



President's Council on UVA-Community Partnerships

Early Childhood Education Implementation Group

Projecting Childcare Needs for Virginia Planning District 10

Executive Summary

President's Council on UVA Community Partnerships

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Executive Summary

Purpose

This report aims to project childcare needs in the year 2030 for children aged 0-4 in Virginia Planning District 10, which includes Albemarle County, Charlottesville City, Fluvanna County, Green County, Louisa County, and Nelson County. Using the 2030 population projections provided by the Weldon Cooper Center for Public Service (2023) allows for proactive steps to be taken towards closing the childcare gap in our area. The analysis is grounded in population projections, birth rates, and ECE participation trends, providing crucial information to inform policymakers, educators, and community leaders.

Methodology

This report aims to project early childhood education needs for Virginia Planning District 10, encompassing. The approach was comprehensive and data-driven, utilizing various data sources and analyses to ensure accurate and reliable projections.

Data Collection and Sources

Population estimates and projections from the Weldon Cooper Center for Public Service (2023b, 2024) provided insights regarding population trends and demographic changes within the district. Birth rates were sourced from the Virginia Department of Health (2020). Early childhood education participation statistics were retrieved from national sources such as America's Health Rankings (2024) and The Anne E. Casey Foundation (2023). Childcare staffing ratios and regulations were referenced from the Virginia Department of Education (2024).

Data Analysis

In conducting the analysis of projected childcare needs in Planning District 10, a multi-step approach was undertaken. First, population data provided projections for the 2030 populations of each locality within Planning District 10. Birthrates were then applied to these projections to calculate the number of annual births expected in each locality, and this value was divided by 12 to get a monthly birth rate, which was rounded to the nearest whole. Next, the estimated number of children in each band was calculated by multiplying the number of months in each band by the monthly birth rate. Next, the staffing ratios were used to divide the number of children in each band to calculate staff needed to support 100% of children in District 10. Next, because childcare participation rates are not 100%, current enrollment rates for West Virginia, Virginia, and Connecticut were applied to provide a realistic idea of the qualified early childhood staff needed in District 10 by 2030.

Assumptions

The projections provided by this report are based upon several foundational assumptions, including:

1. Consistency in Birth Rates
2. Consistency of birth rates across months, allowing even division across months
3. Stability in ECE Staff to Student Ratio Requirements
4. Stable rates of ECE participation

Key Findings

1. **Population Growth and Birth Rates** – Planning District 10 is experiencing steady population growth, with significant increases expected by 2030. Albemarle County and Charlottesville City are projected to see the largest increases.
2. **Early Childhood Educator Projections** – The total number of children aged 0–63 months in Planning District 10 is estimated at 14,105 by 2030, necessitating a substantial increase in qualified educators. Our projections suggest a need for approximately 835 – 1,004 ECE teachers by 2030.

Recommendations

This report recommends two areas of focus to address the childcare gap in Virginia Planning District 10:

1. **Strengthen Working Conditions** – Attract and retain qualified ECE staff through competitive wages, professional development, and appropriate staffing levels. Subsequent recommendations related to expansion of infrastructure and access are dependent upon sufficient progress in this area.
2. **Expand Infrastructure** - Expanding childcare infrastructure, with a focus on equitable distribution, is essential. This necessitates investment in teacher preparation pipelines and childcare facilities to accommodate the projected need of between 5,430 and 14,105 childcare spots by 2030.

Conclusion

In conclusion, this report highlights the critical need for strategic planning and investment in childcare availability within Virginia Planning District 10. With projected population growth and a marked educator shortage, the ECE gap is expected to continue widening without timely, definitive intervention. To address this challenge, recommendations include improving working conditions for educators and equitable expansion of our childcare infrastructure. By implementing these recommendations, stakeholders can work towards ensuring increased access to quality early education for children in the district, laying a strong foundation for their future success.

Early Childhood Education Implementation Group

Projecting Childcare Needs for Virginia Planning District 10

Introduction and Background

The Early Childhood Education Implementation Group, a key initiative under the President's Council on UVA Community Partnerships, is dedicated to fostering educational equity and access in our local communities. This report aims to project the number of childcare spots needed for children aged 0-4 in Planning District 10, which includes Albemarle County, Charlottesville City, Fluvanna County, Greene County, Louisa County, and Nelson County. Our projections are grounded in birth rates, population data, and childcare usage trends, providing a detailed analysis that informs policymakers, educators, and community leaders. Understanding and planning for future childcare needs is essential for ensuring that all families have access to quality early education. By accurately forecasting the demand for childcare spots, the report aims to support both the developmental needs of our youngest residents and their parents' full participation in the workforce. This report underscores the importance of strategic planning and resource allocation, setting the stage for a stronger, more equitable educational foundation in Planning District 10.

Statement of the Problem

According to the Bipartisan Policy Center (2019), the state of Virginia has an approximate 12% childcare gap; the families of just under 47,000 children need (but are unable to access) childcare, with a long-term economic impact to the Commonwealth in the range of \$2-3 billion. Meanwhile, the benefits of available, accessible, and affordable early childhood education are well established, and extend to the individual child, their family, and their wider community. Research has shown that some benefits of ECE are nearly immediate, such as parental workforce participation, academic advantages, and decreased rates of abuse and neglect. Other benefits confer over a child's school years, such as reduced SPED placement, decreased grade retention, and lower rates of teen pregnancy. Lastly, long-term benefits, including increased lifetime wages, decreased crime and correctional involvement, and improved adult physical and psychological wellbeing, accrue over one's lifespan. Taken together, these wide-ranging outcomes contribute to an estimated cost benefit ratio of between \$1:3 and \$1:4, a payoff which far exceeds that of known school-age interventions (i.e.: class size reduction, youth job training, etc.). Certainly, efforts to close the childcare gap are sound investments. What is less well known, though, is how Virginia's statewide ECE shortage plays out within our region, how it is projected to evolve over the coming years, and precisely how it impacts future demand for local, qualified, ECE educators. Addressing these knowledge gaps is the purpose of this report.

Birth Rates and Population Projections

Understanding birth rates and population projections is crucial for planning future childcare needs. The birth rates within Planning District 10 vary significantly across its constituent localities. In 2020, Planning District 10 had an overall birth rate of 10.28 per 1,000 residents,

ranging from a low of 8.8/1,000 in Albemarle County, to a high of 11.8/1,000 in Charlottesville City (Virginia Department of Health, 2020).

Population projections for 2030 further inform our understanding of future needs. By that time, Albemarle County is expected to reach a population of 124,016, and Charlottesville City is projected to have 46,553 residents. Fluvanna County's population is anticipated to be 28,394, Greene County 20,552, Louisa County 27,249, and Nelson County 14,775 (University of Virginia Weldon-Cooper Center for Public Service, 2024). These projections highlight the necessity of strategic planning to accommodate the growing populations within Planning District 10, ensuring that adequate childcare resources are available to meet future demands.

Methodology

The methodology for this report aimed to project the future childcare needs in Planning District 10, which encompasses Albemarle County, Charlottesville City, Fluvanna County, Greene County, Louisa County, and Nelson County. This comprehensive approach used various data sources and analytical techniques to provide research-based projections of the number of childcare spots required by 2030.

Data Collection and Sources

1. **Birth Rates and Population Estimates:** The primary sources of data for birth rates and population estimates were the Virginia Department of Health (2020) and the University of Virginia Weldon-Cooper Center for Public Service (2024). These sources provided locality-specific birth rates and population projections.
2. **ECE Participation Data:** Enrollment rates for early childhood education were sourced from America's Health Rankings (2024) and the Annie E. Casey Foundation (2023), providing insights into the current and projected demand for childcare.
3. **Childcare Staffing Ratios:** The Virginia Department of Education (2023) provided data on the required staff-to-child ratios for various age groups, which was critical for estimating the number of childcare staff needed.

Data Analysis

1. **Projected Births Calculation:** Birth rates per 1,000 residents were used to calculate the number of projected births for each locality. The formula applied was:
$$\text{Projected Births per Year} = \text{Projected Population} \times (\text{Birth Rate}/1,000) / 12 \text{ months} = \text{Monthly birth rate.}$$
2. **Age Distribution Analysis:** Using the age and sex distribution data, the population of children aged 0-4, and including the 1/3 of 5 year-olds who will need early childhood education in any given year, was estimated by multiplying the birth rate across 4 and 1/3 years.
3. **Estimating Childcare Slots Needed:** The total number of childcare slots needed was estimated by projecting the number of children ages 0-5 1/3 in the year 2030. That number was then adjusted according to various enrollment scenarios based on current

ECE participation rates in West Virginia, Virginia, and Connecticut (23.5%, 38.5%, and 55.5%, respectively) to calculate the projected level of childcare demand in 2030.

4. **Staffing Requirements:** To determine the number of ECE staff required to enrollment demand in 2030, the estimated number of childcare slots was divided into three age bands: ages 0-16 months, 16-24 months, 24-36 months, and 26-64 months. The mandated staff-to-child ratios for each age band, provided by the Virginia Department of Education, were applied to the projected number of slots in each age band to estimate the required number of childcare staff. The equation used was:
 - o $\text{Staff Needed} = \text{Total Children in Age Group} / \text{Staff-to-Single-Child Ratio}$

Assumptions

1. Consistency in Birth Rates: It is assumed that birth rates observed in 2020 will remain stable over the projected period until 2030.
2. Population Projections Accuracy: The population projections garnered from the University of Virginia Weldon-Cooper Center for Public Service are assumed to accurately reflect expected trends in Planning District 10.
 - a. It is further assumed that rates of birth are consistent across months, allowing Virginia staffing bands that split months to be used with yearly birth rates for accurate projections
 - b. Across the country, areas with large college populations were often undercounted in the 2020 Census. To address this issue, the population estimates have been based on the University of Virginia Weldon-Cooper Center's numbers instead of the 2020 Census for areas where college students make up over 20% of the population. This includes Charlottesville City (University of Virginia Weldon-Cooper, 2023b).
3. Stability in Virginia requirements for childcare Staff to Student Ratios: It is assumed that staff to student ratio mandates from the Virginia Department of Education in 2023 will remain consistent throughout the projection period.
4. Enrollment Rate Assumption: Early childhood education enrollment rates are assumed to remain relatively stable unless influenced by significant policy changes or other external factors.

Table 1: Planning District 10 Birth Rates by Locality (2020)

Locality	Rate of Births Per 1,000 Residents
Albemarle County	8.8
Charlottesville City	11.8
Fluvanna County	9.2
Greene County	12.1
Louisa County	10.6
Nelson	9.2
Albemarle & Charlottesville Combined	10.3
Planning District 10	10.28

(Source: Virginia Department of Health, 2020)

The following table shows population growth as projected from the 2020 census through 2030. July 2023 population estimates for cities and counties, from The Weldon-Cooper Center (2023b) are included.

Table 2: Projected Population Growth (2030)

Locality	2020 Census	July 2023 Estimates for Cities and Counties in Virginia	2030 Projected Population
Albemarle County	112,395	116,148	124,016
Charlottesville City	46,553	51,132	48,920*
Fluvanna County	27,249	28,214	28,394
Greene County	20,552	21,370	20,552
Louisa County	37,596	40,434	41,436
Nelson County	14,775	14,713	14,775
Albemarle County and Charlottesville City	158,948	167,280	172,936
Planning District 10	263,617	272,011	275,726

(Source: University of Virginia Weldon-Cooper Center for Public Service, 2024 and University of Virginia Weldon-Cooper Center for Public Service, 2023b)

*Across the country, areas with large college populations were often undercounted in the 2020 Census. To address this issue, the population estimates have been based on the Weldon Cooper Center's numbers instead of the 2020 Census for areas where college students make up over 20% of the population. This includes Charlottesville.

Projected Childcare Needs

To estimate the number of childcare spots needed, consider the projected populations and apply the birth rates and age distribution data.

Table 3: Projected Children Ages 0-64 Months by Locality in Planning District 10 (2030)

Locality	Population (2030)	Birth Rate (/ 1,000)	Projected Births per Year	Children 0-<16 months (16 mo)	Children Aged 16-<24 months (8 mo)	Children 24-<36 months (12 mo)	Children 36-64 months (29 mo)
Albemarle County	124,016	8.8	1,092 91/mo*	1,456	728	1,092	2,639
Charlottesville City	48,920	11.8	577 48/mo	768	384	577	1,392

Fluvanna County	28,394	9.2	261 22/mo	352	176	264	638
Greene County	20,552	12.1	249 21/mo	336	168	252	609
Louisa County	27,249	10.6	289 24/mo	384	192	288	696
Nelson County	14,775	9.2	136 11/mo	176	88	132	319
Albemarle and Charlottesville Combined	172,936	See Above	1,669 139/mo	2,224	1,112	1,668	4,031
Total Planning District 10	263,906	See Above	2,604 217/mo	3,472	1,736	2,604	6,293
Total # of ECE Slots	14,105 slots for children in District 10 between 0-64 months of age						

*All monthly birth rates and band counts are rounded to the nearest whole.

Staff-Child Ratios

Based on PreK staff-to-children ratios provided by the Virginia Department of Education, the following table shows the Virginia Childcare Staffing Ratios as of 2020. The rates below do not include administrators as it is best practice not to include administrative personnel in the ratio.

Table 4: Virginia Childcare Staffing Ratios (2020)

Age Group	Staff to Children Ratio
0 to 16 months	1 staff to 4 children
16 months to 24 months	1 staff to 5 children
24 months to 36 months	1 staff to 8 children
36 months to 5 years	1 staff to 10 children

(Source: Virginia Department of Education, 2023)

Table 5: Required ECE Staff Needed for 2030 Projected (100% Participation)

	Children 0-<16 months (16 mo)	Children Aged 16- <24 months (8 mo)	Children 24-<36 months (12 mo)	Children 36-64 months (29 mo)
Early Childhood Staff Needed	868	347	325	629
Total	2,169			

Solution: Choosing the Right Staffing Rate

Importantly, the number above represents workforce numbers necessary to provide ECE for 100% of children aged 0-4 in District 10. However, ECE participation rates from America’s Health Rankings (2024), provide more realistic metrics on which to base our projections. Nationally, Connecticut has the highest rate of Early Childhood Education use at 55.5%, while West Virginia has the lowest at 23.5%; and Virginia is somewhere in the middle at 38.5% (ranked 27th).

Projected Childcare Needs and Staffing at Different Enrollment Rates

Based on ECE participation rates in West Virginia, Virginia, and Connecticut, the following table shows three scenarios for estimated 2030 staffing requirements:

Table 6: Current and Projected Childcare Staff Needs by Enrollment Rate

Enrollment Rate	Staff Needed (2030)
Current West Virginia Rate 23.5%	511
Current Virginia 38.5%	835
Current Connecticut 55.5%	1,004

Several other considerations highlight the need to build additional staff (beyond the numbers detailed in table 6) into pipelines aimed at meeting 2030 projections. These include:

1. The model above assumes perfect distribution of educators amongst programs, all of which are operating at full ratio capacity. Additional educators are required for a more flexible and realistic scenario.
2. Numbers do not account for a pool of qualified substitutes. Lack of staffing flexibility can:
 - a. Preclude adequate professional development and program observations
 - b. Increase educator stress & burnout
 - c. Lower program quality
3. Program administration is not counted in projected staff needs

Conclusion

The findings of this report underscore the critical need for strategic planning and resource allocation to meet the early childhood education needs in Planning District 10. With a projected population growth across all localities within the district, the demand for childcare spots is expected to increase significantly by 2030. Our analysis indicates that to accommodate 100% of children aged 0-64 months, the district would require 2,169 teaching staff by 2030. However, a more realistic target based on desired system-wide improvements and current enrollment rates suggests that the necessary staffing will fall within the range of 835 and 1,004; depending on the specific rate of early childhood education use.

An important note for further consideration is that the Virginia Infant and Toddler Gap Analysis Report cites five primary barriers to accessing infant and toddler care in the state (Franko and Murphy, 2023), just the first of which (Availability) is addressed by this report. The remaining four include:

1. Expense
2. Support for Multiple Children
3. Hours
4. Location

The insights and data presented in this report serve as a foundational step towards strategic planning and investment in early childhood education infrastructure, ultimately contributing to the well-being and future success of the children in Planning District 10.

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