
5 FUTURE HOUSING DEMAND PROJECTIONS

A. INTRODUCTION

1. Purpose of Analysis

Prince William County wants to plan for the future as it relates population and household growth and the resulting demand for housing out to 2040. A study was conducted to examine future housing supply and demand in Prince William County between 2020 and 2040. The consultants analyzed the projected population and its housing demand and projected the supply of housing. This projection of housing unit demand was then matched against the County's developable land parcels and its capacity to support this level of growth. The analysis also distributed the projected 2040 households by HUD Area Median Income (AMI) thresholds to give insights into how the future housing demand will look relative to income future income ranges.

2. Methodology

a.) Future Housing Demand

The 9.2 Round Cooperative Forecasts prepared by the Metropolitan Washington Council of Governments (COG) is the major data source for the County's projected population and households between 2020 and 2040. COG is an independent, nonprofit association, with members comprising 300 elected officials from 24 local governments in the Metropolitan Washington D.C. area, the Maryland and Virginia state legislatures, and U.S. Congress. The Cooperative Forecasts are regularly updated population, household, and employment forecasts used by COG in its planning and modeling activities as well as by other state, regional, and local agencies.

The 9.2 Round Cooperative Forecasts by Transportation Analysis Zone (TAZ) for Prince William County, the City of Manassas, and the City of Manassas Park were used for this study. A TAZ is a geographic unit most commonly used in conventional transportation planning demand models by providing socio-economic data, and TAZs are constructed by census block information. It should be noted that Quantico is excluded from this analysis as discussed in previous chapters, and the City of Manassas and the City of Manassas Park are included. The two cities together with Prince William County are referred to as the "County" in this study, similar to previous chapters.

This analysis utilized the household and population data between 2010 and 2019 from the U.S. Census American Community Survey (ACS) 2010 5-Year Estimates and 2019 5-Year Estimates to extrapolate the household tenure distribution between 2020 and 2040. It

should be noted that the ACS 2019 5-Year Estimates was the latest available data from ACS when this study was conducted.

As the ownership household share in the County (excluding Quantico, including Manassas City and Manassas Park City) dropped from 74.1% in 2010 to 72.5% in 2019 according to ACS with an annual decrease of 0.18 percent point, it is assumed that the same change is going to continue between 2019 and 2040. This also applies to the renter household distribution. Therefore, it is estimated that the ownership households will constitute 68.7% of the total households in the County in 2040, and the renter households will account for 31.3% (Table 5-1). RKG believes that as the County’s housing market matures and diversifies, there will be a gradual shift toward multi-family housing due to cost implications.

**Table 5-1
 Projected Household Tenure, 2020-2040
 Prince William County (Excluding Quantico, Including Manassas and Manassas Park), VA**

	2010	2019	'10-'19 Ann. Chg.	2020	2040
Ownership Household %	74.1%	72.5%	-0.18%	72.31%	68.70%
Renter Household %	25.9%	27.5%	0.18%	27.69%	31.30%

Source: ACS 2010 Estimates, ACS 2019 Estimates and RKG Associates, Inc., 2021

The projected 2040 household tenure distribution was then applied to the COG projected 2040 households to produce the estimated numbers of ownership households and renter households. In addition, as there is no available data for predicting how the future household distribution by income will change, it is assumed that the household distribution by HUD 2019 AMI threshold will remain through 2040, and then the percentages were applied to the projected 2040 households. For example, if in 2019, 46.5% of the owner households earned above 120% of the AMI in the County, translating into 53,742 households, it is assumed that this percentage will hold true in 2040, translating into 67,673 owner households earning above 120% of the AMI in 2040.

It should be noted that as both the HUD AMI limits and the household distribution by household income are needed to produce the household distribution by AMI limit, the two data sets should be from the same year to ensure an apple-to-apple comparison. Though the HUD 2021 AMI limits are the latest AMI thresholds, there is no available data for 2021 household distribution by household income, and the latest available data is the ACS 2019 data. Therefore, household distribution by HUD 2019 AMI limit is used in this section to calculate the projected 2040 household distribution by HUD AMI.

b.) Future Housing Supply

The relationship between past housing developments and the historical population growth in the County was examined as the housing supply usually responds to the changes in demand. Historical residential development trends since 2000 were therefore analyzed using the County’s property assessment database and compared to the County’s population and household growth between 2000 and 2020. The 2000 population and household data were obtained from the Decennial Census and the 2020 figures come from the COG 9.2 Round Cooperative Forecasts. The number of housing units per one new

person increase and the number of housing units per one new household increase were then calculated, and the ratios were then applied to the County's 2040 projected population and households to produce the projected 2040 housing units. This is under the assumption that the relationship between new housing developments and population/household changes in the County will continue through 2040.

B. SUMMARY OF FINDINGS

- The County Does Not Have Sufficient Lands Under Current Zoning to Accommodate Its Projected Population Growth by 2040
It is estimated that there will likely be an addition of 32,418 to 41,958 new housing units occurring in the County in response to the future population growth by 2040. However, according to the County's 2019 Build-Out Analysis, Prince William County has the land capacity for 35,869 additional residential dwelling units under current zoning, which will likely fall short of the new housing units needed to meet the additional housing demand.
- Housing Shortage Is Projected to Persist Through 2040
Even though the County maxes out its current residential development capacity and reaches the residential build-out to 192,486 units, there will still be a shortage of 19,392 units as COG projected that there will be 211,878 households in the County in 2040.
- Future Housing Demand Will Come From Different Income Levels For Renter Households Versus Ownership Households
57.2% of the future ownership housing demand will come from households earning above 100% of the AMI, while over half (54.2%) of the rental housing demand in 2040 will come from households earning at or below 80% of the AMI.

C. HOUSING SUPPLY AND DEMAND PROJECTIONS

As discussed in the Methodology section, the relationship between population growth and housing developments as well as the relation between household gains and housing unit increase were both examined. Table 5-2 lays out the process to project the 2040 housing units in Prince William County.

According to the COG 9.2 Round Cooperative Forecasts, the County's population will stand at 520,468 and its households will equal 169,164 in 2020, at an annual change of 9,739 population and 2,993 households between 2000 and 2020. On the supply side, there has been an average annual change of 2,940 housing units between 2000 and 2020 according to the County's property assessment database. This means that during the past two decades, for every additional person there has been 0.3 new housing unit, and for every additional household, there has been 0.98 new housing unit added in the County. As COG projects that there will be an increase of 107,387 people and 42,714 households between 2020 and 2040 in the County, there will likely be an additional 32,418 to 41,958 new housing units by 2040. This means that the projected number of housing units in 2040 in the County will equal 188,056 to

197,596. Compared to the COG projected 2040 households of 211,878, there will likely be a housing shortage of between 14,282 and 23,822 units in the County in 2040.

Table 5-2

2040 Housing Unit Projection

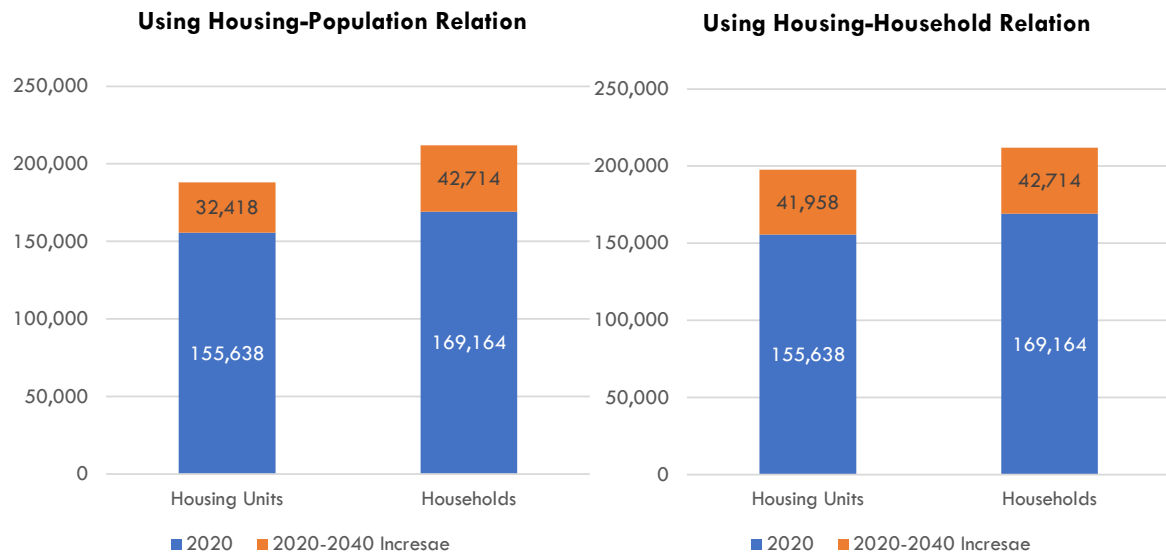
Prince William County (Excluding Quantico, Including Manassas and Manassas Park), VA

2000 ACS Population	325,683	2000 ACS Household	109,289
2020 COG Population	520,468	2020 COG Household	169,164
2040 COG Population	627,855	2040 COG Household	211,878
2000-2020 Population Change	194,785	2000-2020 Household Change	59,875
2000-2020 Population Annual Change	9,739	2000-2020 Household Annual Change	2,993
2000 Housing Units	96,824	2000 Housing Units	96,824
2020 Housing Units	155,638	2020 Housing Units	155,638
2000-2020 Housing Units Annual Change	2,940	2000-2020 Housing Units Annual Change	2,940
New Housing Unit per One Additional Person	0.30	New Housing Unit per One Additional Household	0.98
2020-2040 Population Increase	107,387	2020-2040 Household Increase	42,714
2020-2040 Housing Unit Increase	32,418	2020-2040 Housing Unit Increase	41,958
2020 Housing Unit from Development Trend	155,638	2020 Housing Unit from Development Trend	155,638
Projected 2040 Housing Units	188,056	Projected 2040 Housing Units	197,596
2040 Households	211,878	2040 Households	211,878
2040 Owner Households (68.7%)	145,552	2040 Owner Households (68.7%)	145,552
2040 Renter Households (31.3%)	66,325	2040 Renter Households (31.3%)	66,325
2040 Housing Unit Shortage	23,822	2040 Housing Unit Shortage	14,282

Source: Decennial Census, ACS 2019 Estimates, ACS 2010 Estimates, Metropolitan Washington Council of Governments, and RKG Associates, Inc., 2021

In addition, the County’s Build-Out Analysis as of December 31, 2019 points out that Prince William County has the capacity for 35,869 additional residential dwelling units, bringing the residential build-out to 192,486 units. As the projected new housing unit growth will likely fall between 32,418 and 41,958 by 2040, the County’s land parcels currently available for

Figure 5-1: Projected 2040 Housing Units and Households



Source: Source: Decennial Census, ACS 2019 Estimates, ACS 2010 Estimates, Metropolitan Washington Council of Governments, and RKG Associates, Inc., 2021

residential development under existing zoning will likely be all consumed by future housing development activities. Furthermore, even though the County maxes out its current residential development capacity and reaches the residential build-out to 192,486 units, there will still be a shortage of 19,392 units as COG projected that there will be 211,878 households in the County in 2040.

This suggests that the County’s existing lands available for residential development under the current zoning policies are not sufficient to accommodate the future population growth as projected by COG by 2040. The County could look into rezoning some of its non-residential lands and introducing zoning changes to allow for additional residential densities in certain areas to increase its capacity to meet the future housing demand.

D. PROJECTED HOUSING DEMAND BY AMI

The COG projected 2040 households were also split into ownership households and renter households by using the projected 2040 tenure distribution as discussed in the Methodology section. The household distribution by HUD 2019 AMI limits by tenure was then applied to the number of owner households and renter households in 2040, respectively (Table 5-3).

Table 5-3
2040 Household by Tenure by HUD AMI Income Threshold
Prince William County (Excluding Quantico, Including Manassas and Manassas Park), VA

AMI Threshold	Owner Household		Renter Household	
	Count	Percent	Count	Percent
Total	145,552	100.0%	66,325	100.0%
30% of AMI (Extremely Low Income) and Below	10,236	7.0%	14,811	22.3%
31%-50% of AMI (Very Low Income)	12,073	8.3%	13,057	19.7%
51%-80% of AMI (Low Income)	9,662	6.6%	8,102	12.2%
81%-100% of AMI	30,302	20.8%	14,457	21.8%
101%-120% of AMI	15,606	10.7%	5,046	7.6%
121% of AMI and Above	67,673	46.5%	10,852	16.4%

Source: HUD AMI 2019, ACS 2019 Estimates, Metropolitan Washington Council of Governments, and RKG Associates, Inc., 2021

The result shows that 57.2% of the future ownership housing demand will come from households earning above 100% of the AMI, translating into 83,279 homes. In comparison, 54.2% of the rental housing demand in 2040 will come from households earning at or below 80% of the AMI, which translates into the demand for 35,970 rental units. Households making 80% of AMI or below are typically targeted for future affordable housing developments. There will also be a demand for 15,898 rental units for households earning above 100% of AMI.