**ATTACHMENT # 9**

# WORKFORCE HOUSING ASSESSMENT

PREPARED BY

RESEARCH AND TECHNOLOGY CENTER
MONTGOMERY COUNTY DEPARTMENT OF PARK AND PLANNING

# *WORKFORCE HOUSING ASSESSMENT*

## Comparing demand for housing from employment with indicators of the housing supply in Montgomery County, Maryland, 1997-2015

**A Research Report by the Research & Technology Center**
**Montgomery County Department of Park & Planning**

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## INTRODUCTION, TWO APPROACHES

This report is concerned with the connection between jobs and households in the County. It uses two approaches to estimate housing demand related to jobs.
The first approach uses the actual 1997 housing locations of working household heads by 18 regional job areas to estimate the location of housing demand from forecasted 1997-2015 job growth by sub region. The second approach looks at the number of local housing units needed to fill 1997-2015 job growth within the same local area.

## THE BIG PICTURE

Stepping back from the mathematical results of this study, what is the context for the future relationship between jobs and housing locations in Montgomery County? The future will be primarily determined by some continuing, interrelated, long-term trends.

- As regions grow in jobs and population they tend to expand out from the center geographically. Just as in the 1950s and 60s most jobs were located in the District of Columbia and housing developments were sprouting up in then-new suburbs like Bethesda and Wheaton, now the I-270 Corridor is a major job center and new residential developments are in areas like Clarksburg, Frederick, and even Hagerstown.
- Housing tends to form the leading edge of the outward expansion, followed next by retail to serve the growing population and then, following the growth in the local labor force, other employment facilities such as office buildings.
- Housing farther from the regional center of activity tends to cost less and be favored by young homebuyers with limited financial resources.
- Because of these trends, commuter traffic flows are predominantly in toward the center in the morning and outward in the evening.
- Workers living on the expanding regional fringe often work in jobs well out from the regional center and the average commute of about 30 minutes changes very little over time.
- As jurisdictions begin to run out of land for new neighborhoods several patterns emerge:
    - Residential growth will occur beyond their borders as the region continues to expand;
    - New housing within the jurisdiction tends to be increasingly dense and the multi-family housing share increases.
- The out-migration of middle class households from Montgomery County to Frederick, Howard, and other next tier counties is part of this pattern.

The implication of these trends is that one can expect that future housing locations for workers location will be farther out from the regional center than they were a few years earlier. This follows from the increasing scarcity of new housing sites as they are used up toward the center. Therefore, as this study shows, the 1997 worker housing patterns are not duplicated in the forecast to 2015. This leads to the deficits of single-family housing indicated in the study.

# JOBS and HOUSING LOCATIONS APPROACH

## Introduction

The 1997 job-housing location approach will compare the forecasted supply of housing to the number of added households needed to provide employees for County and regional job growth. For this study we are using full-time employed household heads[1] as the connection between jobs and housing units. Other jobs are not counted as generating households. To round out this picture, the demand for housing units for heads without fulltime jobs (mostly retired)[2] is also calculated.

The principal data source for this report is the 1997 Census Update Survey from the Research & Technology Center of the Park & Planning Department. This sample survey of Montgomery County households provides extensive data on demographic characteristics of our residents including their employment. Many connections between employment and household information can be examined using this data.

## Principal Finding

The supply of single-family housing units as indicated by the forecast will not meet the demand for these units from forecasted job growth in the region based on 1997 patterns. A surplus of multi-family units means that demand strictly from new jobs will be met with a small surplus. However, when households without fulltime employed heads are taken into account there is an overall deficit of 24,200 units.

## Other Findings

- Over the study period from 1997-2015, there is an overall adequate forecasted increase of 79,100 residential units to meet the requirements of job growth in the County (43,000 units) and region[3] (74,000 units including MC).
- In addition to housing for the increase in workers, about 30,000 added units are needed for households whose heads (mainly retired) are not employed fulltime.
- Jobs in the County are forecasted to grow at declining rates. Growth is constrained by limited resources of land, housing, labor force, and infrastructure capacity. At the present time there is an adequate total land area, zoned for job use, to accommodate the long-term growth rate for well over two decades. However, there are very few large greenfield sites for jobs in the County.
- Montgomery County's share of regional employment will decline in the future because of our declining job growth and more rapid growth in the next tier counties.
- There are currently about 130,000 jobs in the pipeline of approved employment development, which will accommodate forecasted growth for about the next 20 years.

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[1] The three terms **head of household**, **householder**, and **head** are used interchangeably in this report.
[2] For simplification, heads that are not employed fulltime are sometimes simply referred to as retired.
[3] The region includes the District of Columbia, Maryland, and Virginia. The Maryland counties whose forecast job growth are explicitly included in the analysis are Anne Arundel, Frederick, Howard, Montgomery & Prince George's. The Virginia jurisdictions are: Arlington, Alexandria, Fairfax, Loudoun & Prince William and cities within their borders. See map on page 5.

- Forecasted jobs exceed the size of the labor force but with an allowance of about ten-percent for multiple job holding, there is an almost perfect balance between projected workers and forecasted jobs.
- County residents fill 60 to 65 percent of jobs in Montgomery County.
- For fulltime heads, 51.5 percent work in the County and 48.5 percent work elsewhere. Among low-wage fulltime household heads, the percentage working in the County is much higher, 63 percent versus 37 percent traveling out to work. For high-wage heads the percentage reverses with 44 percent working within the County and 56 percent working outside the County. This helps show the dependence of the County's affluence on jobs in Washington D.C.
- Lower wage employees are more than twice as likely to hold multiple jobs than high-wage employees, 30 percent of low-wage fulltime householders have more than one job compared to 23 percent for intermediate- and 14 percent of high-wage heads.
- Households with jobs have an average of 1.96 resident-held jobs per household.
- Forty-five percent of low-wage heads live in garden apartments compared to 28 percent of intermediate- and only 7 percent of high-wage heads.
- The affordability of housing is impossible to forecast, depending as it does on the interaction of incomes, interest rates, mortgage lending terms, and housing prices.
- The estimated remaining housing zoning capacity is sufficient to easily cover job demand from regional job growth during this period plus other demand, mainly from retired heads. See map 1.
- The housing forecast is sufficient to cover demands from regional job growth with a surplus of 6,000 units. The smaller demand from County jobs is covered with a surplus of 37,200 units. However, allowing for the increase of other (retired) heads puts demand 24,200 units over the forecast. The Georgia Ave., Eastern County, and Silver Spring/Takoma Park areas are in the deepest deficit.
- The forecast for single-family housing meets the demand from job growth in the County but falls into a deficit of 2,200 units when meeting the added needs of retired households[4]. The single-family forecast falls short of meeting the demand from regional job growth by 10,100 units. Every area of the County is in deficit except for the I-270 Corridor. The deficit grows to 31,500 when retired households are included. See map 2.
- The forecasted increase for multi-family units is greater than the combined need from the regional and County job forecast including retired heads. The regional forecast results in modest deficits in Silver Spring/Takoma Park and Eastern County. See map 3.

**Principal Implication**

This report shows a number of indicators that the County is becoming more urban. Housing demand from job growth is outstripping likely supplies of single-family housing. There is out migration of middle-income families. Job/Housing ratios are increasing. This puts the County in a position similar to the District of Columbia in the 1950s and 60s when many of its jobholders were migrating to the suburbs. Unmet housing

[4] While retired households are a small percentage of the market for new housing, by remaining in their existing homes, these households increase the need for new housing for new workers.

demand is likely to be met in the next ring of suburbs. Increased urbanization points to increased housing prices and greater incommuting.

**Other Implications**

- Montgomery County is losing members of its middle class. One major reason may be the lack of appropriately priced single-family housing for households with incomes in the $50,000 to $100,000 range. This is shown in the past decade by the migration of households to Frederick, Howard and other newer suburban counties and by a modest decline in the proportion of households in these income groups.
- Heads of single-family households may continue to find housing in other areas of the region and the demand for single-family housing is apt to drive prices higher to balance supply and demand.
- While job growth in the region will generate a need for more single-family housing than is forecasted for the County, the multi-family forecast is in excess of the growth in demand from jobs. This may indicate a shift in the County's housing balance toward a higher proportion of multi-family housing. The economic, demographic, and social implications of this shift need to be studied.
- The constrained availability of single-family versus multi-family housing relative to demand implies a shift in balance toward multi-family housing and the demographic and economic implications of this shift.

**1997 Job Housing Location Study Parameters**

**Purpose**

The purpose of this study is to estimate the number of housing units needed in the County because of County and regional job growth from 1997-2015. Comparisons are made to two indicators of housing supply. It attempts to answer the questions:

- Will our potential housing supply meet our labor needs?
- Do we have adequate housing for the current and future workforce?

**Time Frame**

The 1997 through 2015 time frame for this study was picked for several reasons. The starting year, 1997, is the year of the latest Park and Planning Department Census Update Survey. This very rich and flexible data source makes this unusual type of study possible. It provides the staff with the ability to link individuals' job characteristics including wage level and place of work to their household characteristics including relationship in the household, housing type, and income. The ending year, 2015, was chosen to provide guidance for policy makers with a time horizon that corresponds to the effects of initiatives that could be formulated and enacted in the next few years. These include the Olney and Gaithersburg Vicinity master plans that are now in preparation. Staff felt that a time horizon of 2020 or beyond was too distant to inform near term decisions. The staff also recognizes that the 1997 rates reflecting the connection between job and housing choices are inevitably becoming outdated. Studies to predict housing needs in 2020 and beyond will best be made with data from future Census Update Surveys.

**Wage Levels**
Many of the results are reported by three 1996-annual wage levels: less than $30,000, $30,000 to $50,000 and greater than $50,000 per year. Wage levels are what individual workers get paid for employment. This is different from household income, which is the money income from all sources including the combined wages of all workers in the household. Household income also includes: interest and investment income and retirement payments.

**Fulltime-Employed Heads**
To study the connection between the growth of jobs and housing requires a link between the two. Fulltime-employed heads are the best choice for a link representing both jobs and households. Among households where one or more jobs are held, 91.5 percent of householders are employed full-time and 99.7 percent are employed. Most of the part-time employed heads that are older and are probably semi-retired. While retired persons are important in the County they do not represent the job to household connection.

**Forecasted Job Growth**

## Jobs in 1997 & Job Growth 1997-2015

| Job Area from 1997 CUS | 1997 At-Place Jobs | Forecasted Job Growth 1997-2015 | Percentage Job Growth 1997-2015 |
|---|---|---|---|
| Aspen Hill & Olney | 13,039 | 1,557 | 11.9% |
| Bethesda CBD | 39,585 | 9,935 | 25.1% |
| Bethesda Chevy Chase outside of CBD | 49,085 | 9,545 | 19.4% |
| Colesville & White Oak | 10,981 | 6,716 | 61.2% |
| Fairland & Cloverly. | 20,104 | 5,112 | 25.4% |
| Gaithersburg | 84,734 | 39,807 | 47.0% |
| Germantown & Clarksburg | 18,266 | 25,861 | 141.6% |
| Kensington, Wheaton & Four Corners | 29,189 | 2,733 | 9.4% |
| North Bethesda | 79,366 | 18,559 | 23.4% |
| Potomac | 10,543 | 4,501 | 42.7% |
| Rockville | 83,810 | 25,408 | 30.3% |
| Rural | 5,750 | 812 | 14.1% |
| Silver Spring CBD | 32,540 | 9,957 | 30.6% |
| Silver Spring & Takoma Park outside of CBD | 19,341 | 4,012 | 20.7% |
| Montgomery County Total | 496,334 | 164,515 | 33.1% |
| District of Columbia | 692,340 | 91,400 | 13.2% |
| Prince George's County | 310,900 | 99,300 | 31.9% |
| Other Maryland (Frederick, Howard, & Anne Arundel) | 150,500 | 145,800 | 96.9% |
| Northern Virginia | 997,620 | 471,600 | 47.3% |
| Regional Total | 2,647,694 | 972,615 | 36.7% |

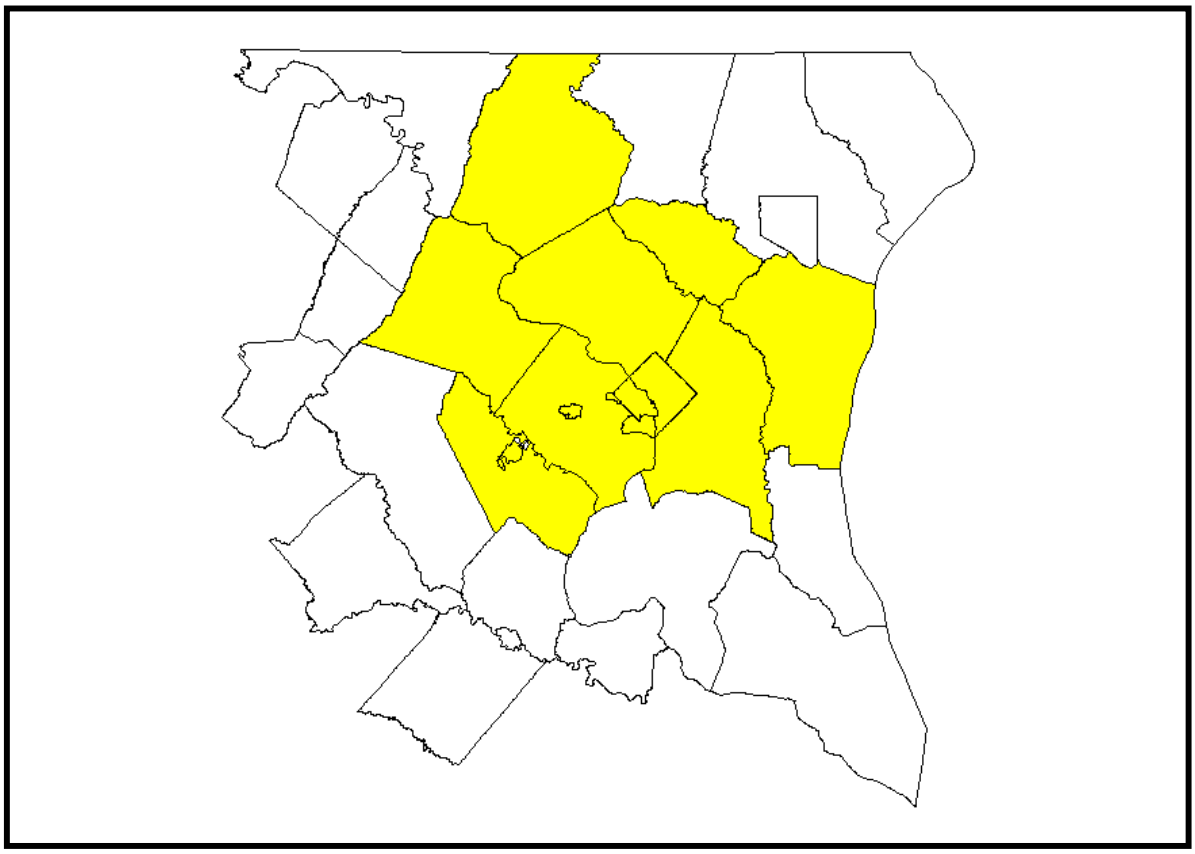
The table above shows the 1997 base and the COG draft round 6.3 forecasted job growth for each of the eighteen job areas for which resident employment data is available from the 1997 Census Update Survey. This job growth by area and the related data on the Montgomery County workers that fill these jobs are the basis of this research.

The following table shows the number of fulltime employed household heads in Montgomery County that will fill these jobs based on the 1997 distribution of these households. Fifty-eight percent of the added household demand is from jobs in Montgomery County.

## Montgomery County Potential Household Demand from Regional Job Growth Forecast 1997-2015

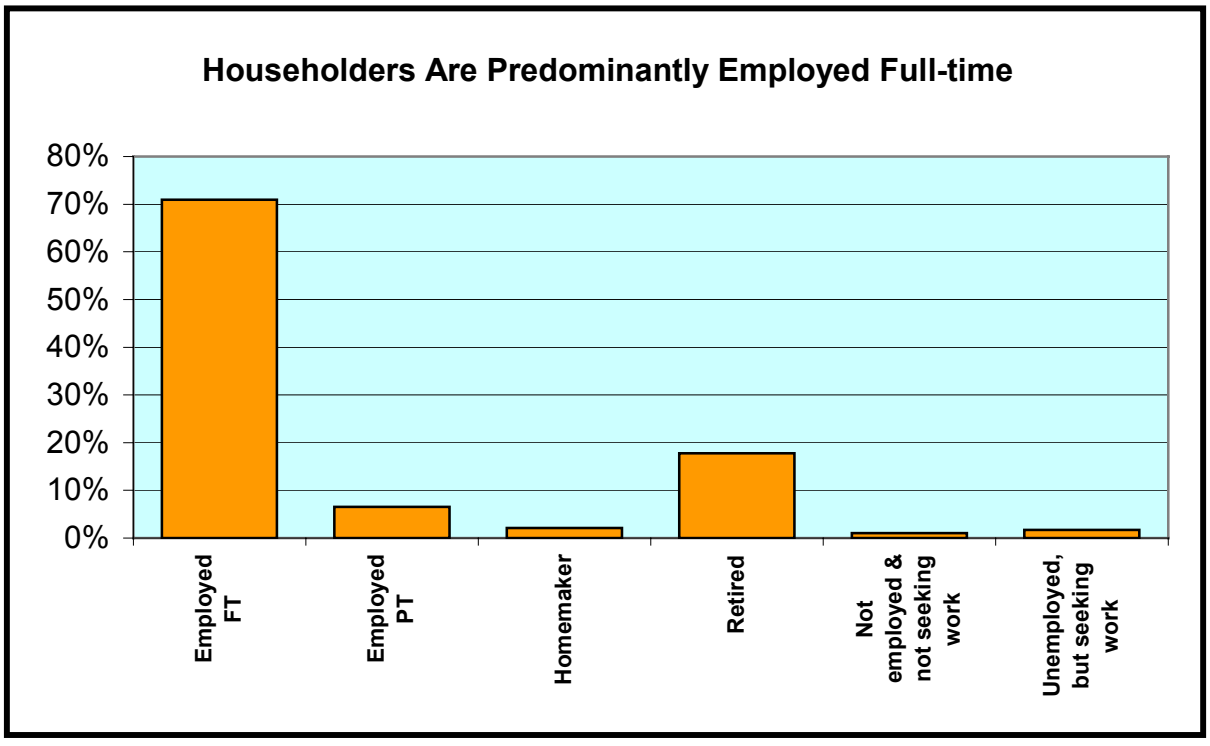
| Community Based Planning Area | From DC Jobs | From MC Jobs | From Other MD Jobs | From VA Jobs | Sum from Region |
|---|---|---|---|---|---|
| Bethesda Chevy Chase/North Bethesda | 1,938 | 4,362 | 1,436 | 1,701 | 9,437 |
| Eastern County | 908 | 3,122 | 2,986 | 871 | 7,887 |
| Georgia Avenue | 1,699 | 6,353 | 2,516 | 1,641 | 12,209 |
| I-270 Corridor | 1,475 | 19,445 | 2,875 | 3,037 | 26,832 |
| Potomac | 769 | 3,755 | 751 | 1,472 | 6,747 |
| Rural | 116 | 3,128 | 828 | 322 | 4,394 |
| Silver Spring/Takoma Park | 1,502 | 2,864 | 1,579 | 819 | 6,764 |
| Sum All MC Areas | 8,407 | 43,029 | 12,971 | 9,863 | 74,270 |

## Areas Included in Regional Job Forecast



**Housing Needs of Non-Fulltime Heads**

Household heads that do not have fulltime jobs still occupy housing. Assuming that non-fulltime heads are the same proportions of the population by age and sex cohorts as in 1997, they will require an additional 30,200 housing units by 2015 compared to 1997. Most of these households already live in the County and will merely be moving out of the role of fulltime employment. As shown in the graph below most of these are retired or over 60 and working part time. If housing choices by age and sex are the same in 2015 as in 1997, 71 percent of this housing will be single-family units.




**Measures of Supply**

This study uses two indicators to quantify the supply of residential units that are apt to become available during the study period. 1) The housing forecasted for the County developed as part of the Metropolitan Washington Council of Governments (COG) Cooperative Forecasting process (Draft round 6.3) using trends, forecasts of job growth, available land, pipeline of approved subdivisions and other indicators. These forecasts are the staff's best estimates of the amount of housing that will be built by sub area of

the County during a given time period. 2) The remaining zoning capacity is a more inclusive measure of the capacity of all the land zoned for housing that remains to be developed. This latter estimate is not constrained by limitations on the infrastructure that could be available to support development during the study period. The pipeline of not yet built dwelling units in approved subdivisions is also included for added context. A new study of land available for housing is underway and will be completed in 2004.

This study is concerned mainly with worker/employment demand for housing. Still, in the following maps we have used two indicators of supply as reference points to give meaning to the demand measures. These supply indicators are summarized in the table below.

**Indicators of Residential Land Supply**

| Community Based Planning Area | Remaining Residential Zoning Capacity 1997[5][6] | Household Forecast 1997-2015 | Remaining Pipeline Capacity 2002[7] |
|---|---|---|---|
| Bethesda Chevy Chase/North Bethesda | 29,138 | 10,745 | 5,355 |
| Eastern County | 15,674 | 4,120 | 1,627 |
| Georgia Avenue | 22,554 | 9,422 | 3,486 |
| I-270 Corridor | 66,202 | 41,007 | 17,434 |
| Potomac | 11,703 | 6,958 | 1,748 |
| Rural | 18,754 | 3,704 | 2,298 |
| Silver Spring/Takoma Park | 14,671 | 3,142 | 1,672 |
| Sum of All Montgomery County Areas | 178,696 | 79,098 | 33,620 |

# Methodology

At the analytical core of this report is a procedure that takes the 1997 rate of fulltime Montgomery County employed household heads working in each of 18 employment areas within the region and multiplies this rate by the change in employment in each of the employment areas from 1997-2015. Procedure summary:

- Start with 1997 Montgomery County fulltime employed household heads (FTHD) from each of 318 community analysis zones (CAZ), formerly known as traffic zones (TZ).
- Split them into the 18 employment areas in which they worked.
- Divide the number of FTHD workers by the number of 1997 at-place jobs in each employment area to yield a rate of FTHD in each CAZ per job in each job area.

[5] From 1997-2001 there were about 21,000 housing units built in the County reducing the remaining residential zoning capacity to about 158,000 units.

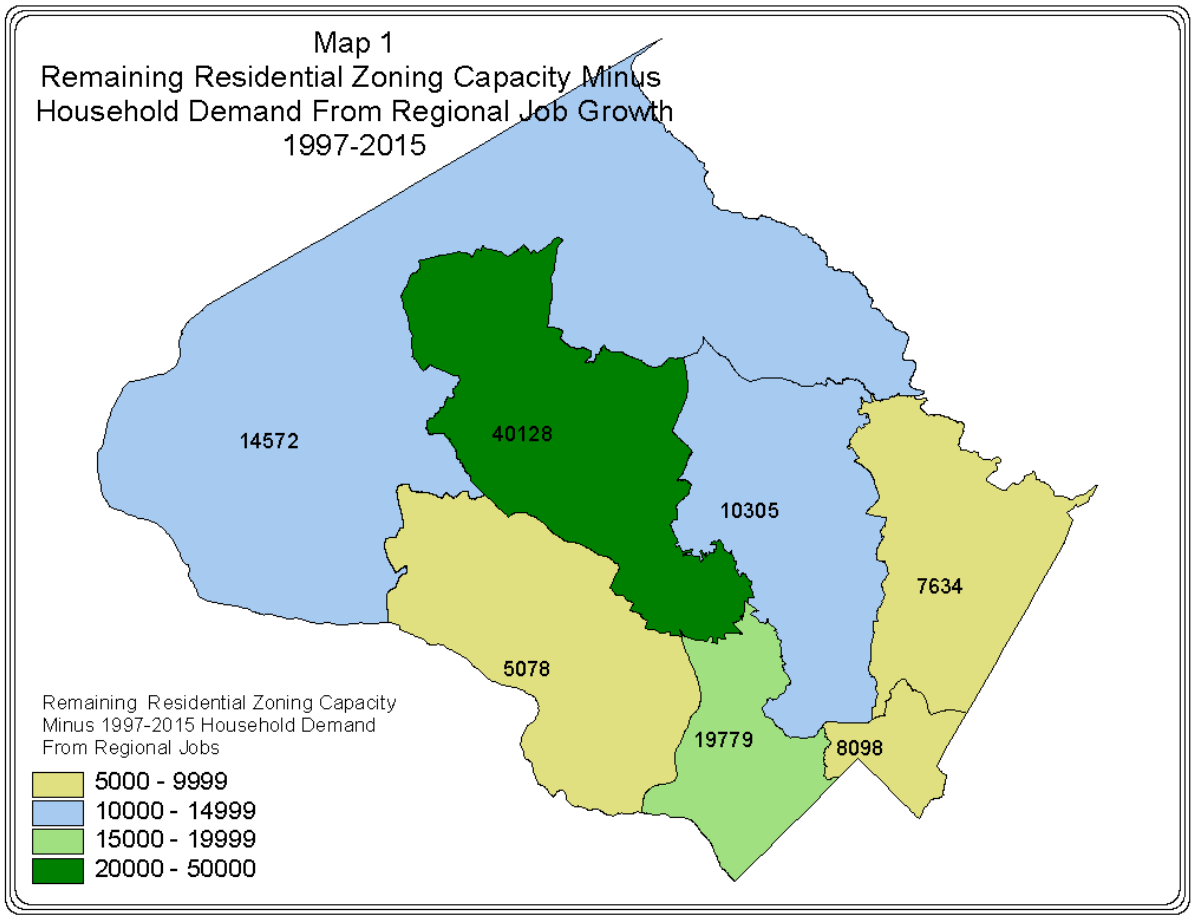
[6] The residential zoning capacity was calculated in a project conducted in 1992. This project was never completed so these numbers are based on our best estimates but are not definitive. In areas where subsequent forecasts have exceeded the 1992 estimates based on approved projects or changes in zoning those estimates have been raised. A new study of residential zoning capacity is scheduled for completion in 2004. The capacity assumptions include: development of residentially zoned country clubs and build out of committed residentially zoned land to its capacity.

[7] Note: Pipeline data does not fit exactly into community based planning areas, so the sub-county pipeline data in this table is approximate.

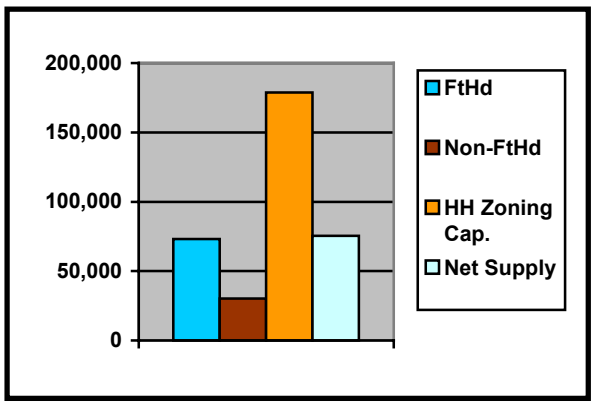
This rate is multiplied by the forecasted job growth for each area from 1997-2015 to yield FTHD for each CAZ needed to fill these jobs at 1997 rates.

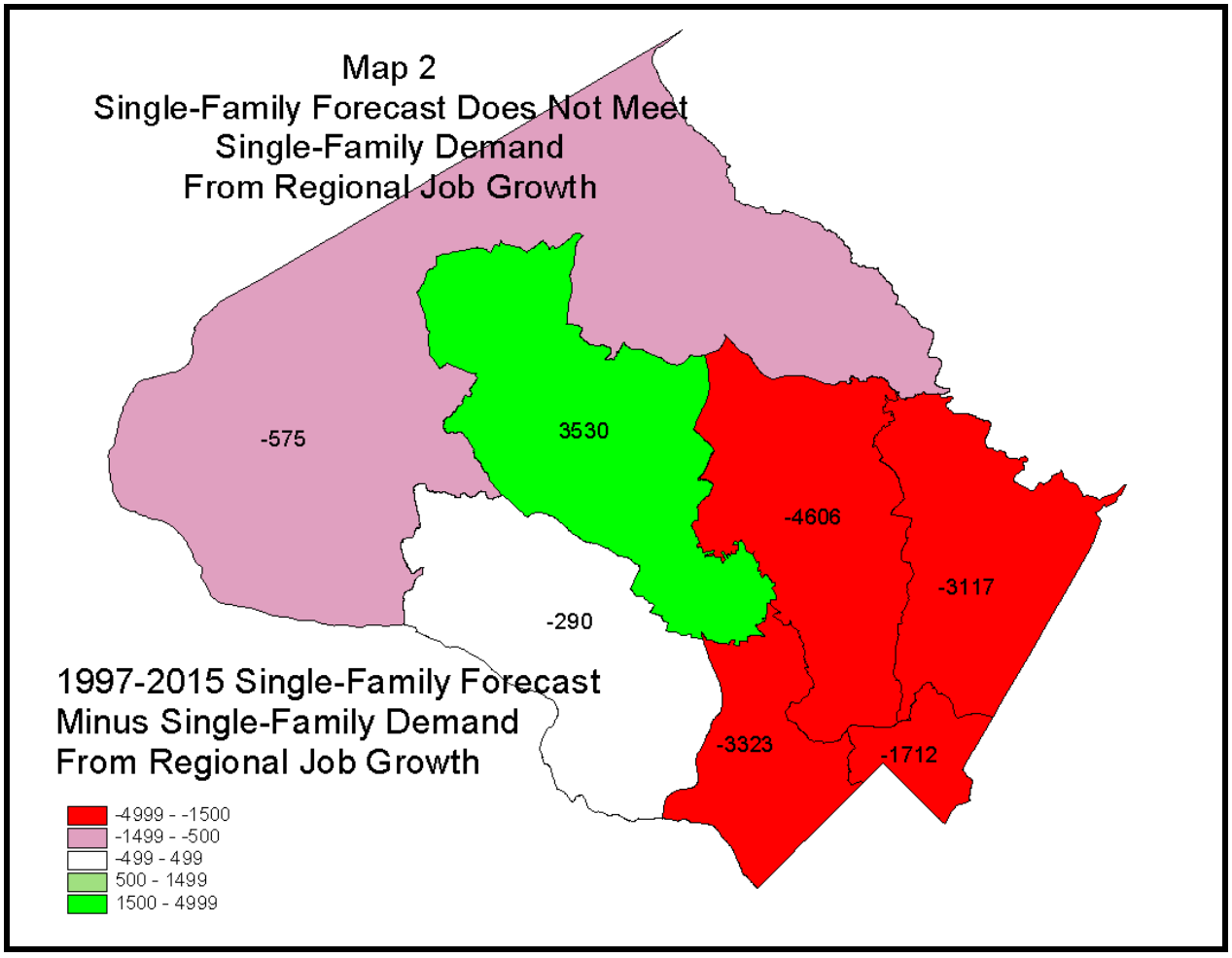
- Sum the CAZ results into Community Based Planning Areas and map them.
- Although this procedure is not a forecast of households it does indicate the number and type of households whose heads could fill forecasted jobs if 1997 rates continued to prevail.

The summary results of this analysis are shown on three maps. The households needed to fill added jobs are compared to the forecast for households and the capacity of residential zoning.

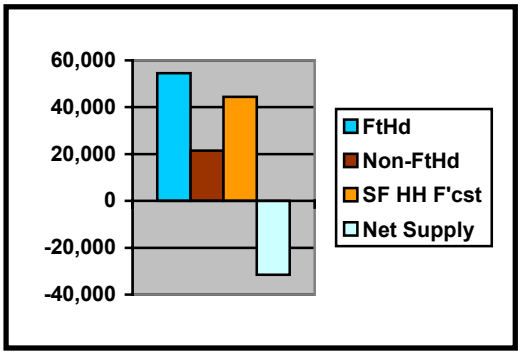



- The total remaining residential zoning capacity provides ample capacity to accommodate households required to fill regional job growth from 1997 to 2015.
- The total capacity for households exceeds that needed to fill the jobs by 106,000.
- Subtracting the increase of about 30,000 retired heads still leaves nearly 76,000 units of capacity.

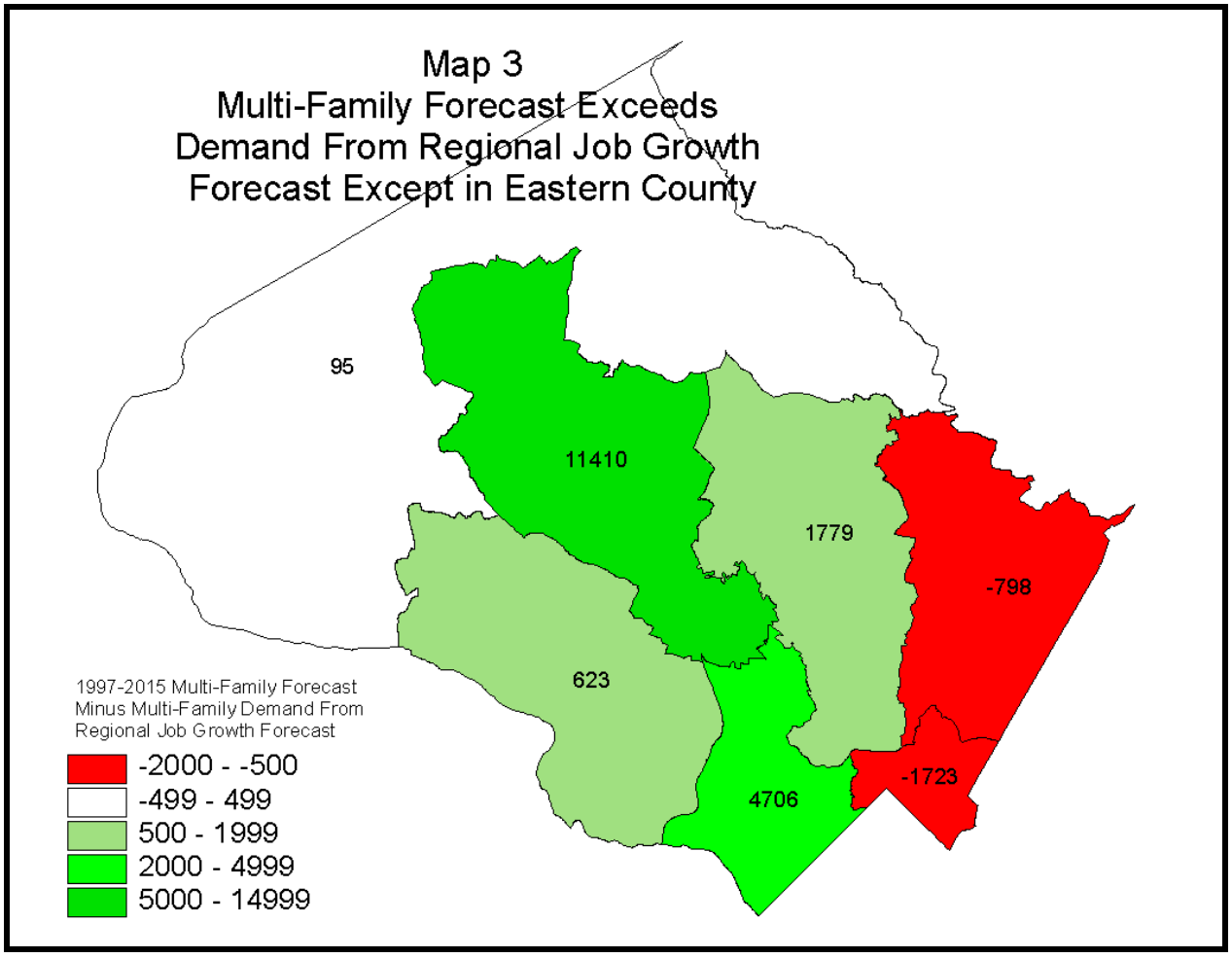




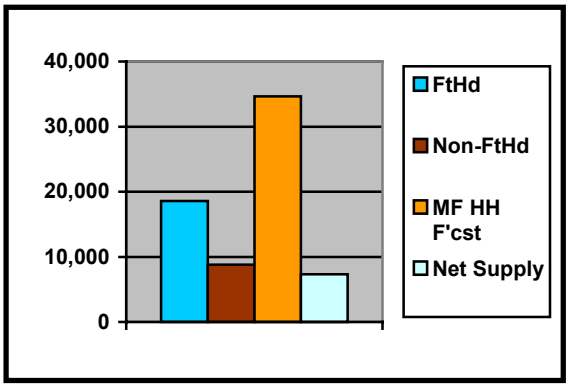

- Forecasted households will not accommodate all the demand for single-family units from job growth in the region except in the I-270 corridor.
- The total difference for the County is a deficit of 10,093 households.
- The increase of 21,400 retired heads in single-family houses increases this deficit to over 31,500 units.




- This deficit may already be evident. From 1989 to 1999 the share of households in the middle-income groups from $50,000 to $100,000 declined slightly. During this time there was a net out-migration of 34,000 people from Montgomery to Frederick and Howard Counties. Although there are multiple causes of this out-migration, lack of enough single-family housing, appropriate for middle and upper-middle income households, is likely one of them.




- The forecasted multi-family households accommodate the demand from multi-family heads filling regional job growth except in the Eastern County and Silver Spring/ Takoma Park CBPAs.
- The total difference for the County is a surplus of 16,100 forecasted multi-family households over what would be needed to fill regional jobs at 1997 rates. An additional 8,800 units would be needed to accommodate retired heads leaving a surplus of about 7,300 multi-family units in the forecast.



# THE JOBS and HOUSING BALANCE APPROACH

## BALANCED JOB AND HOUSING GROWTH

Another way to look at the balance of job and housing growth during the study period asks what would housing growth be if each Community Based Planning Area added enough housing units to provide the workers needed to fill the job growth in that area? This models an approach aimed at reducing work trip travel demand by promoting enough housing growth to balance job growth on a sub-County level. This approach recognizes that many workers commute to jobs from housing in other areas and commute from housing in an area to jobs in other areas but does not include these factors in its calculations. The housing demand in this approach is calculated strictly from the number of jobs forecasted for each area divided by the average number of jobs held per household in the same area. It is a hypothetical exercise to see how many housing units would be needed if matching the number of workers needed to fill local job growth was the only criterion.

### Findings

- Countywide, the household growth forecast cannot keep up with providing 100 percent of the new workers implied by the job growth forecast and the overall deficit is 26,400 housing units for the 18-year period or nearly 1,500 units per year.
- The areas that are more residential in character and have traditionally provided workers for other areas show modest surpluses of forecasted housing units compared to the housing needed to produce enough workers for jobs in those areas (see graph below).
- Employment centers that have traditionally provided jobs for workers from other areas show deficits of forecasted housing units compared to the housing needed to produce enough workers for job growth in those areas.

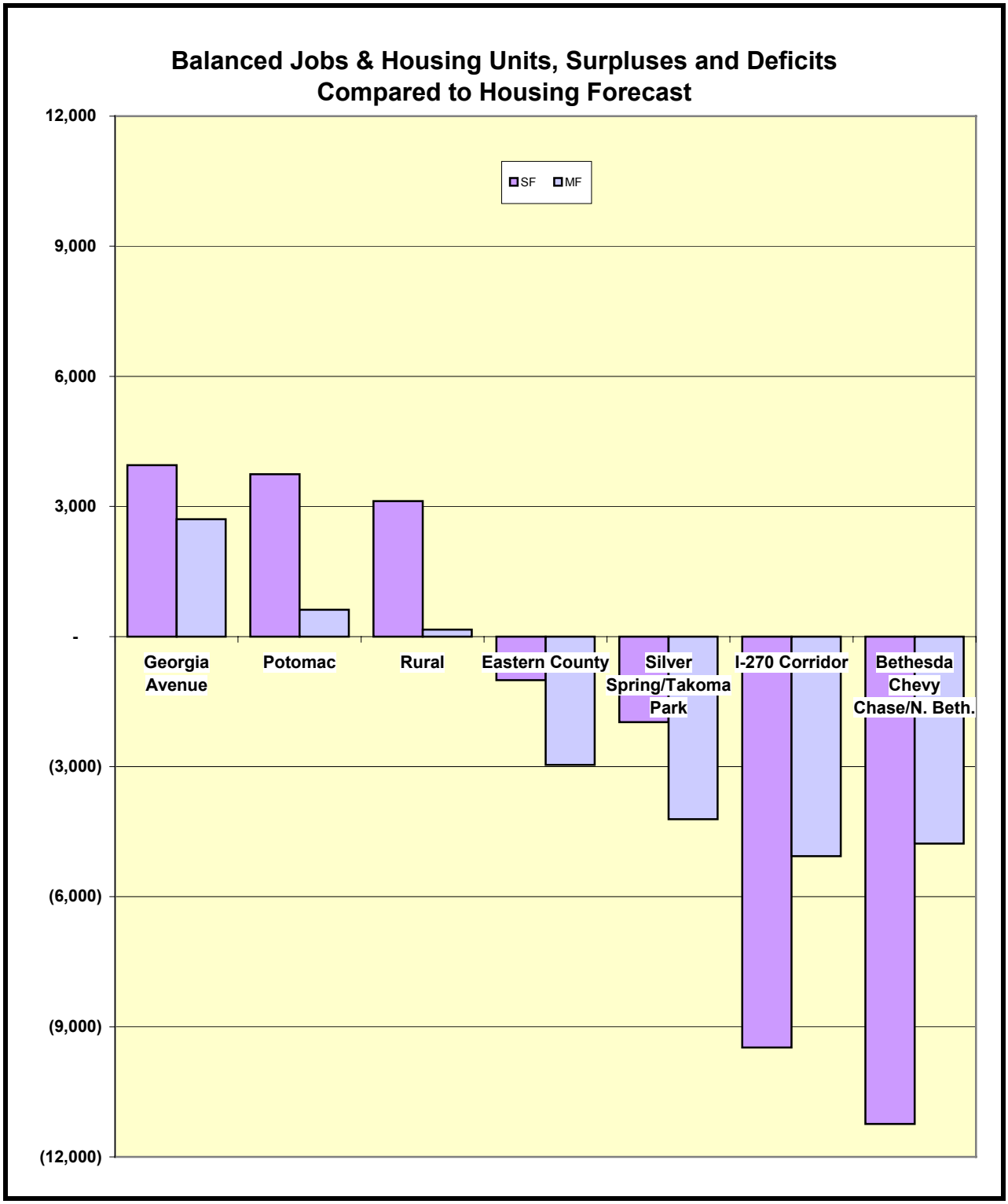
### Implications

- The balanced projection, based primarily on reducing travel demand, produces a much different result than the forecast, which takes into account the pipeline of approved subdivisions and available land.
- The mismatch between the forecast of households and the number of households needed to provide workers for jobs in the area helps show the complexity of the location decisions for many households. Short commuting time is only one among many factors that are weighed when people choose where to live.

### Methodology

The job forecast for each area is split into single-family (SF) and multi-family (MF) portions based on the split of 1997 resident households. Adjustments are made for workers per household and jobs per worker by SF and MF to get jobs held per household by area. The number of jobs forecasted is divided by jobs per household to get the estimated households needed to fill the forecasted jobs. These balanced household estimates are compared to the SF and MF households forecasted for each area. The forecast is our best estimate of the housing units that are apt to be built given

the pipeline of remaining approved units, market strength, available land, and existing policies.



# BACKGROUND

This section presents information related to the connection between jobs and households but not directly included in the calculations of either approach.

## JOBS and LABOR FORCE

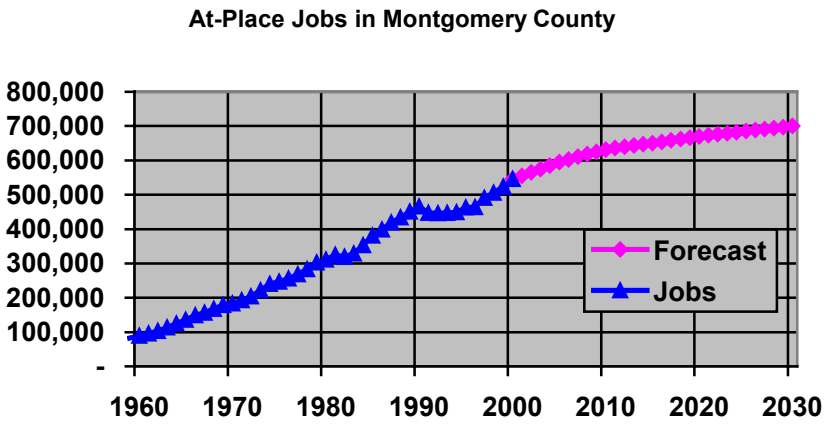
### As a Source of Income

Jobs provide the main source of income for households. Over 87 percent of households had employment earnings, including from self-employment; these provided 82.2 percent of total Montgomery County personal income in 1999. Investment income in the form of dividends, interest, and net rent provided another 8.5 percent. Retirement and social security income are received by 17.3 percent and 18.7 percent respectively and provided the other 8 percent of total income. Public assistance and supplemental security income totaled only 0.17 percent of total personal income in the County.[8]

### History of Job Growth

Over the past four decades Montgomery County has grown along with the Washington, D.C. region and has emerged from being mainly a bedroom community supplying workers for the downtown Washington business district in the 1950s to being a major suburban employment center in the 1980s and beyond. From 1960 to 2000 the number of jobs in the County grew by 512 percent, from 89,000 to 545,000 while jobs in the region grew 219 percent from 819,000 to 2,614,000.

### Employment Forecasts




Forecasts of jobs in Montgomery County are based upon a historical data series extending back to 1959. This series uses the U.S. Census' County Business Patterns coverage of private sector wage and salary employment with estimates of self-employed and government jobs added. Our forecasts start with the long-term growth trend and taper it off to account for increasing constraints. As our economy has matured, our annual rate of employment growth as a percent of existing employment has tended to decline. Future job growth in the County will exhibit a continuation of these declines as it is constrained by limited resources of land, labor force, and infrastructure capacity. At the present time there is an adequate total land area, zoned for job use, to accommodate the long-term growth rate for well over two decades. The land constraint comes mainly in the form of limited choices of easy to develop parcels.

[8] 2000 U.S. Census (Summary File 3)

Easier-to-develop, large, green-field sites are largely developed, leaving smaller parcels with more constraints or pieces that need assembly or redevelopment. These factors constrain job site development through higher costs. There will also be increasing competition from the next tier of counties in the Baltimore-Washington area, particularly as their labor forces grow and their economies mature into employment centers. We expect Montgomery County's share of regional employment to decline during the forecast period because of our declining job growth and more rapid growth in the next tier counties. Infrastructure capacity constraints are mainly in the form of limitations on transportation capacity although school capacity is emerging as an issue in some areas. New employment and residential development enters the pipeline of approved development by passing tests for adequacy of roads and other public facilities. There are currently about 130,000 jobs in the pipeline of approved employment development, which will accommodate forecasted growth for about the next 20 years. The supply of land for residential development is more constrained than the supply of land for jobs. This shifts more of the burden of job growth onto transportation as it becomes difficult to find suitable housing near jobs.

Regionally, jobs are forecasted to grow by nearly one million or 37 percent from 1997-2015. Montgomery County householders, holding jobs throughout the region add to the demand for housing in the County.

**Labor Force Growth**

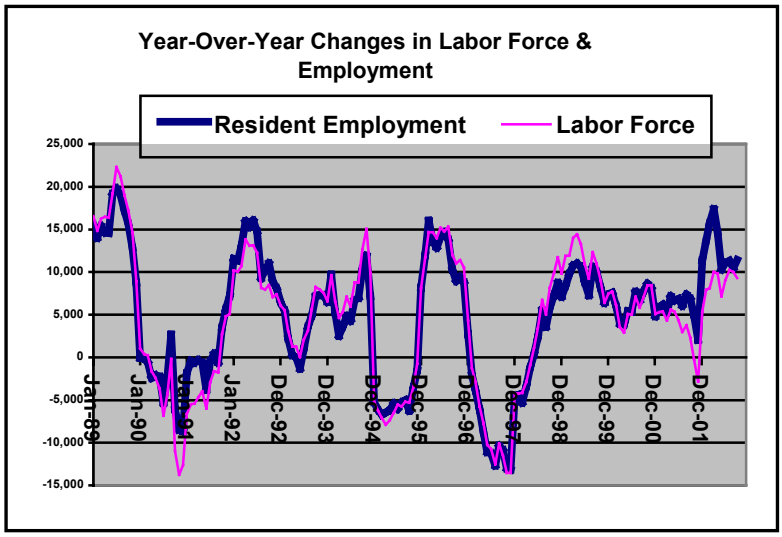
The slowing growth of the labor force will be a constraint on job growth through much of the nation. As the baby boomers, born from 1946-1964, retire over the next thirty years a large cohort will leave the workforce. However, areas like Montgomery County with high levels of foreign immigration will have moderate growth in their labor forces compared to declines in other areas. This table shows the projected growth of the County labor force through 2025. The forecasted jobs exceed the size of the labor force but with an allowance of about ten-percent for multiple job holding, there is an almost perfect balance between projected workers and forecasted jobs. The percentage of workers over the age of 54 increases throughout this period from 15.5 percent in 2000 to 19.5 percent in 2015 to 20.3 percent in 2025.

Montgomery County Labor Force Estimates[9]

| Age | 2000 | 2005 | 2010 | **2015** | 2020 | 2025 |
|---|---|---|---|---|---|---|
| 15 to 19 | 21,408 | 23,386 | 23,879 | **24,427** | 25,062 | 25,516 |
| 20 to 24 | 33,037 | 35,588 | 38,456 | **39,376** | 39,845 | 40,447 |
| 25 to 29 | 47,912 | 51,043 | 54,800 | **57,565** | 58,357 | 58,403 |
| 30 to 34 | 57,238 | 62,120 | 66,173 | **69,234** | 70,496 | 70,528 |
| 35 to 39 | 65,343 | 65,842 | 69,875 | **72,812** | 74,170 | 74,432 |
| 40 to 44 | 64,619 | 65,249 | 66,983 | **70,145** | 71,765 | 72,399 |
| 45 to 49 | 61,020 | 63,148 | 64,433 | **66,222** | 68,176 | 69,226 |
| 50 to 54 | 52,995 | 59,540 | 61,469 | **62,862** | 63,999 | 65,485 |
| 55 to 59 | 35,751 | 42,916 | 47,605 | **49,303** | 50,143 | 51,041 |
| 60 to 64 | 19,880 | 25,391 | 29,931 | **33,098** | 34,102 | 34,780 |
| 65 to 69 | 9,819 | 11,757 | 14,888 | **17,445** | 19,214 | 19,868 |
| 70 to 74 | 5,147 | 5,482 | 6,461 | **7,994** | 9,168 | 10,030 |
| 75 to 79 | 1,690 | 1,725 | 1,771 | **1,994** | 2,341 | 2,610 |
| 80 to 84 | 1,064 | 1,196 | 1,224 | **1,259** | 1,393 | 1,612 |
| 85+ | 781 | 894 | 1,014 | **1,085** | 1,125 | 1,202 |
| Total Labor Force | 477,704 | 515,277 | 548,962 | **574,821** | 589,356 | 597,579 |

[9] Population by age & sex from round 6.3 draft forecast (October 2002) are multiplied by age and sex specific labor force participation rates from the Maryland Office of Planning, (October 2002). (2025 population controlled to 1,070,000)

## Elasticity of the Labor Supply




The resident labor force in Montgomery County has shown great elasticity, expanding when employment is growing and contracting when employment is shrinking. This implies that there are a number of workers on the fringe of the labor force that take jobs when they are easily available and drop out or migrate to other jurisdictions when jobs become hard to find here. This graph shows how closely changes in the labor force and resident employment[10] track each other through business cycles. Considering the swings in employment change of up to 35,000 jobs over the past thirteen years, changes in labor force and employment have tracked very closely with each other. This elasticity indicates the presence of a reserve labor force, particularly for lower skilled jobs, during periods of strong employment growth.

**Jobs to employees**

County residents fill 60 to 65 percent of jobs in Montgomery County. The rest come from households elsewhere in the greater Washington-Baltimore region and beyond. This table shows commuting flows from the resident jurisdictions for employees in Montgomery County from the 1980 and 1990 U.S. Censuses. The Census Bureau is expected to release 2000 Census commuter flow data in the summer of 2003.

**1980 and 1990 Census Commuting Flows**

| To Montgomery County from: | 1980 | % | 1990 | % |
|---|---|---|---|---|
| Within Montgomery County | 174,178 | 61.3% | 251,949 | 64.2% |
| Outside Montgomery County | 109,743 | 38.7% | 140,209 | 35.8% |
| Washington, D.C. | 18,604 | 6.6% | 20,487 | 5.2% |
| Prince George's County | 29,943 | 10.5% | 40,560 | 10.3% |
| Charles County | 618 | 0.2% | 1,078 | 0.3% |
| Calvert County | 548 | 0.2% | 568 | 0.1% |
| Frederick County | 11,734 | 4.1% | 18,887 | 4.8% |
| Baltimore MSA | 13,031 | 4.6% | 23,448 | 6.0% |
| Northern Virginia | 18,243 | 6.4% | 24,612 | 6.3% |
| All Other | 17,022 | 6.0% | 10,569 | 2.7% |
| Total | 283,921 | 100.0% | 392,158 | 100.0% |

Source: *Commuting Patterns in the Washington Metropolitan Region* Metropolitan Washington Council of Governments, December 1992

In 2000, 267,100 out of 455,331 or 58.66% of Montgomery County resident workers commuted to jobs in their own county. This is virtually identical to the 58.63% who commuted within the County in 1990.

[10] Resident employment equals labor force plus unemployment. The labor force is all persons 16 years of age or older who are employed or looking for work.

**Non-Montgomery County Workers**

In 1997, it is estimated that workers commuting from outside the County filled about 40 percent of the jobs in the County. Do workers in Montgomery County jobs who commute from outside the County represent a pool of people that would prefer to live in the County but feel that they cannot afford to live here? Undoubtedly some incommuters fall into this category but as a group, workers commuting across jurisdictional boundaries make more money than workers that live and work in the same jurisdiction.[11] Thus many who commute from outside the County do so for reasons other than not being able to afford to live here. This report will not speculate on all the reasons some workers prefer to commute into the County rather than live here but just note that the percentage of these workers is quite stable over time. More data on residents of other jurisdictions who work here will be available from the US Census 2000 CTPP tabulations, scheduled to be released in the summer of 2003.

**Distribution of Jobs Among Residents and Non-Residents 1997 and 2015***

| | 1997 | % | 2015* | Change |
|---|---|---|---|---|
| All MC at-place Jobs | 491,032 | 100.0% | 660,000 | 168,968 |
| Held by residents | 293,146 | 59.7% | 394,020 | 100,874 |
| Fulltime Heads | 144,363 | 29.4% | 194,040 | 49,677 |
| Held by non-residents | 197,886 | 40.3% | 265,980 | 68,094 |
| All MC resident employees | 464,075 | 89.9% | 583,150 | 119,075 |
| Multiple job holding | 46,872 | 10.1% | 58,899 | 12,027 |
| Total jobs held by residents | 510,947 | 100.0% | 642,049 | 131,102 |
| Jobs in MC | 296,134 | 58.0% | 372,118 | 75,984 |
| Fulltime Heads | 130,810 | 25.6% | 164,374 | 33,564 |
| Jobs Outside MC | 214,813 | 42.0% | 269,931 | 55,118 |
| Fulltime Heads | 121,388 | 23.8% | 152,535 | 31,147 |

***at 1997 rates**

**Low-, Intermediate-, and High-Wage Jobs**

Much of the data analysis in this report distinguishes among workers characteristics by their wage or salary level. The report separates workers into three wage levels:

- Low-wage, under $30,000 in 1996, equivalent to under $34,200 in July 2002 dollars after compensating for the 14 percent change in the consumer price index between July 1996 and July 2002;
- Intermediate-wage, between $30,000 and $50,000 in 1996, equivalent to between $34,200 and $57,000 in July 2002 dollars;
- High-wage, above $50,000 in 1996, equivalent to above $57,000 in July 2002 dollars.

The demand from regional job growth in Montgomery County at 1997 rates breaks down into the following percentages of fulltime employed heads by wage level: low-wage 15.6 percent; intermediate-wage 26.2 percent; and high-wage 58.2 percent. This

[11] *Economic Forces That Shape Montgomery County,* October 1996, page 88. (From 1990 US Census PUMS data.)

is skewed more toward high-wage workers, compared to 49.8 percent in 1997, because of where the jobs are forecast to grow and the wages of the workers that fill jobs in those areas.

## Full- and Part-time Workers by Wages Levels, 1997

| Wage Level | Low | Intermediate | High | Total |
|---|---|---|---|---|
| **Heads** | | | | |
| **Full-time** | 45,453 | 70,937 | 115,399 | 231,790 |
| **Part-time** | 15,589 | 3,761 | 2,105 | 21,455 |
| **Non-Heads** | | | | |
| **Full-time** | 62,662 | 49,367 | 38,941 | 150,970 |
| **Part-time** | 53,152 | 5,211 | 1,497 | 59,860 |

**Characteristics of employees**

- About 10 percent of County resident employees hold multiple jobs. The rate for heads is slightly higher than for other members of the household, with heads holding, on average, 1.106 jobs compared to 1.101 for all household members. Only those not related to others in the household have a higher rate. Lower wage employees are more than twice as likely to hold multiple jobs than high-wage employees, 30 percent of low-wage fulltime householders have more than one job compared to 23 percent for intermediate- and 14 percent of high-wage heads.

- Fifty-eight percent of resident employees work in the County. The percentage is lower for heads, which are more apt to commute out of the County for work, particularly to the District of Columbia. For fulltime heads, 51.5 percent work in the County and 48.5 percent work elsewhere. Among low-wage fulltime household heads, the percentage working in the County is much higher, 63 percent versus 37 percent traveling out to work. Fifty-seven percent of the intermediate-wage group works in the County. For high-wage heads the percentage reverses with 44 percent working within the County and 56 percent working outside the County. This helps show the dependence of the County's affluence on jobs in the District.

- Among households where one or more jobs are held, 99.7 percent of householders are employed and 91.5 percent are employed full-time. Households with jobs have an average of 1.96 resident-held jobs per household.

- Sixteen percent (50,789 of 311,137) of all households have no jobholders. Of these householders, 85 percent are retired, 5 percent are unemployed and looking for work, most of the rest are homemakers.

**Low-wage workers**

Since Montgomery is one of the most affluent counties in the nation, there is concern about the status of low-wage earners and their well-being. Below are some facts about

lower wage fulltime employed household heads (wages below $30,000 in 1996, equivalent to $34,200 in 2002).

- Only 35 percent of low-wage earners are household heads compared to 58 percent of intermediate and 74 percent of high-wage earners.

- The median 1996 household income for fulltime low-wage heads is $36,456 compared to $53,568 for intermediate- and $111,746 for high-wage heads.

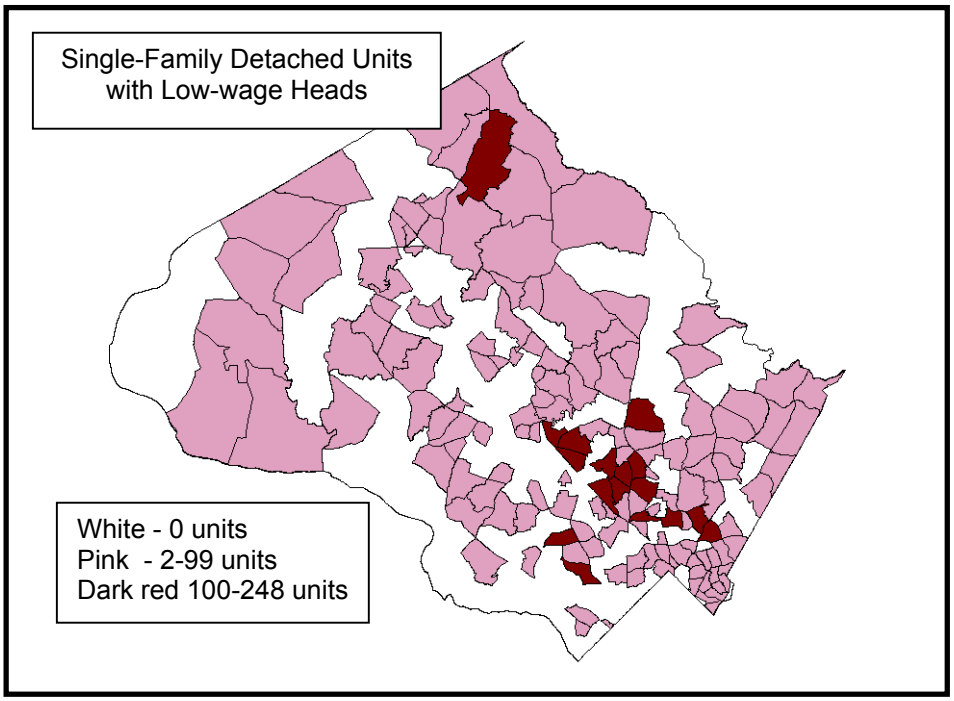
- Low-wage earner fulltime heads have a median age of 38.6 compared to 39.3 for intermediate and 45.7 for high-wage heads.

- There is a high correlation between education and income. The median education level for low-wage heads is a two-year associates or trade school degree, compared to a bachelors degree for intermediate-wage earners and a masters degree for high-wage householders. One-in-seven high-wage heads have a doctoral degree compared to one in 25 low-wage heads. One-in-sixteen low-wage heads are currently enrolled in college; nearly half of those are in graduate school.

- As would be expected from their younger ages, low-wage fulltime heads have been in their current residence for less time on average (5 years, 9 months) than intermediate- (6 years, 4 months) and high-wage heads (8 years, 10 months).

- The average number of persons in households with fulltime low-wage heads (2.68) is slightly below the average for all wage levels (2.78)

- Twenty-eight percent of low-wage householders live in single-family detached houses compared to 38 percent of intermediate- and 71 percent of high-wage heads. Forty-five percent of low-wage heads live in garden apartments compared to 28 percent of intermediate- and only seven percent of high- wage heads. This map shows the location of low-wage fulltime heads in



single-family detached homes. The largest concentrations are arrayed along Veirs Mill Road and University Blvd. in Twinbrook, Aspen Hill, Wheaton and Four Corners. The dark color indicates community analysis zones with 100-248 of these households. The light color indicates 1-99 units and the white areas have none of these units. The fact that more than one-quarter of low-wage heads live in single-family detached housing does not mean that they could afford to buy those houses today.

- Low-wage workers living in Montgomery County have shorter commutes, particularly for those that are not fulltime workers and household heads. Low-wage jobs tend to be less specialized than high-wage jobs and therefore more widely distributed. This is indicated by shorter commuting times for lower-wage workers whose median time is 20 minutes versus 30 minutes for intermediate and high-wage employees. Despite anecdotes about low-wage workers with very long commutes, our data show that, typically, commuting time increases with wages, even from the lowest wage levels. Workers with wages below $5,000 per year had median commuting times of 15 minutes and those with wages between $5,000 and $15,000 commuted a median of 20 minutes. Workers will commute farther for higher wages. For fulltime heads this relationship evens out and all wage levels have median commuting times of 30 minutes. Still, more high-wage heads have longer commutes. Thirty-five percent of low-wage fulltime heads have commutes of more than 30 minutes compared to 39 percent of intermediate-wage and 46 percent of high-wage workers.

- The number of employees per household is virtually identical across wage levels. Households with low-wage heads have an average of 1.79 employees compared to 1.78 in high-wage households.

# HOUSING and HOUSEHOLDS

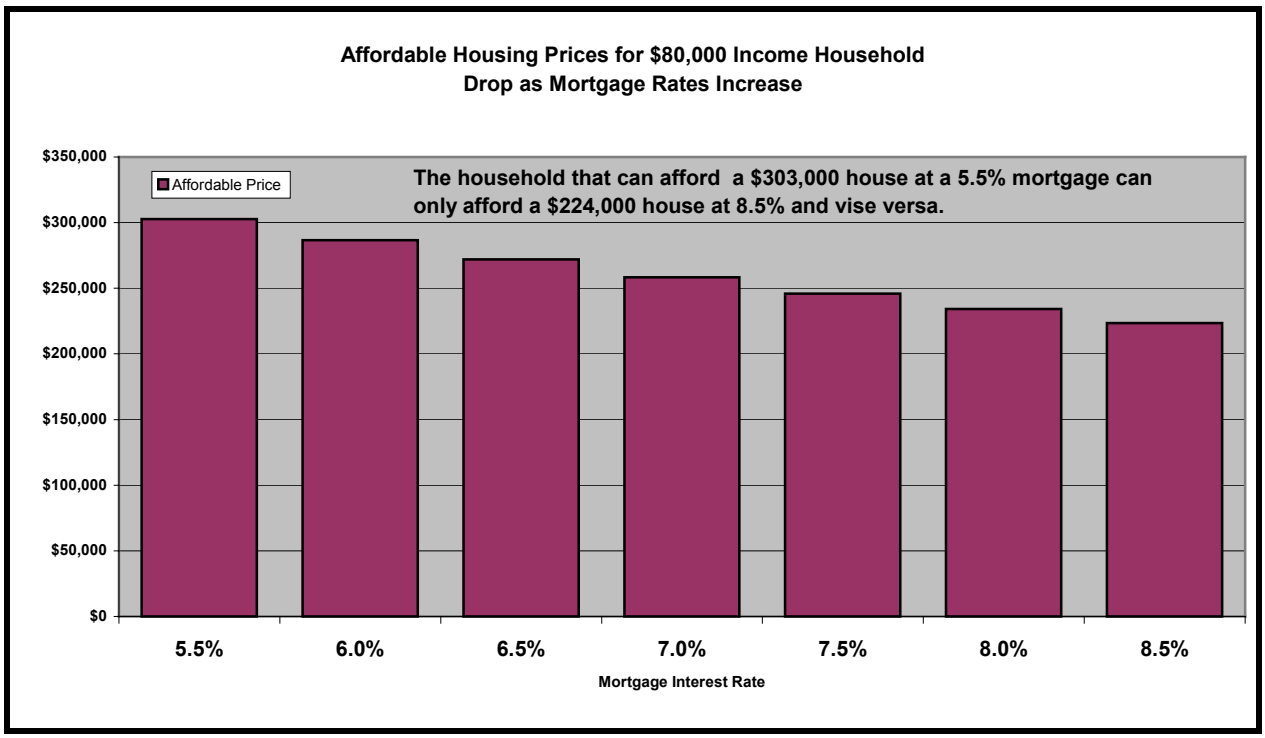
### Affordable Housing and the Economy

When a strong economy results in higher incomes, the prices of houses in attractive neighborhoods are bid up. This creates a fundamental tension between availability of affordable housing and the attractiveness of neighborhoods. Housing in attractive areas tends to appreciate over long periods of time. To the extent that neighborhoods in the County remain attractive places to live and the economy remains strong, housing in the County will continue to be relatively expensive. Employees newly recruited to jobs in the County from areas with less expensive housing such as the South and Midwest often suffer “sticker shock” when they shop for housing here. But housing in several areas that are competitive with the County’s high technology industries, such as Silicon Valley and Boston, is much more expensive than in Montgomery County. To match a $100,000 income in Rockville would take $139,000 in Boston and $154,000 in San Jose.[12]

[12] www.homefair.com, “Salary Calculator®”

## Target for Affordable Housing

A reasonable target for affordable housing, used by a number of jurisdictions around the country is ten percent of all new completions, including both MPDUs and specialized affordable housing built by government, nonprofit organizations, and the public sector. The County's need for housing to serve lower income households probably exceeds ten percent. However, older, more modest market rate stock is expected to absorb some of this need.




## Affordability Calculations

Current low interest rates, about 6 percent for 30-year fixed mortgages, mean that households can afford houses selling for three-and-a-half times their income.[13] As the above graph shows, affordable housing prices can vary dramatically with interest rates. Mortgage interest rates are now near a 40-year low. When rates increase, as they will, the price affordable to a household with a given income will fall and some recent purchasers will find that they cannot sell their house for the price they paid for it. The affordability of housing is impossible to forecast, depending as it does on the interaction of incomes, interest rates, mortgage lending terms, and housing prices. Historically, housing prices have tended to appreciate more than depreciate although there have been periods of depreciation following rapid inflation in housing prices. The 2000 U.S. Census showed that housing ownership costs exceeded 35 percent of household income for 15 percent County owner occupied households, up from 14 percent in 1990.

## Middle Class Out-Migration

The following table and graph show out-migration of and declines in the share of middle-income households over the last decade. This information is consistent with the

[13] Assumptions: 30-year fixed rate mortgage @ 6.125%, 10% down, PITI=28% of income

staffs' analysis, showing that the supply of single-family housing is not adequate to meet demand in the 1997-2015 period.

The table shows that in the eleven years between 1990 and 2000 there was net out-migration of over 43,662 people, equivalent to about 16,400 average size households, from Montgomery to four next-tier counties in Maryland. As shown in the table below, most of this outflow was to Frederick County followed by Howard County. These changes may reflect the tight availability of single-family houses in the County and the perception that similar houses are lower priced in the next tier of counties beyond Montgomery County. When the out-migrants work in Montgomery, they are probably trading off longer commutes for better housing values. The County's small supply of newer detached houses, affordable to middle income households, may encourage our workers to buy in areas beyond the County's borders. The out-migrants from Montgomery County had virtually the same median adjusted gross incomes as in-migrants to Frederick County ($29,948 and $29,845 respectively in 1995-1999). A disturbing indicator is that the out- migrants' incomes were thirteen percent higher than the in-migrants. Note that the out-migration was at a faster pace in the early 1990s during the economic recession and slow recovery.

**Montgomery County Net Out-migration**

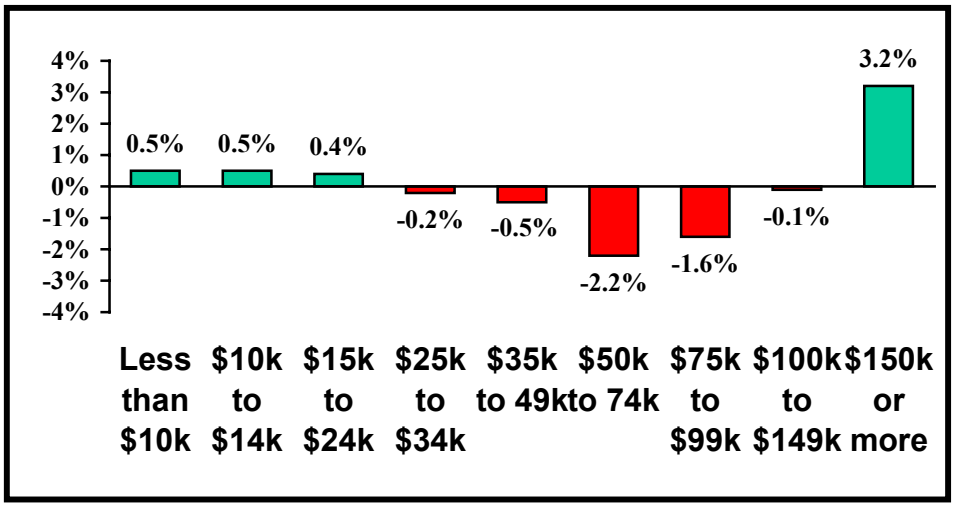
| To: | 1990-1995 | 1996-2000 | 1990-2000 |
|---|---|---|---|
| **Frederick** | 15,069 | 8,783 | 23,852 |
| **Howard** | 6,394 | 3,869 | 10,263 |
| **Anne Arundel** | 2,859 | 2,174 | 5,033 |
| **Carroll** | 3,031 | 1,483 | 4,514 |
| **Sum 4 Counties** | 27,353 | 16,309 | 43,662 |

# Gain in Upper Income Households Tempered by Shrinking Middle Brackets

Household income brackets are adjusted for inflation to 1999 dollars

**Change in % of households, 1989 to 1999**

From 1989-1999 the income groups from $50,000 to $99,999 share of households declined 3.8 percent. The low-income groups of less than $25,000 increased 1.4% and the highest income group, with incomes above $150,000 increased 3.2 percent.




**Jobs/Housing Ratios**

The ratio of jobs to households (J/H) is an indicator of the degree to which an area is an urbanizing employment center or a bedroom community. The table below shows that in 1997 two of the seven community based planning areas were employment centers with two or more jobs for every household: Bethesda-Chevy Chase/North Bethesda and the I-270 Corridor. The Silver Spring/Takoma Park area, with a J/H of 1.48 was nearly balanced with similar numbers of workers and jobs. By 2015 the J/H ratios increase slightly and the same areas are employment centers as in 1997.

| Community Based Planning Area | 1997 Households | 1997 Jobs | 1997 J/H | 2015 Households | 2015 Jobs | 2015 J/H |
|---|---|---|---|---|---|---|
| Bethesda Chevy Chase/ North Bethesda | 52,672 | 168,035 | 3.19 | 63,417 | 203,419 | 3.21 |
| Eastern County | 35,828 | 32,027 | 0.89 | 39,948 | 44,440 | 1.11 |
| Georgia Avenue | 64,714 | 52,231 | 0.81 | 74,136 | 60,839 | 0.82 |
| I-270 Corridor | 84,075 | 173,977 | 2.07 | 125,082 | 261,077 | 2.09 |
| Potomac | 25,623 | 10,544 | 0.41 | 32,581 | 17,703 | 0.54 |
| Rural | 11,327 | 5,127 | 0.45 | 15,031 | 6,652 | 0.44 |
| Silver Spring/Takoma Park | 36,663 | 54,385 | 1.48 | 39,805 | 65,870 | 1.65 |
| County Total | 310,902 | 496,326 | 1.60 | 390,000 | 660,000 | 1.69 |