

Virginia Population Projections 2022 Release

RRTPO Socioeconomic Data Workgroup Meeting

13 July 2022



Weldon Cooper Center
for Public Service
Demographics Research Group

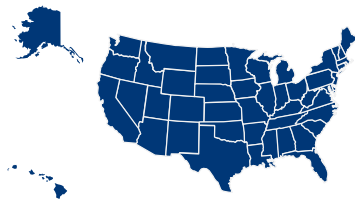
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Past decade of projections at UVA

- Created for 2020, 2030, 2040
- 2 separate data products
- 3 vintages released over the decade

NATIONAL

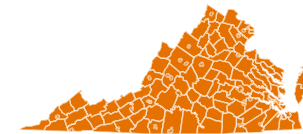
(50 states and D.C.)



2013, 2016, 2018

VIRGINIA

(133 cities/counties and large-towns)



2012, 2017, 2019

Projections Vintage July 1, 2022

- First release of Virginia Population Projections for current decade
- Uses the most recently released 2020 Decennial Census Count data
- Updated methodology
 - Simpler modelling and fewer assumptions
 - Uniformly consistent methods across all localities for comparability
- Allows locality specific trends from the Census Bureau data to play out

Caveat on projections broken down by further demographic detail

- Detailed Virginia population projections, such as by age (18 age-groups at 5-year intervals: 0-4, 5-9, 10-14 ... 80-84, and 85+) and by sex, depends on US Census Bureau's release of Demographic Profile, Demographic and Housing Characteristics File (DHC) and Detailed DHC data.
- On April 27, 2022, the Census Bureau announced that their next 2020 Census Data Products will be released in May 2023.
- This significant delay from the Bureau affects our release schedule. Once the Census Bureau's data becomes available, we can build the timeline for our own projections data products to serve the Commonwealth of Virginia.

Methodology

DATA AND ASSUMPTIONS

Input Data

VIRGINIA STATE AND LOCALITY LEVEL POPULATION :

- 2000 Census 1 April count – Total population
- 2010 Census 1 April count – Total population
- 2020 Census 1 April count – Total population

NOTE: All input data sourced from Census Bureau decennial counts

Output Data

- Year: 2030, 2040, 2050 and 2035, 2045, 2055
- Variables: Total Population
- Geographies: Commonwealth of Virginia, its 133 localities (95 counties and 38 independent cities), and its large towns (population of 5000 or more residents)

Methodology

I. Projecting Total Population	Combination of exponential growth and linear extrapolation → State level totals are developed first, then individual localities are allowed to grow organically, and finally raked according to VA state control totals.
II. Projecting Age*	Hamilton-Perry Cohort Component Method (state level)
III. Projecting Sex*	Hamilton-Perry Cohort Component Method (state level)

Projecting Total Population: Virginia STATE level

- For 2030, two scenarios are created; a high-growth case and a low-growth case, using 2020 as the launch year. The average of both yields the final projected State Population for 2030.
 - High-growth scenario applies exponential growth rate using data from 2010 and 2020.
 - The low-growth scenario applies half of the absolute population change between 2010 and 2020

Projecting Total Population: Virginia STATE level

- For 2040, the absolute population change between 2010 and 2020 is set as the expected growth for the decade, to yield the final projected State Population for 2040.
- For 2050, the annualized growth between 2000 and 2020 is calculated and linear extrapolation is applied to construct the final projected State Population for 2050.
- Projections for 2035 and 2045 are interpolated, and those for 2055 are extrapolated from the end-of-decade projected populations.

Projecting Total Population: CITY/COUNTY level

- For 2030, the localities are initially allowed to grow by their individual absolute population change between 2010 and 2020. The final locality level population projection for 2030 is set by redistributing the state control total to yield Locality Population for 2030.
- For 2040 and 2050, the localities are initially allowed to grow by their individual annualized growth between 2000 and 2020. The final locality level population projections is set by redistributing the state control totals for 2040 and 2050 to yield Locality Populations for 2040 and 2050.

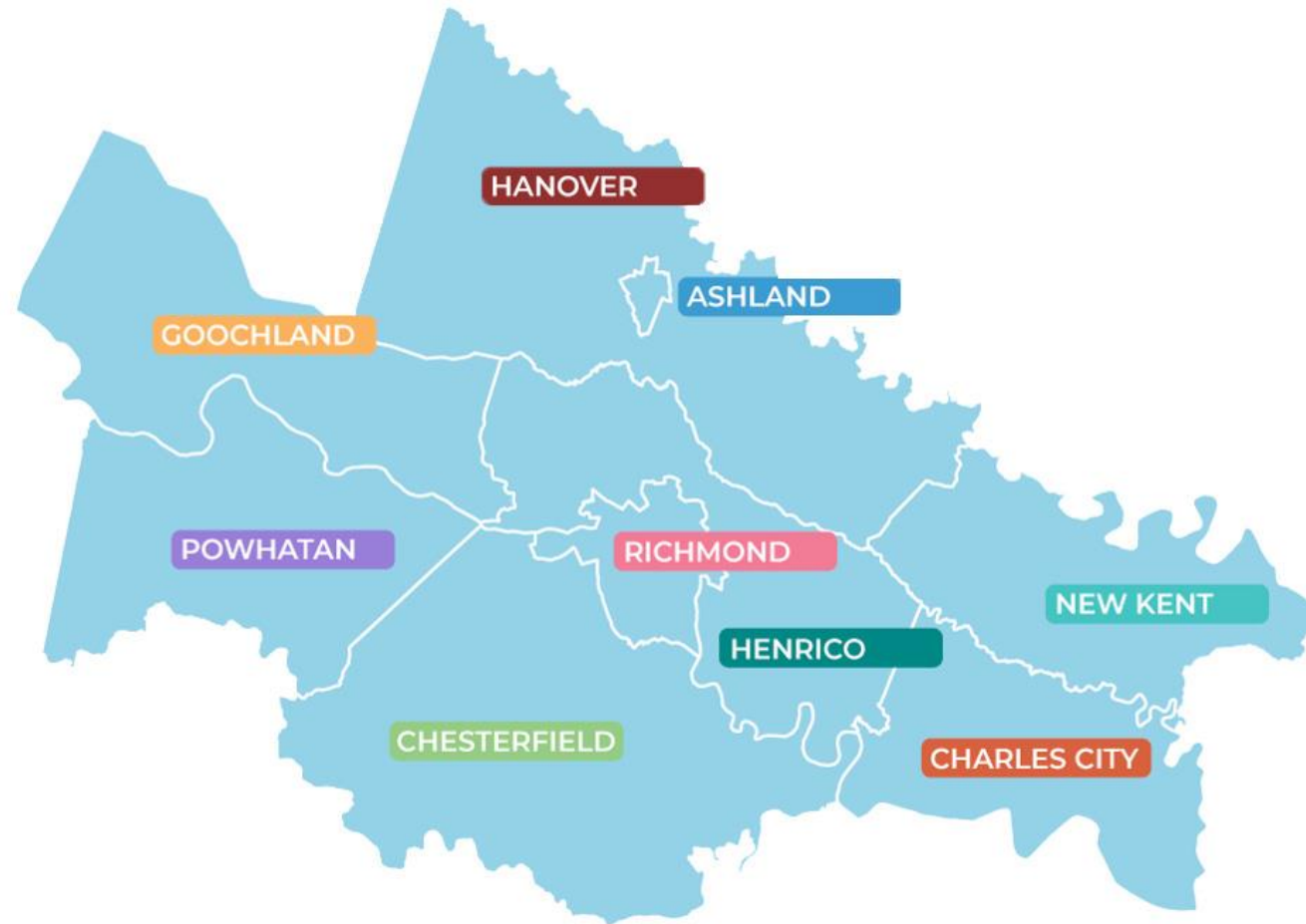
Projecting Total Population: LARGE TOWN level

- Projections are constructed for Virginia towns with a population total over 5000 residents as per the latest 2020 Census count.
- The ratios of town population to parent-county population is used to create their respective shares and project the 2030, 2040, and 2050 for large towns in Virginia.

Projections for 2030, 2040, 2050

RRTPO COVERAGE AREA

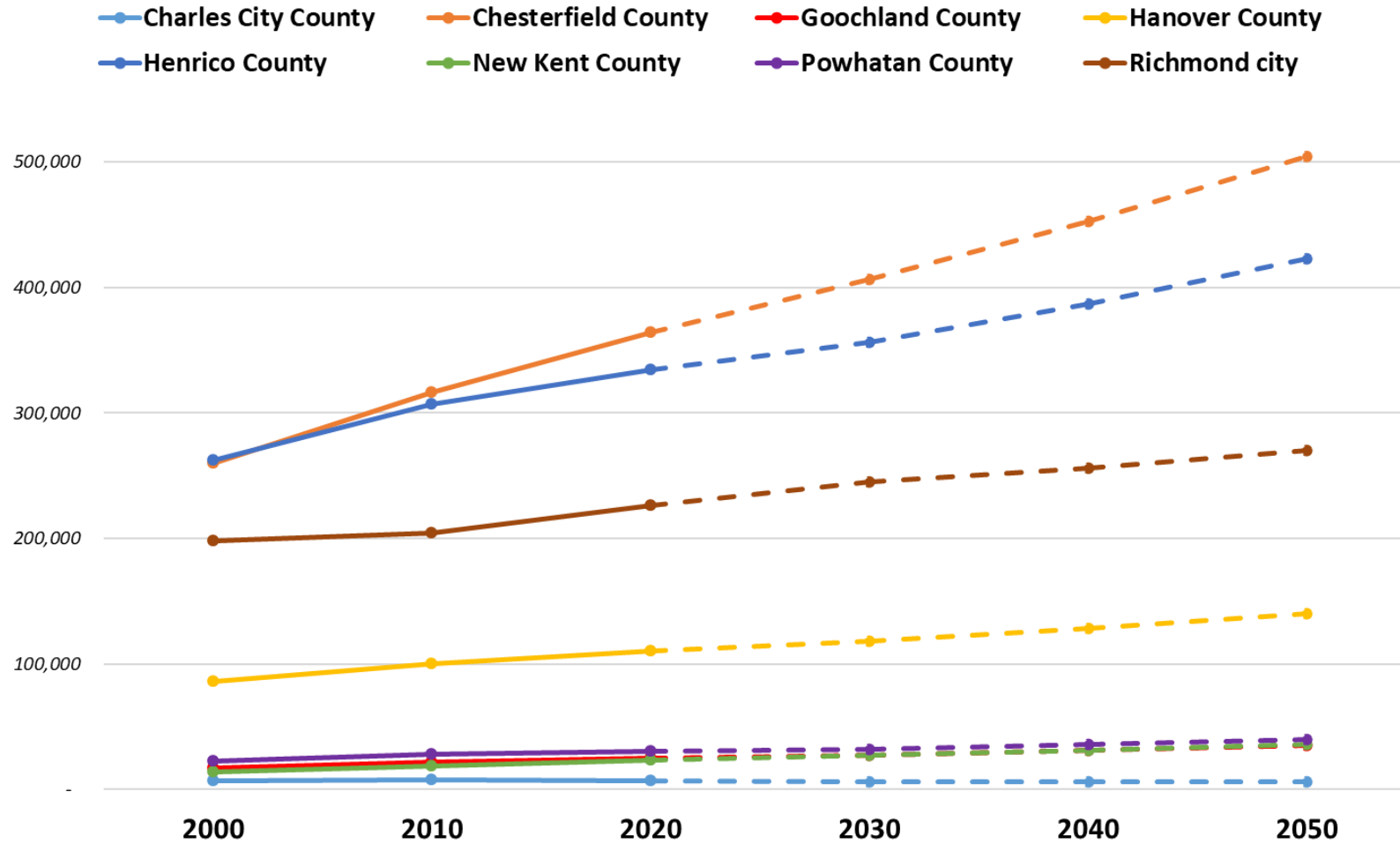
RRTPO coverage area



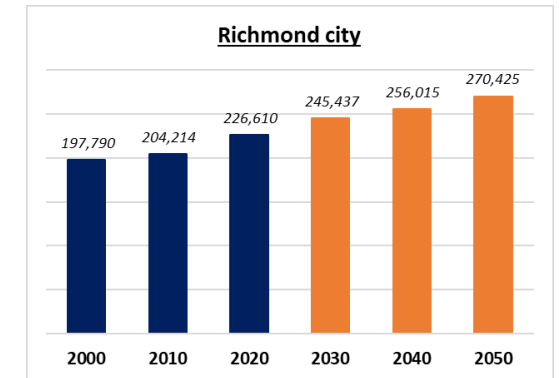
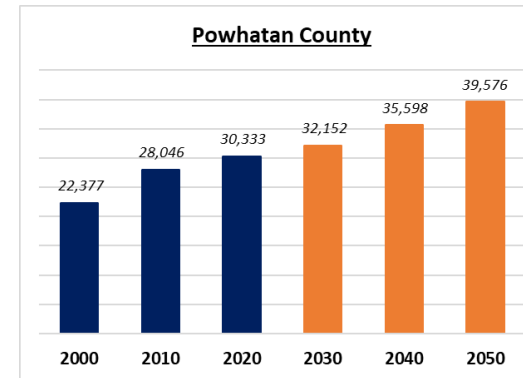
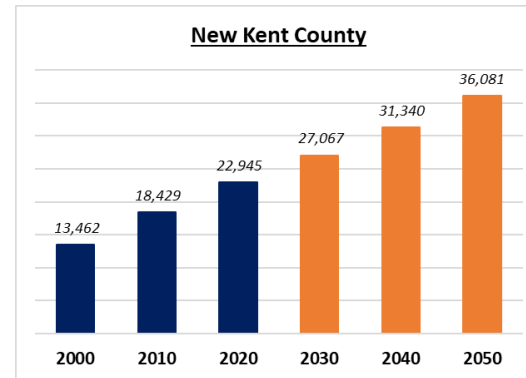
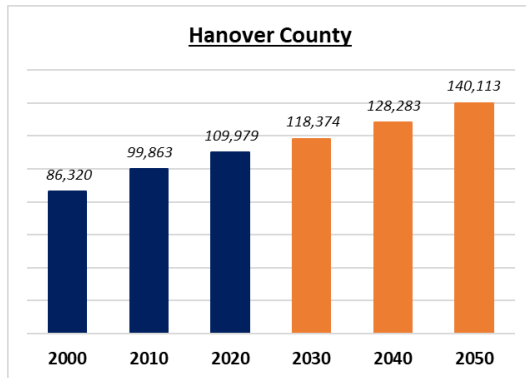
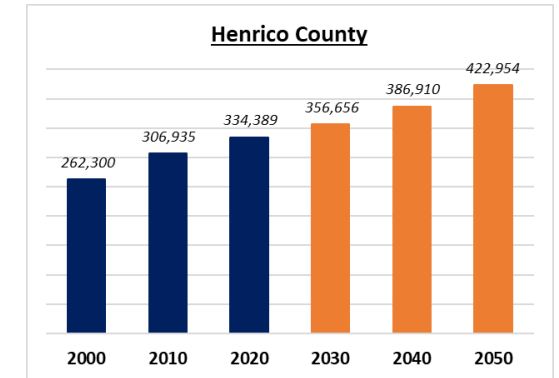
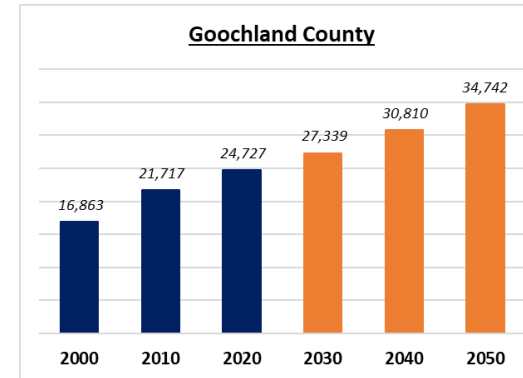
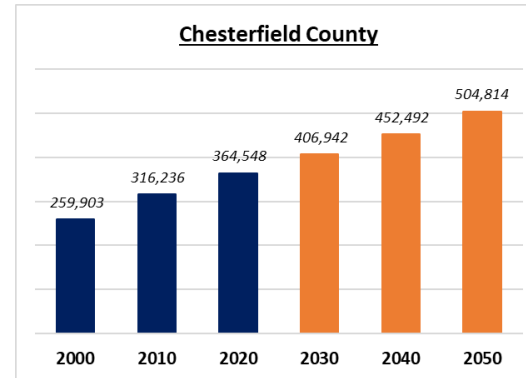
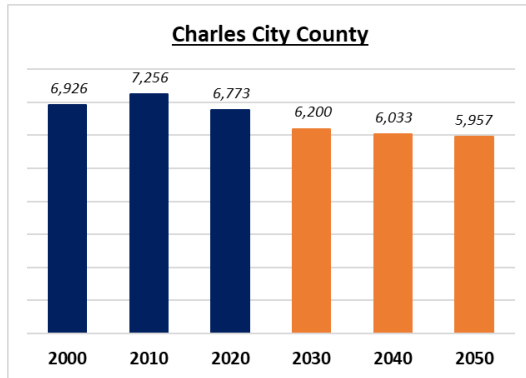
Actual and Projected Population Totals

TOTAL	2000	2010	2020	2030	2040	2050
VIRGINIA	7,078,515	8,001,024	8,631,393	9,129,002	9,759,371	10,535,810
Charles City County	6,926	7,256	6,773	6,200	6,033	5,957
Chesterfield County	259,903	316,236	364,548	406,942	452,492	504,814
Goochland County	16,863	21,717	24,727	27,339	30,810	34,742
Hanover County	86,320	99,863	109,979	118,374	128,283	140,113
Henrico County	262,300	306,935	334,389	356,656	386,910	422,954
New Kent County	13,462	18,429	22,945	27,067	31,340	36,081
Powhatan County	22,377	28,046	30,333	32,152	35,598	39,576
Richmond city	197,790	204,214	226,610	245,437	256,015	270,425

RRTPO CITY/COUNTY projected population



RRTPO CITY/COUNTY projected population



NOTE: Ashland is a Large Town included in Hanover as Parent County; Projections: 2030 = 8,142 | 2040 = 8,824 | 2050 = 9,638

Actual and Projected Population Growth Rates

TOTAL	2000-2010	2010-2020	2020-2030	2030-2040	2040-2050
VIRGINIA	13.03%	7.88%	5.77%	6.91%	7.96%
Charles City County	5%	-7%	-8%	-3%	-1%
Chesterfield County	22%	15%	12%	11%	12%
Goochland County	29%	14%	11%	13%	13%
Hanover County	16%	10%	8%	8%	9%
Henrico County	17%	9%	7%	8%	9%
New Kent County	37%	25%	18%	16%	15%
Powhatan County	25%	8%	6%	11%	11%
Richmond city	3%	11%	8%	4%	6%

Takeaways

Purpose of WCC Projections

- WCC projections for Virginia and all its localities help in planning, budgeting, and program development to meet the needs of Virginia's current and future population
- Our uniform application of a consistent methodology across all cities and counties allows for a fair apples-to-apples comparison across the board
- While some localities are able to produce customized projections for themselves, there are other localities who lack the resources, so the WCC projections also serve such potentially un-met needs.

Concluding thoughts

- Projections need to be updated every 2 to 3 years to better capture the latest trends
- Sometimes, carefully constructed simple methodologies can yield more reliable results than elaborate and complicated modelling techniques
- High quality input data is critical for accurate projections
- The future is inherently uncertain, so alternative projections scenarios developed by regional commissions or local planning departments are just as valid and valuable, especially if they incorporate more local knowledge or granular data points.

Thank You

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<https://demographics.coopercenter.org/virginia-population-projections>



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