CPHD's 2020 Population Estimation Methodology

Arlington's Department of Community Planning, Housing, and Development (CPHD) Research and Strategic Initiatives Group (RSIG) has developed an improved population estimate method—the 2020 Population Estimation Methodology—that produces reliable and timely estimates for small subcounty geographies. This new method uses the most recent housing and household data and captures the difference in household size between single-unit (attached and detached) and multi-unit structures.

Every 10 years the U.S. Census Bureau (Bureau) conducts the decennial census to count every person living in the United States. For the intercensal years, the Bureau produces population estimates based on births, deaths, and migration. After the decennial census, the Bureau looks back at its intercensal estimates and revises them to align with the census data. Therefore, these annual population estimate, which are not available at the subcounty level, can change from what was released the previous year. For these reasons, CPHD produces an annual population estimate.

Methodology Overview

Arlington's new 2020 Population Estimation method uses the County's Master Housing Unit Database (MHUD), a complete snapshot of all housing in Arlington and applies vacancy data from CoStar and the Bureau's American Community Survey (ACS) to determine the number of occupied housing units, also known as households. Average household size factors from the ACS are then applied to the number of households to determine an estimated population. In developing this methodology, the new estimates were compared to the decennial count and intercensal estimates produced by the Bureau. Figure 1 shows the comparison of the output of the 2020 Population Estimation Method to the Bureau's Intercensal Estimates and 2020 Census. Overall, the 2020 method produces results that are within 0.1% - 2.1% of the 2020 Census and intercensal estimates.
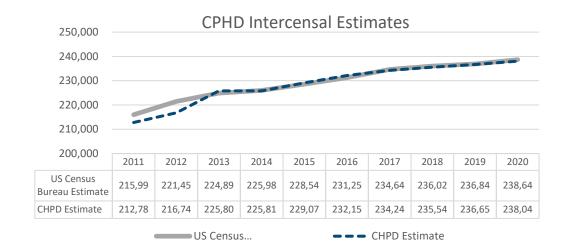
Figure 1: Intercensal Estimates: CPHD (New 2020 Model) and U.S. Census Bureau

CPHD Intercensal Estimates

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
US Census Bureau Estimate	215,99	221,45	224,89	225,98	228,54	231,25	234,64	236,02	236,84	238,64
CHPD Estimate	212,78	216,74	225,80	225,81	229,07	232,15	234,24	235,54	236,65	238,04

US Census…   CHPD Estimate

Benefits of 2020 Methodology

The benefits of the new CPHD model include the following:

- ✓ **Custom Geographies:** Based on housing unit data, which can be summarized at different geographic levels
- ✓ **Timely Estimates:** Updated twice a year (on January 1 and July 1)
- ✓ **Captures Migration Trends:** Migration is accounted for through vacancy and average household size data

Data sources

The following sources are used in the 2020 Population Estimation Methodology.

Development Tracking Database	Master Housing Unit Database (MHUD)	American Community Survey (ACS)	CoStar
The Development Tracking Database captures all development in Arlington. Every quarter, building permit data is downloaded and analyzed to determine which buildings have been completed, are under construction, and demolished. County Board-approved projects, such as site plans, form base code projects, and use permits are also added to this system.	The MHUD combines data from development tracking, real estate assessments, and CPHD's Housing Division apartment data to create one file containing polygons for all of all housing units in Arlington.	The ACS is conducted nationwide by the U.S. Census Bureau annually. In addition to basic demographics, it captures household structure and socioeconomic characteristics.	CoStar is a commercial firm that provides real estate information and analytics to clients on a subscription basis. The firm surveys commercial businesses and apartments and provides data on unit counts, vacancy rates, and more.

2022 Estimates

Applying CPHD's 2020 Population Estimate Methodology resulted in the following 2022 estimates for Arlington County (Figure 2 and Figure 3).

Figure 2: 2022 CPHD Estimates

	Units	Households	Household Population
Single-Unit Structure	34,512	32,579	91,692
Multi-Unit Structure	85,650	79,699	140,792
Total	**120,162**	**112,278**	**232,484**

Figure 3: 2022 Total Population

	Persons
Household Population	232,484
Group Quarters Population	2,986
Total Population	**235,470**