

City's Forecasting Methodology

Population, Household and Employment Forecast for the City of Rockville:

Rockville's Department of Community Planning and Development Services prepares Rockville's forecasts for city employment, population and households. Rockville's forecasts are done as part of Cooperative Forecasting, a process by which the Metropolitan Washington Council of Governments (COG) coordinates forecasts by local governments throughout the COG region.¹ The COG region can be seen in the map, below.



This report presents a summary of the process and results for what is known as “Round 8,” which is the effort conducted during 2009 and 2010. Round 8 provides forecasts of population, housing and employment for the City of Rockville, Montgomery County, and the entire COG region through 2040.

¹ The jurisdictions included in the Cooperative Forecasts for the region are: Washington, DC; the Virginia Counties of Fairfax, Arlington, Loudoun, Prince William, and Stafford; the Virginia Cities of Alexandria, Falls Church, Fairfax, Manassas and Manassas Park; the Maryland Counties of Montgomery, Prince George's, Calvert, Charles and Frederick. The City of Rockville provides its forecasts to Montgomery County, which then includes Rockville's totals in its overall forecasts.

The Cooperative Forecasting Process

The forecasts presented in this report were produced in cooperation with other local governments as a part of a regional effort coordinated by COG. This 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 the 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 monthly to discuss methodologies and assumptions. This committee is actually a subcommittee to the COG Planning Directors Technical Advisory Committee. The cooperative forecasts are a major component of COG’s work, and the forecasts are used by public and private entities for various purposes.

For every new forecast round, COG produces regional employment, household, and population forecasts from an updated regional econometric and demographic model. COG member jurisdictions produce forecasts for their own areas by traffic zones, the smallest geographical area for which the forecasts are prepared. The jurisdictions transmit their forecasts to COG, which sums the jurisdictional forecasts and compares the jurisdictional totals to the Regional forecasts. As a control to the jurisdictional forecasts, COG requires that the sum of the jurisdictions forecast be within three percent of the COG regional forecasts. If the sum of the jurisdictional forecasts does not fall within three percent of the COG Regional Forecasts, the forecasts are reconciled. After reconciliation and adoption by various COG committees, the COG Board of Directors adopts the sum of the jurisdictional forecasts as the official COG cooperative forecasts for the region.

Major rounds of cooperative forecasts (e.g., Round 6, Round 7) generally are produced about every three to four years when new data from the US Census Bureau or other sources is available. *Minor* rounds (e.g., Round 6.1, Round 7.1) are produced annually, in which jurisdictions make adjustments to forecast series taking into account revised land use plans or pipeline projects, changes to underlying assumptions, or new data. The forecast previous to Round 8 was Round 7.2, which was adopted by the COG Board in June of 2009. The Round 7.2 forecast had a 2005 base year and forecasts were in five-year intervals through 2040. It was the first forecast to go beyond 2030.

Round 8 was conducted in 2009 and continues into 2010. A new and updated econometric/demographic model has produced the 5-year Regional control totals through 2040. This econometric model was developed with the help of John McClain, Deputy Director of the Center for Regional Analysis at George Mason University.

All COG forecasts are organized by Traffic Analysis Zones (TAZ)², because of COG's mission to assess the impacts of traffic on air quality. Prior to Round 8, COG coordinated a process to create a new set of TAZ boundaries throughout the region. Staff from CPDS and DPW's Traffic and Transportation Division provided key input to the restructured traffic zones in Rockville. Rockville now has 30 TAZs, which is an increase from the 24 that previously were in Rockville. Staff then revised Rockville's 2005 base year estimates to reflect the restructured traffic zones, to facilitate comparisons across years.

The jurisdictions, including Rockville, submitted their forecasts to COG in September/October 2009, and the reconciliation process has begun. Rockville's totals have been accepted by both Montgomery County and COG, though various COG committees and subcommittees continue to review the forecasts. Round 8 is scheduled for presentation to the COG Board of Directors in July 2010.

How the City of Rockville Forecasts are Prepared

The "Baseline"

Forecasts of population, households and employment start with "baseline" data, and then project forward based on expected development in the city. Baseline information on households and population is from Census 2000, though City staff checks the regular estimates conducted by the Census Bureau between Census years; while baseline employment data is developed in-house. Prior to Rockville's developing its Round 8 forecasts, City staff conducted an intensive effort to verify the base of households and commercial/institutional square footage in the city. Every housing unit was counted and the non-residential square feet were determined as best as possible.

Development Projections

City staff uses three types of expected development projects for the projections: 1) projects currently in progress; 2) projects approved for development by the City Council and the Planning Commission, which are known as "pipeline projections;" and 3) estimates of future development based on existing zoning, master plans, and staff assessment. In general, there is more confidence in the nearer-term projections, as they are based on "real" projects. Staff has less confidence in the longer-term projections, as they are less likely to be built on specific development projects; though it would be a mistake to conclude that no growth would occur.

²Traffic Analysis Zones (TAZ) is the smallest zones set up within jurisdictions to allow for more detailed analysis and better meet the COG transportation modeling requirements. A new zone structure, which will be usable for the next 10-15 years, was set up in 2009 to have smaller zones around existing and emerging activity centers, transit areas, regions where substantial development is anticipated, or in areas where such development has occurred. Across COG, the TAZs increased from 2,000 zones to 3,600 zones

City of Rockville’s Key Assumptions for Round 8 forecasts include:

- Projects that are approved for development by the City Council and Planning Commission, and are currently in the pipeline, will move forward, sooner or later.
- Calculations of projected uses are based on the 2008 adopted zoning ordinance. No assumption is made that zoning will change in the future.
- Uses discussed in adopted master plans, such as those for Twinbrook and Town Center, are considered as part of the forecasting process.
- Forecasting for periods of more than 15 years in the future become very speculative, as “known” or entitled projects become scarce. It would be an error, however, to assume that no growth will occur because no specific projects are known. Staff has projected moderate growth in the latter parts of the 30-year forecasting periods, under the assumption of continued demand for housing and employment in the greater Washington, DC region, limited in Rockville by the scarcity of available undeveloped land.
- Vacancy rates are used for office job calculations based on data from CoStar Group⁵ A 15% office vacancy rate is assumed in the 2005-2010 period to be consistent with the current market conditions. The average office vacancy rate in the City of Rockville was 8% based on a review of annual Costar data from 1993-2006. Therefore 8% office vacancy rate is assumed for all other periods. The current methodology does not account for retail and other vacancies for job calculations.
- For household calculations, a vacancy rate of 3.5% has attributed to the 2005 base multifamily units based on Census 2000 data. A vacancy rate of 5% is assumed for the 2005-2010 period based on the mid-2009 market conditions, and an in-house knowledge of the vacancy rates in new developments in Town Square and others in the City. For periods beyond 2010, vacancy rates are not assigned, which is consistent with the County methodology.
- It is normal for larger projects to take more than one year to be fully occupied by either the residential or non-residential occupants, after completion of the construction. Therefore, increases in jobs and population for larger projects are assigned to more than one year.
- Assumptions about average household sizes⁶, and square feet of office/commercial space per employee⁷ were made in coordination with COG to generate forecasts of people and jobs from the development forecasts.
- No change of use is anticipated for the very large Lakewood, Woodmont, or Redgate golf courses.

⁵ A private real estate company.

⁶ The average household size developed by Washington Metropolitan Council of Governments (COG) to be used for calculations is 2.095 for a multifamily unit, 2.597 for a Single Family Attached Unit, and 2.915 for a Single Family Detached Unit.

⁷ Estimates for average space per employee per square feet as developed by COG is 250 for office, 400 for retail, 450 for industrial and 500 for other uses.

Table 1 below summarizes the Round 8 estimates and forecasts of population, households and employment for the period of 2005 through 2040.

Highlights of the changes from 2005 to 2040 are as follows:

- Population is estimated to increase by 51.3 percent from 59,618 to 83,929
- Households are estimated to increase by 48.6 percent from 23,724 to 35,251
- Employment is estimated to increase by 37.6 percent from 76,597 to 105,403

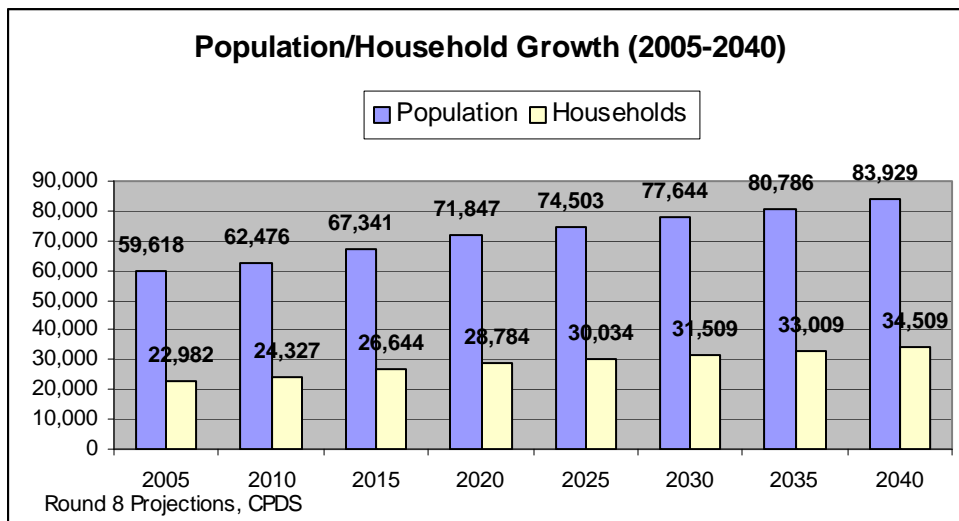
Table 1. Round 8 Forecasts- City of Rockville, Maryland

	2005	2010	2015	2020	2025	2030	2035	2040	Change 2005-2040	Percentage Change 2000-2040
Population	59,618	62,476	67,341	71,874	74,503	77,644	80,786	83,929	24,311	40.8%
Household	22,982*	24,327	26,644	28,784	30,034	31,509	33,009	34,509	11,527	50.2%
Employment	76,597	74,549	83,596	91,600	96,783	99,403	102,403	105,403	28,806	37.6%

- The detailed count of residential units for the 2005 base determined that there were 23,736 households in the City in 2005. Diminishing by the assumed 3.5% vacancy in multifamily units results in 22,982 households

Population/Household Growth:

The household and population numbers reflect planned and potential development over the forecast period. The city population is expected to grow to 83,929, an increase of 24,311 people, or 51 percent from 2005 to 2040. The city households are expected to grow to 34,509, an increase of 11,527 households or 50%. Baseline data for the population and household forecast is from 2000 census and was verified for the 2005 base after an inventory of all existing residential units.



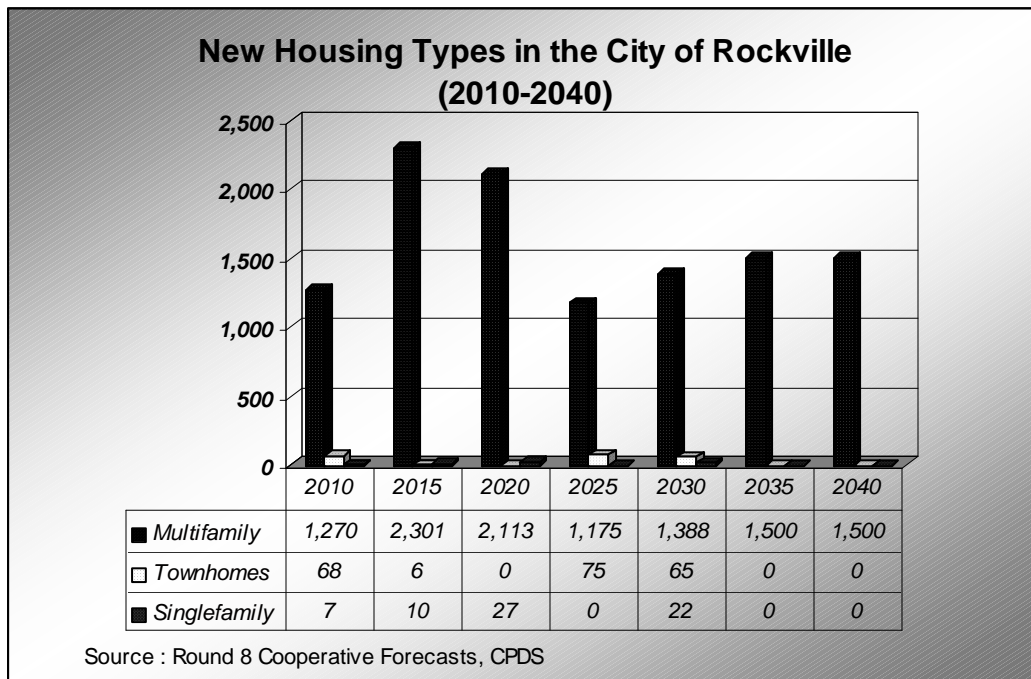
As a result of the inventory, the residential base determined to be 23,736 households in the City in 2005. After attributing a vacancy rate of 3.5% (based on Census 2000 data) to multifamily units, the number of households was 22,982 and our population number for 2005 was 59,618. As stated earlier, for the 2005-2010 periods, a vacancy rate of 5% is

assumed on multifamily units based on existing economic conditions. For periods beyond 2010, vacancy rates are not counted, which is consistent with the Montgomery County methodology.

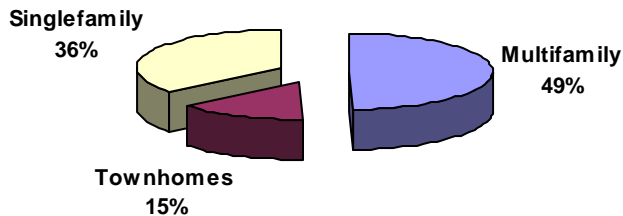
Increase in population and household numbers in 2005 and 2010 are as a result of the build-out of large developments in Town Center, King Farm and Fallsgrove. Development projects in the 2010-2020 periods include projects such as Twinbrook Station and Upper Rock, as well as such Town Center projects as Duball and KSI. King Farm continues to develop with new projects like Ingleside that primarily cater to the needs of senior citizens. Beyond 2020, new residential development in the pipeline is predominantly multifamily rentals or condominiums.

The rate of growth of households is higher than the population growth as a result of declining average household sizes over the forecast period. Household size is decreasing because the majority of development in the forecasting period is for multifamily units where the household size is smaller.

Like population, household growth is projected to increase faster in the beginning of the forecast period when rapid re-development has either occurred or approvals are in place, and slow towards the end when scarcity of development sites will reduce opportunities for growth. As reflected in the chart below, multifamily and condominiums projects will dominate future residential development in the City of Rockville. The percentage of multifamily or a condominium type of housing is projected to be 98% in all development proposed between 2005 and 2040, reflecting an emphasis on smart growth. This also points to a trend that compact development, also called densification, will become a necessity, because of scarcity of developable land in Rockville.



Out of 22,982 households in 2005, 49 % were multifamily and the remainder 51 % were single families

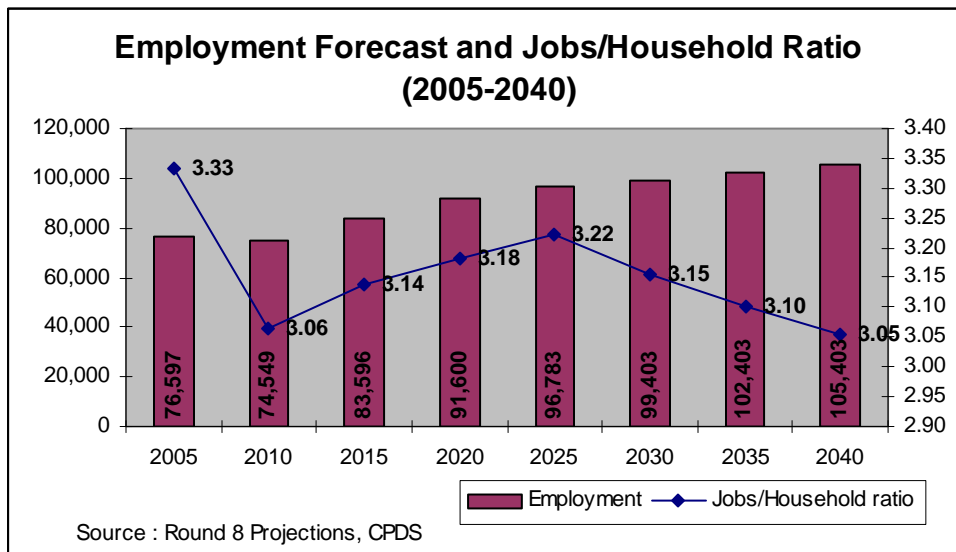


Source : Round 8 Cooperative Forecasts, CPDS

In the 2005 base, the City has 11,384 (49.5 %) multi-family units, 3,372 (14.7 %) townhouses and 8,226 (35.8 %) of single-family units.

Employment Growth:

The total number of jobs in the City of Rockville also referred to as “at-place employment” is estimated to increase from 76,597 in 2005 to 105,403 in 2040, an increase of 28,806 jobs or 37.6 percent.



Source : Round 8 Projections, CPDS

Baseline data for employment forecasts were compiled from several sources, including State Data (SDAT), Dun & Bradstreet data (data provided to GOG by a private firm), aerial photography and utilizing other city resources. Estimates of number of employees are based on a standard average space occupied per employee. Vacancy rates are assumed for office job calculations.

The City is estimating a negative growth of -2.7% in employment in the 2005-2010 period due to the existing economic conditions. Consistent with the COG methodology,

vacancy rates are only applied to office space. A 15% office vacancy rate in the 2005-2010 period is assumed, based on a recent Costar report that indicated higher vacancy rates than normal, both in office and retail. For the next projection periods, 2010-2020, based on regional historical and current data, it is anticipated that there will be recovery both in commercial and residential sectors. The fastest period of job growth is expected to occur between 2010 and 2015, when the number of jobs is expected to increase because of reduction in vacancy rates and filling up of newly constructed office buildings, by 12.1 percent. The projects that were approved by the City and scheduled to be completed by 2010, but were on hold because of the economic conditions, will begin construction in the 2010-2020 period. Major projects in the pipeline for this period include Twinbrook Commons, Duball, Upper Rock District, Fallsgrove, Irvington Center at King Farm, as well as projects in the Town Center and Rockville Pike. Development of the above projects is largely planned to occur in phases, with the last phases expected to develop in between 2010-2020. In the period beyond 2020, a more moderate growth is expected, with projects like Tower Oaks continuing build out and as sites along Rockville Pike become attractive.

The office vacancy rates assumed for that period, and all future periods is 8%, based on an average calculated by reviewing Costar data for the City of Rockville from 1993-2006. The number of jobs in the City of Rockville is expected to grow faster than the number of residents over the forecast period, the jobs to household ratio is consistently over 3, suggesting the City's growing importance as a regional employment center.

Summary:

Since the City bases its forecasts on actual projects, it is difficult to estimate new projects in the pipeline 15-20 years from now. Forecasts in the 2020 to 2040 periods represent potential projects and not the actual development capacity of the region. As a maturing jurisdiction, the City faces diminishing resources such as available land, school and transportation capacity that can sustain rapid growth. Depending on the existing economic conditions, there remains potential for tremendous new re-development projects during the entire forecast period, primarily because of the City's proximity to the Washington region's almost fully developed core. Areas bordering the City, particularly to the south and northwest, are likely to become much more densely developed over the next few decades as reflected in the densities proposed for the areas covered by the Draft Gaithersburg West Plan and the Draft White Flint Sector Plan. Future development in Rockville will be a matter of infill, densification and retrofitting of underused sites. Development in the City center and vicinity is projected to be the primary focus of continuing employment and population growth in the next ten years and beyond.