula.

8.3 RISKS AND UNCERTAINTIES

Although the financial analysis defines a proposed funding strategy based on secured funding to date and reasonable funding source, financing and cost assumptions, there are a number of risks that could influence the stability of the project's financial plan, including construction cost risk and operating cost risk.

8.3.1 CONSTRUCTION COST AND REVENUE RISK

Differences between projected and actual construction costs may occur because of unforeseen conditions, variations in construction unit cost, bid quantities, changes in design elements, mitigation of environmental impacts, or special security measures that may be required for transit facilities. Some of the conditions that may affect actual construction costs include the following:

Changes in Design or Construction Conditions. Differences in construction costs may occur because of changes in technology requirements; unforeseen conditions such as soil and utility relocations; and changes in design elements.

Real Inflation. The rate of inflation may vary, significantly affecting the base unit costs.

Dedicated Revenues. Variations in dedicated revenues from participating jurisdictions may affect the ability to provide capital funding or cover debt service.

Schedule. Delays in the construction schedule may increase the overall project cost and extend the inflation risk.

Capital Funding Availability. The availability of capital funds from Federal, state and local jurisdictions affects the timing and overall cost of the project. Delays may result in additional financing requirements or schedule adjustments.

Interest Rates. Variations in interest rates impact the long-term debt service payments.

Financing Approach. There are many variations to the debt issuance requirements, including some that are market driven. The debt issuer, terms, and schedule may change the project's financing costs.

8.3.2 OPERATING COST AND REVENUE RISK

Differences between projected and actual bus and rail operating costs may impact the anticipated subsidy requirements to address the gap between revenue and expenses. Some of the conditions that may affect actual operating costs include the following:

Fares, Fare Policy and Cost Recovery. Changes in fare levels and structures affect ridership, fare revenue and cost recovery. Changes in ridership affect the level of service required, which affects capital and operating costs.

Service Levels. The frequency of service and hours of operation affect ridership, fare revenue, capital and operating costs.

8.3.3 RISK ASSESSMENT AND MITIGATION

FTA has established procedures for identifying, assessing and mitigating risks associated with major transit capital projects in preliminary engineering and final design. As of FY 2004, FTA is undertaking risk assessment through its Project Management Oversight (PMO) process. PMO contractors have been assigned to the specific projects to assess the capital and operating risks, and identify potential strategies for addressing them. The steps involved in FTA's risk analysis process include: 1) Validation of Base Conditions, 2) Risk Identification and Quantification, 3) Assessment and Modeling, 4) Implementation and Monitoring, and 5) Risk Mitigation Planning. Possible strategies identified by FTA that are available to mitigate for risk include corrective management actions, contract language that shares risks with or transfers risks to other parties, purchase of insurance to mitigate project risks; and additional unallocated contingencies in the project budget**.**

Based on the results of the risk assessment conducted by FTA, DRPT and WMATA will incorporate appropriate risk mitigation strategies into the financial plan as it is further refined and finalized during preliminary engineering.