



Planning Information Report • 58

Arlington County, Virginia

June 2004

Round 6.4 Cooperative Forecasts of Population, Households, Housing Units and Employment

This is the 58th in a series of Planning Information Reports produced by the Planning Research and Analysis Team (PRAT) of the Arlington County Planning Division. This report presents the most recent forecasts of population, households, housing units, and employment for Arlington County through 2030. In addition, this report outlines the methodology used to develop this series of forecasts and presents forecasts for the Washington DC region.

Table 1 below summarizes estimates and forecasts of population, households, housing units, and employment for the period 2000 through 2030. These figures represent the first complete revision to the County's forecasts in nearly 10 years. Forecast figures are derived based on analysis of the General Land Use Plan and Zoning Ordinance, site plans, sector and small area plans, and development trends, and are presented in five-year increments for the period 2000 through 2030.

Highlights of the changes from 2000 to 2030 are as follows:

- Population will increase by 27.6% from 190,313 to 242,887.
- Households will increase by 34.2% from 86,901 to 116,653.
- Housing Units will increase by 32.8% from 90,842 to 120,649.
- Employment will increase by 46.4% from 188,376 to 275,798.

Table 1. Round 6.4 Forecasts – Arlington County, Virginia

	2000*	2005	2010	2015	2020	2025	2030	Change 2000- 2030	% Chg. 2000- 2030
Population	190,313	200,770	212,229	223,304	233,092	238,776	242,887	52,574	27.6%
Households	86,901	92,884	99,573	105,923	111,451	114,635	116,653	29,752	34.2%
Housing Units	90,842	97,987	105,850	111,854	115,952	118,588	120,649	29,807	32.8%
Employment	188,376	195,205	217,834	237,781	254,416	263,578	275,798	87,422	46.4%

*2000 figures are from the following sources: Population, Households, and Housing Units (2000 Census adjusted for observed errors in housing unit counts); Employment (Dun & Bradstreet, Bureau of Economic Analysis, ES-202 (state unemployment insurance) data, and U.S. Census Bureau County Business Patterns)

The Cooperative Forecasting Process

The forecasts presented in this report were produced in cooperation with other local governmentsⁱ as part of a regional effort coordinated by the Metropolitan Washington Council of Governments (COG). This regionally coordinated forecasting effort is called the “Cooperative Forecasting” process. The cooperative forecasts serve as a key data source for the COG transportation model, which is developed to determine the region’s conformity with EPA air quality regulations. The forecasts are also used by COG to conduct regional land use analyses. Representatives from each jurisdiction prepare their forecasts independently, but a COG forecasting committee convenes to discuss methodologies and assumptions.

Major rounds of cooperative forecasts (e.g., Round 6, Round 7) generally are produced about every eight to 10 years when new data from the U.S. Census Bureau or other sources are available. For the major rounds, jurisdiction-level forecasts are summed and benchmarked against a regional model. These major rounds constitute a significant amount of work, with a complete review of baseline data, pipeline development, and land use plans, and are produced for very small areas within the County. *Minor* rounds (e.g., Round 5.1, Round 6.3) generally are produced annually or bi-annually. For these minor rounds, jurisdictions make relatively minor adjustments to forecast series to take into account revised land use plans, changes to underlying assumptions, or new data.

The present series was originally intended as Round 7, but complications related to the regional model resulted in COG deciding to hold off on the major round and prepare a minor round of forecasts instead, incorporating data from the 2000 Census. This new set of forecasts is therefore called Round 6.4 instead of Round 7. However, Arlington County felt it was important to conduct a major revision of its forecasts not only to take into account new Census and employment data, but also to incorporate information from updated sector plans, new land use studies, and revised development assumptions. Thus, while this set of forecasts is referred to as Round 6.4, it constitutes a major revision for Arlington.

How the Arlington County Forecasts are Prepared

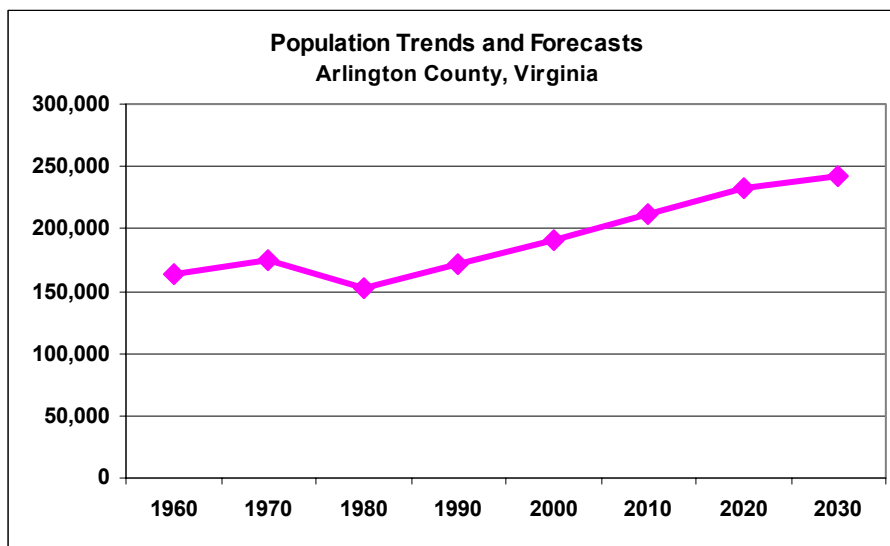
Forecasts of population, households, housing units, and employment for Arlington County are based on forecasts of the development of residential units, office space, retail space, hotel rooms, and other space.ⁱⁱ Development forecasts are based on existing development, pipeline development—projects under construction, projects approved for construction by the County Board, and projects under review by County staff as of December 31, 2003—and development capacity based on adopted land use plans and zoning. Input from Arlington County Planning Division and Economic Development staff was essential for identifying areas with development potential, making assumptions about the future of mix of uses in these areas, and determining timelines for future growth. Arlington County’s forecasts are based on the County’s General Land Use Plan, Zoning Ordinance, and adopted sector plans and revitalization plans.

Assumptions about residential and commercial vacancy rates, average household sizes, immigration trends, and square feet of office/commercial space per employee were made to generate forecasts of people and jobs from the development forecasts. (See Figure 1 for a schematic of the forecasting process.)

Population

Arlington County's population is forecast to grow by over 50,000 residents between 2000 and 2030. This population growth represents an increase of almost 28 percent over the 30-year forecast period. Baseline data for the population forecasts are based on 2000 Census data. Residential development, particularly high-density development in the County's Metro corridors and along Columbia Pike, drives the forecasts. The average household size in Arlington will drop slightly through the forecast period, a result of the high proportion of smaller units in new multi-family buildings. However, steady growth in the immigrant population, which tends to have larger household sizes, will keep the average household size higher than in previous forecasts. A strong regional economy and the County's exceptional quality of life is expected to maintain Arlington's desirability as a residential location, keeping residential vacancy rates relatively low over the entire forecast period.

These forecasts reflect an average annual growth rate of 0.92 percent, with faster population growth in the near-term. Between 2005 and 2010, Arlington's population is forecast to grow by 5.7 percent. At the end of the forecast period, the five-year growth rate will drop to below two percent. Slower growth late in the forecast period reflects anticipated buildout under the current General Land Use Plan.



The majority of population growth is expected in Arlington's Metro Corridors. The total population in the Rosslyn-Ballston and Jefferson Davis Corridors is projected to increase by 77.3 percent over the forecast period—a growth rate almost three times the rate of the County as a whole. In 2000, the Metro Corridors accounted for 24.8 percent of the

total County population; in 2030, 34.5 percent of the County's population will live in the Metro Corridors.

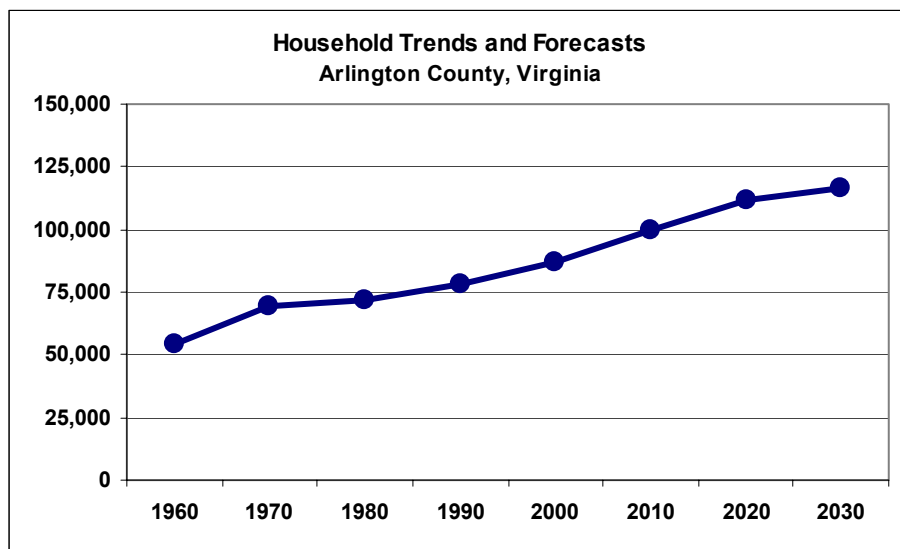
Households and Housing Unitsⁱⁱⁱ

Households are defined as occupied housing units and include both families (i.e., groups of people that are related) and non-families. Baseline data for forecasts of households and housing units are based on 2000 Census data. The total number of households in Arlington is expected to grow by almost 30,000 between 2000 and 2030, representing an increase of about 34 percent. The rate of growth of households is slightly higher than the population growth rate as a result of slightly declining average household sizes over the forecast period. (The average household size is estimated to be 2.19 in 2000 and 2.08 in 2030.)

Household growth is determined by growth in the number of total housing units and assumptions about residential vacancy rates. Between 2000 and 2030, the total number of housing units in Arlington is forecast to grow by almost 30,000, an increase of about 33 percent. Estimates of residential vacancy rates vary based on:

- Housing type (e.g., units in multi-family buildings, townhouses, single-family houses)
- Planning area (e.g., Rosslyn, Crystal City, Nauck)
- Forecast year (e.g., 2005, 2010, 2015)

In general, vacancy rates are higher for multi-family buildings, lower for single-family houses and townhouses, and will decline over the forecast period. Household growth is expected to outpace housing unit growth because of these declining vacancy rates.



Like population, household and housing unit growth is projected

to be faster in the beginning of the forecast period when rapid development is likely, and slower toward the end when a scarcity of development sites will slow growth. For example, between 2005 and 2010, the number of households is forecast to grow by 7.2 percent while the number of housing units is forecast to grow by 8.0 percent. (Vacancy rates are assumed to be rising slightly during this period, which explains the faster growth in housing units.) However, between 2025 and 2030, the growth rates for households and housing units will be just 1.8 and 1.7 percent, respectively.

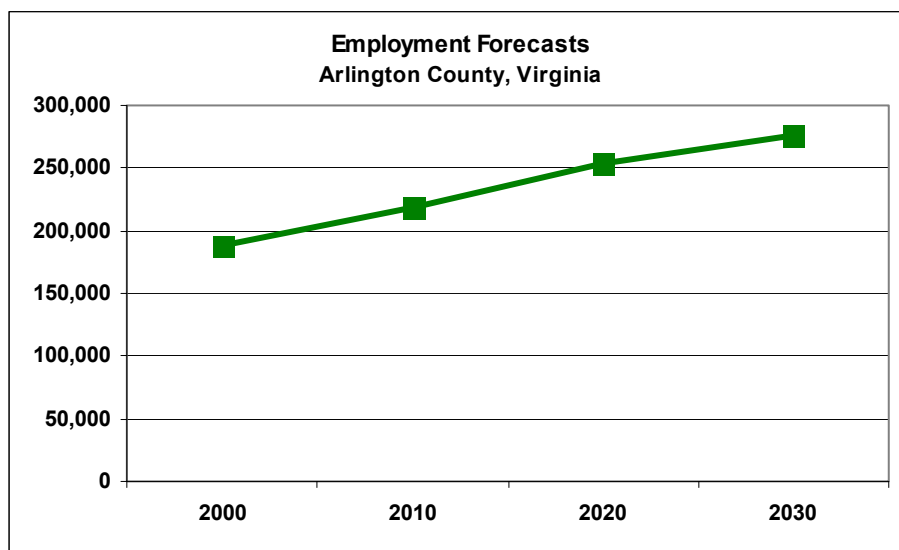
The most significant housing growth is projected for the Rosslyn-Ballston Corridor, where the total number of housing units is projected to increase by almost 16,000—more than half of the total growth in housing units in the County over the forecast period. Significant housing growth is also expected in the Jefferson Davis Corridor. In 2000, it is estimated that 33.0 percent of all of the County’s housing units were located in the Metro Corridors. By 2030, the percentage is projected to be 43.4 percent.

Employment

The total number of jobs in Arlington, also referred to as “at-place employment”, is projected to increase from 188,376 in 2000 to 275,798 in 2030, an increase of over 87,000 or 46.4 percent. Baseline data for employment forecasts were compiled from several sources, including Dun & Bradstreet data (data provided to COG by a private firm), state unemployment insurance data (known as ES-202 data), U.S. Census County Business Patterns, and data acquired locally

from Arlington Economic Development, Arlington County Public Schools, and other County departments. Job growth is determined by office, retail, hotel, and other development, along with assumptions about vacancy rates and average space per employee. Vacancy rates are estimated separately for office, retail, and other space and for different planning areas. Estimates of square feet per employee (or hotel rooms per employee) are based on a review of estimates used by other Washington area jurisdictions and on industry standards.

The number of jobs in Arlington is expected to grow faster than the number of residents over the forecast period, which suggests the County's growing importance as a regional employment center. These forecasts reflect an annual growth rate of 1.5 percent. The fastest period of job growth is forecast to occur between 2005 and 2010 when the number of jobs is projected to increase by 11.6 percent. The relatively fast rate of growth is attributable to at least two factors. First, major office projects under construction at present and those that were recently completed are expected to gain full occupancy by 2010. Second, employment gains are also expected in the Crystal City area where vacancies left by the Patent and Trademark Office (which moved to Alexandria) are likely to be filled.



The Round 6.4 employment forecasts are lower than previous rounds. In part this is due to somewhat slower growth in the beginning of the forecast period, as assumptions about market conditions were revised to project more residential development in place of commercial development where the General Land Use

Plan allowed for either type. However, the most significant difference between the Round 6.4 employment forecasts and previous forecasts is that a lower, more accurate baseline figure was used.^{iv}

While there is significant job growth projected for the Rosslyn-Ballston and Jefferson Davis Corridors, the areas with the fastest rate of employment growth are outside of the Metro Corridors. The realization of County revitalization plans for the Nauck, Lee Highway, and Columbia Pike areas has the potential to expand significantly the existing employment base in each of these areas. Nauck, Shirlington, and Lee Highway/Cherrydale are forecast to have faster job growth than the County as a whole.

Regional Forecasts

By 2030, the Washington DC region will be home to approximately 6.2 million people, 2.4 million households, and 4.1 million jobs.^v According to the Round 6.4 regional forecasts, the number of jobs in the region will grow faster than the working-age population, implying that the number of people who commute from outside the region will continue to rise. The region's population is projected to increase by 1.6 million people, an increase of 35.8 percent over the forecast period, while the number of jobs is forecast to grow by 1.3 million, or 48.3 percent. The total number of households in the region is forecast to increase by about 668,000. This amounts to an increase of 39.1 percent, which is slightly higher than the population growth rate and reflects an overall drop in average household sizes across the region due to the aging of the population and a decline in fertility rates.

The outer suburban jurisdictions—particularly those in Northern Virginia—are projected to have the fastest population and job growth over the forecast period.^{vi} The population in these jurisdictions is forecast to grow by over 800,000 or 82.4 percent between 2000 and 2030. The number of jobs will more than double, from about 402,000 in 2000 to 810,000 in 2030.

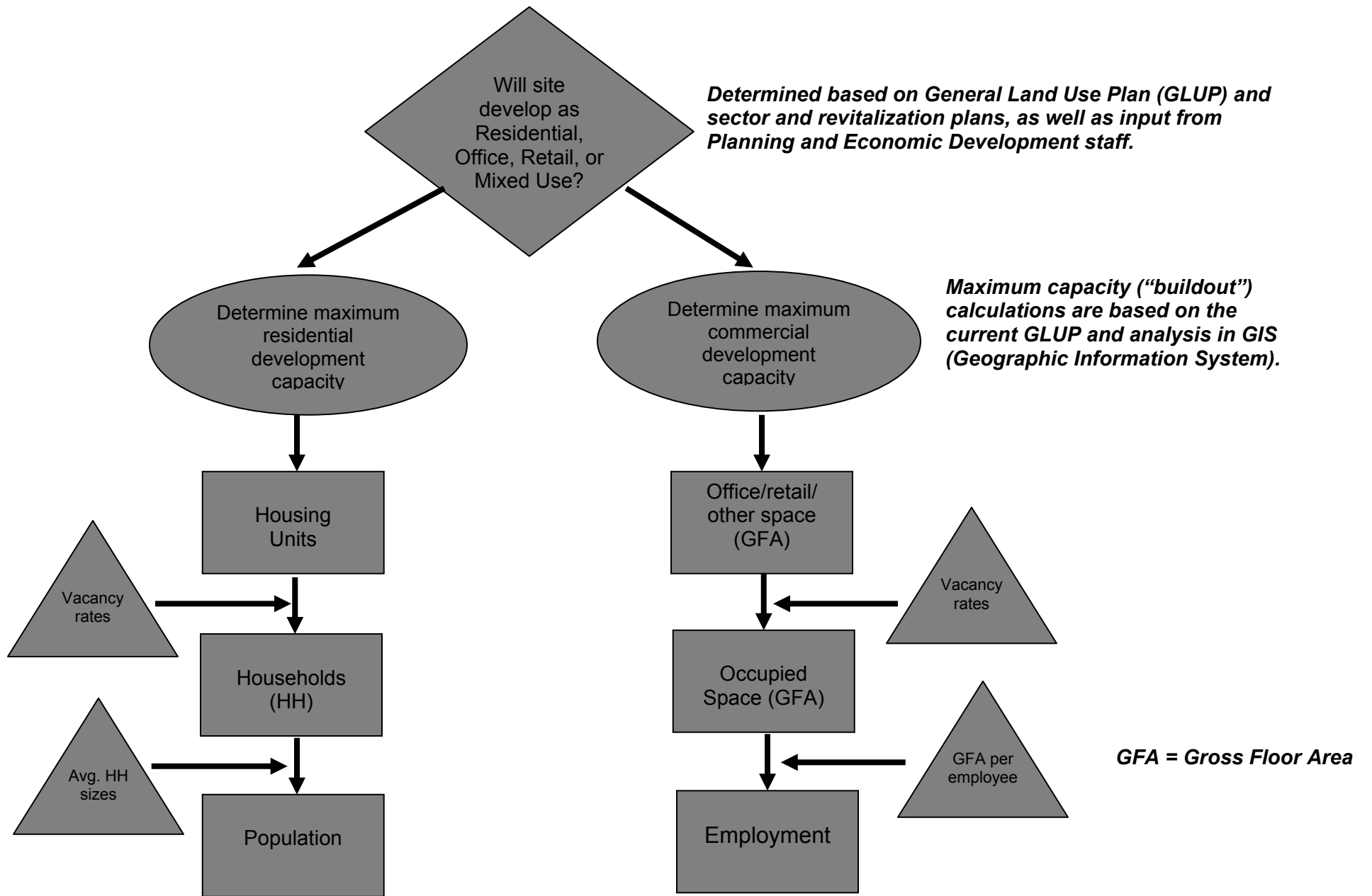
Table 2. Round 6.4 Forecasts – Washington D.C. Region

Numbers in Thousands

	2000	2005	2010	2015	2020	2025	2030	Change 2000- 2030	% Chg. 2000- 2030
Population	4,552.4	5,001.4	5,363.5	5,674.3	5,898.3	6,060.7	6,182.5	1,630.1	35.8%
Households	1,711.1	1,874.5	2,021.3	2,155.6	2,251.7	2,325.3	2,379.5	668.4	39.1%
Employment	2,740.2	3,006.0	3,290.9	3,504.4	3,713.4	3,917.1	4,063.7	1,323.5	48.3%

Source: Metropolitan Washington Council of Governments.

Figure 1. Forecasting Population and Employment for a Typical Development Site or Block



Round 6.4 Population Forecasts – Arlington County, Virginia Metro Station Areas

	2000	2005	2010	2015	2020	2025	2030	Change 2000-2030	% Chg. 2000-2030
Rosslyn	9,610	9,988	11,147	12,542	13,603	15,618	16,857	7,246	75.4%
Court House	9,765	10,279	11,387	13,079	13,836	14,062	14,221	4,456	45.6%
Clarendon	1,652	3,552	4,576	6,110	6,532	6,603	6,677	5,026	304.3%
Virginia Square	2,700	4,598	5,744	6,199	7,092	7,875	8,127	5,427	201.0%
Ballston	11,061	12,124	12,745	13,168	14,476	14,480	15,409	4,348	39.3%
R-B Corridor	34,788	40,542	45,599	51,097	55,538	58,638	61,291	26,503	76.2%
Pentagon City	4,568	6,334	7,233	8,779	10,851	10,900	10,900	6,331	138.6%
Crystal City	7,840	8,021	9,376	10,453	11,020	11,209	11,503	3,663	46.7%
J-D Corridor	12,408	14,355	16,609	19,232	21,871	22,109	22,403	9,995	80.5%

Round 6.4 Household Forecasts – Arlington County, Virginia Metro Station Areas

	2000	2005	2010	2015	2020	2025	2030	Change 2000-2030	% Chg. 2000-2030
Rosslyn	5,783	5,959	6,662	7,474	8,162	9,278	9,936	4,153	71.8%
Court House	5,686	5,981	6,643	7,697	8,110	8,200	8,313	2,627	46.2%
Clarendon	657	1,951	2,644	3,719	4,008	4,057	4,099	3,442	523.9%
Virginia Square	1,307	2,443	3,125	3,320	3,846	4,286	4,398	3,091	236.5%
Ballston	6,282	6,774	7,211	7,435	8,177	8,282	8,740	2,458	39.1%
R-B Corridor	19,715	23,108	26,285	29,646	32,304	34,103	35,486	15,771	80.0%
Pentagon City	3,118	4,182	4,806	5,880	7,320	7,354	7,354	4,236	135.8%
Crystal City	4,848	5,004	5,874	6,536	6,890	7,009	7,197	2,349	48.5%
J-D Corridor	7,966	9,186	10,680	12,416	14,210	14,362	14,551	6,585	82.7%

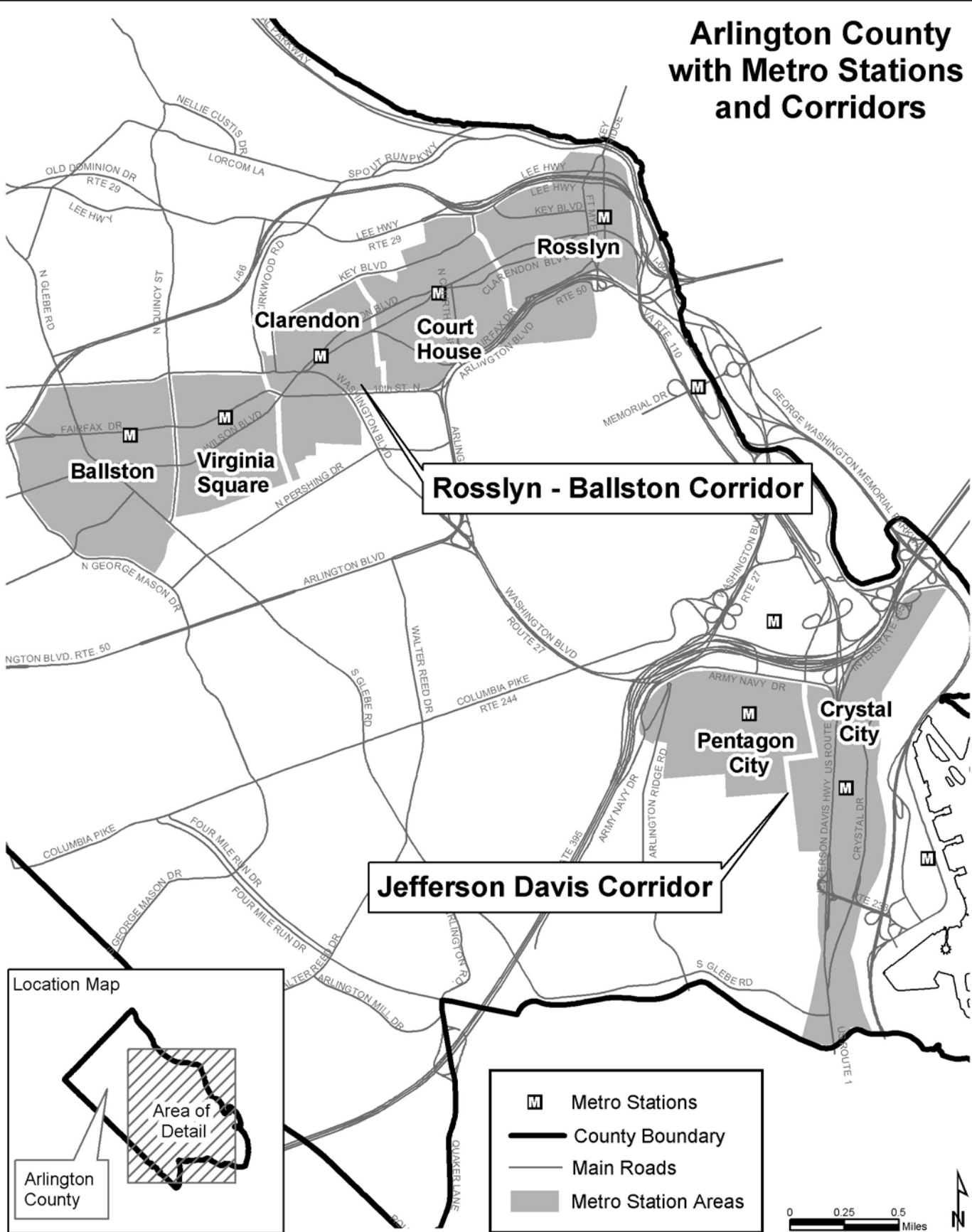
Round 6.4 Housing Unit Forecasts – Arlington County, Virginia Metro Station Areas

	2000	2005	2010	2015	2020	2025	2030	Change 2000-2030	% Chg. 2000-2030
Rosslyn	6,212	6,407	7,270	8,040	8,558	9,606	10,287	4,075	65.6%
Court House	6,048	6,444	7,211	8,250	8,494	8,513	8,628	2,580	42.7%
Clarendon	680	2,137	2,957	4,074	4,248	4,248	4,291	3,611	531.0%
Virginia Square	1,435	2,790	3,675	3,768	4,169	4,572	4,692	3,257	227.0%
Ballston	6,744	7,332	7,852	7,959	8,539	8,575	9,032	2,288	33.9%
R-B Corridor	21,119	25,110	28,965	32,091	34,008	35,514	36,930	15,811	74.9%
Pentagon City	3,433	4,580	5,280	6,440	7,790	7,790	7,790	4,357	126.9%
Crystal City	5,427	5,854	6,939	7,442	7,442	7,442	7,642	2,215	40.8%
J-D Corridor	8,860	10,434	12,219	13,882	15,232	15,232	15,432	6,572	74.2%

Round 6.4 Employment Forecasts – Arlington County, Virginia Metro Station Areas

	2000	2005	2010	2015	2020	2025	2030	Change 2000-2030	% Chg. 2000-2030
Rosslyn	27,664	28,595	31,740	32,978	36,404	38,598	43,313	15,649	56.6%
Court House	11,770	13,795	15,086	16,922	17,428	17,679	18,003	6,233	53.0%
Clarendon	5,362	6,724	7,639	8,650	9,219	9,556	9,556	4,194	78.2%
Virginia Square	3,851	7,123	8,188	9,003	9,387	9,987	10,522	6,670	173.2%
Ballston	24,207	26,820	30,659	30,659	34,916	35,276	37,029	12,821	53.0%
R-B Corridor	72,854	83,057	93,313	98,212	107,354	111,096	118,422	45,568	62.5%
Pentagon City	8,893	9,527	12,072	12,194	12,336	15,923	15,923	7,030	79.0%
Crystal City	39,747	33,398	41,057	51,553	52,700	52,700	53,930	14,184	35.7%
J-D Corridor	48,640	42,924	53,129	63,747	65,036	68,623	69,854	21,213	43.6%

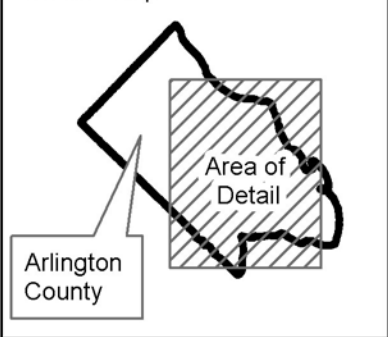
Arlington County with Metro Stations and Corridors



Rosslyn - Ballston Corridor

Jefferson Davis Corridor

Location Map

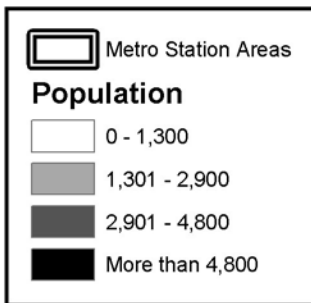
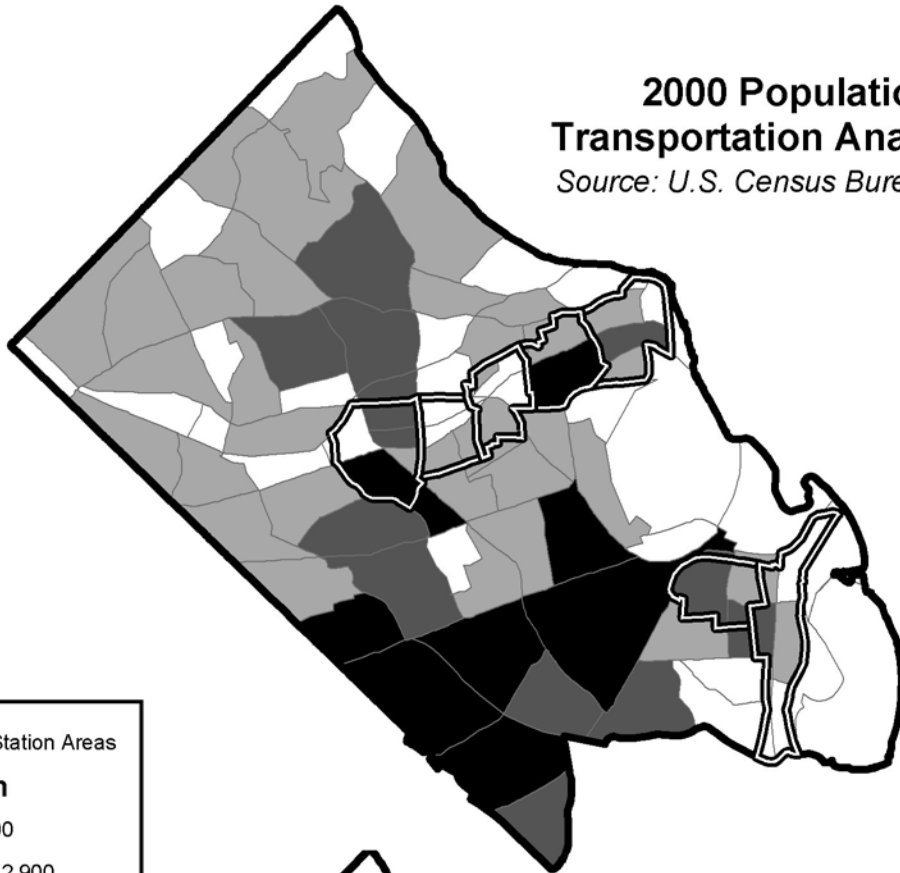


	Metro Stations
	County Boundary
	Main Roads
	Metro Station Areas



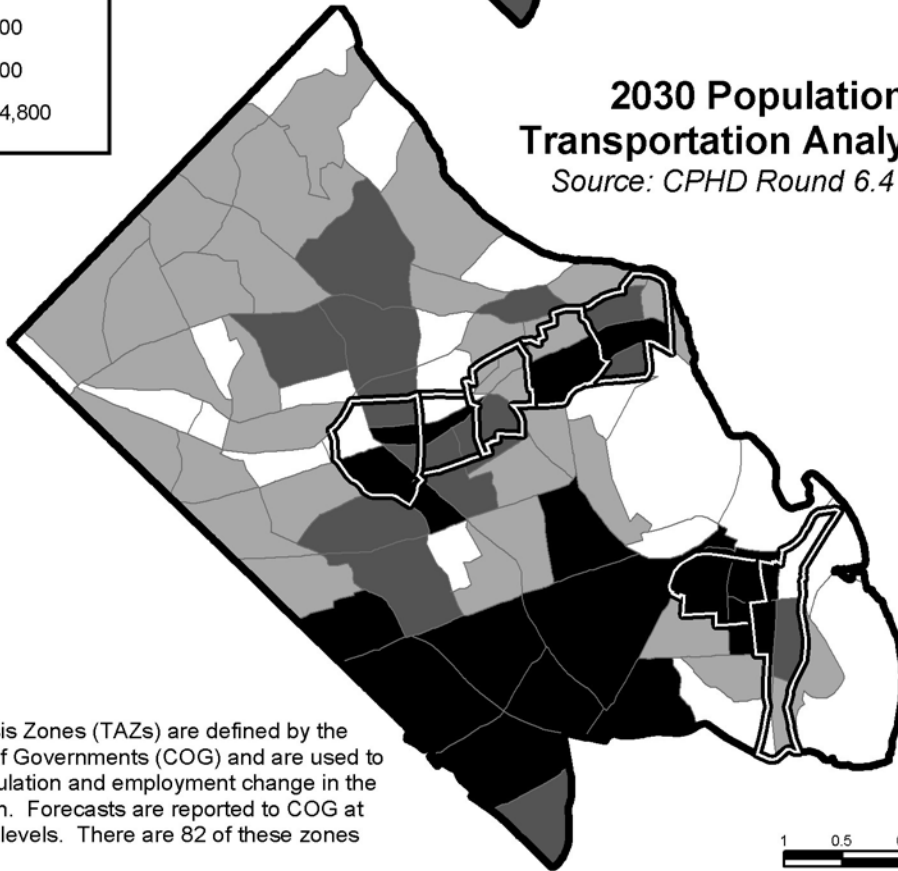
2000 Population by Transportation Analysis Zone

Source: U.S. Census Bureau and CPHD

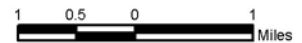


2030 Population by Transportation Analysis Zone

Source: CPHD Round 6.4 Forecasts

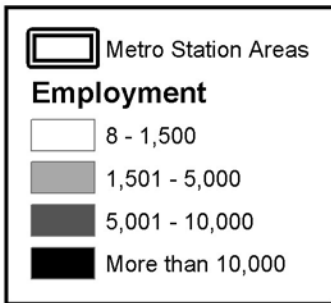
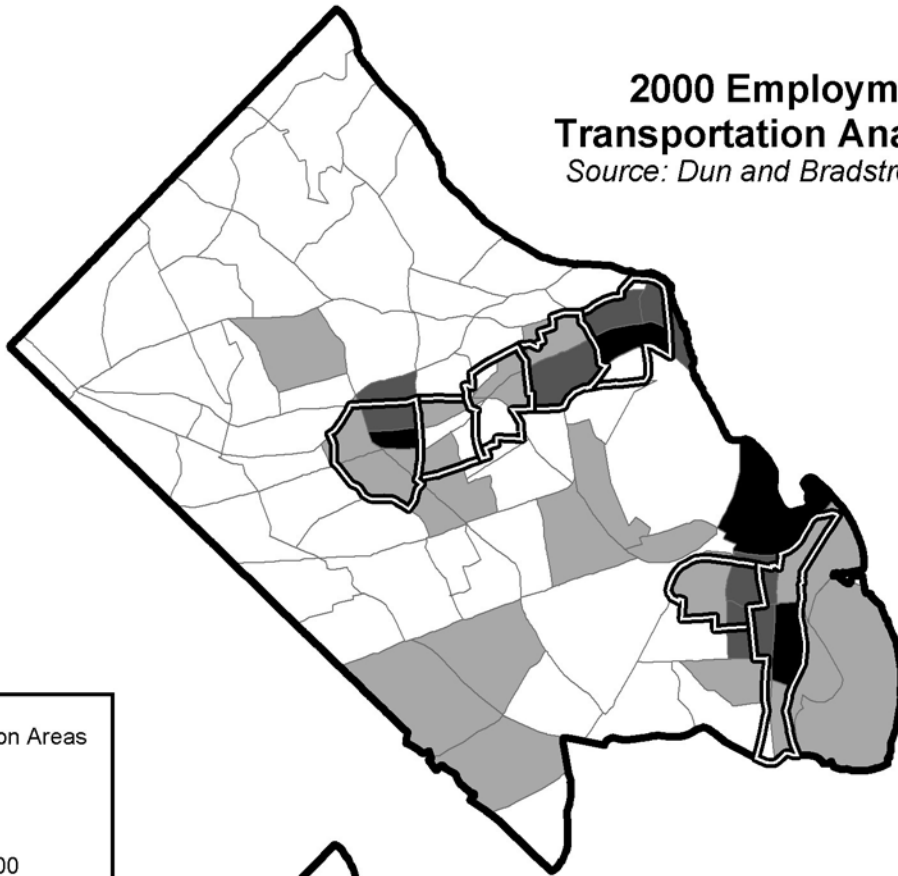


Transportation Analysis Zones (TAZs) are defined by the Washington Council of Governments (COG) and are used to model impacts of population and employment change in the Washington DC region. Forecasts are reported to COG at the County and TAZs levels. There are 82 of these zones in Arlington.



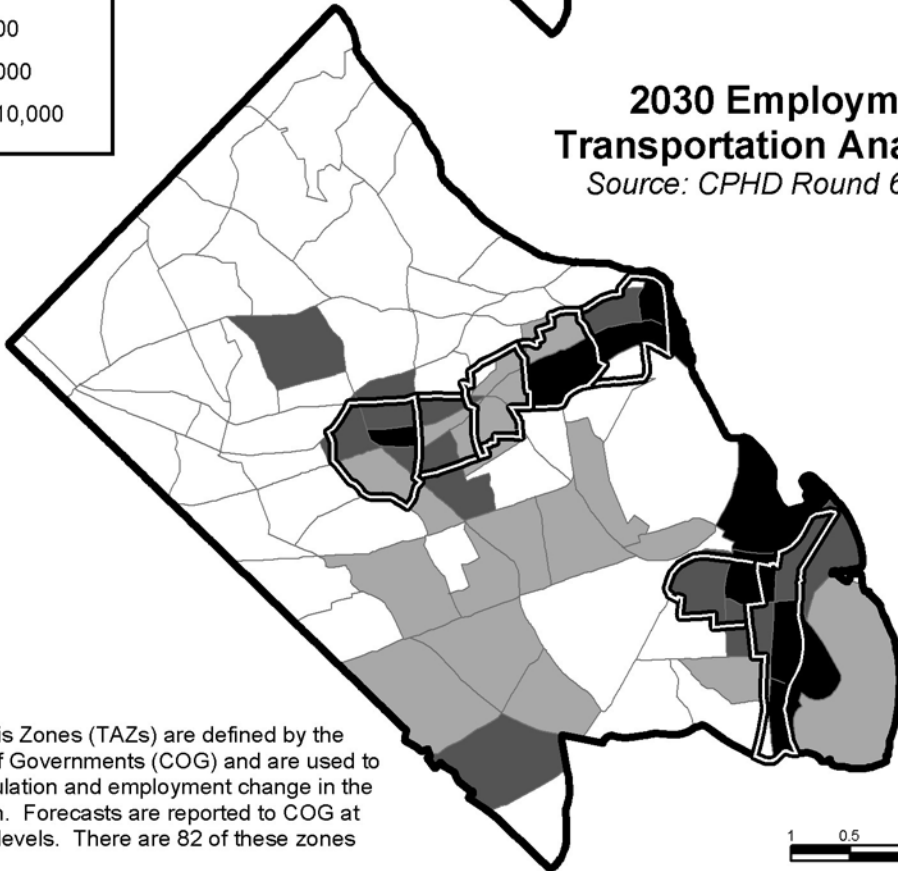
2000 Employment by Transportation Analysis Zone

Source: Dun and Bradstreet and CPHD

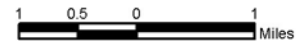


2030 Employment by Transportation Analysis Zone

Source: CPHD Round 6.4 Forecasts



Transportation Analysis Zones (TAZs) are defined by the Washington Council of Governments (COG) and are used to model impacts of population and employment change in the Washington DC region. Forecasts are reported to COG at the County and TAZs levels. There are 82 of these zones in Arlington.



ⁱ The jurisdictions included in the Cooperative Forecasts for the region are: Washington DC; the counties of Arlington, Fairfax, Loudoun, Prince William, and Stafford and the cities of Alexandria, Falls Church, Fairfax, Manassas, and Manassas Park in Virginia; and Montgomery, Prince George's, Calvert, Charles, and Frederick counties in Maryland.

ⁱⁱ Other space includes hospitals, schools, community centers, fire stations, industrial space, theaters, and self-storage facilities.

ⁱⁱⁱ Household forecasts are essential inputs to COG's transportation and economic models and to Arlington's planning and economic studies. For example, COG uses an average number of vehicles per household to determine the number of vehicle trips and the amount of exhaust that an occupied housing unit might generate in a given period of time. In addition, recent County studies in the Clarendon area have examined spending patterns for households to better understand how much retail development could be supported by a given number of new housing units when they are occupied.

^{iv} For more information on the methodology used to develop the employment baseline figure, and for further explanation on the differences between the Round 6.4 employment forecasts and previous employment forecasts, see PRAT's Technical Working Paper #3, Setting Employment Benchmarks for Round 7 Cooperative Forecasting, June 2003.

^v COG does not require jurisdictions to submit housing unit forecasts and does not prepare regional housing unit forecast totals.

^{vi} Includes Loudoun, Prince William, and Stafford counties and Manassas and Manassas Park cities in Virginia and Calvert, Charles, and Frederick counties in Maryland.