



The Global Leader

**Fiscal Impact of Metrorail
On The Commonwealth of Virginia**

Northern Virginia Transportation
Commission

November 10, 1994

Prepared by
KPMG Peat Marwick
8200 Greensboro Drive, Suite 400
McLean, Virginia 22102

Final Technical Report

KPMG Peat Marwick LLP

Suite 400
8200 Greensboro Drive
McLean, VA 22102-3803

Telephone 703 442 0030

Telecopier 703 556 0195

November 10, 1994

Mr. Richard K. Taube
Executive Director
Northern Virginia Transportation Commission
4350 N. Fairfax Drive
Suite 720
Arlington, Virginia 22203

Dear Mr. Taube:

KPMG Peat Marwick is pleased to submit the Final Technical Report of the *Fiscal Impact of Metrorail on the Commonwealth of Virginia*. This report presents KPMG's detailed analysis, findings, and documentation of Metrorail-related economic activity that generates tax revenues for the Commonwealth. A separate *Executive Summary* of this report was prepared for NVTC which presents an overview of the findings.

We appreciate the cooperation of the NVTC, WMATA (Metro), local jurisdictions, and developers that participated in this study.

Very truly yours,



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1. INTRODUCTION

This study assesses the economic benefits that accrue to the Commonwealth of Virginia from the additional real estate development attributable to the presence of Metrorail as well as Metrorail construction and operations. Metrorail spurs economic activity: jobs, incomes, and sales that generate additional tax revenues for the Commonwealth.

The study estimates net increases in development attributed to Metrorail and relates this development to measures of economic activity. Construction of Metrorail stations and tracks as well as its recurring operations have also created economic activity. Estimates of Commonwealth tax revenues are projected from measures of employment, sales, and other economic activity. From these estimates, a determination of the net or incremental tax revenues attributable to Metrorail is made and compared to the Commonwealth's investment. The Blue Line to Virginia first opened in 1977 -- the study addresses the calendar years 1978 through 2010.

In 1985, KPMG conducted a fiscal impact study of the Metrorail system on the Commonwealth through the year 1995. This study is an update of the 1985 study, using methodologies and data sources consistent with the previous study. The 1985 study projected commercial development at Metro station areas to be 24 million square feet; this study identifies actual and projected (through 1995) commercial development of 26 million square feet.

Why Metrorail spurs development

Would there have been development anyway? Yes, but on a smaller scale and of lower quality. Without Metrorail, the region loses a vital attraction: fixed-route, rapid, and reasonably priced transportation.

The capacity of land to support development is a function of the public and private services available. Transportation accessibility is one of the most critical elements of development capacity. Metrorail service in Virginia represents the creation of additional development potential. Metrorail station areas are major nodes of economic activity. Without Metrorail service, these areas would neither attract high density development nor accommodate it.

The presence of Metrorail service in Virginia has facilitated and refocused metropolitan economic growth forces. Rather than having high density development confined to downtown Washington, this type of development is attracted to Virginia station sites. High density development results in more efficient land use patterns. By supporting development of new employment and commercial centers, jobs that would have located downtown without Metrorail access are attracted to and captured by Virginia, bringing substantial tax revenues to the Commonwealth.

Comments by members of the business community relate the importance of Metrorail to their decisions to invest in Virginia:

- Denton U. Kent, Senior Vice President, RF&P Corp.

Metrorail is a major feature in the prototype community for the 21st century on Potomac Yard. Metrorail's Blue and Yellow Lines will be an integral part of a transit hub that will make the Yard the most transit accessible site in Northern Virginia. The hub will consolidate Amtrak, Metrorail, Virginia Railway Express, and public bus systems into one station facility in the center of the Yard.

RF&P believes that the quality of life for both residents and workers in Northern Virginia urban areas is directly linked to the availability of mass transit services. We, therefore, have committed to underwriting the cost of building the Potomac Yard Metrorail transit hub—a first in the Nation.

Over the life of the development of the Potomac Yard's 5,500 housing units and over 6 million square feet of commercial office, transit services are projected to provide for approximately 30 percent of the travel to and from the site. Without Metrorail, the projected development would not be possible.

- Mark Fried, President, Fried Companies, Inc.

In no small part, our construction in 'downtown' Springfield of 250,000 square feet of office space, a 268-room hotel, five retail centers, and two automobile dealerships were dependent on the coming of Metrorail service. In our judgment, proximity to a Metrorail station entitled us to greater densities and favorable financing.

- Giuseppe Cecchi, President, IDI Group Companies

Metrorail has played an integral part in many of IDI's Northern Virginia projects. The Rosslyn Center and the Ballston Metro Center's mixed-use projects, both in Arlington, sit atop two of Metro's busiest subway stations which have been an important ingredient in making these projects successful. The success of three condominium communities built or under development by IDI -- Montebello (Fairfax County), The Belvedere (Arlington), and Carlyle Towers (Alexandria) -- were highly dependent upon access to public transportation. We simply would not have developed the Montebello community of over 1,000 units on Route 1 had it not been for the adjacent Metrorail station.

- James P. Lee, Senior Vice President, Simon Property Group

The ability of both daytime travelers and weekend shoppers to use Metrorail to get to the Fashion Centre at Pentagon City has had a dramatic impact on our success.

- Oliver T. Carr, Chairman, Carr Realty Corporation

Our real estate investment strategy has always been driven, to a great extent, by Metrorail. We feel strongly that Metrorail has been, and will certainly continue to be, a catalyst for

intelligent growth in the Washington D.C. region. The locations of the Carr Realty portfolio properties, clustered around several Metrorail locations, illustrate the obvious advantages of being located close to Metrorail, both by Carr Realty and by our tenants.

■ Daniel S. Alcorn, Vice Chairman, Metropolitan Washington Airports Authority

Metrorail access to Washington National Airport greatly enhances the ground transportation options area travelers have to reach air service. One of the specific improvements that our capital development investment in modernizing National Airport will bring about is a direct connection between Metrorail and the new terminal. Likewise, our planning at Washington Dulles International Airport makes provision for a future rail station at the main terminal, and the Airports Authority supports the concept of extension of rail service to Dulles. Land use planning at Tysons Corner has recently changed to facilitate mass transit stations in the heart of Tysons Corner, and Fairfax County is currently in the process of reviewing land use planning for the remainder of the Dulles Corridor. Metrorail is a strong component in the future of the Washington area as a world capital city.

■ James C. Cleveland, President, Mobil Land Development Corp.

Situated on seven landscaped acres, our 730,000 square foot Colonial Place project offers spectacular views of the Washington skyline, high quality urban design, underground parking and direct access to the Courthouse Metro station. One of the primary factors in our decision to invest substantial capital in the development of Colonial Place was the commitment of the state and local governments to Metro. The proximity to Metro has enhanced our ability to consistently attract and retain quality tenants and maintain full occupancy in our buildings. The Metrorail system has made it possible for suburban localities to effectively compete in the national development marketplace.

■ George Johnson, President, George Mason University

George Mason University continues to extend its reach as the regional university in Northern Virginia. Given projections of continued growth for the next ten years at our "network" of locations throughout the region (Fairfax, Arlington, Prince William, Dulles), the infrastructure (both physical and technological) that binds this network together becomes a critical element in the success of our expansion. The importance of the continued development of the Metro system to our plans cannot be overstated. Look, for example, at the redevelopment currently under way at our Arlington campus—simply stated, immediate access from campus to the Virginia Square/GMU Orange Line stop is a key component for a campus which will serve more than 5,000 students. Continued expansion of bus, rail and new transportation technologies is a key for our future success.

What the Commonwealth provides to Metrorail

The Commonwealth of Virginia has been, and continues to be, an important contributor to Metrorail. Contributions for Metrorail construction and operations began in 1973 and are now at an annual level of \$37 million. Metrorail service and public transit in general are not self-supporting although Metrobus the highest fare recovery in the U.S. The Metrorail system in Virginia is a partnership of the federal government, the Commonwealth, local jurisdictions, and fare-paying passengers.

The Commonwealth's financial contribution is stable and a critical component of funding that is relied on by all partners. It is an investment in transportation infrastructure which offers substantial financial returns to the Commonwealth.

What the Commonwealth receives from Metrorail

The Commonwealth receives financial returns from Metrorail in the form of enhanced tax revenues created from additional development in Metro station areas and Metrorail construction and operations. These tax revenues come from the principal levies imposed at the Commonwealth level:

- Sales tax
- Personal income tax
- Corporate income tax
- Recordation fees

This study demonstrates that the level of tax revenues that accrue to the Commonwealth would not have been generated without Metrorail. Metrorail encourages and enables development of a substantially greater magnitude that sustains economic activities and provides significant returns to the Commonwealth in the form of increased tax revenues.

The Commonwealth recovers more than double its investment through its Metrorail partnership with the federal government, local jurisdictions, and fare-paying passengers.

Between 1978 and 2010, this study estimates that the Commonwealth will obtain tax revenues of \$2.1 billion attributable to Metrorail and \$1.2 billion, net of Commonwealth contributions. When compared to the Commonwealth's historical contributions, these tax revenues generate an annual return on investment of 12.4% (the 1985 Metrorail study calculated a return on investment through 1995 to be 13%). Prospectively, the return on investment is estimated to be 19.2% assuming the Commonwealth continues to fund Metrorail at the current annual level of \$37 million.

Metrorail also provides numerous transportation, environmental, and community benefits to Northern Virginia that are not the focus of this study. Substantial ridership reduces traffic congestion and dependence on the highway mode of travel, adding to the efficiency of the total transportation system. Compliance with the Clean Air Act, in light of continued growth, will be a major challenge Northern Virginia and the metropolitan area Metrorail helps by reducing automobile emissions and helps make federal money available from other transportation

investments. Metrorail attracts businesses, public sector entities, and residents, creating an enhanced sense of community.

Bus services are integral to Metrorail

The public transit system in Northern Virginia is an integrated system of rail and bus. Most Northern Virginia bus routes feed a Metrorail station. As the 103-mile Metrorail system nears completion and Northern Virginia continues to grow, jurisdictions will rely more heavily on bus service, especially in areas not served by rail. Over one million persons, or 90 percent of the Northern Virginia population, are located within walking distance of a bus route. Compliance with the Clean Air Act is expected to include incentives to reduce automobile commuting and to encourage greater use of mass transit, especially buses.

New Metrorail station at Potomac Yard

In addition to the 20 Metrorail stations (existing or under construction) within the 103 mile Metro system, a new station will be constructed at Potomac Yard in Alexandria. Owned by RF&P Corporation and just south of National Airport and Crystal City, this 340 acre site is one of the area's prime undeveloped parcels of urban real estate. As a condition of zoning up to 12 million square feet of mixed-use space, the City of Alexandria required construction of a Metrorail station. In a unique public/private partnership, RF&P is underwriting the cost of constructing the \$22 million Metrorail station. This major development will be centered around a transportation hub with Metrorail, Virginia Railway Express, and Amtrak. RF&P Corporation is wholly owned by the State of Virginia Retirement System.

Future Metrorail extensions

A Metrorail extension is being planned for the Dulles corridor with up to 11 new stations possible in Fairfax and Loudoun Counties. A people mover is also being discussed between the Franconia-Springfield station and the Engineering Proving Grounds (EPG) development, also in Fairfax County. The additional development associated with the recent approval of the Tysons Corner Urban Plan and the EPG area will affect future decisions regarding Metrorail stations.

2. STATION AREAS AND METRORAIL CORRIDORS

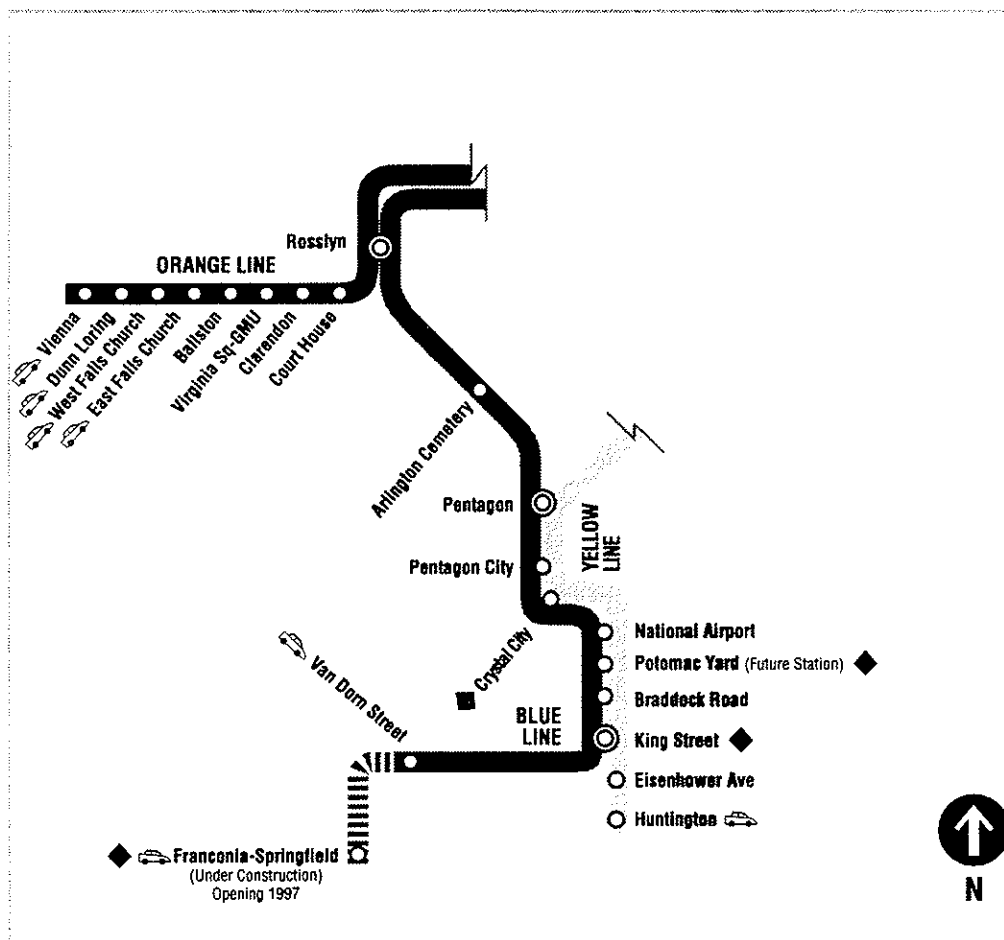
The Metrorail system

Metrorail extends from a District of Columbia core in a spoke pattern to Montgomery and Prince George's counties, Maryland; the cities of Alexandria, Falls Church, and Fairfax; and Arlington and Fairfax counties, Virginia. When the Blue Line opens to Franconia-Springfield and with the construction of the Potomac Yard station in Alexandria, Virginia will have the following 21 stations:

<u>Stations</u>	<u>Jurisdictions Served</u>
Arlington Cemetery	Arlington County
Pentagon	Arlington County
Pentagon City	Arlington County
Crystal City	Arlington County
National Airport	Arlington County
Rosslyn	Arlington County
Court House	Arlington County
Clarendon	Arlington County
Virginia Square-GMU	Arlington County
Ballston	Arlington County
East Falls Church	Arlington and City of Falls Church
Braddock Road	City of Alexandria
King Street	City of Alexandria
Eisenhower Avenue	City of Alexandria
Van Dorn Street	City of Alexandria and Fairfax County
Potomac Yard	City of Alexandria and Arlington Co.
Huntington	Fairfax County
Franconia-Springfield	Fairfax County
West Falls Church	Fairfax County and City of Falls Church
Dunn Loring	Fairfax County
Vienna	Fairfax County and Fairfax City

Exhibit 2-1 shows the Virginia section of the existing 103-mile Metrorail system.

Metrorail System Map (Virginia)



Legend



Delineation of station areas

Metrorail station areas were defined in terms of the station area plans approved by the city of Alexandria and Arlington and Fairfax counties. Station areas were defined by each local jurisdiction based on long-range comprehensive planning processes. These plans guide and define development options and focus growth around Metrorail stations through zoning that allows higher ratios of floor area to the size of the land parcel. For analytic purposes, data on development (in-place, under construction, and planned) are keyed to the geographic areas covered by these station area plans.

Station areas are not a uniform shape or size. For example, the Virginia Square-GMU station area (on the Orange Line) resembles a rectangle measuring approximately 3,300 by 2,500 feet; the Crystal City station area (on the Blue and Yellow Lines) is highly elongated -- approximately 11,000 feet long and 2,400 feet wide (maximum).

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3. DEVELOPMENT PROJECTIONS WITH METRORAIL

Overview of projection methodology

Projections through the year 2010 were developed for each station site, then consolidated by jurisdiction. For stations with a development history, a listing of individual developments was compiled by station area through 1993 based on:

- Actual development
- Development under construction
- Projects that have site-plan approval

The historical analysis included only developments completed from 1978 (the year after) to 1993 even though development in Arlington was planned and completed before 1978 in anticipation of future station openings.

The 18 station sites included in this analysis are:

- Ballston
- Braddock Road
- Clarendon
- Court House
- Crystal City
- Dunn Loring
- East Falls Church
- Eisenhower Avenue
- Franconia-Springfield (opening 1997)
- Huntington
- King Street
- Pentagon City
- Potomac Yard (opening 2000)
- Rosslyn
- Van Dorn Street
- Vienna
- Virginia Square-GMU
- West Falls Church

No development benefits are included for Arlington Cemetery, National Airport, and the Pentagon because of the public nature of the land uses.

The development analysis included four types of land use:

- Office
- Retail
- Hotel
- Residential

The development data are stated in terms of space (square feet) or units (number of housing units, number of hotel rooms).

Projection methodology

Projections of build-out space beyond 1993 are based on Round V forecasts developed by the Metropolitan Washington Council of Governments (MWCOG) in conjunction with the local jurisdictions. These forecasts, prepared by MWCOG based on a regional economic model and data provided by each jurisdiction, project employment and population for each jurisdiction to the year 2010.

Growth in employment is divided into four categories: office, retail, industrial, and other. Household units are also projected. Each jurisdiction has provided Round V data broken down by Metro station area. It is from this data that development projections are calculated. For example, a 10 percent growth in the number of office employees at a particular station area between 1993 and 2010 would indicate that there would be a 10 percent growth in office space during that time period as well.

Based on this methodology, growth factors calculated by station area were applied to the existing development to arrive at the development projections from 1994 to 2010 for each jurisdiction.

Absorption of space

The timing of build-out at each station is critical to attributing (or not attributing) the development to Metrorail. The date for completion corresponds to the issuance of the master certificate of occupancy. This is the date when the property can be let (or sold) and the economic activities creating jobs, incomes, and sales begin. Before project completion, the return to the Commonwealth is in the form of tax revenues from construction activities.

Absorption of office space is assumed to occur one year from the year construction is completed. Occupancy is assumed to begin one year from date completed. This means that for projection purposes each unit is assumed to be totally vacant during the entire first year and there is no preleasing of space. Similar assumptions regarding absorption and occupancy rates are assumed for retail space.

Residential development is assumed to be sold in the year construction is completed. It is assumed that all units are absorbed. Hotel operations are assumed to begin on issuance of the master certificate of occupancy.

Appendix A contains additional details on projection methods.

Development projections with Metrorail

The following exhibits show projections of development at Metrorail station impact areas that relate to the gross impact of Metrorail station area development. Exhibit 3-1 is a summary table showing build-out associated with Metrorail by category for all station areas in Northern Virginia. Historical data are presented through 1993 and projections are provided through

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2010. The data show the building boom between 1986 and 1990 and a leveling off of construction in the 1990s.

The annual average office space completed between 1978 and 1993 is 1.2 million square feet; the projected annual average for 1994 to 2010 is 0.7 million square feet or 58 percent of the historical development during a similar time frame. Currently, overall office occupancy for these jurisdictions is approximately 90 percent.

**Exhibit 3-1
Actual and Projected Development
for No. Virginia Metrorail Station Areas**

Year	Office (1,000sq.ft.)	Retail (1,000sq.ft.)	Hotel (rooms)	Residential (units)
1978	343	81	246	255
1979	231	32	264	1,114
1980	1,489	61	0	828
1981	770	17	0	1,832
1982	1,318	38	1,065	2,476
1983	988	15	197	575
1984	811	0	459	333
1985	1,168	105	267	475
1986	1,596	639	221	1,662
1987	3,261	133	255	1,899
1988	2,467	110	0	1,458
1989	2,857	956	360	2,386
1990	1,145	117	737	1,884
1991	860	370	0	1,172
1992	1,175	46	429	905
1993	0	0	378	771
Subtotal '78 - '93	20,481	2,718	4,878	20,025
1994-2010	13,307	1,076	1,367	13,401
TOTAL	33,788	3,795	6,245	33,426

Retail development over the next 16 years is estimated at 40 percent of development between 1978 and 1993. Projected hotel development is estimated at 28 percent of the units developed since 1978, and residential growth between 1994 and 2010 is estimated at 67 percent of growth experienced over a similar historical time frame. When comparing this historical data for a similar time frame, the Round V forecast data used in this study for retail, hotel, and residences are viewed as reasonable.

As the data in Exhibit 3-1 show, build-out through 2010 for all Virginia station impact areas is estimated at:

- 33,788,000 square feet - office
- 3,795,000 square feet - retail
- 6,245 hotel rooms

- 33,426 new residential units

Exhibit 3-2 presents actual and estimated annual office/retail buildout through 1995 compared to the projection from KPMG's November 1985 study (*Fiscal Impact of Metrorail on the Commonwealth*). The earlier study projected office and retail development for 1995 to be 24 million square feet for the Metro station areas. This study projects 1995 development for the station areas to be approximately 26 million square feet.

Exhibit 3-2

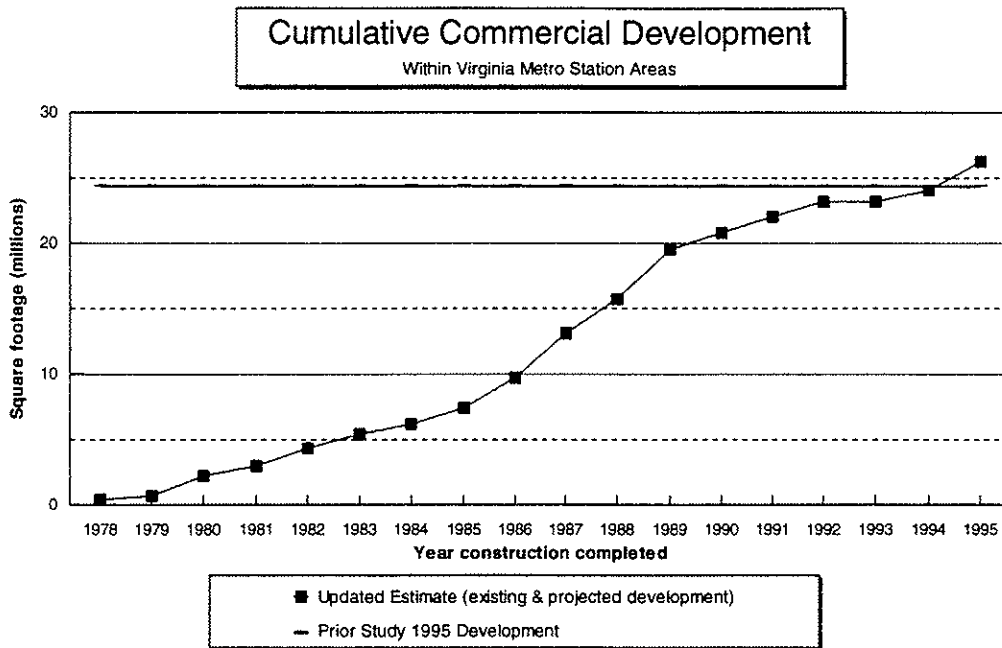


Exhibit 3-3 shows development estimates for 2010 by jurisdiction and station area. Data presented in this exhibit relate to total development by category of use for each station area through 2010.

Office development

Major office space developments in Arlington are in Crystal City, Ballston, Court House, and Rosslyn Metro station areas, shown in Exhibit 3-3. The Pentagon City, Clarendon, and Virginia Square station areas are also projected to be growth centers for 1994 through 2010.

The King Street and Potomac Yard station areas are projected to lead the growth in office space developed in Alexandria. Potomac Yard is planned to absorb approximately 1.5 million square feet of space by 2010. In Fairfax County, the Franconia-Springfield station area accounts for more than half the total office space development projected through 2010 in the station areas.

**Exhibit 3-3
Actual and Projected Development
By Station Area, 1978-2010**

Station	Office (sq.ft.)	Retail (sq.ft.)	Hotel (Rooms)	Residential (Units)
<i>Arlington</i>				
Pentagon City	2,910,835	1,174,863	1,001	4,287
Crystal City	5,541,447	122,568	2,056	2,756
Rosslyn	4,212,223	209,254	828	4,759
Court House	3,231,038	120,800	718	5,633
Clarendon	1,297,544	89,679	0	30
Virginia Square/GMU	1,799,756	117,939	0	1,672
East Falls Church*	210,998	0	0	261
Ballston	<u>5,094,805</u>	<u>829,246</u>	<u>431</u>	<u>5,761</u>
Subtotal	24,298,646	2,664,349	5,033	25,158
<i>Alexandria</i>				
Braddock Rd.	705,595	47,146	0	550
King Street	2,534,303	165,075	267	500
Eisenhower Ave.	806,813	0	0	1,500
Van Dorn St.**	233,973	5,843	194	0
Potomac Yard	<u>1,500,000</u>	<u>200,000</u>	<u>240</u>	<u>3,000</u>
Subtotal	5,780,684	418,064	701	5,550
<i>Fairfax</i>				
West Falls Church***	3,452	7,280	0	85
Dunn Loring	1,059,365	38,826	0	32
Vienna	949,942	0	0	837
Huntington	97,206	0	0	1,688
Franconia Springfield	<u>1,598,582</u>	<u>666,200</u>	<u>511</u>	<u>76</u>
Subtotal	3,708,548	712,306	511	2,718
TOTAL	33,787,878	3,794,719	6,245	33,426

* Development divided between Arlington and City of Falls Church

**Development divided between Alexandria and Fairfax County

***Development divided between Fairfax County and City of Falls Church

Retail development

For retailing activities in Arlington County, the Ballston and Pentagon City station areas are projected to be the leading growth centers for 1995 through 2010. Past retail development, 1978 to 1993, centered in Crystal City and Rosslyn.

The King Street and Potomac Yard station areas are also projected to lead the growth in retail space developed in Alexandria. The Franconia-Springfield station area accounts for almost 80 percent of the retail space projected for station areas in Fairfax County through 2010.

Hotel and residential development

Projections of 2010 development of hotel facilities and residential units are also provided in Exhibit 3-3 by station area. Although the Crystal City station area was the past growth center for hotel facilities in Arlington County, Pentagon City is the projected hotel facility growth center. Alexandria's projected hotel facilities are concentrated in the King Street area. Fairfax County's projected hotel rooms are primarily in the Franconia-Springfield station area.

Residential units shown in Exhibit 3-3 indicate high levels of housing stock in the Court House, Ballston, Potomac Yard, and Huntington station areas.

The next two exhibits show actual and projected development in the Metrorail station areas by year. Exhibit 3-4 provides build-out estimates of office and retail space by year aggregated across station areas. Exhibit 3-5 provides estimates for hotel and residential development by year as well.

Exhibit 3-4

**Office Development by Jurisdiction (1,000 sq.ft.)
Actual And Projected for Metro Station Areas**

Year	Arlington	Alexandria	Fairfax
1978	343	0	0
1979	231	0	0
1980	1,489	0	0
1981	629	0	141
1982	1,159	0	159
1983	988	0	0
1984	586	0	225
1985	761	284	123
1986	1,050	462	85
1987	2,723	295	244
1988	2,072	396	0
1989	2,099	506	252
1990	1,068	77	0
1991	686	0	175
1992	917	258	0
1993	0	0	0
Subtotal '78 - '93	16,799	2,277	1,404
1994-2010	7,499	3,503	2,304
TOTAL	24,299	5,781	3,709

**Retail Development by Jurisdiction (1,000 sq.ft.)
Actual And Projected for Metro Station Areas**

Year	Arlington	Alexandria	Fairfax
1978	8	0	73
1979	23	0	8
1980	61	0	0
1981	17	0	0
1982	30	0	8
1983	15	0	0
1984	0	0	0
1985	91	13	0
1986	600	39	0
1987	133	0	0
1988	96	13	2
1989	921	35	0
1990	103	14	0
1991	0	0	370
1992	35	11	0
1993	0	0	0
Subtotal '78 - '93	2,132	125	462
1994-2010	532	293	251
TOTAL	2,664	418	712

Exhibit 3-5

Hotel Development by Jurisdiction (Rooms)
Actual And Projected for Metro Station Areas

Year	Arlington	Alexandria	Fairfax
1978	0	0	246
1979	264	0	0
1980	0	0	0
1981	0	0	0
1982	1,065	0	0
1983	197	0	0
1984	0	194	265
1985	267	0	0
1986	221	0	0
1987	255	0	0
1988	0	0	0
1989	360	0	0
1990	737	0	0
1991	0	0	0
1992	162	267	0
1993	378	0	0
Subtotal '78 - '93	3,906	461	511
1994-2010	1,127	240	0
TOTAL	5,033	701	511

Residential Development by Jurisdiction (Units)
Actual And Projected for Metro Station Areas

Year	Arlington	Alexandria	Fairfax
1978	240	0	15
1979	933	0	181
1980	720	0	108
1981	1,638	0	194
1982	1,934	0	542
1983	499	0	76
1984	48	0	285
1985	300	131	44
1986	1,386	0	276
1987	1,860	39	0
1988	1,458	0	0
1989	1,910	0	476
1990	1,519	353	12
1991	1,161	0	11
1992	899	0	6
1993	763	0	8
Subtotal '78 - '93	17,268	523	2,234
1994-2010	7,890	5,027	484
TOTAL	25,158	5,550	2,718

4. NET DEVELOPMENT ATTRIBUTED TO METRORAIL

The financial impact analysis is based on tax revenues generated from net development attributable to Metrorail service and stations in Virginia. The net development is determined based on an evaluation of total development under two scenarios: with Metrorail and without Metrorail. The data in Exhibit 4-1 show the projections of build-out in Virginia Metrorail station areas through 2010 under the two scenarios and calculation of the net development attributable to Metrorail.

**Exhibit 4-1
Net Development Attributable to Metrorail
1978-2010**

	Office (1,000 sq.ft.)	Retail (1,000 sq.ft.)	Hotel (rooms)	Residential (units)
With Metrorail	33,787,878	3,794,719	6,245	33,426
Without Metrorail	8,294,994	1,926,075	2,207	2,511
Net Attributable to Metrorail	25,492,884	1,868,644	4,038	30,915

The net development attributable to Metrorail is based on an analysis of employment and population growth outside the Metro station areas for each jurisdiction.

For projected development, the growth rates from Round V forecasts outside the Metro station areas were applied to data in the station areas to compute the *Without Metrorail* scenario. The following table provides an example computation of Metrorail-related growth for Arlington office employment using this methodology.

**Exhibit 4-2
Sample Calculation: Determination of Metrorail-Related Growth**

ARLINGTON OFFICE EMPLOYMENT				
	1990	2010	Difference	Growth
1 Total	144,553	215,000	70,447	48.7%
2 Metro	88,511	145,473	56,962	64.4%
3 Non-Metro	56,042	69,527	13,485	24.1%
	Metro-Related Growth:			62.6%
4 Metro employment increase with Metrorail using Round V projection				56,962
	1990 = 88,511	2010 = 145,473		
5 Metro employment increase using non-Metro growth %				21,298
	1990 = 88,511	2010 = 109,809		
6 Difference attributable to Metrorail development				35,664
7 Percentage of Metrorail related growth (1990-2010)				62.6%

Note: #5 21,298 = 88,511 X 24.1%

#7 62.6% = 35,664/56,962

The Metrorail-related growth factor is then applied to projected office development in Arlington Metro station areas to compute the portion attributable to Metrorail. Appendix A provides these growth factors by jurisdiction and category of use. This methodology was also applied to historical employment and population data to compute growth factors attributable to Metrorail for historical development. Using this methodology, the net development attributed to Metrorail was developed by jurisdiction and category of use, shown in the following table.

Exhibit 4-3
Net Development Attributable to Metrorail by Jurisdiction
(1978-2010)

	Office (1,000 sq.ft.)	Retail (1,000 sq.ft.)	Hotel (rooms)	Residential (units)
Arlington	20,648,934	1,521,353	3,896	25,102
Alexandria	3,020,878	132,010	142	3,850
Fairfax	1,823,073	215,282	0	1,963
Total	25,492,884	1,868,644	4,038	30,915

Exhibit 4-4, on the following page, provides development attributed to Metrorail on a yearly basis through 2010.

Exhibit 4-4
Net Development Attributable to Metrorail by Type
(1978-2010)

Year	Office (1,000 sq.ft.)	Retail (1,000 sq.ft.)	Hotel (rooms)	Residential (units)
1978	325	4	0	252
1979	219	13	263	1,082
1980	1,414	35	0	809
1981	718	9	0	1,798
1982	1,236	17	1,062	2,381
1983	939	8	197	562
1984	749	0	0	283
1985	899	54	266	465
1986	1,185	348	220	1,613
1987	2,868	76	254	1,898
1988	2,066	56	0	1,458
1989	2,335	531	359	2,302
1990	1,068	59	735	1,799
1991	706	128	0	1,159
1992	1,052	20	162	897
1993	0	0	377	762
Subtotal '78 -'93	17,781	1,360	3,896	19,520
1994-2010	7,712	509	142	11,395
TOTAL	25,493	1,869	4,038	30,915

5. ESTIMATE OF COMMONWEALTH TAX REVENUES

Overview of estimating procedures

Commonwealth taxes are generated from three principal activities associated with Metrorail. First, Commonwealth taxes are generated from the wages created by Metrorail construction and operations and maintenance expenditures in Virginia. Second, Commonwealth taxes are generated from the wages created by construction of office, retail, hotel, and residential space at Metrorail station areas. Third, Commonwealth taxes are generated from the employment, sales, and residents at Metrorail station area developments. The detailed methodology used in calculating tax revenues is presented in Appendix A.

Future tax revenues are *not* adjusted for inflation. Historical revenue estimates are deflated to more accurately reflect current year dollars. For example, personal income taxes were initially based on 1990 average taxes per return; this data were deflated using Department of Taxation values to estimate historical income taxes paid. Future income taxes per return were not adjusted. This methodology provides a conservative estimate of future tax revenues.

The employment and incomes created in Virginia for non-Virginia residents were subtracted out since these incomes do not contribute to the Commonwealth's personal income tax revenues. Data from the U.S. Census were used to estimate the magnitude of this adjustment.

Job projection was developed using employment conversion factors that relate square feet of space to number of workers. The number of jobs was translated directly to tax revenues by multiplying the factored employment by the average income tax paid by workers living in Northern Virginia. The average income tax paid per worker in Northern Virginia was calculated by dividing employment in Alexandria, Arlington, and Fairfax into total income taxes paid by residents in these jurisdictions. This accounts for wage differentials in Northern Virginia in relation to the Commonwealth as a whole.

Sales projections were developed on a site basis by relating retail sales per square foot to retail development. Sales projections at sites in the Metrorail impact areas were made using unit sales information obtained from each local jurisdiction and the Urban Land Institute of Realtors. Projections of Virginia residents who would live in Metrorail corridors but work outside the Commonwealth were developed using data from the Virginia Employment Commission.

Sales for hotels were projected by relating occupancy rates and local room rates to number of rooms. These data were provided by local jurisdictions as well.

Construction (and operation and maintenance) of Metrorail generates direct, indirect, and induced economic impacts which are also generated from development activities that result in construction expenditures for the various development types:

- Office
- Commercial

- Residential
- Hotel

These impacts were estimated through input-output modeling by assigning construction expenditure to the following input-output sectors:

- New railroad construction
- New office buildings
- New residential high-rise apartments
- Railroads and related services

Data on construction cost estimates are derived from development projections combined with cost data compiled by the Metropolitan Washington Council of Governments and interviews with area developers. The Boeckh Index was used to deflate construction data to current dollars for the years prior to 1993.

Impacts from Metrorail operations and maintenance costs were assessed using the input-output framework for railroads and related services. Data on Metrorail operations and maintenance costs were prepared by the Washington Metropolitan Area Transit Authority and allocated by the consultant to Virginia on the basis of route miles.

Tax revenues attributed to Metrorail

Tax revenues associated with Metrorail accrue to the Commonwealth from economic activities related to real estate development and from direct expenditures for Metrorail construction and operations and maintenance allocated to the Commonwealth. Types of taxes generated are:

- Individual income taxes
- Corporate income taxes
- Sales taxes
- Document recording fees

Exhibit 5-1 shows estimates of the tax revenues projected to 2010. The projections contrast the tax revenue estimates with Metrorail against estimates without Metrorail.

The total tax revenues estimated with Metrorail over the 1978 to 2010 time frame are estimated at \$3.8 billion. Of this amount, \$3.6 billion is related to development and \$179 million is for Metrorail construction and operation and maintenance in Virginia. After adjusting for growth that would have occurred without Metrorail, the net tax revenue attributable to Metrorail is estimated at \$2.1 billion for Metrorail construction and operations.

Tax revenues from development

The net Commonwealth tax revenues attributable to Metrorail development through 2010 are estimated at \$1.97 billion (this represents the difference between \$3.62 billion and \$1.65 billion of development revenue with and without Metrorail, shown in Exhibit 5-1).

The composition of this total net Commonwealth tax revenue *attributable to Metrorail development* is:

	\$ million
Individual income taxes	\$1,287
Corporate income taxes	218
Sales taxes	455
Document recording fees	—5
Total (for development)	\$1,965

A series of detailed exhibits in Appendix B show estimates of tax revenues by tax type, year, jurisdiction, and category of development. They also show tax revenues separately for projected development with and without Metrorail.

Tax revenues from Metrorail construction and operations

In addition to tax revenues generated by economic activity at Metrorail station areas, significant amounts of tax revenue accrue to the Commonwealth from expenditures for Metrorail construction as well as operations and maintenance. For the projected years 1978 through 2010, \$174 million in tax revenues to the Commonwealth is generated through Metrorail construction and operations and maintenance expenditures. Tax revenues are estimated based on expenditures for Metrorail in Virginia.

Appendix B provides detailed estimates of tax revenues stemming from Metrorail construction, operation, and maintenance allocated to the Virginia segment of the Metrorail system.

Recurring and nonrecurring Commonwealth tax revenues

Commonwealth tax revenues generated from Metrorail in Virginia are classified as recurring or nonrecurring. Tax revenues from Metrorail construction represent a nonrecurring source of tax revenues generated by wages to construction workers and the attendant personal income taxes remitted to the Commonwealth. Metrorail operations and maintenance in Virginia represent a recurring source of tax revenues generated by wages to the Metrorail workforce and the personal income taxes they pay yearly. Construction activities at Metrorail station area development sites generate nonrecurring tax revenues tied to construction schedules and changing labor requirements.

**Exhibit 5-1
Estimated State Tax Revenues
1978-2010**

With Metrorail:	
Development Related	\$3,620,681,752
Metrorail Construction, Operating, and Maintenance Related	<u>174,134,512</u>
Subtotal	3,794,816,265
Without Metrorail:	
Development Related	1,654,915,423
Metrorail Construction, Operating, and Maintenance Related	<u>0</u>
Subtotal	1,654,915,423
Net Attributable to Metro Rail	<u><u>\$2,139,900,841</u></u>

Commonwealth tax revenues generated on a nonrecurring basis result from:

- Metrorail construction activities
- Construction of development sites in Metrorail station areas
- Sales of housing units

Recurring Commonwealth tax revenues of a significant magnitude are generated from the incomes earned and sales at Metrorail station area office, retail, and hotel developments. Additional recurring tax revenues are derived from residents who choose housing locations at Metrorail station area sites. Tax revenues that recur from year to year are generated from:

- Metrorail operations and maintenance expenditures in Virginia
- Office employment generated from development at Metrorail station area sites
- Retail sales and employment generated from development at Metrorail station area sites
- Hotel sales and employment generated from development at Metrorail station area sites
- New Virginia residents who have purchased houses at Metrorail station area sites

Exhibit 5-2 summarizes in matrix form the Commonwealth tax revenues generated from Metrorail. The first column lists the sources and economic activities that result in Commonwealth tax revenues. The entries marked X match the sources and economic activities to types of Commonwealth tax revenues generated.

Exhibit 5-2
Recurring and Nonrecurring Sources of Tax Revenue

Economic Activity	Sales Taxes	Individual Income Taxes	Corporate Income Taxes	Document Recording Fee
Non-recurring				
Metrorail Construction	X	X		
Construction at Development Sites		X		
Sales of Housing Units				X
Recurring				
Metrorail Operations & Maintenance Expenditures	X	X		
Office		X	X	
Retail	X	X	X	
Hotel	X	X	X	
Residential		X		

Exhibit 5-3 lists recurring and nonrecurring Commonwealth tax revenues from Metrorail construction and operations and Metrorail-related development. Recurring tax revenues from Metrorail-related development account for the largest share (88 percent) of Metrorail-related Commonwealth tax revenues from 1978 to 2010. Revenue from Metrorail construction in Virginia before 1978 is also shown in the table (in the 1978 row).

**Exhibit 5-3
Commonwealth Tax Revenues Attributable to Metrorail**

Year	Metrorail Construction & Operations		Metrorail-Related Development		Total State Revenues
	State Revenues from Construction	Recurring State Revenues from Operations	State Revenues from Construction	Recurring State Revenues from Jobs Created	
1978	\$19,699,579	\$334,597	\$642,356	\$147,481	\$20,824,013
1979	0	357,560	1,480,724	1,013,504	2,851,788
1980	0	587,185	2,177,240	1,535,450	4,299,876
1981	818,866	754,484	2,906,768	4,181,141	8,661,259
1982	1,637,732	843,054	5,249,469	6,667,735	14,397,990
1983	3,275,465	951,306	1,956,376	8,951,604	15,134,751
1984	1,637,732	1,374,473	1,486,165	11,212,785	15,711,155
1985	1,820,222	1,545,052	2,114,403	13,875,871	19,355,548
1986	2,002,713	1,581,136	4,333,468	17,762,669	25,679,985
1987	4,005,425	2,404,508	5,307,414	25,288,396	37,005,742
1988	2,002,713	2,673,497	4,172,719	34,501,797	43,350,726
1989	1,001,356	2,476,676	6,534,108	41,476,629	51,488,769
1990	1,282,110	2,516,040	3,902,536	54,726,947	62,427,633
1991	879,696	2,609,530	1,969,092	59,025,157	64,483,475
1992	1,282,110	2,748,946	2,984,245	64,648,537	71,663,839
1993	2,531,466	2,730,149	868,960	68,614,413	74,744,989
1994	4,375,085	2,999,566	1,486,928	68,904,721	77,766,300
1995	5,905,195	3,099,289	1,486,928	70,938,885	81,430,297
1996	6,326,326	3,161,288	1,486,928	72,973,049	83,947,591
1997	6,298,250	3,373,101	1,486,928	75,007,213	86,165,493
1998	3,888,444	3,464,065	1,486,928	77,041,377	85,880,815
1999	2,072,901	3,547,354	1,486,928	79,075,540	86,182,724
2000	2,779,466	3,602,858	2,353,766	83,783,425	92,519,514
2001	1,399,091	3,726,265	3,052,551	82,450,610	90,628,517
2002	1,080,903	3,757,789	1,486,928	86,050,396	92,376,017
2003	996,677	3,783,376	1,486,928	88,084,560	94,351,542
2004	935,847	3,805,584	1,486,928	90,118,724	96,347,083
2005	935,847	3,843,965	2,744,433	95,882,138	103,406,382
2006	935,847	3,894,417	3,052,551	94,549,323	102,432,137
2007	935,847	3,932,206	1,486,928	98,149,109	104,504,091
2008	935,847	3,982,724	1,486,928	100,183,273	106,588,772
2009	935,847	4,035,735	1,486,928	102,217,437	108,675,947
2010	935,847	4,086,285	2,398,337	107,195,613	114,616,082
TOTAL	\$85,550,454	\$88,584,059	\$79,530,823	\$1,886,235,506	\$2,139,900,841

6. RETURNS TO THE COMMONWEALTH OF VIRGINIA

The Commonwealth of Virginia has provided partial funding for Metrorail since 1973. This funding is crucial to the Metrorail system since mass transit in Northern Virginia will continue to rely on federal, state, and local funding for ongoing capital and operating needs.

Virginia has provided \$353 million to the Metrorail system between 1978 and 1994. Assuming that the 1995 appropriation of \$37 million for Metrorail continues (without inflation), the total contributions from 1995 to 2010 will be \$589 million (shown in Exhibit 6-1).

Just as the Commonwealth has made (and continues to make) an investment in Metrorail, returns to the Commonwealth have been substantial and show recent significant growth that is projected to continue. The exhibit shows estimated returns to the Commonwealth in the form of tax revenues.

Exhibit 6-1
Metrorail Contributions and Tax Revenues
(\$ million)

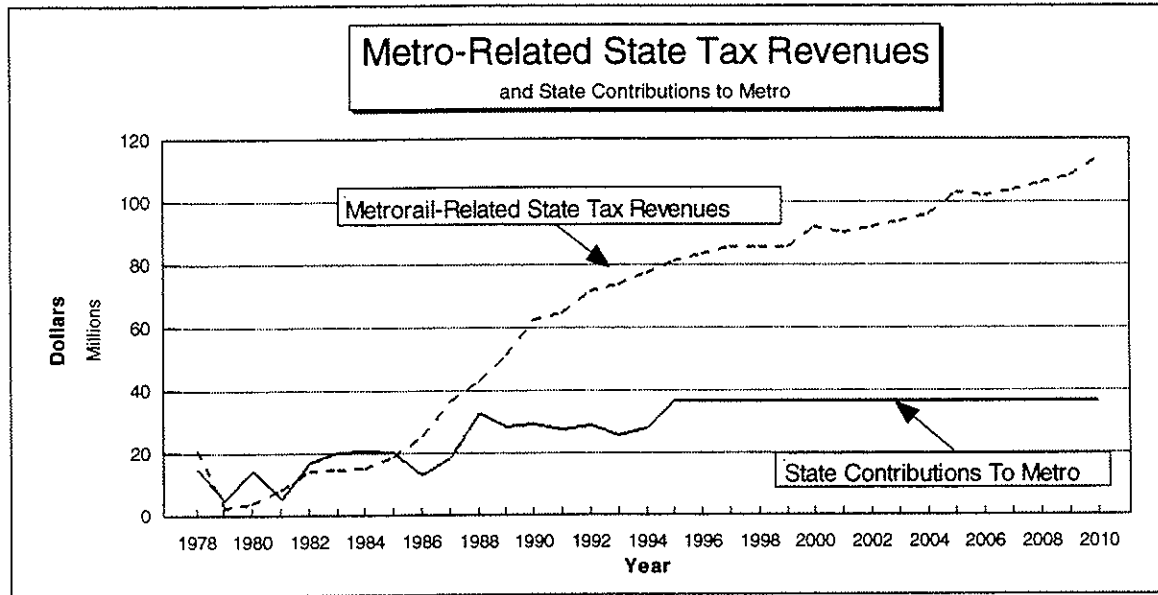
	<u>State Contributions</u>	<u>Tax Revenue Attributable to Metrorail</u>	<u>Tax Revenue/Contributions</u>
1978-1994	\$352.9	\$737.7	\$209%
1995-2010	<u>588.8</u>	<u>1,402.2</u>	<u>238%</u>
Total	<u>\$941.7</u>	<u>\$2,139.9</u>	<u>\$227%</u>

The exhibit also shows that 209 percent of every dollar the Commonwealth invested in Metrorail between 1978 and 1994 was returned in terms of tax revenues. Between 1995 and 2010, Metrorail-related tax revenues are estimated to return 238 percent of the Commonwealth's contributions.

Tax revenues increase in future years because of the growth in economic activity, particularly activity related to permanent employment from office and retail development. For purposes of this study, Commonwealth contributions are assumed to be level (at the 1995 amount) until the year 2010. Additionally, as noted earlier, *tax revenues are not inflated from 1994 to 2010* to provide a conservative approach to this analysis.

Exhibit 6-2 shows, on an annual basis, that the additional tax revenues associated with Metrorail far exceed the Commonwealth contributions, especially when compared to the level contributions assumed from 1995 on.

Exhibit 6-2



In Section 5, the *total* Commonwealth tax revenues estimated from development in the Metrorail station areas and Metrorail construction and operations are projected at nearly \$3.9 billion (1978 to 2010). The \$2.1 billion presented in the table is an estimate of *net* tax revenues, differentiating the projection of economic activity with Metrorail from economic activity without Metrorail. Therefore in financial terms, the *net* tax revenue value represents an appropriate measure when it is compared to Commonwealth contributions.

Rate of return from investment in Metrorail

There are a number of ways to express the return on investment that the Commonwealth derives from its investment in Metrorail. The discussion and findings in Exhibit 6-1 show the return in terms of absolute dollars. In this case, the Commonwealth has an investment of \$941 million in the years 1978 through 2010 and a net return in tax revenue of \$2.1 billion, representing a net gain to the Commonwealth of \$1.2 billion on a dollar-for-dollar basis.

A second way to express the Commonwealth's return on its investment is the annual or internal rate of return. The internal rate of return is the conventional measure for assessing an investment's performance. The calculation of the internal rate of return recognizes that money has time value; specifically, present money is more valuable than future money even if receipt of future money is assured. An internal rate of return is the interest rate earned on the investment.

Exhibit 6-3 shows that an annual return on investment of 12.4 percent is generated over the 1978 to 1994 time frame. The internal rate of return is calculated by explicitly considering the timing of the Commonwealth's investment in Metrorail and its return in terms of net Commonwealth tax revenues on a yearly basis through factoring in an interest rate (discount rate). On a historical basis, the excess of net Commonwealth tax revenues attributable to Metrorail relative to the actual Commonwealth investment represents an annual rate of return

of 12.4 percent. This return on investment is similar to KPMG's November 1985 study (*Fiscal Impact on Metrorail*) that estimated the return on Commonwealth investment through 1995 to be 13 percent.

**Exhibit 6-3
Return on Commonwealth Investment**

	1978 - 1994	1995 - 2010
Net State Tax Revenue	\$737.7 million	\$1402.2 million
State Appropriations	352.9 million	588.8 million
Annual Return on Investment	12.4%	19.2%

Note: Projected Revenues are presented in 1993 dollars.

In the future, the Commonwealth's investment looks even more optimistic. The annual rate of return on the Commonwealth's contribution from 1995 to 2010 is 19.2 percent under the assumed conditions. As discussed previously in this section, future Commonwealth contributions are assumed to be level at the 1995 level. Continued economic growth in the Metro station areas accumulates permanent jobs and income, producing relatively higher Commonwealth revenue than the historical data indicated.

The rate of return can be compared to the Commonwealth's cost of money (or interest rate for borrowing). Currently, interest rates for long-term (e.g., 20 year) tax-exempt general obligation bonds average approximately 6 percent, which is substantially lower than the 19.2 percent return on the Commonwealth's future Metrorail-related investment.

Employment generated in the Commonwealth

The dollar comparisons and internal rate of return indicate the prudent nature of the Commonwealth's investment decision by financial criteria. From a broader socioeconomic perspective, Metrorail generates recurring employment in office, retail, and hotel establishments.

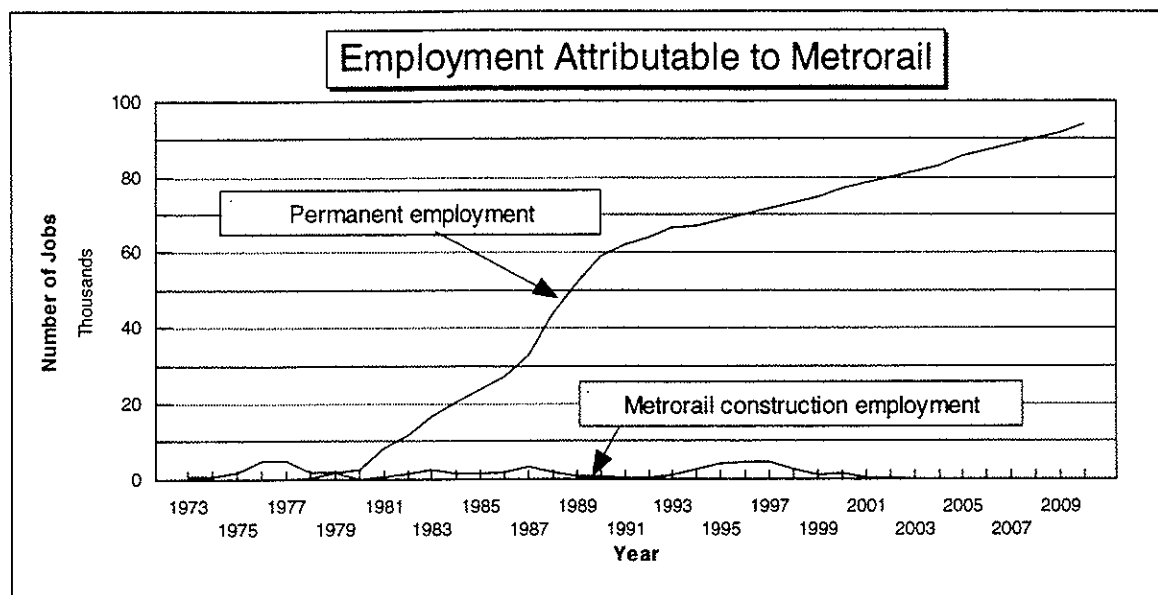
The following estimates of cumulative employment have been generated from development and Metrorail operations at Metrorail station areas.

- Office development - 85,900
- Retail development - 1,500
- Hotel development - 3,500
- Metrorail operations - 3,000

These estimates represent employment in permanent jobs. Employment generated from Metrorail construction activities averaged 1,600 a year from projected years 1978 through 2003 when most construction has been completed.

The following chart (Exhibit 6-4) shows that total permanent employment in the Metro station areas is projected to approach 140,000 by the year 2010.

Exhibit 6-4



Items not counted in estimating tax revenues

Although returns to the Commonwealth are projected to be sizable, the analyses and attendant projections have taken a highly conservative approach. The following items were not counted in projecting Commonwealth tax revenues.

- Projections of revenues are based on data from a recent specific time; for example, tax revenue projections use 1993 data. Revenue estimates are deflated for years before the base data but are not escalated for future years. This places tax revenue projections at an absolute minimum.
- The analysis included only developments completed from 1978 (a year after the first Virginia Metrorail station opened) to 1993 even though substantial development in Arlington was planned and completed before 1978 in anticipation of further station openings.
- Retail sales were estimated using average sales per square foot for the southeastern United States. Therefore retail sales do not reflect the higher wages and prices in the Washington, D.C., metropolitan area.
- Development in station areas will spawn fringe development that has not been projected; thus, tax revenues attributable to Metrorail are understated to the extent this type of development occurs.
- Development projections considered only new construction. Hundreds of units have been converted to condominium, but tax revenues associated with conversions have not been counted.

- Sales taxes paid by businesses, construction companies, and homeowners for purchases outside Metrorail station areas have not been included.
- Developers derive profits from office, retail, hotel, and residential construction space. The corporate taxes that would be paid on these profits have not been counted.

7. FUTURE OUTLOOK

The 103-mile Metrorail system is expected to be fully constructed in Northern Virginia with the completion of the Franconia-Springfield Metro station in 2000. Although this study focuses primarily on economic activity in the existing Metrorail system, several important transportation and development aspects should be noted. Three topics affecting Metrorail's future are:

- Importance of bus services to Metrorail and future transit needs
- Planning and zoning the Tysons Corner Urban Center for rail service
- Development of the Engineering Proving Ground (EPG) site south of the Franconia-Springfield Metrorail station

Bus service and Metrorail

The Metro system in Northern Virginia is an integrated system of rail and bus services. Most of the bus routes in Northern Virginia are designed to feed a Metrorail station. Many stations, including Pentagon, Vienna, and Huntington, serve as major transfer points for bus and rail riders.

In Northern Virginia, Metrorail operates 42 bus lines and 136 routes that carry 22 million passenger trips annually; local jurisdictions carry another 5 million passengers per year. Approximately 18 percent of Virginia Metrorail riders currently use buses to access Metrorail; 21 percent of Virginia bus riders have Metrorail station areas as their destination. Over one million persons, or 90 percent of the Northern Virginia population, are located within walking distance of a bus route.

As the 103-mile Metrorail system nears completion and Northern Virginia continues to grow, jurisdictions will rely more heavily on bus service, especially in areas not served by rail. Compliance with the Clean Air Act is expected to include incentives to reduce automobile commuting and encourage greater use of mass transit, especially buses.

Bus service is an integral component of the regional Metrorail system and will play an important role in maximizing the use of the Metrorail system and in meeting future transit needs in Northern Virginia.

Tysons Corner Urban Center

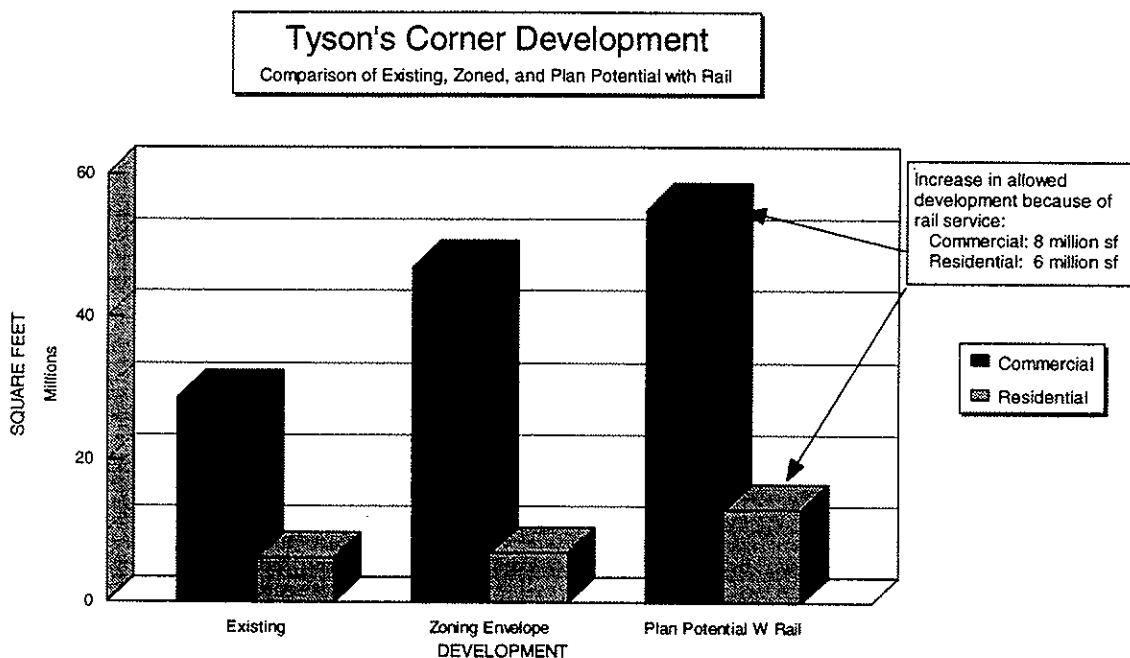
In May 1994 the Fairfax County Board of Supervisors approved the county's Planning Commission recommendations to address development and transportation issues of the Tysons Corner Urban Center. As the county's only Urban Center, Tysons Corner is expected to develop differently in function, physical design, and intensity than other parts of the county.

The Tysons Corner Plan seeks to create a more functionally efficient pedestrian- and transit-friendly environment by integrating new development with existing buildings; thoroughfare improvements; and future rail, bus, and/or circulation systems. The Plan relies heavily on managing transportation capacity and development potential while allowing increased

residential and mixed-use development to reduce the number and length of commuter trips. One of the basic tenets of the Plan is an adequate transportation system—highways, rail, and other transit enhancements—as well as transportation demand management programs.

The Plan's suggested rail alignment option for Tysons Corner provides for three new rail stations in the next 20 to 30 years. This extension of the Metrorail system would be connected to the West Falls Church Metrorail station. The Plan not only identifies rail as an important option for the future efficiency of Tysons Corner but allows for significantly greater development densities under the rail option.

The Tysons Corner planning area currently has almost 30 million square feet of commercial space in place. The Plan provides zoning for another 20 million square feet of commercial space without rail service. The Tysons Corner Plan provides zoning for *an additional 8 million square feet of commercial space with rail service (over the existing zoning)*, shown in the following chart.



Development at the Engineering Proving Ground (EPG) site

Since late 1989 the Department of the Army has evaluated alternatives to develop the EPG site and, more recently, is planning to enter into a unique public-private agreement to develop the 820-acre site located west of Interstate 95 and south of Franconia-Springfield. The Army's plans for full development of the site include 10.5 million square feet of commercial space and up to 3,950 residential units (Phase I development plans are 2.3 million square feet of commercial space and 800 residential units). The Army expects to lease much of the site to Defense/other federal agencies and contractors.

A key transportation component of this development is a proposed people mover (e.g., automated light rail) that links the site with the Franconia-Springfield Metrorail station, Springfield Mall, and the central business district of Springfield. The Franconia-Springfield Metrorail station will serve as a regional transportation center with Metrorail, Metrobus, and commuter rail services. Linkage of this center with the EPG people mover is an important factor affecting the development's attractiveness and zoning densities.

METHODOLOGY

Appendix A Methodology

METHODOLOGY

This appendix describes methodologies that were used to estimate the economic impact of Metrorail construction, operations, and maintenance expenditures in Virginia; project development attributable to siting Metrorail stations; and relate this development to measures of economic activity to project tax revenues that will accrue to the Commonwealth of Virginia.

The first of two major sections describes methods for projecting development and the related jobs, incomes, and sales generated as a result of development. The second describes the application of input-output modeling procedures to estimate (1) the direct, indirect, and induced economic impacts of Metrorail construction, operations, and maintenance expenditures; and (2) the impacts stemming from construction activities to develop office, retail, residential, and hotel space at Metrorail station sites.

Projections of development and estimates of Commonwealth tax revenues

The projections of build-out and the attendant employment, sales, and tax revenues were made using Lotus 123 software. Separate exhibits were developed for these types of development:

- Office
- Retail
- Hotel
- Residential

The documentation for the exhibits is provided by a series of formulas that apply to specific types of development. The formulas are keyed to each column of the exhibits that appear in Appendix B. When reviewing the exhibits, note that Excel calculates values to the number of decimal places entered while the user specifies a display format. The displayed numbers are rounded and are not the exact numbers used for the calculations.

The columns are identified by capital letters (A, B, C, etc.). The letters correspond to the position of the column in the exhibits (A refers to the first column, B to the second column, etc.). The letter convention is used to avoid confusion since the formulas contain numerical data.

Office

Column A = Year construction completed

Column B = Projections of build-out of office space

*Column C = Column B_{t-1} * Office occupancy rate for each jurisdiction*

Column C is the prior year's build-out absorbed at 92.2 percent for Arlington, 90.6 percent for Alexandria, and 87.6 percent for Fairfax.

Column D = Column C ÷ 200.

Column D assigns one office employee per 250 square feet of space occupied in Arlington, 3.4 per 1000 square feet for Alexandria, and one per 200 square feet for Fairfax.

Column E = Column Σ D

Column E accumulates employment by adding employment for each space occupied.

*Column F = Column E * percentage of Commonwealth employees that are Virginia residents*

Column F states employment by state of residence. It nets out jobs in Virginia for residents of Maryland and Washington, D.C., using data from *Commuting Patterns of Virginia Workers: County and City Level for 1990*, provided by the Virginia Employment Commission Economic Information Services Division State Data Center. The percentages for Arlington, Alexandria, and Fairfax are: 67.1 percent, 52.9 percent, and 82.3 percent.

*Column G = Column F * .85 * Personal income taxes per return*

Column G converts employment in Virginia by Virginia residents to tax revenues to the Commonwealth from the personal income tax. For 1990, 2,588,907 returns were filed and Virginia had employment of 3,028,362. This converts to a returns-to-employment ratio of 85 percent. 1990 taxes per return for Arlington, Alexandria, and Fairfax (including Fairfax City and Falls Church) were \$1,565, \$1,510, and \$1,827. This provides an estimate of Virginia personal income taxes for each unit of employment. In effect, the procedure accounts for joint returns.

To estimate personal income taxes in current dollars for years before 1991 the following formula adjustments were developed from Table 1.8: *Statewide Individual Income Taxes - Taxable Years 1973-1993 of the Department of Taxation Annual Report.*

	ARLINGTON	ALEXANDRIA	FAIRFAX
1979	(F * .85 * \$1,565 * .43)	(F * .85 * \$1,510 * .46)	(F * .85 * \$1,827 * .43)
1980	(F * .85 * \$1,565 * .50)	(F * .85 * \$1,510 * .50)	(F * .85 * \$1,827 * .47)
1981	(F * .85 * \$1,565 * .57)	(F * .85 * \$1,510 * .54)	(F * .85 * \$1,827 * .51)
1982	(F * .85 * \$1,565 * .62)	(F * .85 * \$1,510 * .59)	(F * .85 * \$1,827 * .56)
1983	(F * .85 * \$1,565 * .66)	(F * .85 * \$1,510 * .63)	(F * .85 * \$1,827 * .61)
1984	(F * .85 * \$1,565 * .71)	(F * .85 * \$1,510 * .66)	(F * .85 * \$1,827 * .65)
1985	(F * .85 * \$1,565 * .76)	(F * .85 * \$1,510 * .71)	(F * .85 * \$1,827 * .70)
1986	(F * .85 * \$1,565 * .82)	(F * .85 * \$1,510 * .76)	(F * .85 * \$1,827 * .76)
1987	(F * .85 * \$1,565 * .90)	(F * .85 * \$1,510 * .86)	(F * .85 * \$1,827 * .87)
1988	(F * .85 * \$1,565 * .97)	(F * .85 * \$1,510 * .98)	(F * .85 * \$1,827 * .97)
1989	(F * .85 * \$1,565 * .96)	(F * .85 * \$1,510 * .92)	(F * .85 * \$1,827 * .97)
1990	(F * .85 * \$1,565 * .99)	(F * .85 * \$1,510 * .98)	(F * .85 * \$1,827 * 1.0)

$$\text{Column H} = \text{Column E} * \$111.82$$

Column H converts employment in Virginia to tax revenues to the Commonwealth from the corporate income tax. For 1990, \$338,618,526 was collected and Virginia had employment of 3,028,362. This converts to a corporate tax revenue per unit of employment of \$111.82. (Source: Table 2.2: Number of Corporate Returns, Taxable Income, and Tax Assessed, Department of Taxation *Annual Report* Fiscal Year 1990.)

To adjust corporate income taxes to current dollars for years before 1991 the following formula adjustments were developed from Table 2.2 and employment data from the Bureau of Labor Statistics.

- 1979 (E * \$112 * .55)
- 1980 (E * \$112 * .59)
- 1981 (E * \$112 * .73)
- 1982 (E * \$112 * .67)
- 1983 (E * \$112 * .62)
- 1984 (E * \$112 * .62)
- 1985 (E * \$112 * .77)
- 1986 (E * \$112 * .79)
- 1987 (E * \$112 * .88)
- 1988 (E * \$112 * .89)
- 1989 (E * \$112 * 1.04)
- 1990 (E * \$112 * 1.13)

$$\text{Column I} = \text{Column B} * \$88.70 * .74 * .036$$

Column I converts construction into an estimate of total earnings in Virginia by Virginia residents and personal income tax revenues. Construction costs are stated as \$88.70 per square foot. The source for the construction cost figure was *Means Square Foot Costs 1993*, published by the R.S. Means Company, Inc. The earnings multiplier for sector 110202 New Office Construction is .7434, (rounded to .74). The source of the earnings multiplier is the RIMS II model developed by the Bureau of Economic Analysis. The effective tax rate on adjusted gross income is .036 for 1993. (Source: Department of Taxation *Annual Report* 1993.)

To estimate personal income taxes generated by construction activity for years before 1992 the following formula adjustments were developed using the Boeckh Index for construction costs of office, hotel, and high-rise apartment buildings.

- 1978 (B * \$68.70 * .53 * .74 * .036)
- 1979 (B * \$68.70 * .57 * .74 * .036)
- 1980 (B * \$68.70 * .62 * .74 * .036)
- 1981 (B * \$68.70 * .68 * .74 * .036)
- 1982 (B * \$68.70 * .74 * .74 * .036)
- 1983 (B * \$68.70 * .79 * .74 * .036)

- 1984 (B * \$68.70 * .83 * .74 * .036)
- 1985 (B * \$68.70 * .84 * .74 * .036)
- 1986 (B * \$68.70 * .85 * .74 * .036)
- 1987 (B * \$68.70 * .87 * .74 * .036)
- 1988 (B * \$68.70 * .89 * .74 * .036)
- 1989 (B * \$68.70 * .92 * .74 * .036)
- 1990 (B * \$68.70 * .95 * .74 * .036)
- 1991 (B * \$68.70 * .97 * .74 * .036)

Column J = Columns G + H + I

Column J states total tax revenues. Columns G and H are in 1991 dollars because employment and taxes per unit of employment are based on 1992 data. Column I uses construction cost data in 1993 dollars taxed at a 1993 rate.

This convention of deflating but not escalating dollars is followed throughout the analyses to arrive at the most conservative estimate of Commonwealth tax revenues associated with Metrorail.

Retail

Column A = Year construction completed

Column B = Projections of build-out of retail space

*Column C = Columns B_{t-1} * Retail occupancy rate for each jurisdiction*

Column C is the prior years build-out absorbed at 90.2 percent occupancy for Arlington, 88 percent for Alexandria, and 88 percent for Fairfax.

Column D = ΣC

Column D accumulates space occupied over the years of the projections.

Column E = Column C ÷ 500

Column E assigns one retail employee per 500 square feet of space occupied.

Column F = Column ΣE

Column F accumulates employment, adding employment data for each year.

*Column G = Column F * percentage of Commonwealth employees that are Virginia residents*

Column G states employment by state of residence. It nets out jobs in Virginia for residents of Maryland and Washington, D.C., using data from the Virginia Employment Commission

Economic Information Services Division State Data Center. The percentages for Arlington, Alexandria, and Fairfax are: 67.1 percent, 52.9 percent, and 82.3 percent.

$$\text{Column H} = D * \$233$$

Column H estimates yearly sales on the basis of \$233 per square foot of retail space.

The data on sales per square foot were taken from the Urban Land Institute's *Dollars and Cents of Shopping Centers*: 1990 report. To deflate values before 1993 to current dollars, the Consumer Price Index was used. The formula adjustments are:

- 1979 (D * \$233 * .36)
- 1980 (D * \$233 * .39)
- 1981 (D * \$233 * .43)
- 1982 (D * \$233 * .47)
- 1983 (D * \$233 * .52)
- 1984 (D * \$233 * .56)
- 1985 (D * \$233 * .59)
- 1986 (D * \$233 * .63)
- 1987 (D * \$233 * .67)
- 1988 (D * \$233 * .71)
- 1989 (D * \$233 * .77)
- 1990 (D * \$233 * .82)
- 1991 (D * \$233 * .89)
- 1992 (D * \$233 * .95)

$$\text{Column I} = G * \text{retail wage} * .036$$

Column I converts employment in Virginia by Virginia residents to tax revenues to the Commonwealth from the personal income tax. The average retail wage for Arlington was \$15,759; for Alexandria, \$16,045; and for Fairfax, \$15,369. (Source: *County Business Patterns, Virginia 1991*, Bureau of the Census, Table 2: Employees, Payroll, and Establishments, by Industry.) This is multiplied by the effective tax rate of .036. (Source: Department of Taxation *Annual Report 1993*.)

To estimate personal income taxes from employment in retail trade for years before 1993 the following formula adjustments were developed from Table 1.8 of the Virginia Department of Taxation *Annual Report 1983-1993*.

ARLINGTON	ALEXANDRIA	FAIRFAX
1979 (G * \$15,759 * .43)	(G * 16,045 * .46)	(G * \$15,369 * .43)
1980 (G * \$15,759 * .50)	(G * 16,045 * .50)	(G * \$15,369 * .47)
1981 (G * \$15,759 * .57)	(G * 16,045 * .54)	(G * \$15,369 * .51)
1982 (G * \$15,759 * .62)	(G * 16,045 * .59)	(G * \$15,369 * .56)
1983 (G * \$15,759 * .66)	(G * 16,045 * .63)	(G * \$15,369 * .61)

1984 (G * \$15,759 * .71)	(G * 16,045 * .66)	(G * \$15,369 * .65)
1985 (G * \$15,759 * .76)	(G * 16,045 * .71)	(G * \$15,369 * .70)
1986 (G * \$15,759 * .82)	(G * 16,045 * .76)	(G * \$15,369 * .76)
1987 (G * \$15,759 * .90)	(G * 16,045 * .86)	(G * \$15,369 * .87)
1988 (G * \$15,759 * .97)	(G * 16,045 * .98)	(G * \$15,369 * .97)
1989 (G * \$15,759 * .96)	(G * 16,045 * .92)	(G * \$15,369 * .97)
1990 (G * \$15,759 * .99)	(G * 16,045 * .98)	(G * \$15,369 * 1.0)

$$\text{Column J} = H * .045$$

Column J converts retail sales to Commonwealth sales tax revenues through imposition of the 4.5 percent tax rate.

$$\text{Column K} = \text{Column F} * \$111.82$$

Column K converts employment in Virginia to tax revenues to the Commonwealth from the corporate income tax. For 1991, \$338,618,526 was collected and Virginia had employment of 3,028,362. This converts to a corporate tax revenue per unit of employment of \$111.82. (Source: Table 2.2: Number of Corporate Returns, Taxable Income, and Tax Assessed, Department of Taxation *Annual Report Fiscal Year 1990*.)

To adjust corporate income taxes to current dollars the following formula adjustments were developed from Table 2.2 and employment data from the Bureau of Labor Statistics.

1979 (F * \$112 * .55)
1980 (F * \$112 * .59)
1981 (F * \$112 * .73)
1982 (F * \$112 * .67)
1983 (F * \$112 * .62)
1984 (F * \$112 * .62)
1985 (F * \$112 * .77)
1986 (F * \$112 * .79)
1987 (F * \$112 * .88)
1988 (F * \$112 * .89)
1989 (F * \$112 * 1.04)
1990 (F * \$112 * 1.13)

$$\text{Column L} = \text{Column B} * \$63.15 * .74 * .036$$

Column L converts construction into an estimate of total earnings in Virginia by Virginia residents and personal income tax revenues. Construction costs are stated as \$61.35 per square foot. The source of the construction cost figure was *Means Square Foot Costs 1993*, published by the R.S. Means Company, Inc.. The earnings multiplier for sector 110202 New Office Construction is .7434, (rounded to .74). The source of the earnings multiplier was the RIMS II model developed by the Bureau of Economic Analysis. The effective tax rate on adjusted gross income is .036 for 1993. (Source: Department of Taxation *Annual Report 1993*.)

To estimate personal income taxes generated by construction activity for years before 1993 the following formula adjustments were developed using the Boeckh Index for construction costs of office, hotel, and high-rise apartment buildings.

1978 (B * \$63.15 * .53 * .74 * .036)
1979 (B * \$63.15 * .57 * .74 * .036)
1980 (B * \$63.15 * .62 * .74 * .036)
1981 (B * \$63.15 * .68 * .74 * .036)
1982 (B * \$63.15 * .74 * .74 * .036)
1983 (B * \$63.15 * .79 * .74 * .036)
1984 (B * \$63.15 * .83 * .74 * .036)
1985 (B * \$63.15 * .84 * .74 * .036)
1986 (B * \$63.15 * .85 * .74 * .036)
1987 (B * \$63.15 * .87 * .74 * .036)
1988 (B * \$63.15 * .89 * .74 * .036)
1989 (B * \$63.15 * .92 * .74 * .036)
1990 (B * \$63.15 * .95 * .74 * .036)
1991 (B * \$63.15 * .97 * .74 * .036)

Column M = Columns I + J + K + L

Column M states total tax revenues that accrue to the Commonwealth as a result of retail development.

Hotel

Column A = Year construction completed

Column B = Projections of build-out by number of hotel rooms

Column C = ΣB

Column C runs a cumulative total of hotel rooms added through the years.

*Column D = B * Hotel employees per room*

Column D assigns .89 hotel employee per room for Arlington, .67 per room for Alexandria, and .56 per room for Fairfax, based on data provided the Convention and Visitors Bureaus for each jurisdiction..

Column E = ΣD

Column E accumulates employment as hotel rooms are added through the years.

Column 4 = Column 1 * percentage of Commonwealth employees that are Virginia residents

Column 5 states employment by state of residence. It nets out jobs in Virginia for residents of Maryland and Washington, D.C., using data from the Virginia Employment Commission Economic Information Services Division State Data Center. The percentages for Arlington, Alexandria and Fairfax are 67.1 percent, 87.9 percent, and 87.3 percent.

Column 6 = $C^2 \cdot 365 \cdot \text{hotel occupancy} \cdot \text{hotel sales}$

Column 6 states hotel sales by multiplying number of rooms by room days (365), occupancy rates for the area (77 for Arlington, 73 for Alexandria, 69 for Fairfax), and average hotel sales per room (\$118 for Arlington, \$134 for Alexandria, \$119 for Fairfax).

The data on occupancy rates and average rate per room were taken from the Convention and Visitors Bureau for each jurisdiction. Data on sales per room were obtained from *The Host Report, Hotel Operating Statistics 1995*. To deflate values before 1995 to current dollars, the Consumer Price Index Other Goods and Services was used. The formula adjustments are:

1970 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .86$
1980 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .91$
1981 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .93$
1982 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .97$
1983 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .99$
1984 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .96$
1985 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .99$
1986 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .63$
1987 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .67$
1988 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .71$
1989 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .72$
1990 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .87$
1991 (C)	$\cdot 368 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .89$
1992 (C)	$\cdot 365 \cdot \text{occupancy rate} \cdot \text{room rate} \cdot .95$

Column 7 = $C^2 \cdot \text{service wage} \cdot .036$

Column 7 converts employment in Virginia by Virginia residents to tax revenues to the Commonwealth from the personal income tax. The average service wage for Arlington was \$15,145; for Alexandria, \$14,726; and for Fairfax, \$13,485. (Source: *County Business Patterns, Virginia 1991*, Bureau of the Census, Table 2: Employees, Payroll, and Establishments, by Industry.) This is multiplied by the effective tax rate of .036. (Source: Department of Taxation *Annual Report 1993*.)

To estimate personal income taxes from employment in the service industry for years before 1991 the following formula adjustments were developed from Table 1.8 in the Virginia Department of Taxation *Annual Report, 1985-1993*:

ARLINGTON	ALEXANDRIA	FAIRFAX
1979 (F * \$15,145 * .43 * .036)	(F * 14,726 * .46 * .036)	(F * \$13,485 * .43 * .036)
1980 (F * \$15,145 * .50 * .036)	(F * 14,726 * .50 * .036)	(F * \$13,485 * .47 * .036)
1981 (F * \$15,145 * .57 * .036)	(F * 14,726 * .54 * .036)	(F * \$13,485 * .51 * .036)
1982 (F * \$15,145 * .62 * .036)	(F * 14,726 * .59 * .036)	(F * \$13,485 * .56 * .036)
1983 (F * \$15,145 * .66 * .036)	(F * 14,726 * .63 * .036)	(F * \$13,485 * .61 * .036)
1984 (F * \$15,145 * .71 * .036)	(F * 14,726 * .66 * .036)	(F * \$13,485 * .65 * .036)
1985 (F * \$15,145 * .76 * .036)	(F * 14,726 * .71 * .036)	(F * \$13,485 * .70 * .036)
1986 (F * \$15,145 * .82 * .036)	(F * 14,726 * .76 * .036)	(F * \$13,485 * .76 * .036)
1987 (F * \$15,145 * .90 * .036)	(F * 14,726 * .86 * .036)	(F * \$13,485 * .87 * .036)
1988 (F * \$15,145 * .97 * .036)	(F * 14,726 * .98 * .036)	(F * \$13,485 * .97 * .036)
1989 (F * \$15,145 * .96 * .036)	(F * 14,726 * .92 * .036)	(F * \$13,485 * .97 * .036)
1990 (F * \$15,145 * .99 * .036)	(F * 14,726 * .98 * .036)	(F * \$13,485 * 1.0 * .036)

*Column I = G * .045*

Column I converts hotel sales to state sales tax revenues through imposition of the 4.5 percent tax rate.

*Column J = Column E * \$111.82*

Column J converts employment in Virginia to tax revenues to the Commonwealth from the corporate income tax. For 1991, \$338,618,526 was collected and Virginia had employment of 3,028,362. This converts to a corporate tax revenue per unit of employment of \$111.82. (Source: Table 2.2: Number of Corporate Returns, Taxable Income, and Tax Assessed, Department of Taxation *Annual Report* Fiscal Year 1990.)

To adjust corporate income taxes to current dollars the following formula adjustments were developed from Table 2.2 and employment data from the Bureau of Labor Statistics.

1979 (E * \$112 * .55)
1980 (E * \$112 * .59)
1981 (E * \$112 * .73)
1982 (E * \$112 * .67)
1983 (E * \$112 * .62)
1984 (E * \$112 * .62)
1985 (E * \$112 * .77)
1986 (E * \$112 * .79)
1987 (E * \$112 * .88)
1988 (E * \$112 * .89)
1989 (E * \$112 * 1.04)
1990 (E * \$112 * 1.13)

$$\text{Column K} = B * 952 * \$77.40 * .74 * .036$$

Column K converts construction into an estimate of total earnings in Virginia by Virginia residents and personal income tax revenues. An estimate of the square feet per room, 952, was obtained from 6 high-rise hotels built in Crystal City since 1978. Construction costs are stated as \$77.40 per square foot. The source of the construction cost figure is the cost of hotel construction reported in *Means Square Foot Costs 1993*. The earnings multiplier for sector 110202, New High-rise Construction, is .7434 (rounded to .74). The source of the earnings multiplier was the RIMS II model developed by the Bureau of Economic Analysis. The effective tax rate on adjusted gross income is .036 for 1993. (Source: Department of Taxation *Annual Report 1993*.)

To estimate personal income taxes generated by construction activity for years before 1993 the following formula adjustments were developed using the Boeckh Index for construction costs of office, hotel, and high-rise apartment buildings.

$$\begin{aligned} 1978 & (B * 952 * \$77.40 * .53 * .74 * .036) \\ 1979 & (B * 952 * \$77.40 * .57 * .74 * .036) \\ 1980 & (B * 952 * \$77.40 * .62 * .74 * .036) \\ 1981 & (B * 952 * \$77.40 * .68 * .74 * .036) \\ 1982 & (B * 952 * \$77.40 * .74 * .74 * .036) \\ 1983 & (B * 952 * \$77.40 * .79 * .74 * .036) \\ 1984 & (B * 952 * \$77.40 * .83 * .74 * .036) \\ 1985 & (B * 952 * \$77.40 * .84 * .74 * .036) \\ 1986 & (B * 952 * \$77.40 * .85 * .74 * .036) \\ 1987 & (B * 952 * \$77.40 * .87 * .74 * .036) \\ 1988 & (B * 952 * \$77.40 * .89 * .74 * .036) \\ 1989 & (B * 952 * \$77.40 * .92 * .74 * .036) \\ 1990 & (B * 952 * \$77.40 * .95 * .74 * .036) \\ 1991 & (B * 952 * \$77.40 * .97 * .74 * .036) \end{aligned}$$

$$\text{Column L} = \text{Columns H} + \text{I} + \text{J} + \text{K}$$

Column L states total tax revenues that accrue to the Commonwealth as a result of hotel development.

Residential

Column A = Year construction completed

Column B = Historical multifamily dwelling build-out by number of dwelling units

Column C = Historical townhouse build-out by number of dwelling units

Column D = Projected residential units build-out by number of projected units

Column E = Σ (B through D)

Column E runs a cumulative total of dwelling units added through the year.

*Column F = B * multifamily dwelling unit value*

Column F places a value of construction on multifamily dwelling (MFD) units using the average price of houses provided by the Real Estate Assessment Center of each Jurisdiction for the years 1985-1993.

	ARLINGTON	ALEXANDRIA	FAIRFAX
	(MFD)	(MFD)	(MFD)
1993	43,754	117,189	NA
1992	45,788	116,805	103,177
1991	45,830	109,721	105,124
1990	58,082	98,794	105,329
1989	53,097	87,867	100,743
1988	55,860	79,723	96,215
1987	52,776	76,172	86,428
1986	51,449	72,092	79,185
1985	50,122	66,455	74,417

The values for years before 1985, provided by the Northern Virginia Board of Realtors, formed the basis for the following formula adjustments to residential housing values.

- 1978 (B * \$71,639)
- 1979 (B * \$79,838)
- 1980 (B * \$90,744)
- 1981 (B * \$100,050)
- 1982 (B * \$103,631)
- 1983 (B * \$105,388)
- 1984 (B * \$108,049)

*Column G = C * townhouse unit value*

Column G places a value of construction on townhouse dwelling units using the average price of houses provided by the Real Estate Assessment Center of each jurisdiction for the years 1985 - 1993.

	ARLINGTON	ALEXANDRIA	FAIRFAX
	(MFD)	(MFD)	(MFD)
1993	251,960	193,585	NA
1992	253,853	182,607	156,301
1991	346,689	185,110	157,828

1990	239,084	175,900	158,311
1989	224,869	166,690	158,618
1988	232,553	142,220	141,723
1987	201,711	133,266	122,131
1986	194,533	127,876	107,388
1985	187,355	119,663	97,837

The values for years before 1985, provided by the Northern Virginia Board of Realtors, formed the basis for the following formula adjustments to residential housing values.

- 1978 (C * \$71,639)
- 1979 (C * \$79,838)
- 1980 (C * \$90,744)
- 1981 (C * \$100,050)
- 1982 (C * \$103,631)
- 1983 (C * \$105,388)
- 1984 (C * \$108,049)

*Column H = D * projected unit value*

Column H places a value on the construction of projected units. The projected unit value was based on a weighted average of multifamily dwelling and townhouse unit values for prior years.

*Column I = C * Personal income taxes per return * percentage of residents employed in D.C.*

Column I converts residence to personal income tax revenues by applying average personal income tax returns for each Northern Virginia return (\$1,565 for Arlington, \$1,510 for Alexandria, and \$1,827 for Fairfax) to each residence. (Source: Department of Taxation *Annual Report* 1993.) This produces a conservative estimate, i.e., two or more unrelated persons sharing a residence are counted as only one return.

The percentage of Virginia residents employed in Washington, D.C., factor accounts for the percentage of Northern Virginia residents working in the District of Columbia but paying Commonwealth taxes. It represents the percentage of Virginians living in Metrorail station areas who work in downtown Washington. For Arlington, it is 40 percent; for Alexandria, 33 percent; and for Fairfax, 20 percent. The source of the data is the *Commuting Patterns of Virginia Workers: County and City Level for 1990* prepared by the Virginia Employment Commission Economic Information Services Division State Data Center. The factor was applied so that the analysis would not double count tax revenues from individuals who work and live in Metrorail station areas.

To deflate personal income taxes to current dollars the following formula adjustments were developed from Table 1.8 of the Department of Taxation *Annual Report* 1983-1993.

ARLINGTON	ALEXANDRIA	FAIRFAX
1979 (C * \$1,565 * .43 *.40)	(C * \$1,510 * .46 * .33)	(C * \$1,827 * .43 * .20)
1980 (C * \$1,565 * .50 *.40)	(C * \$1,510 * .50 * .33)	(C * \$1,827 * .47 * .20)
1981 (C * \$1,565 * .57 *.40)	(C * \$1,510 * .54 * .33)	(C * \$1,827 * .51 * .20)
1982 (C * \$1,565 * .62 *.40)	(C * \$1,510 * .59 * .33)	(C * \$1,827 * .56 * .20)
1983 (C * \$1,565 * .66 *.40)	(C * \$1,510 * .63 * .33)	(C * \$1,827 * .61 * .20)
1984 (C * \$1,565 * .71 *.40)	(C * \$1,510 * .66 * .33)	(C * \$1,827 * .65 * .20)
1985 (C * \$1,565 * .76 *.40)	(C * \$1,510 * .71 * .33)	(C * \$1,827 * .70 * .20)
1986 (C * \$1,565 * .82 *.40)	(C * \$1,510 * .76 * .33)	(C * \$1,827 * .76 * .20)
1987 (C * \$1,565 * .90 *.40)	(C * \$1,510 * .86 * .33)	(C * \$1,827 * .87 * .20)
1988 (C * \$1,565 * .97 *.40)	(C * \$1,510 * .98 * .33)	(C * \$1,827 * .97 * .20)
1989 (C * \$1,565 * .96 *.40)	(C * \$1,510 * .92 * .33)	(C * \$1,827 * .97 * .20)
1990 (C * \$1,565 * .99 *.40)	(C * \$1,510 * .98 * .33)	(C * \$1,827 * 1.0 * .20)

$$J = E * .65 * .036$$

Column J converts construction into an estimate of total earnings in Virginia by Virginia residents and personal income tax revenues. The earnings multiplier for sector 11.0104 new residential high-rise construction is .6457 (rounded to .65). The source of the earnings multiplier is the RIMS II model developed by the Bureau of Economic Analysis. The effective tax rate on adjusted gross income is .036 for 1993. (Source: Department of Taxation *Annual Report*.)

$$\text{Column K} = D * .0032$$

Column K applies the deed recording fee of 15¢/\$100, Commonwealth share of transfer tax at 5¢/100, and deed of trust or mortgage recording fee of 15¢/\$100 applied at 80 percent of housing value.

$$\text{Column L} = E + F + G$$

Column L states total tax revenues that accrue to the Commonwealth as a result of residential development.

It should be noted that in Fairfax there are two addition columns, one for single family dwellings (SFD) constructed, and another for the value of these units. Otherwise, exactly the same format is followed in determining Commonwealth tax revenues. The single family unit dwelling values for Fairfax, provided by the real estate assessment center, are:

1992	259,659
1991	259,718
1990	273,628
1989	276,087
1988	240,607
1987	199,629

1986	167,554
1985	150,302

Input-output modeling of construction and operations and maintenance expenditures
 This section documents the methodology employed using the input-output (I-O) model.

Economic impact analysis

The direct economic impacts resulting from establishing Metrorail service in Northern Virginia are:

- Employment in the construction, operation, and maintenance of the Metrorail system.
- Employment resulting from construction expenditures for development of office, commercial, residential, and hotel space.

The extent of the economic impacts will change over time. The initial impacts are due to the direct expenditures associated with construction of Metrorail and the employment and income generated for residents of the Commonwealth. These direct and immediate effects will also provide additional stimulation of economic impacts through a multiplier effect that results from spending income earned from construction activities for Metrorail projects.

Second, economic impacts will result from the direct operation and maintenance of Metrorail after its initial construction. This, in turn, will also have a multiplier effect on the economy. Third, Metrorail will be associated with development activities at Metrorail station sites. Expenditures in the form of construction costs will also have a multiplier effect on the economy.

Scope of analysis

The economic impact analysis is presented in terms of the following assumptions:

- The Commonwealth of Virginia is the impact region.
- Overall Metrorail capital and operating and maintenance cost estimates have been provided by WMATA and are based on its most recently adopted construction schedule.
- Construction expenditures for development of office, commercial, and hotel space were applied at \$130 per square foot. Housing construction is valued at \$110,000 per unit.
- Estimates of employment were provided in full-time equivalent years by applying I-O direct labor coefficients factored by average wages.
- Direct coefficients and earnings multipliers were applied from the latest Bureau of Economic Analysis (BEA) input-output tables for the Commonwealth of Virginia.
- Relevant industry sectors for the I-O analysis were:
 - 11.0302 new railroads

- 11.0202 new office buildings
 - 11.0104 new residential high-rise apartments
 - 65.0100 railroads and related services
- All expenditure and wage data were deflated to reflect current dollars.

Use of input-output analysis

The major advantage of using I-O techniques is that they allow estimation of both the direct and indirect economic effects of changes in demand for particular goods and services. For example, the construction of Metrorail requires an increase in the output of the construction industry. The increase in construction requires, for example, higher steel production, which, in turn, requires more chemicals, iron ore, limestone, etc. Another input to construction will be gravel, and the gravel industry will, in turn, require inputs of its own. I-O tables trace these input chains back through the economy to arrive at the total requirements needed to support a given increase in the final demand for Metrorail construction. The multiplier effects include both the direct inputs needed to build the line and the indirect inputs from supply industries needed to support the direct inputs.

These direct inputs and multiplier effects are further stated in terms of a wage bill that accrues to the benefit of resident Virginia workers. Use of direct coefficients and earnings multipliers allows estimates of total wages generated from all types of construction (and Metrorail operations and maintenance) expenditures.

Regional I-O tables that give multiplier effects relevant to the study areas have recently been developed by BEA, using its Regional Input-Output Modeling System (RIMS).

As a regional or state economy does not produce the same composition of goods and services as a national economy, for a given change in final demand it is likely that the region or state will have to import some of the input needed to meet the demand change. Such imports represent "leakages" from the regional economy since their impacts occur outside the region.

The I-O model accounts for region leakages through the RIMS model development and the region specified by the user. In this case the region consists of the Commonwealth of Virginia and leakages occur to the benefit of the national economy to the extent that the Commonwealth is not self-sufficient across all input sectors.

The impacts resulting from the increased earnings of workers in the construction and other supply industries are estimated through earnings multipliers. Workers will spend a portion of their increased earnings on additional goods and services, and these consumer demands will generate further multiplier effects the same way the increase in Metrorail construction did. The RIMS I-O tables take the impacts of these *induced* earnings into account by treating households as a separate *sector* of the economy.

Metrorail construction and operation impacts

The RIMS analysis divides the regional economy into 39 input and 531 output sectors. Thus impacts resulting from construction and operations can be estimated by assigning the relevant

expenditures to detailed output categories. For example, construction expenditures (excluding rolling stock) were assigned to I-O Sector 11.0302--New Railroad Construction. Each dollar of final demand for new railroad construction generates \$.4323 to households in Virginia resident income.

The regional I-O tables account for the induced impacts of increased earnings of workers. To include these effects, the RIMS model must incorporate specific estimates of the proportion of each dollar spent in each industry on labor. The estimates are based on aggregated historical data and thus may differ from the actual labor expenditures by WMATA and the various developers. For Sector 11.302, New Railroad Construction, the earnings multiplier is .9453. This may be interpreted in two ways. First, a dollar of new railroad construction generates a total of \$.9453 to households in Virginia resident income. Second, \$.4323 in direct household income has a multiplier of 1.82 (.7871 divided by .4323).

Impacts from development

Metrorail construction (and operations and maintenance) generates direct, indirect, and induced economic impacts which are also generated from development activities that result in construction expenditures for the various types of development:

- Office
- Commercial
- Residential
- Hotel

These impacts can be estimated through I-O modeling by assigning construction expenditures to the following I-O sectors:

- New office buildings (which accounts for retail and hotel)
- New residential high-rise apartments
- New stores and restaurants

The data on construction cost estimates are derived from development projections combined with cost data compiled by the Washington Council of Governments and interviews with area developers.

KEY ASSUMPTIONS

	Arlington	Alexandria	Fairfax	Reference
% Employees That Are Va. Residents	67.1%	53.0%	82.3%	28
% Employed That Are Employed In D.C.	40.3%	32.8%	19.7%	29
Office Employees Per 1000 ft2	4.0	3.4	5.0	1
Office Occupancy Rate (latest year)	92.9%	90.6%	87.6%	2
Office Occupancy Rate (average)	92.2%	88.0%	84.9%	2
Cost of Construction / ft2 (COG)	\$68.70	\$68.70	\$68.70	3
Office	\$88.70	\$88.70	\$88.70	4
Retail	\$61.35	\$61.35	\$61.35	5
Hotel	\$77.40	\$77.40	\$77.40	6
House	\$75.60	\$75.60	\$75.60	7
Apartment	\$78.40	\$78.40	\$78.40	8
Occupancy Rate for Retail	90.2%	88.0%	88.0%	11
Retail Employees Per 1000 ft2	2.0	2.0	2.0	12
Retail Sales Per Square Foot	\$233	\$233	\$233	13
Average Retail Wage	\$15,759	\$16,045	\$15,369	14
Hotel Employees Per Room	0.89	0.67	0.56	15
Average Square Feet Per Hotel Room	952	952	952	16
Average Service Wage	\$15,145	\$14,726	\$13,485	17
Hotel Rates Per Room	\$97	\$83	\$68	18
Hotel Sales Per Room	\$51	\$51	\$51	19
Hotel Occupancy Rate	73.00%	73.10%	69.10%	20
Average Price Of House	\$243,700	\$275,772	\$259,659	21
Average Price of MFD	\$51,500	\$117,189	\$103,177	22
Average Price of Townhouse	\$255,250	\$193,585	\$156,301	23
Deed Recording Fee (\$/\$100)	\$0.15	\$0.15	\$0.15	24
State Share of Transfer Tax (\$/\$100)	\$0.05	\$0.05	\$0.05	25
Deed Recording Fee (\$/100)	\$0.15	\$0.15	\$0.15	26
Personal Income Taxes Per Return	\$1,565	\$1,510	\$1,827	27
Corp. Tax Revenue Per Employee	\$112	\$112	\$112	30
RIMS II Earnings Multipliers for Virginia				
- New office construction	0.7434	0.7434	0.7434	9
- Residential high rise construction	0.6547	0.6457	0.6457	10
- New railroad construction	0.9453	0.9453	0.9453	10

Ref Sources

- 1 AR: Margaret Simkovsky (Planning) 358-3540; AL: Ralph Rosenbaum (Planning) 838-4666; FF: EDA "Business Report" 1993
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- 3 MWCoG "Commercial Construction Indicators in the Wash. Region" 1993 (202) 962-3256
- 4 "Means Square Foot Costs 1993"
- 5 "Means Square Foot Costs 1993"
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- 13 Urban Land Institute "Dollars and Cents of Shopping Centers: 1990" SE Average
- 14 County Business patterns, 1991 Virginia KPMG Library
- 15 AR: Margaret Simkovsky (Planning) 358-3540; AL: Ralph Rosenbaum 838-4637; FF: Jim Larson (Hotel Convention and Visitor's Bureau) 790-3329
- 16 Average: Six High Rises in Crystal City
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- 18 Convention and Visitor's Bureaus: AR: Margaret Brumbaugh 358-3988; AL: Robin Moscoti 838-9200; FF: Jim Larson 790-3329
- 19 The Host Report 1993
- 20 Convention and Visitor's Bureaus: AR: Margaret Brumbaugh 358-3988; AL: Robin Moscoti 838-9200; FF: Jim Larson 790-3329
- 21 Real Estate Assessment Center: Fred Campard, 790-3920 AR; Robin Randel 324-4935 FF; 838-4646 City Hall AL.
- 22 Real Estate Assessment Center: Fred Campard, 790-3920 AR; Robin Randel 324-4935 FF; 838-4646 City Hall AL.
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- 26 Virginia Department of Taxation (804) 367-2062
- 27 Department of Taxation Annual Report 1993; 1990 Census Data
- 28 Commuting Patterns of Virginia Workers: County and City Level for 1990
- 29 Commuting Patterns of Virginia Workers: County and City Level for 1990
- 30 Virginia Department of Taxation Annual Report 1993-1994

Estimate of Metro-Related Growth Based on Round V Forecast

Portions of Development Attributable to Metrorail

Jurisdiction	Office	Retail	Residential	Hotel
<u>Development (1973-1990)</u>				
Arlington	95.0%	57.1%	100.0%	99.8%
Alexandria	25.0%	13.8%	98.2%	0.0%
Fairfax	85.5%	0.0%	82.4%	0.0%
<u>Development (1990-2010)</u>				
Arlington	62.6%	12.4%	99.5%	0.0%
Alexandria	70.5%	0.0%	80.3%	0.0%
Fairfax	31.2%	34.7%	29.2%	0.0%

The above data is based on historical and Round V forecasted employment and population data and analysis of growth rates in Metro station areas versus outside station areas.

Appendix B
Detailed Tax Yield Calculations By Jurisdiction

Office Development (Actual & Projected)
Arlington Stations

Year	Space Projection (ft2)	Space Occupied (ft2)	Employment per year	Employment cumulative	Va. resident employment cumulative	Revenue from Individual Income taxes	Revenue from corporate income taxes	Employee Income Taxes from Construction	Total State tax revenues
1978	342,600	0	0	0	0	0	0	428,010	428,010
1979	231,100	316,025	1,264	1,264	848	491,201	77,535	311,275	880,011
1980	1,489,200	213,174	853	2,117	1,420	951,796	141,071	2,180,252	3,273,120
1981	629,000	1,373,683	5,495	7,612	5,107	3,887,229	623,870	1,019,065	5,530,164
1982	1,158,634	580,208	2,321	9,932	6,665	5,513,573	739,972	2,035,417	8,288,962
1983	988,300	1,068,759	4,275	14,207	9,533	8,481,518	978,145	1,851,931	11,311,593
1984	585,887	911,638	3,647	17,854	11,980	11,385,769	1,227,384	1,147,495	13,760,647
1985	760,504	540,440	2,162	20,016	13,431	13,702,477	1,732,684	1,513,061	16,948,222
1986	1,050,047	701,512	2,806	22,822	15,313	16,743,367	2,030,631	2,126,001	20,899,998
1987	2,722,986	968,595	3,874	26,696	17,913	21,584,783	2,611,150	5,625,667	29,821,600
1988	2,071,526	2,511,764	10,047	36,743	24,655	31,944,924	3,653,986	4,395,310	39,994,220
1989	2,099,111	1,910,838	7,643	44,387	29,783	38,375,659	5,186,221	4,605,625	48,167,505
1990	1,068,235	1,936,283	7,745	52,132	34,980	46,613,242	6,591,497	2,405,592	55,610,331
1991	685,604	985,372	3,941	56,073	37,625	50,339,300	6,270,100	1,586,427	58,195,826
1992	916,550	632,422	2,530	58,603	39,323	52,610,309	6,552,970	2,175,729	61,339,008
1993	0	845,453	3,382	61,985	41,592	55,646,309	6,931,124	0	62,577,433
1994	441,139	0	0	61,985	41,592	55,646,309	6,931,124	1,047,187	63,624,619
1995	441,139	406,920	1,628	63,612	42,684	57,107,547	7,113,131	1,047,187	65,267,865
1996	441,139	406,920	1,628	65,240	43,776	58,568,785	7,295,138	1,047,187	66,911,110
1997	441,139	406,920	1,628	66,868	44,868	60,030,023	7,477,145	1,047,187	68,554,355
1998	441,139	406,920	1,628	68,495	45,960	61,491,261	7,659,152	1,047,187	70,197,600
1999	441,139	406,920	1,628	70,123	47,053	62,952,499	7,841,159	1,047,187	71,840,845
2000	441,139	406,920	1,628	71,751	48,145	64,413,738	8,023,167	1,047,187	73,484,091
2001	441,139	406,920	1,628	73,378	49,237	65,874,976	8,205,174	1,047,187	75,127,336
2002	441,139	406,920	1,628	75,006	50,329	67,336,214	8,387,181	1,047,187	76,770,581
2003	441,139	406,920	1,628	76,634	51,421	68,797,452	8,569,188	1,047,187	78,413,826
2004	441,139	406,920	1,628	78,261	52,513	70,258,690	8,751,195	1,047,187	80,057,072
2005	441,139	406,920	1,628	79,889	53,606	71,719,928	8,933,202	1,047,187	81,700,317
2006	441,139	406,920	1,628	81,517	54,698	73,181,166	9,115,209	1,047,187	83,343,562
2007	441,139	406,920	1,628	83,144	55,790	74,642,404	9,297,216	1,047,187	84,986,807
2008	441,139	406,920	1,628	84,772	56,882	76,103,642	9,479,223	1,047,187	86,630,052
2009	441,139	406,920	1,628	86,400	57,974	77,564,881	9,661,230	1,047,187	88,273,298
2010	441,139	406,920	1,628	88,028	59,066	79,026,119	9,843,237	1,047,187	89,916,543
TOTAL	24,298,646	22,006,880	88,028	1,707,545	1,145,763	1,502,987,090	187,930,410	51,209,029	1,742,126,529

Retail Development (Actual & Projected)
Arlington Stations

Year	Space Projection (ft ²)	Space Occupied (ft ²)	Space Cumulative (ft ²)	Employment per year	Employment cumulative	Va. resident employment cumulative	Sales	Revenue from Individual Income taxes (in \$000's)	Revenue From Sales Taxes	Revenue from Corporate Income Taxes	Employee Income Taxes from Construction	Total State tax revenues
1978	7,500	0	0	0	0	0	0	0	0	0	6,481	6,481
1979	23,312	6,765	6,765	14	14	9	562,689	2,229	25,321	830	21,718	50,098
1980	61,440	21,027	27,792	42	56	37	2,523,048	10,598	113,537	3,704	62,215	190,055
1981	16,504	55,419	83,211	111	166	112	8,297,432	36,041	373,384	13,641	18,494	441,560
1982	29,997	14,887	98,098	30	196	132	10,788,460	46,183	485,481	14,617	36,448	582,729
1983	14,770	27,057	125,155	54	250	166	15,275,006	63,365	687,375	17,233	19,143	787,117
1984	0	13,323	138,478	27	277	186	18,037,766	74,895	811,699	19,040	0	905,634
1985	91,242	0	138,478	0	277	186	19,141,095	80,399	861,349	23,975	125,557	1,091,280
1986	600,156	82,300	220,778	165	442	296	32,356,077	137,370	1,456,023	39,289	840,446	2,473,128
1987	132,610	541,341	762,119	1,083	1,524	1,023	118,224,391	522,594	5,320,098	149,086	189,494	6,181,271
1988	95,570	119,614	881,733	239	1,763	1,183	145,827,342	650,136	6,562,230	175,371	140,253	7,527,990
1989	920,809	86,204	967,937	172	1,936	1,299	172,587,345	709,731	7,766,431	226,192	1,397,377	10,099,731
1990	103,333	830,570	1,798,507	1,661	3,597	2,414	345,215,692	1,363,835	15,534,706	454,804	160,948	17,514,293
1991	0	93,206	1,891,713	186	3,783	2,539	391,880,714	1,440,288	17,634,632	423,063	0	19,497,983
1992	34,850	0	1,891,713	0	3,783	2,539	418,599,853	1,440,288	18,836,993	423,063	57,219	20,757,564
1993	0	31,435	1,923,148	63	3,846	2,581	447,843,448	1,464,222	20,152,955	430,093	0	22,047,270
1994	31,309	0	1,923,148	0	3,846	2,581	447,843,448	1,464,222	20,152,955	430,093	51,406	22,098,675
1995	31,309	28,241	1,951,389	56	3,903	2,619	454,419,897	1,485,723	20,448,895	436,409	51,406	22,422,433
1996	31,309	28,241	1,979,630	56	3,959	2,657	460,996,346	1,507,225	20,744,836	442,724	51,406	22,746,191
1997	31,309	28,241	2,007,870	56	4,016	2,695	467,572,795	1,528,727	21,040,776	449,040	51,406	23,069,948
1998	31,309	28,241	2,036,111	56	4,072	2,732	474,149,244	1,550,228	21,336,716	455,356	51,406	23,393,706
1999	31,309	28,241	2,064,352	56	4,129	2,770	480,725,693	1,571,730	21,632,656	461,672	51,406	23,717,464
2000	31,309	28,241	2,092,593	56	4,185	2,808	487,302,142	1,593,232	21,928,596	467,988	51,406	24,041,221
2001	31,309	28,241	2,120,834	56	4,242	2,846	493,878,591	1,614,733	22,224,537	474,303	51,406	24,364,979
2002	31,309	28,241	2,149,075	56	4,298	2,884	500,455,040	1,636,235	22,520,477	480,619	51,406	24,688,737
2003	31,309	28,241	2,177,316	56	4,355	2,922	507,031,489	1,657,737	22,816,417	486,935	51,406	25,012,494
2004	31,309	28,241	2,205,556	56	4,411	2,960	513,607,938	1,679,238	23,112,357	493,251	51,406	25,336,252
2005	31,309	28,241	2,233,797	56	4,468	2,998	520,184,387	1,700,740	23,408,297	499,566	51,406	25,660,009
2006	31,309	28,241	2,262,038	56	4,524	3,036	526,760,836	1,722,242	23,704,238	505,882	51,406	25,983,767
2007	31,309	28,241	2,290,279	56	4,581	3,074	533,337,285	1,743,743	24,000,178	512,198	51,406	26,307,525
2008	31,309	28,241	2,318,520	56	4,637	3,111	539,913,734	1,765,245	24,296,118	518,514	51,406	26,631,282
2009	31,309	28,241	2,346,761	56	4,694	3,149	546,490,183	1,786,747	24,592,058	524,830	51,406	26,955,040
2010	31,309	28,241	2,375,002	56	4,750	3,187	553,066,632	1,808,248	24,887,998	531,145	51,406	27,278,798
TOTAL	2,664,349	2,375,002	47,489,896	4,750	94,980	63,731	\$10,654,896,044	\$35,858,166	\$479,470,322	\$10,584,523	\$3,949,689	\$529,862,702

Hotel Development (Actual & Projected)
Arlington Stations

Year	Number of Rooms	Number of Rooms Cumulative	Employment per year	Employment cumulative	Va. resident employment cumulative	Sales	Revenue from Individual income taxes	Revenue From Sales Taxes	Revenue from Corporate Income Taxes	Employee Income Taxes from Construction	Total State tax revenues
1978	0	0	0	0	0	0.00	0	0	0	0	0
1979	264	264	235	235	158	3,736,946.70	239	168,163	14,411	295,394	478,208
1980	0	264	0	235	158	4,078,641.39	277	183,539	15,659	0	199,474
1981	0	264	0	235	158	4,479,997.06	314	201,600	19,258	0	221,173
1982	1,065	1,329	948	1,183	794	24,873,512.18	1,720	1,119,308	88,121	1,554,215	2,763,364
1983	197	1,526	175	1,358	911	31,695,634.05	2,124	1,426,304	93,505	306,660	1,828,592
1984	0	1,526	0	1,358	911	33,827,486.79	2,269	1,522,237	93,366	0	1,617,873
1985	267	1,793	238	1,596	1,071	42,177,373.45	2,862	1,897,982	138,140	441,286	2,480,270
1986	221	2,014	197	1,792	1,203	50,231,009.66	3,446	2,260,395	159,489	371,707	2,795,038
1987	255	2,269	227	2,019	1,355	59,900,628.38	4,278	2,695,528	197,519	437,646	3,334,971
1988	0	2,269	0	2,019	1,355	63,862,926.76	4,600	2,873,832	200,824	0	3,079,256
1989	360	2,629	320	2,340	1,570	79,774,636.91	5,301	3,589,859	273,389	656,160	4,524,708
1990	737	3,366	656	2,996	2,010	109,952,470.21	7,019	4,947,861	378,780	1,378,723	6,712,382
1991	0	3,366	0	2,996	2,010	118,665,684.83	1,095,951	5,339,956	334,984	0	6,770,891
1992	162	3,528	144	3,140	2,107	132,857,108.50	1,148,698	5,978,570	351,106	319,461	7,797,835
1993	378	3,906	336	3,476	2,333	154,795,460.82	1,271,772	6,965,796	388,724	745,409	9,371,702
1994	66	3,972	59	3,535	2,372	157,423,174.49	1,293,361	7,084,043	395,323	130,754	8,903,481
1995	66	4,039	59	3,594	2,412	160,050,888.17	1,314,950	7,202,290	401,922	130,754	9,049,916
1996	66	4,105	59	3,653	2,451	162,678,601.84	1,336,539	7,320,537	408,521	130,754	9,196,351
1997	66	4,171	59	3,712	2,491	165,306,315.51	1,358,128	7,438,784	415,119	130,754	9,342,785
1998	66	4,238	59	3,771	2,531	167,934,029.19	1,379,717	7,557,031	421,718	130,754	9,489,220
1999	66	4,304	59	3,830	2,570	170,561,742.86	1,401,305	7,675,278	428,317	130,754	9,635,655
2000	66	4,370	59	3,889	2,610	173,189,456.54	1,422,894	7,793,526	434,916	130,754	9,782,089
2001	66	4,436	59	3,948	2,649	175,817,170.21	1,444,483	7,911,773	441,514	130,754	9,928,524
2002	66	4,503	59	4,007	2,689	178,444,883.89	1,466,072	8,030,020	448,113	130,754	10,074,959
2003	66	4,569	59	4,066	2,729	181,072,597.56	1,487,661	8,148,267	454,712	130,754	10,221,394
2004	66	4,635	59	4,125	2,768	183,700,311.24	1,509,250	8,266,514	461,311	130,754	10,367,828
2005	66	4,702	59	4,184	2,808	186,328,024.91	1,530,838	8,384,761	467,909	130,754	10,514,263
2006	66	4,768	59	4,243	2,847	188,955,738.59	1,552,427	8,503,008	474,508	130,754	10,660,698
2007	66	4,834	59	4,303	2,887	191,583,452.26	1,574,016	8,621,255	481,107	130,754	10,807,132
2008	66	4,901	59	4,362	2,927	194,211,165.94	1,595,605	8,739,502	487,706	130,754	10,953,567
2009	66	4,967	59	4,421	2,966	196,838,879.61	1,617,194	8,857,750	494,304	130,754	11,100,002
2010	66	5,033	59	4,480	3,006	199,466,593.29	1,638,783	8,975,997	500,903	130,754	11,246,436
TOTAL	5,033	106,860	4,480	95,105	63,816	\$3,948,472,544	\$28,474,096	\$177,681,264	\$10,365,196	\$8,729,480	\$225,250,037

Residential Development (Actual & Projected)
Arlington Stations

Year	New MFD Units	New Townhouse Units	Projected Units	Number of Units Cumulative	Value of MFD	Value of Townhouse	Projected Units Value	Revenue from individual income taxes	Employee Income Taxes from Construction	Document Recording Fees	Total State tax revenues
1978	240	0	0	240	17,193,360	0	0	65,485	405,234	60,177	530,895
1979	901	32	0	1,173	71,934,038	2,554,816	0	320,058	1,755,643	260,711	2,336,412
1980	595	125	0	1,893	53,992,680	11,343,000	0	597,679	1,539,910	228,675	2,366,264
1981	1,494	144	0	3,531	149,474,700	14,407,200	0	1,266,246	3,862,565	573,587	5,702,397
1982	1,934	0	0	5,465	200,422,354	0	0	2,130,211	4,723,795	701,478	7,555,483
1983	403	96	0	5,964	42,471,364	10,117,248	0	2,500,049	1,239,472	184,060	3,923,580
1984	0	48	0	6,012	0	5,186,352	0	2,692,147	122,238	18,152	2,832,538
1985	185	115	0	6,312	9,272,570	21,545,825	0	3,034,219	726,365	107,864	3,868,448
1986	1,052	334	0	7,698	54,124,348	64,974,022	0	3,965,732	2,807,053	416,844	7,189,630
1987	1,785	75	0	9,558	94,205,160	15,128,325	0	5,426,478	2,576,903	382,667	8,386,048
1988	1,439	19	0	11,016	80,382,540	4,418,507	0	6,725,129	1,998,693	296,804	9,020,626
1989	1,871	39	0	12,926	99,344,487	8,769,891	0	7,847,302	2,548,169	378,400	10,773,872
1990	1,517	2	0	14,445	88,110,394	478,168	0	9,069,365	2,087,962	310,060	11,467,386
1991	1,135	26	0	15,606	52,017,050	6,413,914	0	9,837,741	1,377,171	204,508	11,419,421
1992	783	116	0	16,505	35,852,004	29,446,948	0	10,404,455	1,539,044	228,546	12,172,045
1993	753	10	0	17,268	32,946,762	2,519,600	0	10,885,436	835,914	124,132	11,845,482
1994	0	0	464	17,732	0	0	28,469,042	11,177,998	670,993	99,642	11,848,632
1995	0	0	464	18,196	0	0	28,469,042	11,470,560	670,993	99,642	12,241,194
1996	0	0	464	18,660	0	0	28,469,042	11,763,121	670,993	99,642	12,533,755
1997	0	0	464	19,124	0	0	28,469,042	12,055,683	670,993	99,642	12,826,317
1998	0	0	464	19,589	0	0	28,469,042	12,348,244	670,993	99,642	13,118,879
1999	0	0	464	20,053	0	0	28,469,042	12,640,806	670,993	99,642	13,411,440
2000	0	0	464	20,517	0	0	28,469,042	12,933,368	670,993	99,642	13,704,002
2001	0	0	464	20,981	0	0	28,469,042	13,225,929	670,993	99,642	13,996,563
2002	0	0	464	21,445	0	0	28,469,042	13,518,491	670,993	99,642	14,289,125
2003	0	0	464	21,909	0	0	28,469,042	13,811,052	670,993	99,642	14,581,687
2004	0	0	464	22,373	0	0	28,469,042	14,103,614	670,993	99,642	14,874,248
2005	0	0	464	22,837	0	0	28,469,042	14,396,176	670,993	99,642	15,166,810
2006	0	0	464	23,301	0	0	28,469,042	14,688,737	670,993	99,642	15,459,371
2007	0	0	464	23,765	0	0	28,469,042	14,981,299	670,993	99,642	15,751,933
2008	0	0	464	24,230	0	0	28,469,042	15,273,860	670,993	99,642	16,044,494
2009	0	0	464	24,694	0	0	28,469,042	15,566,422	670,993	99,642	16,337,056
2010	0	0	464	25,158	0	0	28,469,042	15,858,983	670,993	99,642	16,629,618
TOTAL	16,087	1,181	7,890	500,176	\$1,081,743,811	\$197,303,816	\$483,973,719	\$306,582,075	\$41,553,003	\$6,170,575	\$354,305,652

Office Development (Actual & Projected)
Alexandria Stations

Year	Space Projection (ft2)	Space Occupied (ft2)	Employment per year	Employment cumulative	Va. resident employment cumulative	Revenue from individual income taxes	Revenue from corporate income taxes	Employee Income Taxes from Construction	Total State tax revenues
1978	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0
1985	283,993	0	0	0	0	0	0	760,046	760,046
1986	461,534	249,914	850	850	450	442,777	40,040	1,257,002	1,739,819
1987	294,826	406,150	1,381	2,231	1,181	1,308,747	115,546	819,355	2,243,648
1988	395,809	259,447	882	3,113	1,649	2,082,694	163,938	1,129,698	3,376,330
1989	506,457	348,312	1,184	4,297	2,276	2,713,593	265,897	1,494,766	4,474,255
1990	76,605	445,682	1,515	5,812	3,078	3,895,841	389,206	232,054	4,517,102
1991	0	67,412	229	6,042	3,200	4,130,344	357,778	0	4,488,122
1992	258,154	0	0	6,042	3,200	4,130,344	357,778	824,337	5,312,460
1993	0	227,176	772	6,814	3,609	4,658,401	403,519	0	5,061,920
1994	117,842	0	0	6,814	3,609	4,658,401	403,519	376,292	5,438,212
1995	117,842	103,701	353	7,166	3,795	4,899,448	424,399	376,292	5,700,138
1996	117,842	103,701	353	7,519	3,982	5,140,494	445,279	376,292	5,962,064
1997	117,842	103,701	353	7,872	4,169	5,381,540	466,159	376,292	6,223,990
1998	117,842	103,701	353	8,224	4,356	5,622,586	487,039	376,292	6,485,916
1999	117,842	103,701	353	8,577	4,542	5,863,632	507,918	376,292	6,747,843
2000	117,842	103,701	353	8,929	4,729	6,104,679	528,798	376,292	7,009,769
2001	117,842	103,701	353	9,282	4,916	6,345,725	549,678	376,292	7,271,695
2002	117,842	103,701	353	9,635	5,102	6,586,771	570,558	376,292	7,533,621
2003	117,842	103,701	353	9,987	5,289	6,827,817	591,438	376,292	7,795,547
2004	117,842	103,701	353	10,340	5,476	7,068,864	612,318	376,292	8,057,473
2005	117,842	103,701	353	10,692	5,663	7,309,910	633,198	376,292	8,319,399
2006	117,842	103,701	353	11,045	5,849	7,550,956	654,077	376,292	8,581,325
2007	117,842	103,701	353	11,397	6,036	7,792,002	674,957	376,292	8,843,251
2008	117,842	103,701	353	11,750	6,223	8,033,048	695,837	376,292	9,105,177
2009	117,842	103,701	353	12,103	6,410	8,274,095	716,717	376,292	9,367,103
2010	117,842	103,701	353	12,455	6,596	8,515,141	737,597	376,292	9,629,029
TOTAL	4,280,684	3,663,302	12,455	198,987	105,384	\$135,337,852	\$11,793,189	\$12,914,216	\$160,045,256

Retail Development (Actual & Projected)
Alexandria Stations

Year	Space Projection (ft ²)	Space Occupied (ft ²)	Space Cumulative (ft ²)	Employment per year	Employment cumulative	Va. resident employment cumulative	Sales	Revenue from individual income taxes	Revenue From Sales Taxes	Revenue from Corporate Income Taxes	Employee Income Taxes from Construction	Total State tax revenues
1978	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0
1985	13,363	0	0	0	0	0	0	0	0	0	18,389	18,389
1986	38,867	11,759	11,759	24	24	12	1,723,402	5,484	77,553	2,093	54,429	139,558
1987	0	34,203	45,962	68	92	49	7,129,961	24,133	320,848	8,991	0	353,973
1988	12,650	0	45,962	0	92	49	7,601,592	27,521	342,072	9,142	18,564	397,299
1989	34,912	11,132	57,094	22	114	60	10,180,177	32,267	458,108	13,342	52,981	556,698
1990	13,709	30,723	87,817	61	176	93	16,856,090	52,676	758,524	22,207	21,353	854,760
1991	0	12,064	99,881	24	200	106	20,690,975	61,109	931,094	22,337	0	1,014,540
1992	11,000	0	99,881	0	200	106	22,101,723	61,109	994,578	22,337	18,061	1,096,085
1993	0	9,680	109,561	19	219	116	25,513,442	67,032	1,148,105	24,502	0	1,239,639
1994	5,485	0	109,561	0	219	116	25,513,442	67,032	1,148,105	24,502	9,005	1,248,644
1995	5,485	4,827	114,388	10	229	121	26,637,436	69,985	1,198,685	25,582	9,005	1,303,257
1996	5,485	4,827	119,214	10	238	126	27,761,430	72,938	1,249,264	26,661	9,005	1,357,869
1997	5,485	4,827	124,041	10	248	131	28,885,424	75,891	1,289,844	27,741	9,005	1,412,481
1998	5,485	4,827	128,868	10	258	136	30,009,418	78,844	1,350,424	28,820	9,005	1,467,093
1999	5,485	4,827	133,694	10	267	142	31,133,412	81,797	1,401,004	29,899	9,005	1,521,706
2000	5,485	4,827	138,521	10	277	147	32,257,406	84,750	1,451,583	30,979	9,005	1,576,318
2001	5,485	4,827	143,348	10	287	152	33,381,400	87,703	1,502,163	32,058	9,005	1,630,930
2002	5,485	4,827	148,174	10	296	157	34,505,394	90,656	1,552,743	33,138	9,005	1,685,542
2003	5,485	4,827	153,001	10	306	162	35,629,388	93,609	1,603,322	34,217	9,005	1,740,155
2004	5,485	4,827	157,828	10	316	167	36,753,382	96,562	1,653,902	35,297	9,005	1,794,767
2005	5,485	4,827	162,655	10	325	172	37,877,376	99,516	1,704,482	36,376	9,005	1,849,379
2006	5,485	4,827	167,481	10	335	177	39,001,371	102,469	1,755,062	37,456	9,005	1,903,991
2007	5,485	4,827	172,308	10	345	183	40,125,365	105,422	1,805,641	38,535	9,005	1,958,604
2008	5,485	4,827	177,135	10	354	188	41,249,359	108,375	1,856,221	39,614	9,005	2,013,216
2009	5,485	4,827	181,961	10	364	193	42,373,353	111,328	1,906,801	40,694	9,005	2,067,828
2010	5,485	4,827	186,788	10	374	198	43,497,347	114,281	1,957,381	41,773	9,005	2,122,440
TOTAL	217,744	186,788	3,076,885	374	6,154	3,259	\$698,389,067	\$1,872,489	\$31,427,508	\$688,293	\$336,869	\$34,325,159

Hotel Development (Actual & Projected)
Alexandria Stations

Year	Number of Rooms	Number of Rooms Cumulative	Employment per year	Employment cumulative	Va. resident employment cumulative	Sales	Revenue from individual income taxes	Revenue From Sales Taxes	Revenue from Corporate Income Taxes	Employee Income Taxes from Construction	Total State tax revenues
1978	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0
1984	194	194	129.333333	129.333333	68.4949333	3898563.09	36310.3970688	175345.339039	8891.1233079	315640.705323	536187.564738
1985	0	194	0	129.333333	68.4949333	4134907.079	36310.3970688	186070.818535	11195.899427	0	233577.115031
1986	0	194	0	129	68	4384084.885	36,310	197,284	11,508	0	245,102
1987	0	194	0	129	68	4640485.237	36,310	208,822	12,650	0	257,782
1988	0	194	0	129	68	4947443.404	36,310	222,635	12,862	0	271,807
1989	0	194	0	129	68	5333849.568	36,310	240,023	15,112	0	291,445
1990	0	194	0	129	68	5741923.367	36,310	258,387	16,353	0	311,050
1991	0	194	0	129	68	6196943.709	36,310	278,862	14,462	0	329,835
1992	267	461	178	307	163	15,729,754	86,284	707,839	34,366	526,519	1,355,008
1993	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
1994	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
1995	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
1996	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
1997	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
1998	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
1999	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2000	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2001	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2002	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2003	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2004	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2005	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2006	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2007	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2008	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2009	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
2010	0	461	0	307	163	16,553,571	86,284	744,911	34,366	0	865,561
TOTAL	461	10,311	307	6,874	3,640	\$352,970,229	\$1,929,879	\$15,883,660	\$755,987	\$842,160	\$19,411,687

Residential Development (Actual & Projected)
Alexandria Stations

Year	New MFD Units	New Townhouse Units	Projected Units	Number of Units Cumulative	Value of MFD	Value of Townhouse	Projected Unit Value	Revenue from individual income taxes	Employee Income Taxes from Construction	Document Recording Fees	Total State tax revenues
1978	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0
1985	131	0	0	131	8,705,631	0	0	45,995	202,364	30,470	278,829
1986	0	0	0	131	0	0	0	49,469	0	0	49,469
1987	0	39	0	170	0	5,197,369	0	72,281	120,814	18,191	211,285
1988	0	0	0	170	0	0	0	82,428	0	0	82,428
1989	0	0	0	170	0	0	0	237,118	0	0	237,118
1990	345	8	0	523	34,083,930	1,407,198	0	254,037	824,998	124,219	1,203,254
1991	0	0	0	523	0	0	0	259,110	0	0	259,110
1992	0	0	0	523	0	0	0	259,110	0	0	259,110
1993	0	0	0	523	0	0	0	259,110	0	0	259,110
1994	0	0	119	642	0	0	14,789,474	318,175	343,784	51,763	713,722
1995	0	0	119	761	0	0	14,789,474	377,239	343,784	51,763	772,786
1996	0	0	119	881	0	0	14,789,474	436,303	343,784	51,763	831,850
1997	0	0	119	1,000	0	0	14,789,474	495,367	343,784	51,763	890,914
1998	0	0	119	1,119	0	0	14,789,474	554,431	343,784	51,763	949,978
1999	0	0	119	1,238	0	0	14,789,474	613,495	343,784	51,763	1,009,043
2000	0	0	119	1,358	0	0	14,789,474	672,559	343,784	51,763	1,068,107
2001	0	0	119	1,477	0	0	14,789,474	731,623	343,784	51,763	1,127,171
2002	0	0	119	1,596	0	0	14,789,474	790,687	343,784	51,763	1,186,235
2003	0	0	119	1,715	0	0	14,789,474	849,752	343,784	51,763	1,245,299
2004	0	0	119	1,834	0	0	14,789,474	908,816	343,784	51,763	1,304,363
2005	0	0	119	1,954	0	0	14,789,474	967,880	343,784	51,763	1,363,427
2006	0	0	119	2,073	0	0	14,789,474	1,026,944	343,784	51,763	1,422,491
2007	0	0	119	2,192	0	0	14,789,474	1,086,008	343,784	51,763	1,481,555
2008	0	0	119	2,311	0	0	14,789,474	1,145,072	343,784	51,763	1,540,619
2009	0	0	119	2,430	0	0	14,789,474	1,204,136	343,784	51,763	1,599,684
2010	0	0	119	2,550	0	0	14,789,474	1,263,200	343,784	51,763	1,658,748
TOTAL	476	47	2,027	29,995	\$42,789,561	\$6,604,567	\$251,421,056	\$14,960,345	\$6,992,509	\$1,052,853	\$23,005,707

**Office Development (Actual & Projected)
Fairfax Stations**

Year	Space Projection (ft2)	Space Occupied (ft2)	Employment per year	Employment cumulative	Va. resident employment cumulative	Revenue from individual income taxes	Revenue from corporate income taxes	Employee Income Taxes from Construction	Total State tax revenues
1978	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0
1981	141,045	0	0	0	0	0	0	2,576	2,576
1982	159,206	119,747	599	599	493	394,088	44,606	3,153	441,848
1983	0	135,166	676	1,275	1,049	992,405	87,751	0	1,080,155
1984	225,297	0	0	1,275	1,049	1,064,289	87,621	4,975	1,156,885
1985	123,482	191,277	956	2,231	1,837	2,021,926	193,125	0	2,215,051
1986	84,673	104,836	524	2,755	2,269	2,709,739	245,146	1,933	2,956,818
1987	243,656	71,887	359	3,115	2,565	3,497,923	304,636	5,675	3,808,234
1988	0	206,864	1,034	4,149	3,416	5,168,873	412,593	0	5,581,466
1989	251,930	0	0	4,149	3,416	5,173,625	484,765	6,232	5,664,623
1990	0	213,889	1,069	5,218	4,297	6,742,734	659,803	0	7,402,537
1991	174,772	0	0	5,218	4,297	6,711,142	583,514	4,444	7,299,100
1992	0	148,381	742	5,960	4,908	7,665,287	666,474	0	8,331,761
1993	0	0	0	5,960	4,908	7,665,287	666,474	0	8,331,761
1994	135,558	0	0	5,960	4,908	7,665,287	666,474	3,628	8,335,388
1995	135,558	115,089	575	6,536	5,381	8,405,348	730,820	3,628	9,139,796
1996	135,558	115,089	575	7,111	5,855	9,145,409	795,166	3,628	9,944,203
1997	135,558	115,089	575	7,687	6,329	9,885,470	859,512	3,628	10,748,611
1998	135,558	115,089	575	8,262	6,803	10,625,532	923,858	3,628	11,553,018
1999	135,558	115,089	575	8,837	7,277	11,365,593	988,205	3,628	12,357,426
2000	135,558	115,089	575	9,413	7,751	12,105,654	1,052,551	3,628	13,161,833
2001	135,558	115,089	575	9,988	8,224	12,845,716	1,116,897	3,628	13,966,240
2002	135,558	115,089	575	10,564	8,698	13,585,777	1,181,243	3,628	14,770,648
2003	135,558	115,089	575	11,139	9,172	14,325,838	1,245,589	3,628	15,575,055
2004	135,558	115,089	575	11,715	9,646	15,065,900	1,309,935	3,628	16,379,463
2005	135,558	115,089	575	12,290	10,120	15,805,961	1,374,281	3,628	17,183,870
2006	135,558	115,089	575	12,866	10,594	16,546,022	1,438,628	3,628	17,988,277
2007	135,558	115,089	575	13,441	11,067	17,286,083	1,502,974	3,628	18,792,685
2008	135,558	115,089	575	14,016	11,541	18,026,145	1,567,320	3,628	19,597,092
2009	135,558	115,089	575	14,592	12,015	18,766,206	1,631,666	3,628	20,401,500
2010	135,558	115,089	575	15,167	12,489	19,506,267	1,696,012	3,628	21,205,907
TOTAL	3,708,548	3,033,468	15,167	221,488	182,373	\$280,765,526	\$24,517,639	\$90,662	\$305,373,826

Retail Development (Actual & Projected)
Fairfax Stations

Year	Space Projection (ft2)	Space Occupied (ft2)	Space Cumulative (ft2)	Employment per year	Employment cumulative	Va. resident employment cumulative	Sales	Revenue from individual income taxes	Revenue From Sales Taxes	Revenue from Corporate Income Taxes	Construction revenue from corporate income taxes	Total State tax revenues
1978	73,058	0	0	0	0	0	0	0	0	0	63,128	63,128
1979	7,900	64,291	64,291	129	129	106	5,347,502	25,375	240,638	7,887	7,360	281,259
1980	0	6,952	71,243	14	142	117	6,467,577	30,564	291,041	9,496	0	331,101
1981	0	0	71,243	0	142	117	7,104,014	33,222	319,681	11,679	0	364,582
1982	8,364	0	71,243	0	142	117	7,835,057	36,111	352,578	10,615	10,163	409,467
1983	0	7,360	78,603	15	157	129	9,593,423	43,361	431,704	10,823	0	485,888
1984	0	0	78,603	0	157	129	10,238,678	46,501	460,740	10,807	0	518,049
1985	0	0	78,603	0	157	129	10,864,955	50,471	488,923	13,609	0	553,003
1986	0	0	78,603	0	157	129	11,519,699	54,771	518,386	13,988	0	587,146
1987	0	0	78,603	0	157	129	12,193,421	62,543	548,704	15,376	0	626,624
1988	2,098	0	78,603	0	157	129	12,999,989	69,380	585,000	15,634	3,079	673,092
1989	0	1,846	80,450	4	161	132	14,344,509	71,075	645,503	18,800	0	735,377
1990	0	0	80,450	0	161	132	15,441,957	73,647	694,888	20,344	0	788,879
1991	370,122	0	80,450	0	161	132	16,665,659	73,302	749,955	17,992	592,356	1,433,604
1992	0	325,707	406,157	651	812	669	89,874,747	370,072	4,044,364	90,833	0	4,505,268
1993	0	0	406,157	0	812	669	94,581,771	370,072	4,256,180	90,833	0	4,717,084
1994	14,751	0	406,157	0	812	669	94,581,771	370,072	4,256,180	90,833	24,219	4,741,303
1995	14,751	12,981	419,138	26	838	690	97,604,597	381,899	4,392,207	93,736	24,219	4,892,061
1996	14,751	12,981	432,118	26	864	712	100,627,423	393,727	4,528,234	96,639	24,219	5,042,819
1997	14,751	12,981	445,099	26	890	733	103,650,249	405,554	4,664,261	99,542	24,219	5,193,576
1998	14,751	12,981	458,080	26	916	754	106,673,076	417,382	4,800,288	102,445	24,219	5,344,334
1999	14,751	12,981	471,061	26	942	776	109,695,902	429,209	4,936,316	105,348	24,219	5,495,092
2000	14,751	12,981	484,041	26	968	797	112,718,728	441,036	5,072,343	108,251	24,219	5,645,849
2001	14,751	12,981	497,022	26	994	818	115,741,554	452,864	5,208,370	111,154	24,219	5,796,607
2002	14,751	12,981	510,003	26	1,020	840	118,764,380	464,691	5,344,397	114,057	24,219	5,947,365
2003	14,751	12,981	522,984	26	1,046	861	121,787,206	476,519	5,480,424	116,960	24,219	6,098,122
2004	14,751	12,981	535,964	26	1,072	883	124,810,032	488,346	5,616,451	119,863	24,219	6,248,880
2005	14,751	12,981	548,945	26	1,098	904	127,832,858	500,174	5,752,479	122,766	24,219	6,399,638
2006	14,751	12,981	561,926	26	1,124	925	130,855,684	512,001	5,888,506	125,669	24,219	6,550,395
2007	14,751	12,981	574,907	26	1,150	947	133,878,510	523,829	6,024,533	128,572	24,219	6,701,153
2008	14,751	12,981	587,887	26	1,176	968	136,901,336	535,656	6,160,560	131,475	24,219	6,851,910
2009	14,751	12,981	600,868	26	1,202	990	139,924,162	547,484	6,296,587	134,378	24,219	7,002,668
2010	14,751	12,981	613,849	26	1,228	1,011	142,946,988	559,311	6,432,614	137,281	24,219	7,153,426
TOTAL	712,306	613,849	10,473,353	1,228	20,947	17,248	*****	\$9,310,221	\$105,483,034	\$2,297,685	\$1,087,809	\$118,178,749

Hotel Development (Actual & Projected)
Fairfax Stations

Year	Number of Rooms	Number of Rooms Cumulative	Employment per year	Employment cumulative	Va. resident employment cumulative	Sales	Revenue from individual income taxes	Revenue From Sales Taxes	Revenue from Corporate Income Taxes	Employee Income Taxes from Construction	Total State tax revenues
1978	246	246	137	137	113	2,467,939	21,774	111,057	7,238	255,303	395,372
1979	0	246	0	137	113	2,644,494	23,667	119,002	8,383	0	151,053
1980	0	246	0	137	113	2,886,299	25,725	129,883	9,109	0	164,717
1981	0	246	0	137	113	3,170,323	27,962	142,665	11,203	0	181,829
1982	0	246	0	137	113	3,496,567	30,394	157,345	10,183	0	197,922
1983	0	246	0	137	113	3,880,383	33,078	174,617	9,410	0	217,105
1984	265	511	147	284	234	8,602,619	73,688	387,118	19,518	431,159	911,482
1985	0	511	0	284	234	9,128,821	79,978	410,797	24,577	0	515,353
1986	0	511	0	284	234	9,678,943	86,793	435,552	25,262	0	547,607
1987	0	511	0	284	234	10,245,009	99,108	461,025	27,769	0	587,903
1988	0	511	0	284	234	10,922,695	109,942	491,521	28,234	0	629,697
1989	0	511	0	284	234	11,775,781	110,043	529,910	33,173	0	673,126
1990	0	511	0	284	234	12,676,704	114,026	570,452	35,898	0	720,375
1991	0	511	0	284	234	13,681,273	113,491	615,657	31,747	0	760,896
1992	0	511	0	284	234	14,614,087	113,491	657,634	31,747	0	802,872
1993	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
1994	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
1995	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
1996	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
1997	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
1998	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
1999	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2000	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2001	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2002	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2003	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2004	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2005	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2006	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2007	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2008	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2009	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
2010	0	511	0	284	234	15,379,473	113,491	692,076	31,747	0	837,315
TOTAL	511	15,273	284	8,486	6,987	\$396,702,449	\$3,106,003	\$17,851,610	\$884,896	\$686,462	\$22,528,970

Residential Development (Actual & Projected)

Fairfax Stations

Year	New MFD Units	New Townhouse Units	New SFD Units	Projected Units	Number of Units Cumulative	Value of MFD	Value of Townhouse	Value of SFD	Projected Unit Value	Revenue from individual income taxes	Employee Income Taxes from Construction	Document Recording Fees	Total State tax revenues
1978	0	13	2	0	15	0	931,307	143,278	0	2,148	24,979	3,761	30,888
1979	0	161	20	0	196	0	12,853,918	1,596,760	0	30,512	335,909	50,577	416,998
1980	0	108	0	0	304	0	9,800,352	0	0	51,440	227,811	34,301	313,552
1981	1	193	0	0	498	100,050	19,309,650	0	0	91,594	451,182	67,934	610,710
1982	509	32	1	0	1,040	52,748,179	3,316,192	103,631	0	207,913	1,305,636	196,588	1,710,138
1983	0	74	2	0	1,116	0	7,798,712	210,776	0	242,811	186,182	28,033	457,027
1984	253	32	0	0	1,401	27,336,397	3,457,568	0	0	326,899	715,812	107,779	1,150,490
1985	0	38	6	0	1,445	0	3,717,806	901,812	0	365,950	107,384	16,169	489,502
1986	253	23	0	0	1,721	20,033,805	2,469,924	0	0	472,981	523,104	78,763	1,074,848
1987	0	0	0	0	1,721	0	0	0	0	540,096	0	0	540,096
1988	0	0	0	0	1,721	0	0	0	0	599,133	0	0	599,133
1989	437	0	39	0	2,197	44,024,691	0	10,767,393	0	765,546	1,273,653	191,772	2,230,971
1990	0	0	12	0	2,209	0	0	3,283,536	0	797,587	76,326	11,492	865,406
1991	0	0	11	0	2,220	0	0	2,856,898	0	797,803	66,409	9,999	874,212
1992	0	0	6	0	2,226	0	0	1,557,954	0	799,960	36,215	5,453	841,627
1993	0	8	0	0	2,234	0	825,416	0	0	802,835	19,187	2,889	824,911
1994	0	0	0	28	2,234	0	0	0	3,626,291	802,835	84,294	12,692	899,820
1995	0	0	0	28	2,262	0	0	0	3,626,291	813,073	84,294	12,692	910,059
1996	0	0	0	28	2,291	0	0	0	3,626,291	823,312	84,294	12,692	920,298
1997	0	0	0	28	2,319	0	0	0	3,626,291	833,550	84,294	12,692	930,536
1998	0	0	0	28	2,348	0	0	0	3,626,291	843,789	84,294	12,692	940,775
1999	0	0	0	28	2,376	0	0	0	3,626,291	854,028	84,294	12,692	951,013
2000	0	0	0	28	2,405	0	0	0	3,626,291	864,266	84,294	12,692	961,252
2001	0	0	0	28	2,433	0	0	0	3,626,291	874,505	84,294	12,692	971,491
2002	0	0	0	28	2,462	0	0	0	3,626,291	884,743	84,294	12,692	981,729
2003	0	0	0	28	2,490	0	0	0	3,626,291	894,982	84,294	12,692	991,968
2004	0	0	0	28	2,519	0	0	0	3,626,291	905,221	84,294	12,692	1,002,206
2005	0	0	0	28	2,547	0	0	0	3,626,291	915,459	84,294	12,692	1,012,445
2006	0	0	0	28	2,576	0	0	0	3,626,291	925,698	84,294	12,692	1,022,684
2007	0	0	0	28	2,604	0	0	0	3,626,291	935,936	84,294	12,692	1,032,922
2008	0	0	0	28	2,633	0	0	0	3,626,291	946,175	84,294	12,692	1,043,161
2009	0	0	0	28	2,661	0	0	0	3,626,291	956,414	84,294	12,692	1,053,399
2010	0	0	0	28	2,690	0	0	0	3,626,291	966,652	84,294	12,692	1,063,638
TOTAL	1,453	682	99	484	64,117	\$144,243,122	\$64,480,845	\$21,422,038	\$61,646,945	\$21,935,846	\$6,782,785	\$1,021,275	\$29,739,907

**Office Development (Projected)
Potomac Yard**

Year	Space Projection (ft2)	Space Occupied (ft2)	Employment per year	Employment cumulative	Va. resident employment cumulative	Revenue from individual income taxes	Revenue from corporate income taxes	Employee Income Taxes from Construction	Total State tax revenues
2000	500,000	440,000	1,496	1,496	792	1,022,756	88,593	1,596,600	2,707,948
2001	0	0	0	1,496	792	1,022,756	88,593	0	1,111,348
2002	0	0	0	1,496	792	1,022,756	88,593	0	1,111,348
2003	0	0	0	1,496	792	1,022,756	88,593	0	1,111,348
2004	0	0	0	1,496	792	1,022,756	88,593	0	1,111,348
2005	500,000	440,000	1,496	2,992	1,585	2,045,511	177,186	1,596,600	3,819,297
2006	0	0	0	2,992	1,585	2,045,511	177,186	0	2,222,697
2007	0	0	0	2,992	1,585	2,045,511	177,186	0	2,222,697
2008	0	0	0	2,992	1,585	2,045,511	177,186	0	2,222,697
2009	0	0	0	2,992	1,585	2,045,511	177,186	0	2,222,697
2010	500,000	440,000	1,496	4,488	2,377	3,068,267	265,779	1,596,600	4,930,645
TOTAL	1,500,000	1,320,000	4,488	26,928	14,261	18,409,599	1,594,673	4,789,800	24,794,072

Retail Development (Projected)
Potomac Yard

Year	Space Projection (ft2)	Space Occupied (ft2)	Space Cumulative (ft2)	Employment per year	Employment cumulative	Va. resident employment cumulative	Sales	Revenue from individual income taxes	Revenue From Sales Taxes	Revenue from Corporate Income Taxes	Employee Income Taxes from Construction	Total State tax revenues
2000	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0
2005	150,000	132,000	132,000	264	264	140	30,738,840	80,760	1,383,248	29,520	246,281	1,739,810
2006	0	0	132,000	0	264	140	30,738,840	80,760	1,383,248	29,520	0	1,493,529
2007	0	0	132,000	0	264	140	30,738,840	80,760	1,383,248	29,520	0	1,493,529
2008	0	0	132,000	0	264	140	30,738,840	80,760	1,383,248	29,520	0	1,493,529
2009	0	0	132,000	0	264	140	30,738,840	80,760	1,383,248	29,520	0	1,493,529
2010	50,000	44,000	176,000	88	352	186	40,985,120	107,681	1,844,330	39,361	82,094	2,073,465
TOTAL	200,000	176,000	836,000	352	1,672	885	194,679,320	511,483	8,760,569	186,963	328,375	9,787,390

Hotel Development (Projected)
Potomac Yard

Year	Number of Rooms	Number of Rooms Cumulative	Employment per year	Employment cumulative	Va. resident employment cumulative	Sales	Revenue from individual income taxes	Revenue From Sales Taxes	Revenue from Corporate Income Taxes	Employee Income Taxes from Construction	Total State tax revenues
2000	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0
2005	240	240	160	160	85	8,617,911	44,920	387,806	17,891	473,276	923,893
2006	0	240	0	160	85	8,617,911	44,920	387,806	17,891	0	450,617
2007	0	240	0	160	85	8,617,911	44,920	387,806	17,891	0	450,617
2008	0	240	0	160	85	8,617,911	44,920	387,806	17,891	0	450,617
2009	0	240	0	160	85	8,617,911	44,920	387,806	17,891	0	450,617
2010	0	240	0	160	85	8,617,911	44,920	387,806	17,891	0	450,617
TOTAL	240	1,440	160	960	508	51,707,466	269,520	2,326,836	107,347	473,276	3,176,979

Residential Development (Projected)
Potomac Yard

Year	New MFD Units	New Townhouse Units	Projected Units	Number of Units Cumulative	Value of MFD	Value of Townhouse	Projected Unit Value	Revenue from individual income taxes	Employee Income Taxes from Construction	Document Recording Fees	Total State tax revenues
2000	0	0	1,000	1,000	0	0	124,054,420	495,431	2,883,670	434,190	3,813,291
2001	0	0	0	1,000	0	0	0	495,431	0	0	495,431
2002	0	0	0	1,000	0	0	0	495,431	0	0	495,431
2003	0	0	0	1,000	0	0	0	495,431	0	0	495,431
2004	0	0	0	1,000	0	0	0	495,431	0	0	495,431
2005	0	0	1,000	2,000	0	0	124,054,420	990,862	2,883,670	434,190	4,308,722
2006	0	0	0	2,000	0	0	0	990,862	0	0	990,862
2007	0	0	0	2,000	0	0	0	990,862	0	0	990,862
2008	0	0	0	2,000	0	0	0	990,862	0	0	990,862
2009	0	0	0	2,000	0	0	0	990,862	0	0	990,862
2010	0	0	1,000	3,000	0	0	124,054,420	990,862	0	0	990,862
TOTAL	0	0	3,000	18,000	0	0	372,163,260	8,917,758	8,651,009	1,302,571	18,871,339

COST IMPACTS
VIRGINIA METRORAIL OPERATIONS & MAINTENANCE
(\$ millions)

Year	Rail Operations & Maintenance Costs	Revenue from Individual Income Taxes	Revenue from Sales Taxes	Total Tax Revenues
1978	10.2	0.243	0.091	0.335
1979	10.9	0.260	0.098	0.358
1980	17.9	0.427	0.160	0.587
1981	23.0	0.549	0.206	0.754
1982	25.7	0.613	0.230	0.843
1983	29.0	0.692	0.259	0.951
1984	41.9	1.000	0.375	1.374
1985	47.1	1.124	0.421	1.545
1986	48.2	1.150	0.431	1.581
1987	73.3	1.749	0.656	2.405
1988	81.5	1.944	0.729	2.673
1989	75.5	1.801	0.675	2.477
1990	76.7	1.830	0.686	2.516
1991	79.6	1.898	0.712	2.610
1992	83.8	1.999	0.750	2.749
1993	83.2	1.986	0.745	2.730
1994	91.4	2.182	0.818	3.000
1995	94.5	2.254	0.845	3.099
1996	96.4	2.299	0.862	3.161
1997	102.8	2.453	0.920	3.373
1998	105.6	2.519	0.945	3.464
1999	108.1	2.580	0.967	3.547
2000	109.8	2.620	0.983	3.603
2001	113.6	2.710	1.016	3.726
2002	114.6	2.733	1.025	3.758
2003	115.3	2.752	1.032	3.783
2004	116.0	2.768	1.038	3.806
2005	117.2	2.796	1.048	3.844
2006	118.7	2.832	1.062	3.894
2007	119.9	2.860	1.072	3.932
2008	121.4	2.897	1.086	3.983
2009	123.0	2.935	1.101	4.036
2010	124.6	2.972	1.114	4.086
TOTALS	2,700.4	64.425	24.159	88.584

-B.16-

**VA Metrorail Construction Cost Impacts
(\$ MILLION)**

Year	Construction Costs	MetroRail Other Capital	Construction Costs and Other Capital	Direct Indirect Induced Wages	Revenue from Individual Income Taxes	Revenue From Sales Taxes	Total Tax Revenues
1972-1979	421.0	0	421	398.0	14.327	5.373	19.700
1980	0.0	0	0	0.0	0.000	0.000	0.000
1981	17.5	0	17.5	16.5	0.596	0.223	0.819
1982	35.0	0	35	33.1	1.191	0.447	1.638
1983	70.0	0	70	66.2	2.382	0.893	3.275
1984	35.0	0	35	33.1	1.191	0.447	1.638
1985	38.9	0	38.9	36.8	1.324	0.496	1.820
1986	42.8	0	42.8	40.5	1.457	0.546	2.003
1987	85.6	0	85.6	80.9	2.913	1.092	4.005
1988	42.8	0	42.8	40.5	1.457	0.546	2.003
1989	21.4	0	21.4	20.2	0.728	0.273	1.001
1990	19.4	8	27.4	25.9	0.932	0.350	1.282
1991	9.8	9	18.8	17.8	0.640	0.240	0.880
1992	7.4	20	27.4	25.9	0.932	0.350	1.282
1993	30.1	24	54.1	51.1	1.841	0.690	2.531
1994	66.5	27	93.5	88.4	3.182	1.193	4.375
1995	106.2	20	126.2	119.3	4.295	1.611	5.905
1996	112.2	23	135.2	127.8	4.601	1.725	6.326
1997	114.6	20	134.6	127.2	4.581	1.718	6.298
1998	63.1	20	83.1	78.6	2.828	1.060	3.888
1999	24.3	20	44.3	41.9	1.508	0.565	2.073
2000	39.4	20	59.4	56.2	2.021	0.758	2.779
2001	9.9	20	29.9	28.3	1.018	0.382	1.399
2002	3.1	20	23.1	21.8	0.786	0.295	1.081
2003	1.3	20	21.3	20.1	0.725	0.272	0.997
2004	0.0	20	20	18.9	0.681	0.255	0.936
2005	0.0	20	20	18.9	0.681	0.255	0.936
2006	0.0	20	20	18.9	0.681	0.255	0.936
2007	0.0	20	20	18.9	0.681	0.255	0.936
2008	0.0	20	20	18.9	0.681	0.255	0.936
2009	0.0	20	20	18.9	0.681	0.255	0.936
2010	0.0	20	20	18.9	0.681	0.255	0.936
TOTAL	1,417.3	411.0	1,828.3	1,728.3	62.219	23.332	85.550

APPENDIX C

**Appendix C
Detailed Projections Of Development**

ARLINGTON STATION AREAS

Ballston		Office	Retail	Hotel	MFD	Townhouse	Units
Year							
1978		0	0	0	0	0	0
1979		0	0	0	0	0	0
1980		61	0	0	0	0	0
1981		0	0	0	322	96	418
1982		0	0	0	252	130	382
1983		0	0	0	0	0	0
1984		0	0	0	0	74	74
1985		60	0	0	0	14	14
1986		16	582	221	4	115	119
1987		723	15	0	695	45	740
1988		216	16	0	139	75	214
1989		605	23	210	0	11	11
1990		340	45	0	974	28	1,002
1991		0	0	0	0	0	0
1992		551	35	0	0	0	0
1993		0	0	0	700	0	700
1994 - 2010		2,524	113	0	11	0	11
Total		5,095	829	431	3,097	588	2,076

Crystal City		Office	Retail	Hotel	MFD	Townhouse	Units
Year							
1978		343	0	0	0	0	0
1979		231	0	0	0	0	0
1980		445	0	0	0	0	0
1981		349	17	0	0	0	0
1982		421	3	0	522	0	522
1983		347	3	1,065	0	0	0
1984		212	0	197	135	0	135
1985		449	0	0	0	0	0
1986		514	13	267	181	0	181
1987		978	8	0	0	0	0
1988		452	43	255	411	0	411
1989		369	9	0	737	0	737
1990		369	27	0	386	0	386
1991		432	0	272	0	0	0
1992		0	0	0	384	0	384
1993		0	0	0	0	0	0
1994 - 2010		0	0	1	0	0	0
Total		5,541	123	2,057	2,756	0	2,756

ARLINGTON STATION AREAS

Court House

<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>Units</u>
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	4	4
1981	0	0	0	310	14	324
1982	46	27	0	72	0	72
1983	360	0	0	268	0	268
1984	0	0	0	0	16	16
1985	195	4	0	0	0	0
1986	0	11	0	0	52	52
1987	461	0	0	524	0	524
1988	524	57	0	702	0	702
1989	279	0	0	0	11	11
1990	0	13	0	738	0	738
1991	0	0	0	390	0	390
1992	366	0	0	0	0	0
1993		0	378	660	0	660
1994 - 2010	<u>1,000</u>	<u>10</u>	<u>340</u>			<u>1,872</u>
Total	3,231	121	718	3,664	97	5,633

Clarendon

<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>Units</u>
1978	0	0	0	0	0	0
1979	0	0	0	0	12	12
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	419	46	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	0	0	0	0	0	0
1991	0	0	0	0	0	0
1992	0	0	0	0	0	0
1993	0	0	0	0	0	0
1994 - 2010	<u>879</u>	<u>44</u>	<u>0</u>			<u>18</u>
Total	1,298	90	0	0	12	30

ARLINGTON STATION AREAS

Pentagon City

Year	Office	Retail	Hotel	MFD	Townhouse	Units
1978	0	0	0	240	0	240
1979	0	0	0	901	0	901
1980	0	0	0	0	0	0
1981	0	0	0	198	0	198
1982	254	0	0	0	0	0
1983	0	0	0	0	0	0
1984	310	0	0	0	0	0
1985	0	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	0	0
1988	515	0	0	0	0	0
1989	172	860	0	0	0	0
1990	231	0	345	779	0	779
1991	166	0	0	0	22	22
1992	0	0	0	83	0	83
1993	0	0	0	0	0	0
1994 - 2010	<u>1,264</u>	<u>315</u>	<u>656</u>			<u>2,064</u>
Total	2,911	1,175	1,001	2,201	22	4,287

Rosslyn

Year	Office	Retail	Hotel	MFD	Townhouse	Units
1978	0	0	0	0	0	0
1979	0	13	264	0	20	20
1980	984	61	0	273	19	292
1981	280	0	0	158	0	158
1982	438	0	0	1,862	0	1,862
1983	281	12	0	0	10	10
1984	0	0	0	0	18	18
1985	0	69	0	0	0	0
1986	478	0	0	357	15	372
1987	142	28	0	711	0	711
1988	283	0	0	0	0	0
1989	496	10	150	511	0	511
1990	0	0	120	0	0	0
1991	178	0	0	11	0	11
1992	0	0	162	0	112	112
1993	0	0	0	0	0	0
1994 - 2010	<u>653</u>	<u>16</u>	<u>132</u>			<u>682</u>
Total	4,212	209	828	3,883	194	4,759

ARLINGTON STATION AREAS

Virginia Square

<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>Units</u>
1978	0	8	0	0	0	0
1979	0	11	0	0	0	0
1980	0	0	0	0	6	6
1981	0	0	0	54	0	54
1982	0	0	0	0	0	0
1983	0	0	0	0	12	12
1984	0	0	0	0	0	0
1985	0	6	0	0	0	0
1986	43	0	0	0	0	0
1987	0	0	0	0	16	16
1988	56	14	0	0	0	0
1989	179	0	0	0	8	8
1990	0	45	0	0	0	0
1991	342	0	0	350	0	350
1992	0	0	0	0	0	0
1993	0	0	0	47	0	47
1994 - 2010	<u>1,180</u>	<u>35</u>	<u>0</u>	<u>451</u>	<u>42</u>	<u>1,179</u>
Total	1,800	118	0	451	42	1,672

East Falls Church

<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>Units</u>
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	64	0	0	0	0	0
1985	57	0	0	0	0	0
1986	0	0	0	0	0	0
1987	0	0	0	0	206	206
1988	24	0	0	0	0	0
1989	0	0	0	0	0	0
1990	65	0	0	0	2	2
1991	0	0	0	0	4	4
1992	0	0	0	0	4	4
1993	0	0	0	35	4	4
1994 - 2010	<u>0</u>	<u>0</u>	<u>0</u>	<u>35</u>	<u>10</u>	<u>45</u>
Total	211	0	0	35	226	261

ALEXANDRIA STATION AREAS

Braddock							
<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>Units</u>	
1978	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0
1985	0	0	0	131	0	0	131
1986	323	37	0	0	0	0	0
1987	14	0	0	0	39	0	39
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	27	10	0	345	8	0	353
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993		0	0	0	0	0	0
1994 - 2010	<u>342</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>27</u>
Total	706	47	0	476	47		550

Eisenhower Avenue							
<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>Units</u>	
1978	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0
1987	208	0	0	0	0	0	0
1988	76	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0
1992	77	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994 - 2010	<u>446</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1,500</u>
Total	807	0	0	0	0	0	1,500

ALEXANDRIA STATION AREAS

King Street

Year	Office	Retail	Hotel	MFD	Townhouse	Units
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	0	0	0	0
1985	125	13	0	0	0	0
1986	88	1	0	0	0	0
1987	74	0	0	0	0	0
1988	320	13	0	0	0	0
1989	506	29	0	0	0	0
1990	50	4	0	0	0	0
1991	0	0	0	0	0	0
1992	181	11	267	0	0	0
1993	0	0	0	0	0	0
1994 - 2010	<u>1,191</u>	<u>93</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	2,534	165	267	0	0	500

Van Dorn

Year	Office	Retail	Hotel	MFD	Townhouse	Units
1978	0	0	0	0	0	0
1979	0	0	0	0	0	0
1980	0	0	0	0	0	0
1981	0	0	0	0	0	0
1982	0	0	0	0	0	0
1983	0	0	0	0	0	0
1984	0	0	194	0	0	0
1985	159	0	0	0	0	0
1986	50	0	0	0	0	0
1987	0	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	6	0	0	0	0
1990	0	0	0	0	0	0
1991	0	0	0	0	0	0
1992	0	0	0	0	0	0
1993	0	0	0	0	0	0
1994 - 2010	<u>24</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	234	6	194	0	0	0

FAIRFAX STATION AREAS

Dunn Loring

<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>SFD</u>	<u>Units</u>
1978	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0
1981	23	0	0	0	0	0	0
1982	159	8	0	0	0	0	0
1983	0	0	0	0	0	0	0
1984	81	0	0	0	0	0	0
1985	123	0	0	0	0	0	0
1986	85	0	0	0	0	0	0
1987	22	0	0	0	0	0	0
1988	0	0	0	0	0	0	0
1989	28	0	0	0	0	0	0
1990	0	0	0	0	0	0	0
1991	175	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994 - 2010	363	30	0	0	0	0	0
Total	1,059	39	0	0	0	0	32

Franconia/Springfield

<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>SFD</u>	<u>Units</u>
1978	0	73	246	0	0	0	0
1979	0	8	0	0	0	0	0
1980	0	0	0	0	0	0	0
1981	118	0	0	0	0	0	0
1982	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0
1984	144	0	265	0	0	0	0
1985	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0
1990	0	0	0	0	0	38	38
1991	0	370	0	0	0	12	12
1992	0	0	0	0	0	7	7
1993	0	0	0	0	0	3	3
1994 - 2010	1,336	215	0	0	0	0	0
Total	1,599	666	511	0	0	60	76

FAIRFAX STATION AREAS

Huntington

<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>SFD</u>	<u>Units</u>
1978	0	0	0	0	0	0	0
1979	0	0	0	0	0	20	20
1980	0	0	0	0	0	0	0
1981	0	0	0	1	0	0	1
1982	0	0	0	509	0	0	509
1983	0	0	0	0	0	0	0
1984	0	0	0	253	0	0	253
1985	0	0	0	0	0	0	0
1986	0	0	0	253	0	0	253
1987	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0
1989	0	0	0	437	0	0	437
1990	0	0	0	0	0	0	0
1991	0	0	0	0	0	3	3
1992	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0
1994 - 2010	<u>97</u>	<u>0</u>	<u>0</u>	<u>1,453</u>	<u>0</u>	<u>23</u>	<u>212</u>
Total	97	0	0	1,453	0	23	1,688

Vienna

<u>Year</u>	<u>Office</u>	<u>Retail</u>	<u>Hotel</u>	<u>MFD</u>	<u>Townhouse</u>	<u>SFD</u>	<u>Units</u>
1978	0	0	0	0	13	0	13
1979	0	0	0	0	161	0	161
1980	0	0	0	0	108	0	108
1981	0	0	0	0	193	0	193
1982	0	0	0	0	32	0	32
1983	0	0	0	0	74	0	74
1984	0	0	0	0	32	0	32
1985	0	0	0	0	38	0	38
1986	0	0	0	0	23	0	23
1987	222	0	0	0	0	0	0
1988	0	0	0	0	0	0	0
1989	222	0	0	0	0	0	0
1990	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0
1993	0	0	0	0	8	0	8
1994 - 2010	<u>507</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>682</u>	<u>0</u>	<u>155</u>
Total	950	0	0	0	682	0	837

FAIRFAX STATION AREAS

West Falls Church

Year	Office	Retail	Hotel	MFD	Townhouse	SFD	Units
1978	0	0	0	0	0	2	2
1979	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0
1982	0	0	0	0	0	1	1
1983	0	0	0	0	0	2	2
1984	0	0	0	0	0	0	0
1985	0	0	0	0	0	6	6
1986	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0
1988	0	2	0	0	0	0	0
1989	2	0	0	0	0	1	1
1990	0	0	0	0	0	0	0
1991	0	0	0	0	0	1	1
1992	0	0	0	0	0	3	3
1993	0	0	0	0	0	0	0
1994 - 2010	2	5	0	0	0	0	69
Total	3	7	0	0	0	16	85

Appendix D
Actual and Approved Development Projects

KEY FOR DATABASE OF PROPERTIES

Jurisdiction:

AL = Alexandria
AR = Arlington
FF = Fairfax

Station:

Alexandria
BR: Braddock
EA: Eisenhower Avenue
KS: King Street
PY: Potomac Yard
VD: Van Dorn

Arlington

BA: Ballston
CC: Crystal City
CH: Courthouse
CL: Clarendon
EF: East Falls Church
PC: Pentago
RO: Rosslyn n City
VS: Virginia Square

Fairfax

DL: Dunn Loring
FS: Franconia/Springfield
HU: Huntington
VI: Vienna
WF: West Falls Church

Development Type:

OF: Office
RE: Retail
HO: Hotel
MFD: Multi-Family Dwelling
TH: Townhouse
SFD: Single-Family Dwelling

Status:

C: Completed
P: Planned
A: Approved
U: Under Construction

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AL	BR	North West St. Townhouse	600	N. West	TH	C	1990	12.6	8
AL	BR	Braddock Rd. Townhouse	Madison/	N. Fayette	TH	C	1987	149.2	39
AL	BR	Braddock Place	1320	Braddock	RE	C	1986	37.4	
AL	BR	Braddock Place	1200	Braddock Pl.	RE	C	1990	4.5	
AL	BR	Colecroft II	505	E. Braddock	RE	C	1990	5.2	
AL	BR	Braddock Place	1320	Braddock	OF	C	1986	323.0	
AL	BR	Colecroft II	505	E. Braddock	OF	C	1990	13.6	
AL	BR	Braddock Place	1200	Braddock Pl.	OF	C	1990	13.5	
AL	BR	Navid Office Bldg	1008	Pendelton	OF	U	Future	5.6	
AL	BR	Assoc. Of Old Crows	1000	N. Payne	OF	C	1987	13.6	
AL	BR	Braddock Place	1200	Braddock Pl.	MFD	C	1990	206.3	162
AL	BR	Potomac Club Phase II		First	MFD	U	Future		296
AL	BR	Potomac Club Phase I	1200	First	MFD	C	1990		183
AL	BR	Colecroft I	530-566	West	MFD	C	1985	131.0	131
AL	EA	Carlyle	1700	Eisenhower	RE	P	Future	195.5	
AL	EA	Eisenhower Plaza	2411	Mill	OF	P	Future	392.8	
AL	EA	Eisenhower Center	O Mill/	Eisenhower	OF	P	Future	89.0	
AL	EA	Andrews Office Building	2349	Mill	OF	P	Future	50.0	
AL	EA	Carlyle	1700	Eisenhower	OF	P	Future	1,602.0	
AL	EA	Cameron Center	2901	Eisenhower	OF	P	Future	117.8	
AL	EA	Hoof Warehouse	O Hoof Run Dr.	E. Side	OF	P	Future	7.9	
AL	EA	Eisenhower CT. IV	2141	Eisenhower	OF	P	Future	32.0	
AL	EA	UFCW	2900	Eisenhower	OF	C	1988	61.2	
AL	EA	ATC Building IV	2850	Eisenhower	OF	C	1992	77.2	
AL	EA	Mill Race	2350	Mill	OF	P	Future	180.0	
AL	EA	Plaza Building	2750	Eisenhower	OF	C	1988	14.9	
AL	EA	Woodward & Lothrop	2800	Eisenhower	OF	C	1987	120.0	
AL	EA	AT&T	2763	Eisenhower	OF	C	1987	41.8	
AL	EA	Starr	2760	Eisenhower	OF	C	1987	45.9	
AL	EA	Gateway Metro Center	O Mill/	S. of Eisenhower	OF	P	Future	399.0	
AL	EA	Mill Race	2350	Mill	MFD	P	Future	2,088.8	680
AL	EA	Carlyle	1700	Eisenhower	MFD	P	Future	1,434.1	1,434
AL	EA	Carlyle	1700	Eisenhower	HO	P	Future		460
AL	KS	King Street Station IV	1775	Duke	RE	C	1992	11.0	

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AL	KS	National Assoc. of Conv.	1605	King	RE	C	1986	1.4	
AL	KS	King Street Station II	225	Reinekers	RE	C	1988	12.7	
AL	KS	King Street Bogle	1650	King	RE	C	1990	4.0	
AL	KS	Office Building	1623	King	RE	P	Future	4.0	
AL	KS	Carlyle	1900	Duke	RE	P	Future	182.5	
AL	KS	Office Building	1700	Prince	RE	P	Future	3.7	
AL	KS	Carlyle Towers	2101	Jamieson	RE	P	Future	4.0	
AL	KS	Coca Cola Bldg	1500	King	RE	C	1985	12.4	
AL	KS	American Vocational	1410	King	RE	C	1985	1.0	
AL	KS	King Street Staion III	1801	Duke	RE	C	1989	29.4	
AL	KS	King Street Station III	1801	Duke	OF	C	1989	135.3	
AL	KS	ASTD	1630	Duke	OF	C	1985	27.5	
AL	KS	Office Building	216	S. Peyton	OF	C	1986	11.3	
AL	KS	Office Building	1514	Duke	OF	P	Future	36.6	
AL	KS	King Street Station IV	1775	Duke	OF	C	1992	181.0	
AL	KS	Carlyle	1900	Duke	OF	P	Future	1,108.0	
AL	KS	Office Building	1623	King	OF	P	Future	41.0	
AL	KS	American Diabetes Assoc	1660	Duke	OF	C	1986	31.0	
AL	KS	Naber Building	1501	Duke	OF	C	1986	18.3	
AL	KS	Clipper	Prince/	Dangerfield	OF	P	Future	15.0	
AL	KS	Metro Square	1611	Duke	OF	C	1985	44.9	
AL	KS	Courtyard Bldg	1600	Duke	OF	C	1985	0.2	
AL	KS	Coca Cola Bldg	1500	King	OF	C	1985	23.4	
AL	KS	King Street Metroplace I	1801	King	OF	C	1989	82.8	
AL	KS	Franklin and Mumford Bld	1755	Duke	OF	C	1985	9.6	
AL	KS	American Vocational	1410	King	OF	C	1985	19.1	
AL	KS	Meushaw Office	117	S. West	OF	C	1989	18.0	
AL	KS	Upper King Street Assoc	1630	King	OF	C	1989	102.3	
AL	KS	King Street Bogle	1650	King	OF	C	1990	49.5	
AL	KS	King Street Metro Place	1801	King	OF	P	Future	356.7	
AL	KS	Dominion Building	1610	King	OF	P	Future	64.3	
AL	KS	Office Building	120	S. Peyton	OF	P	Future	20.7	
AL	KS	King Street Station II	225	Reinekers	OF	C	1988	128.3	
AL	KS	International Sleep Produ	333	Commerce	OF	C	1988	5.9	

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AL	KS	Upper King Street Assoc.	1630	King	OF	C	1989	11.8	
AL	KS	Prince Street Plaza	1421	Prince	OF	C	1988	56.5	
AL	KS	King Street Court	1555	King	OF	C	1988	50.0	
AL	KS	Lotto	1416	Prince	OF	C	1989	15.6	
AL	KS	DRI OFFICE	207	S. Peyton	OF	C	1987	20.2	
AL	KS	Office Building	1700	Prince	OF	P	Future	85.5	
AL	KS	Station Center	1700	Diagonal	OF	C	1988	79.0	
AL	KS	American Optometric	1501	Prince	OF	C	1987	24.7	
AL	KS	National Assoc. of Retail	205	Dangerfield	OF	C	1989	4.0	
AL	KS	King Street Exchange I	100	Dangerfield	OF	P	Future	86.8	
AL	KS	Food Processing Machine	200	Daingerfield	OF	C	1987	12.9	
AL	KS	Office Building	1415	King	OF	P	Future	11.7	
AL	KS	Office Townhouses	1604	King	OF	C	1986	16.0	
AL	KS	King Street Exchange II	156	Dangerfield	OF	C	1989	100.4	
AL	KS	Office Building	127	S. Peyton	OF	C	1989	36.2	
AL	KS	1419-1429 Duke Street	1419	Duke	OF	C	1987	15.8	
AL	KS	National Assoc. of Conv.	1605	King	OF	C	1986	11.5	
AL	KS	Carlyle	1900	Duke	MFD	P	Future	782.0	782
AL	KS	Carlyle Towers	2101	Jamieson	MFD	P	Future	893.4	625
AL	KS	King Street Station IV	1775	Duke	HO	C	1992		267
AL	KS	King Street Metro Place	1801	King	HO	P	Future		178
AL	PY	Retail			RE	P	2005	180.0	
AL	PY	Retail			RE	P	2010	75.0	
AL	PY	Office			OF	P	2010	1,000.0	
AL	PY	Office			OF	P	2005	1,000.0	
AL	PY	Office			OF	P	Future	1,000.0	
AL	PY	Residential			MFD	P	Future		550
AL	PY	Residential			MFD	P	2005		550
AL	PY	Residential			MFD	P	2010		550
AL	PY	Hotel			HO	P	2005		175
AL	VD	Used Car Sales			RE	C	1979	0.3	
AL	VD	Asian Auto Service			RE	C	1989	5.5	
AL	VD	Boat U.S. Addition	800	S. Pitt St.	OF	P	Future	66.0	
AL	VD	Tauber Building	5001	Eisenhower	OF	P	Future	575.0	

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AL	VD	Bush Hill Industrial	5000	Eisenhower	OF	P	Future		
AL	VD	P.S. Business Center	4701	Eisenhower	OF	C	1985	21.2	
AL	VD	Bogle Business Center	4601	Eisenhower	OF	C	1985	94.3	
AL	VD	Bush Hill Building	4875	Eisenhower	OF	C	1986	65.0	
AL	VD	Comfort Inn			HO	C	1984	50.4	
AR	BA	Olde Ballston Square	11th &	N Stuart St	TH	C	1980	75.7	194
AR	BA	Vernon Corner	1111	N. Vernon St.	TH	C	1987		20
AR	BA	Ballston Place	632-710	N. Tazewell St.	TH	C	1983		15
AR	BA	Detty-Anderson Townhou	600-624	N. Tazewell St.	TH	C	1989		30
AR	BA	Victoria at Ballston	1102-1112	N. Utah St.	TH	C	1983		28
AR	BA	Cathcart Springs	440	N Park Dr	TH	C	1980		14
AR	BA	Carlin Ridge	617	N. Abingdon St.	TH	C	1983		76
AR	BA	Rocky Gorge	724	N Vermont St	TH	C	1981		19
AR	BA	Randolph Square	1020-1040	N. Randolph St.	TH	C	1981		23
AR	BA	Ballston Commons	1136-1146	N. Utah St.	TH	C	1981		48
AR	BA	Quincy Court	1110A-04C	N. Quincy St.	TH	C	1987		25
AR	BA	Clement's Court	1117-1123	N. Stuart St.	TH	C	1987		12
AR	BA	Ballston Towne West	1125	N. Vernon St.	TH	C	1987		32
AR	BA	Vernon Square	1132-1144	N. Vermont St.	TH	C	1986		16
AR	BA	Vermont Place	1100-1110	N. Vermont St.	TH	C	1985		34
AR	BA	Olde Ballston Towne	1118-1124	N. Taylor St.	TH	C	1981		11
AR	BA	Olde Ballston Towne V	1107-1111	N. Taylor St.	TH	C	1985		18
AR	BA	Rocky George II	723-729	N. wakefield St.	TH	C	1983		13
AR	BA	Jerrerson Row	1106-1110	N. Taylor St.	TH	C	1986		11
AR	BA	Olde Ballston Towne III	1125-1133	N. Taylor St.	TH	C	1984		11
AR	BA	CSC Properties	1140	N. Randolph St.	TH	C	1988		14
AR	BA	Ballston Courts	1133-1141	N. Utah St.	TH	C	1985		11
AR	BA	Olde Ballston Towne II	1132-1144	N. Taylor St.	TH	C	1981		13
AR	BA	Ballston Towne	1122	N. Utah St.	TH	C	1985		16
AR	BA	Stafford Square	1103-1131	N. Stafford St.	TH	C	1985		18
AR	BA	Ballston Centre 3			RE	C	1970		60
AR	BA	Jefferson Square	900 & 500	N. Randolph St.	RE	A	Future	6.6	
AR	BA	Ballston Plaz #3			RE	C	1990	14.7	
AR	BA	Ballston Common Mall	701	N. Glebe Rd.	RE	C	1986	22.0	
								431.2	

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	BA	Ballston Station			RE	C	1990	22.7	
AR	BA	Fairgat Phase 2 Retail			RE	A	Future	7.3	
AR	BA	Ballston Metro Center			RE	C	1989	23.4	
AR	BA	Ballston One			RE	C	1986	18.6	
AR	BA	Ballston Plaza #2 Retail	1110	N. Glebe Rd	RE	C	1988	16.0	
AR	BA	Ballston Plaza 1			RE	C	1987	15.0	
AR	BA	Stafford PI-Nat Science Found			RE	C	1992	34.9	
AR	BA	JC Penney			RE	C	1986	116.7	
AR	BA	Randolph Towers			RE	C	1986	15.7	
AR	BA	Quincy Station	4001-33	Fairfax Dr.	OF	C	1989	191.1	
AR	BA	Stuart Park	900	Blk. N. Stuart	OF	A	Future	365.5	
AR	BA	1000 N Glebe Rd			OF	A	Future	266.1	
AR	BA	Stafford PI-Nat Science Found			OF	C	1992	551.1	
AR	BA	Jefferson Square	900 & 950	N. Randolph St.	OF	A	Future	264.2	
AR	BA	Ballston Metro Center	4212	N. Fairfax Dr.	OF	C	1989	208.5	
AR	BA	Ballston Plaza #3	1100	N. Glebe Rd.	OF	C	1990	340.3	
AR	BA	Hyde Park Plaza	600	N. Glebe Rd.	OF	A	Future	501.5	
AR	BA	Fairgate Phase 2 Offices			OF	A	Future	194.6	
AR	BA	Ballston Station Off Bldg	4301	N. Fairfax Dr.	OF	U	Future	284.3	
AR	BA	Fairgate II at Ballston	1001	N. Glebe Rd.	OF	A	Future	202.0	
AR	BA	Birch's Crossroads Assoc.			OF	A	Future	228.3	
AR	BA	Arlington Square	4401	N. Fairfax Dr.	OF	C	1987	134.3	
AR	BA	Ballston Plaza #1	1010	N. Glebe Rd	OF	C	1987	156.2	
AR	BA	Randolph Towers	901-911	N. Randolph St.	OF	C	1986	15.7	
AR	BA	Ballston One	4601	Fairfax Dr.	OF	C	1987	249.0	
AR	BA	United Services Life Insur	970	N Glebe Road	OF	C	1980	60.5	
AR	BA	Fairmont Building	4420	Faifax Dr.	OF	C	1985	59.7	
AR	BA	Ballston Plaza #2	1110	N. Glebe Rd	OF	C	1988	216.0	
AR	BA	The Ellipse at Ballston #1	4350	N. Fairfax Dr.	OF	C	1989	205.0	
AR	BA	Ballston Common Office	701	N. Glebe Rd.	OF	C	1987	183.6	
AR	BA	Fairgate I at Ballston	1005	N. Glebe Rd.	MFD	C	1988	145.4	
AR	BA	Fairlee Court			MFD	C	1993		11
AR	BA	Stafford Place Lincoln To	850	Randolph	MFD	C	1992		700
AR	BA	Townes of Ballston	633	N. Tazewell St.	MFD	C	1989		38

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	BA	Quincy Station	4001-33	Fairfax Dr.	MFD	C	1989		222
AR	BA	The Ellipse at Ballston	4300	Fairfax Dr.	MFD	A	Future		383
AR	BA	Ballston Place II	1024	N. Utah St.	MFD	C	1989		93
AR	BA	Ballston Plaza-The Chase	4600	N. Wash. Blvd.	MFD	C	1989		344
AR	BA	Ballston Metro Center	4212	N. Fairfax Dr.	MFD	C	1989		277
AR	BA	Jefferson Square	900 & 500	N. Randolph St.	MFD	A	Future		280
AR	BA	Stuart Park	900	Bld. N. Stuart	MFD	A	Future		372
AR	BA	Ballston Place	1001	N. Vermont St	MFD	C	1987		139
AR	BA	Hyde Park Plaza	600	N. Glebe Rd.	MFD	A	Future		311
AR	BA	Carol Court	738	N Wakefield St	MFD	C	1973		9
AR	BA	Buckingham	Henderson Rd. &	N. Thomas St.	MFD	C	1981		252
AR	BA	Ballston Station Millenium	1008-1042	N. Taylor St.	MFD	U	Future		184
AR	BA	Hyde Park	4141	N Henderson Dr	MFD	C	1980		322
AR	BA	Courts of Ballston			MFD	A	Future		19
AR	BA	Summerwalk	1023-1035	N. Stuart St.	MFD	C	1986		172
AR	BA	Rivero	730	N. Abingdon St.	MFD	C	1985		4
AR	BA	Windsor Plaza			MFD	U	Future		198
AR	BA	Randolph Towers	900-926	N. Quincy St.	MFD	C	1986		523
AR	BA	Ballston Metro Center	4212	N. Fairfax Dr.	HO	C	1989		210
AR	BA	Holiday Inn	4600	Fairfax Dr.	HO	C	1986		221
AR	CC	Crystal Park 5			RE	C	1989	27.4	
AR	CC	Crystal Park 4			RE	C	1988	8.7	
AR	CC	Forest City	400	12th St. South	RE	A	Future	10.0	
AR	CC	Crystal Park 3			RE	C	1987	43.4	
AR	CC	Crystal Park 2			RE	C	1986	7.5	
AR	CC	Crystal Park 1			RE	C	1985	3.4	
AR	CC	Gateway 3			RE	C	1983	2.6	
AR	CC	Gateway 1			RE	C	1981	9.5	
AR	CC	Airport Plaza 2			RE	C	1985	10.0	
AR	CC	Pierce Bldg			RE	C	1976	48.4	
AR	CC	Airport Plaza 1			RE	C	1981	7.0	
AR	CC	Century & Heitman Buildings			RE	C	1973	47.4	
AR	CC	Buchanan Apts. and Taylor Bldg			RE	C	1971	103.4	
AR	CC	Jeffereson Plaza			RE	C	1970	7.6	

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	CC	Gateway 2			RE	C	1982	3.2	
AR	CC	Crystal Park Off #5	2451	Crystal Drive	OF	C	1989	368.6	
AR	CC	Crystal Station North	2805	J-D Highway	OF	C	1990	169.8	
AR	CC	Crystal Gateway Off #3	1215	J-D Highway	OF	C	1983	347.0	
AR	CC	Eads St Building	1919	S. Eads St.	OF	C	1990	92.0	
AR	CC	Airport Plaza Office	2611	J-D Highway	OF	C	1984	212.0	
AR	CC	Crystal Gateway North	1111	J-D Highway	OF	C	1987	321.5	
AR	CC	Crystal Park Off #2	2121	Crystal Drive	OF	C	1986	514.3	
AR	CC	Crystal Gateway Off #4	1203	J-D Highway	OF	C	1987	200.0	
AR	CC	C & P Switching Center	1101	S. Eads St.	OF	A	Future	190.2	
AR	CC	Crystal Park Off #3	2231	Crystal Drive	OF	C	1987	456.7	
AR	CC	Crystal Park Off #1	2011	Crystal Drive	OF	C	1985	449.2	
AR	CC	Crystal Station South	2805	J-D Highway	OF	C	1990	169.8	
AR	CC	Crystal Park Off #4	2341	Crystal Drive	OF	C	1988	452.0	
AR	CC	Hayes Building	2361	J-D Highway	OF	C	1973	215.1	
AR	CC	Airport Plaza Off #1	2711	J-D Highway	OF	C	1982	143.0	
AR	CC	Crystal Square Off #3	1735	J-D Highway	OF	C	1979	231.1	
AR	CC	Jefferson Plaza Off #2	1421	J-D Highway	OF	C	1970	258.0	
AR	CC	Jefferson Plaza Off #1	1411	J-D Highway	OF	C	1970	278.0	
AR	CC	Crystal Square Off #5	1755	J-D Highway	OF	C	1975	294.3	
AR	CC	Crystal Gateway Off #1	1235	J-D Highway	OF	C	1981	349.0	
AR	CC	Crystal Square Off #2	1725	J-D Highway	OF	C	1980	445.0	
AR	CC	Crystal Square Off #4	11945	J-D Highway	OF	C	1978	342.6	
AR	CC	Buchanan House	2301	J-D Highway	OF	C	1974	79.3	
AR	CC	Polk Building	2521	J-D Highway	OF	C	1970	358.0	
AR	CC	Crystal Gateway Off #2	1255	J-D Highway	OF	C	1982	278.0	
AR	CC	Century Building	2341	J-D Highway	OF	C	1973	360.1	
AR	CC	Taylor Building	2531	J-D Highway	OF	C	1971	518.5	
AR	CC	Crystal Park Condo #1	1805	Crystal Drive	MFD	C	1985		181
AR	CC	Crystal Park Res #2	1805	Crystal Drive	MFD	C	1987		181
AR	CC	Waterford House		J-D Highway	MFD	C	1987		68
AR	CC	Crystal City Gateway Plac	400	S. Eads St.	MFD	C	1987		162
AR	CC	Crystal Gateway South	1201	J-D Highway	MFD	C	1981		174
AR	CC	Bennington Apts	1201	S. Eads St.	MFD	C	1981		348

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	CC	Columbia Ctr Bella Vista			MFD	C	1989		205
AR	CC	Crystal Square Apts	1515	J-D Highway	MFD	C	1975		378
AR	CC	Buchanan House	2301	J-D Highway	MFD	C	1974		442
AR	CC	Forest City	400	12th St. South	MFD	C	1991		384
AR	CC	Hampton House (CC)	1425	S. Eads St.	MFD	C	1983		135
AR	CC	Crystal Park Res #4	1805	Crystal Drive	MFD	C	1989		181
AR	CC	Columbia Center	1211	S. Eads St.	MFD	C	1988		556
AR	CC	Crystal Park Res #3	1805	Crystal Drive	MFD	C	1988		181
AR	CC	Airport Plaza II	2611 & 2765	J-D Highway	HO	A	Future		930
AR	CC	Days Inn	2000	J-D Highway	HO	A	Future		149
AR	CC	Jefferson Plaza Holiday In	1489	J-D Highway	HO	C	1969		308
AR	CC	Hotel Compri	2899	J-D Highway	HO	C	1990		272
AR	CC	National Clarion Hotel	300	Army-Navy Dr.	HO	C	1973		635
AR	CC	Sheraton Crystal City	1800	J-D Highway	HO	C	1983		197
AR	CC	Days Inn	2650	J-D Highway	HO	C	1973		276
AR	CC	Crystal City Marriott Hote	1500	S. Eads St.	HO	C	1982		450
AR	CC	Stouffer Hotel	2399	J-D Highway	HO	C	1975		400
AR	CC	Airport Plaza Hyatt Reger	2799	J-D Highway	HO	C	1982		615
AR	CC	Crystal City Marriott Hote	1700	S. Eads St.	HO	C	1987		255
AR	CC	Embassy Suites (CC)	1401	S. Eads St.	HO	C	1985		267
AR	CH	Courthouse Park	2609	10th St N	TH	C	1984		16
AR	CH	Courthouse Triangle Townhouse			TH	A	Future		12
AR	CH	Barton Place	1210	Barton Place	TH	C	1986		52
AR	CH	Summer Hill	1504	N Rolfe St	TH	C	1981		14
AR	CH	Village at Courtlands	2620	N Fairfax Dr	TH	C	1989		11
AR	CH	1201 N Danville St	1201	N Danville St	TH	C	1980		4
AR	CH	Bell Atlantic Plaza			RE	C	1982	26.8	
AR	CH	Riggs Bank	2601	Clarendon Blvd	RE	C	1988	8.5	
AR	CH	Jackson Heights Hotel			RE	A	Future	12.0	
AR	CH	Courthouse Plaza II			RE	C	1990	13.3	
AR	CH	Arlington Plaza			RE	C	1985	3.5	
AR	CH	Staatsburg	1207	N Adams St	RE	A	Future	50.0	
AR	CH	Court House Gateway Retail			RE	A	Future	12.3	
AR	CH	Courthouse Plaza1			RE	C	1988	6.9	

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	CH	Colonial Place #1		Wilson Blvd.	RE	C	1988	13.5	
AR	CH	Colonial Pace II			RE	C	1988	19.4	
AR	CH	Courtland Towers	1200	N Veitch St	RE	U	Future	3.0	
AR	CH	Courthouse Metro One	2200	Wilson Blvd	RE	C	1988	8.7	
AR	CH	Central Fidelity Bank			RE	C	1977	3.8	
AR	CH	2500 N. Wilson Blvd			RE	C	1986	10.5	
AR	CH	Courthouse Metro One	2200	Wilson Blvd	OF	C	1988	95.9	
AR	CH	Court House Plaza			OF	C	1989	278.7	
AR	CH	Court House Gateway	1309	N Courthouse Rd	OF	A	1988	97.0	
AR	CH	Colonial Place #3		Wilson Blvd.	OF	A	Future	264.0	
AR	CH	Courthouse Place	2000	14th St N	OF	C	1987	118.8	
AR	CH	Bell Atlantic II			OF	C	1992	365.5	
AR	CH	Court House Plaza	2100	Clarendon Blvd	OF	C	1988	331.6	
AR	CH	Weissberg Development	2530	Wilson Blvd	OF	C	1987	95.5	
AR	CH	Court House Gateway			OF	A	Future	84.7	
AR	CH	Colonial Place #2		Wilson Blvd.	OF	A	Future	235.6	
AR	CH	Arlington Plaza (SRA)	2000	15th St N	OF	C	1985	194.7	
AR	CH	Colonial Place #1		Wilson Blvd.	OF	C	1987	246.9	
AR	CH	DeMar	2201	Wilson Blvd	OF	A	Future	121.6	
AR	CH	Court House Commons			OF	A	Future	219.1	
AR	CH	National Milk Producers	1840	Wilson Blvd	OF	C	1982	46.1	
AR	CH	Bell Atlantic Plaza	1320	N Courthouse Rd	OF	C	1983	360.3	
AR	CH	Courtland Park	2500	Clarendon Blvd	MFD	C	1987		284
AR	CH	Woodbury Heights	1301	N Courthouse Rd	MFD	C	1983		170
AR	CH	Astoria	2100	19th St	MFD	C	1987		240
AR	CH	Taft Towers	1210	N Taft St	MFD	C	1981		98
AR	CH	Chelsea Landing	2028	Lee Hwy	MFD	C	1983		28
AR	CH	Court House Plaza	2250	Clarendon Blvd	MFD	C	1988		228
AR	CH	Colonial Village Common	1700	N Troy St	MFD	C	1982		72
AR	CH	Colonial Village II	??		MFD	C	1988		474
AR	CH	Colonial Village I	1801	Key Blvd	MFD	C	1981		212
AR	CH	Arlington County Jail			MFD	A	Future		512
AR	CH	Staatsburg	1227	N Barton St	MFD	A	Future		881
AR	CH	The Charleston	1402	N Adams St	MFD	C	1991		168

**DATABASE OF PROPERTIES
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Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	CH	DeMar	2201	Wilson Blvd	MFD	A	Future		190
AR	CH	Court House Commons Garden Apt.			MFD	C	1991		111
AR	CH	Court House Commons-meridia			MFD	C	1993		400
AR	CH	Colonial Village (AHC)	1700	N Uhle St	MFD	C	1983		70
AR	CH	Charleston/Adams St Cond.			MFD	C	1991		111
AR	CH	Court House Plaza			MFD	C	1990		167
AR	CH	Courtland Towers	1200	N Veitch St	MFD	C	1990		571
AR	CH	Williamsburg			MFD	C	1993		260
AR	CH	Jackson Heights Hotel			HO	C	1993		378
AR	CL	Daniel Court	1001	N Daniel St	TH	C	1979		12
AR	CL	Gateway II Townhouses			TH	A	Future		16
AR	CL	Ollies Trolley			RE	C	1974	0.2	
AR	CL	Clarendon Square			RE	C	1987	19.5	
AR	CL	Hartford Assoc. Retail			RE	A	Future	13.8	
AR	CL	3100 Clarendon Blvd			RE	C	1987	26.6	
AR	CL	First Virginia Bank			RE	C	1970	1.8	
AR	CL	Clarendon Sq	3033	Wilson Blvd	OF	C	1987	171.6	
AR	CL	Hartford Associates			OF	A	Future	209.0	
AR	CL	First American Bank	3140	Washington Blvd	OF	C	1973	10.0	
AR	CL	3100 Clarendon Blvd	3100	Clarendon Blvd	OF	C	1987	213.0	
AR	CL	Portsmouth Building	3138	10th St N	OF	C	1987	34.0	
AR	CL	S&A Partnership/ J. Albrit			OF	C	1987		
AR	CL	Marion Courts Apts	3100	9th St N	MFD	A	Future		8
AR	EF	Gresham Place			MFD	C	1971		11
AR	EF	Gresham Place			TH	C	1993		10
AR	EF	Gresham Place			TH	C	1994		5
AR	EF	Gresham Place			TH	P	Future		8
AR	EF	Gresham Place			TH	C	1991		4
AR	EF	Gresham Place			TH	C	1990		2
AR	EF	Gresham Place			TH	C	1992		4
AR	EF	Gresham Place			SFD	P	Future		5
AR	EF	Kaiser Foundation			OF	C	1985	56.9	
AR	EF	Kaiser Foundation Addition			OF	C	1990	60.8	
AR	EF	Madison Preservation			OF	C	1988	24.5	
AR	EF	Gateway Plaza			OF	C	1984	64.3	

**DATABASE OF PROPERTIES
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Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	EF	125 N. Washington St.			OF	C	1990	4.5	
AR	EF	Sunrise			MFD	C	1993	39.1	35
AR	PC	Tazewell St.			TH	C	1991		22
AR	PC	Pentagon City Mall	1000-1400	S. Hayes St.	RE	C	1989	860.0	
AR	PC	PC Mall Offices	1000-1400	S. Hayes St.	OF	C	1989	172.0	
AR	PC	Lincoln Place	600-700	Army-Navy Dr.	OF	C	1988	514.9	
AR	PC	MCI #2	601	12th St. S.	OF	C	1984	309.6	
AR	PC	Pentagon City Office			OF	C	1990	172.0	
AR	PC	MCI #1	701	12th St. S.	OF	C	1982	253.5	
AR	PC	Sequoira Plaza II			OF	C	1991	165.6	
AR	PC	Sequoia Plaza III			OF	C	1990	59.1	
AR	PC	Remainder			MFD	A	Future		5,026
AR	PC	Columbia Crossing-by right			MFD	C	1990		247
AR	PC	Carriage Hill	1785	S. Hayes St.	MFD	C	1978		240
AR	PC	Clavindish	1200	Arlington Ridge Rd.	MFD	C	1981		198
AR	PC	Horizon House	1300	Army Navy dr.	MFD	C	1979		290
AR	PC	The Ridge House	1301	S. Arlington Ridge Rd.	MFD	C	1979		89
AR	PC	Claridge House	1500	S. Fern St.	MFD	C	1979		302
AR	PC	South Hampton		S. Hayes St. and 15th St. S	MFD	C	1979		220
AR	PC	Housing			MFD	A	Future		325
AR	PC	Sunrise Retirement			MFD	C	1990		225
AR	PC	The Representative	1101	S. Arlington Ridge Rd.	MFD	C	1976		206
AR	PC	Henson Park (addition)			MFD	C	1990		10
AR	PC	Clupeper Gardens			MFD	C	1992		63
AR	PC	Pentagon City-Parc Vista			MFD	C	1990		297
AR	PC	Lyongate/Spout run Overlook			MFD	C	1992		20
AR	PC	Pentagon City-Housing I	801	15th St. S.	MFD	A	Future		624
AR	PC	Marriott Suites Hotel	1101	S. Fern St.	HO	A	Future		300
AR	PC	Ritz-Carlton	1000-1400	S. Hayes St.	HO	C	1990		345
AR	RO	Key Mews	1604	Key Blvd	TH	C	1980		6
AR	RO	Roslyn Mews	1810	N Ode St	TH	C	1980		13
AR	RO	Overlook Townhouses	1211	Nash St	TH	C	1979		15
AR	RO	Lisa Court	1610	Arlington Blvd	TH	C	1984		6

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	RO	Colonial Terrace	1500	Colonial Terrace	TH	C	1992		112
AR	RO	Federal Ridge	1509	Key Blvd	TH	C	1983		10
AR	RO	Quinn Oaks	1232	N Quinn St	TH	C	1986		4
AR	RO	Prospect Place	1424	12th St	TH	C	1979		5
AR	RO	Rosslyn Crest	1450	N Quinn St	TH	C	1986		11
AR	RO	Radnor Heights	1408	12th St N	TH	C	1984		12
AR	RO	Park Place			RE	C	1983	12.2	
AR	RO	Gannett BUIldg			RE	C	1985	68.6	
AR	RO	Metro Center			RE	C	1980	53.9	
AR	RO	1600 Wilson Blvd			RE	C	1975	7.7	
AR	RO	Noland Bldg			RE	C	1980	7.5	
AR	RO	Berkley Bldg			RE	C	1970	10.0	
AR	RO	SPC Bldg			RE	C	1971	24.4	
AR	RO	Freedom Forum Bldg			RE	C	1989	10.0	
AR	RO	1525 Wilson Bldg			RE	C	1987	28.1	
AR	RO	McDonalds	1823	N Moore St	RE	C	1979	12.6	
AR	RO	Park Place	1655	Fort Meyer Dr	OF	C	1983	158.0	
AR	RO	American Chiropractic	1617	17th St N	OF	C	1986	19.6	
AR	RO	1560 Wilson Blvd	1560	Wilson Blvd	OF	C	1987	142.0	
AR	RO	Arland Towers West	1101-1144	Wilson Blvd.	OF	C	1986	457.9	
AR	RO	Xerox Bldg	1616	N Ft Meyer Dr	OF	C	1975	295.0	
AR	RO	Gannett Foundation	1101?	Wilson Blvd	OF	C	1989	243.7	
AR	RO	Arland Towers East	1101-1144	Wilson Blvd.	OF	C	1982	438.0	
AR	RO	Kodak Bldg	1555	Wilson Blvd	OF	C	1980	169.0	
AR	RO	Potomac Tower	1001	19th St N	OF	C	1989	252.2	
AR	RO	Palisades Development	1600	22nd Road N	OF	A	Future	313.0	
AR	RO	Art Assoc W	1515	Wilson Blvd	OF	C	1970	122.7	
AR	RO	1550 Wilson Blvd	1550	Wilson Blvd	OF	C	1983	123.0	
AR	RO	Am Building	1500	Wilson Blvd	OF	C	1971	251.4	
AR	RO	Berkley	1701	N Fort Meyer	OF	C	1970	276.5	
AR	RO	1600 Bldg	1600	Wilson Blvd	OF	C	1975	182.5	
AR	RO	Noland Bldg	1300	17th St N	OF	C	1980	392.7	
AR	RO	Rosslyn Center	1700	N Moore St	OF	C	1980	422.0	
AR	RO	AMS Bldg	1801	N Kent St	OF	C	1981	280.0	

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	RO	Commonwealth	1300	Wilson Blvd	OF	C	1971	283.5	
AR	RO	1525 Wilson Blvd	1525	Wilson Blvd	OF	C	1988	283.4	
AR	RO	Commonwealth Addition			OF	A	Future	51.0	
AR	RO	Wharton Place		N Oak St	OF	A	Future	5.0	
AR	RO	Milk Producers			OF	C	1991	178.0	
AR	RO	Mild Producers/ Lincoln Prop.			MFD	C	1991		11
AR	RO	Palisades Dev-Greathouse Trac			MFD	A	Future		129
AR	RO	The Atrium	1538	Key Blvd	MFD	C	1986		357
AR	RO	Summit Village II			MFD	C	1989		168
AR	RO	Rosslyn Heights East	1300	N Meade St	MFD	C	1981		54
AR	RO	1510 Condo	1510	12Th St	MFD	C	1972		39
AR	RO	The Corinthian	1400	N Ode St	MFD	C	1974		35
AR	RO	Prospect House	1200	N Nash St	MFD	C	1980		273
AR	RO	Rosslyn Heights South	1400	12th St N	MFD	C	1981		32
AR	RO	The Weslie	1401	N Oak St	MFD	C	1981		42
AR	RO	Georgetown Vista	1563	Colonel Terrace	MFD	C	1982		80
AR	RO	The Belvedere	1407	N Fairfax Dr	MFD	C	1987		526
AR	RO	Cascades	1550	17th St N	MFD	C	1987		185
AR	RO	River Place	1101	Arlington Blvd	MFD	C	1982		1633
AR	RO	Wharton Place	1629	N Oak St	MFD	A	Future		21
AR	RO	Summit Village	1800	N Quinn St	MFD	C	1989		343
AR	RO	Westmoreland Terrace	1301	N Ode St	MFD	C	1982		149
AR	RO	Rosslyn Heights North	1423	N Nash St	MFD	C	1981		30
AR	RO	Westpark Hotel	1900	N Fort Meyer	HO	C	1972		300
AR	RO	Hyatt House	1325	Wilson Blvd	HO	C	1976		319
AR	RO	The Virginian	1500	Arlington Blvd	HO	C	1979		264
AR	RO	Marriott Courtyard	1533	Clarendon Blvd	HO	C	1992		162
AR	RO	Ross. Suites Hotel/Donohue Co.			HO	A	Future		176
AR	RO	Palisades Development	1401	Lee Hwy	HO	A	Future		270
AR	RO	Marriott Key Bridge Addit	1401	Lee Hwy	HO	C	1990		120
AR	RO	Iwo Jima Motel	1425	Arlington Blvd	HO	C	1989		150
AR	VS	Va. Sq. TownHomes			TH	U	Future		11
AR	VS	Woodside	822	N Jackson St	TH	C	1983		12
AR	VS	Ashton Square	3901	6th St N	TH	C	1980		6

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
AR	VS	Ballston Ayres	601	N Piedmont St	TH	C	1986		16
AR	VS	Colonial Ballston	600	N Oxford St	TH	C	1988		8
AR	VS	Preston Caruthers Retail			RE	A	Future	9.0	
AR	VS	First Commercial Bank			RE	C	1978	7.5	
AR	VS	Courts Royal			RE	C	1979	10.7	
AR	VS	FDIC Training Center Giant			RE	C	1990	45.3	
AR	VS	3440 A - B			RE	C	1985	5.7	
AR	VS	Virginia Square Plaza			RE	C	1988	13.9	
AR	VS	Virginia Square Plaz #2	3701	N Fairfax Dr	OF	A	Future	38.3	
AR	VS	Pollard Gardens Office			OF	A	Future	142.8	
AR	VS	Virginia Square First Assoc.			OF	A	Future	121.0	
AR	VS	Virginia Executive Center	3300	N Fairfax Dr	OF	C	1986	42.6	
AR	VS	3330 Washington Blvd	3330	Washington Blvd	OF	C	1988	56.3	
AR	VS	FDIC Training Center #1	3501	Fairfax Dr	OF	C	1991	342.0	
AR	VS	Quincy Crossing Offices			OF	A	Future	114.8	
AR	VS	Virginia Square Plaza N	3801	N Fairfax Dr	OF	C	1967	45.7	
AR	VS	Virginia Square Plaza #1	3801	N Fairfax Dr	OF	C	1989	179.3	
AR	VS	Buckingham	3825	5th St N	MFD	C	1981		54
AR	VS	Virginia Square Plaza #2	3701	N Fairfax Dr	MFD	A	Future		256
AR	VS	FDIC Training Center Resid			MFD	C	1991		350
AR	VS	Tower Villas	3800	N Fairfax Dr	MFD	C	1972		252
AR	VS	Virginia Square Center			MFD	A	Future		237
AR	VS	Virginia Square First Residential			MFD	A	Future		183
AR	VS	Quincy Crossing			MFD	A	Future		119
AR	VS	Virginia Square First	3500	N Fairfax Dr	MFD	A	Future		237
AR	VS	Preston Caruthers Lifecare			MFD	A	Future		97
AR	VS	Pollard Gardens			MFD	A	Future		669
AR	VS	Pollard Gardens-Clarendon Court			MFD	C	1993		47
AR	VS	Virginia Square Atrium	3816		MFD	A	Future	9.0	97
FF	DL	Townhouse		9th St	TH	C	1972		1
FF	DL	Townhouse			TH	C	1971		28
FF	DL	Merrifield Sunoco			RE	C	1973	2.1	

**DATABASE OF PROPERTIES
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Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
FF	DL	Pizza Hut			RE	C	1977	2.5	
FF	DL	Taco Bell			RE	C	1970	1.4	
FF	DL	Capitol Camp Supply			RE	C	1982	8.4	
FF	DL	Hartland Place Office			OF	C	1984	23.6	
FF	DL	Prosperity Bus			OF	C	1985	123.5	
FF	DL	Hartlee Center			OF	C	1981	22.9	
FF	DL	Prudential Office Bldg			OF	C	1982	96.3	
FF	DL	Prudential Office Bldg			OF	C	1982	62.9	
FF	DL	Office			OF	C	1987	22.0	
FF	DL	Metro Place			OF	C	1991	172.4	
FF	DL	Office			OF	C	1986	35.5	
FF	DL	Hartland Office Bldg			OF	C	1986	25.5	
FF	DL	Hartland Place			OF	C	1986	23.7	
FF	DL	Dunn Loring Center			OF	C	1984	57.3	
FF	DL	Park Square at Metro Area			OF	C	1991	2.3	
FF	DL	Park Square at Metro Area			OF	C	1989	28.5	
FF	FS	Single Family Dwelling			SFD	C	1990		12
FF	FS	Single Family Dwelling			SFD	C	1976		1
FF	FS	Single Family Dwelling			SFD	C	1975		10
FF	FS	Single Family Dwelling			SFD	C	1989		38
FF	FS	Single Family Dwelling			SFD	C	1971		1
FF	FS	Single Family Dwelling			SFD	C	1992		3
FF	FS	Single Family Dwelling			SFD	C	1991		7
FF	FS	Single Family Dwelling			SFD	C	1972		2
FF	FS	Spring Mall Shopping Center			RE	C	1978	23.6	
FF	FS	JC Penney			RE	C	1973	222.3	
FF	FS	Montgomery Wards			RE	C	1973	187.1	
FF	FS	Circuit City			RE	C	1979	7.9	
FF	FS	Macys			RE	C	1991	289.3	
FF	FS	Auto Park			RE	C	1978	27.2	
FF	FS	Spring Mall Dodge			RE	C	1978	22.3	
FF	FS	Mall			RE	C	1991	80.8	
FF	FS	United Bldg			OF	C	1981	118.2	

**DATABASE OF PROPERTIES
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Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
FF	FS	Loisdale Mall							
FF	FS	Exec Plaza Office Bldg			OF	C	1984	144.5	
FF	FS	Springfield Hall			OF	C	1977	130.7	
FF	FS	Fairfax Office Building			OF	C	1975	728.7	
FF	FS	Dominion Federal			OF	C	1975	21.9	
FF	FS	1st American Bank			OF	C	1970	46.3	
FF	FS	Springfield Inn			OF	C	1973	11.1	
FF	FS	Springfield Hilton			HO	C	1984	125.6	265
FF	HU	Townhouse			HO	C	1978	147.4	246
FF	HU	Townhouse			TH	C	1976		17
FF	HU	Townhouse			TH	C	1977		38
FF	HU	Single Family			TH	C	1971		23
FF	HU	Single Family			SFD	C	1977		24
FF	HU	Single Family			SFD	C	1970		45
FF	HU	Single Family			SFD	C	1979		20
FF	HU	Huntington Avenue			SFD	C	1991		3
FF	HU	The Huntington Bldg			OF	C	1972	4.1	
FF	HU	Androus Office Bldg			OF	C	1976	58.0	
FF	HU	Apartment			OF	C	1974	10.0	
FF	HU	Apartment			MFD	C	1972		213
FF	HU	Apartment			MFD	C	1981		1
FF	HU	Apartment			MFD	C	1982		509
FF	HU	Apartment			MFD	C	1984		253
FF	HU	Apartment			MFD	C	1986		253
FF	HU	Apartment			MFD	C	1989		437
FF	VI	Townhouse			MFD	C	1974		224
FF	VI	Townhouse			TH	C	1985		17
FF	VI	Townhouse			TH	C	1978		13
FF	VI	Townhouse			TH	C	1979		161
FF	VI	Townhouse			TH	C	1985		21
FF	VI	Townhouse			TH	C	1981		193
FF	VI	Townhouse			TH	C	1980		108
FF	VI	Townhouse			TH	C	1993		8
FF	VI	Townhouse			TH	C	1983		74
FF	VI	Townhouse			TH	C	1984		32

**DATABASE OF PROPERTIES
NVTC SURVEY**

Juris	Station	Name	Street #	St. Name	Type	Status	Year	Floor Space	Units
FF	VI	Townhouse			TH	C	1986		23
FF	VI	Townhouse			TH	C	1982		32
FF	VI	Single Family			SFD	C	1972		1
FF	VI	Hunters Branch			OF	C	1987	221.7	
FF	VI	Hunters Branch II			OF	C	1989	221.7	
FF	WF	Townhouse			TH	C	1971		7
FF	WF	Townhouse			TH	C	1972		22
FF	WF	Single Family			SFD	C	1978		2
FF	WF	Single Family			SFD	C	1992		3
FF	WF	Single Family			SFD	C	1991		1
FF	WF	Single Family			SFD	C	1972		9
FF	WF	Single Family			SFD	C	1982		1
FF	WF	Single Family			SFD	C	1974		8
FF	WF	Single Family			SFD	C	1975		1
FF	WF	Single Family			SFD	C	1985		6
FF	WF	Single Family			SFD	C	1989		1
FF	WF	Single Family			SFD	C	1983		2
FF	WF	Jiffy Lube			RE	C	1988	2.1	
FF	WF	Roy Rogers			RE	C	1970	3.3	
FF	WF	Taco Bell			RE	C	1994	2.0	
FF	WF	UVA/VPI Graduate Center			OF	P	Future	200.0	
FF	WF	Chevy Chase Bank			OF	C	1989	1.8	
FF	WF	Gates of West Falls			MFD	P	Future		83