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## Estimating the Demand for and Supply of Early Childhood Education in Northwest Arkansas

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# Estimating the Demand for and Supply of Early Childhood Education in Northwest Arkansas



UNIVERSITY OF  
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## EXECUTIVE SUMMARY

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The Helen R. Walton Children’s Enrichment Center (HWCEC) partnered with the Center for Business and Economic Research (CBER) in the Sam M. Walton College of Business at the University of Arkansas to conduct a study that delivers insight to the Northwest Arkansas community about the existing landscape of early childhood education in 2016. Detailed data about the availability and use of early childhood education in Benton and Washington Counties, along with possible barriers preventing early childhood education providers from gaining and maintaining quality accreditation, are presented in this study. Additionally, the CBER researchers estimate the demand for and supply of early childhood education slots in Benton and Washington Counties over the coming five and ten years.

The results have mixed implications for policy-makers and community leaders. First, in 2016, there existed substantial availability of unused infant/toddler and pre-K state-approved slots in Benton and Washington Counties. The slots remained open despite population usage rates that exceeded the national average for early childhood education. Also, early childhood education providers reported availability of slots across facilities at every level of quality rating. Additionally, there was no measurable difference in the average daily rates charged by early childhood education facilities with differing levels of quality accreditation. Because price is among the considerations that parents face when choosing early childhood education, the excess supply may indicate an affordability mismatch, rather than too much capacity in the system.

The populations of Benton and Washington Counties are projected to continue to grow into 2021 and 2026. As the overall population increases, so too will the demand for early childhood education, particularly as the benefits of a high quality experience are recognized. Early childhood education providers have already begun making plans to expand the number of state-approved slots that will be available in the future. If these plans are implemented as expected, and if usage rates increase modestly, then all the available future slots will be occupied.

Finally, early childhood education providers were asked about the barriers to improving their quality accreditation ratings. Choices included not being aware of the program and its benefits, parents not having interest in the rating, the cost of achieving the three star rating being higher than perceived benefits, and “other.” In Benton County, 23.1 percent of the early childhood education centers that responded said the costs of acquiring a higher rating were larger than the perceived benefits. 39.1 percent of the Benton County early childhood education centers chose ‘other’ as their reason, and a plurality of the respondents that chose ‘other’ said that they were working on acquiring a higher rating. Among the Washington County early childhood education centers, 28.6 percent of respondents reported that parents of their children were uninterested in the centers’ ratings and 23.8 percent reported that the costs were higher than the perceived benefits. Half of the Washington County early childhood education centers that chose ‘other,’ said that they were working on acquiring a higher rating.

Selected county level results of the study are presented on the next two pages.

**BENTON COUNTY EARLY CHILDHOOD EDUCATION**

- There were 2,802 state-approved early childhood education center slots for infants and toddlers in Benton County in 2016.
  - On average, an estimated 24.3 percent of the slots were vacant during the year.
  - Only 20.3 percent of the state-approved slots were in centers that had the highest state quality rating.
  - An estimated 18.4 percent of the population of Benton County’s infants and toddlers made use of early childhood education centers in 2016.
  - Early childhood education centers planned to offer a total of 3,104 slots for infants and toddlers by 2021 and a total of 3,438 slots by 2026.
  - If the usage rate rose from 18.4 percent of Benton County infants and toddlers in 2016 to 23.7 percent in 2021 and 23.4 percent in 2026, all of the projected infant and toddler slots in Benton County would be occupied.
  
- There were 6,358 state-approved pre-K slots in early childhood education centers in Benton County in 2016.
  - On average, an estimated 15.1 percent of the slots were vacant during the year.
  - Only 35.2 percent of the state-approved slots were in centers that had the highest state quality rating.
  - An estimated 64.2 percent of Benton County’s pre-K children made use of early childhood education centers in 2016.
  - Early childhood centers planned to offer a total of 6,917 slots for pre-K children in 2021 and a total of 7,304 slots in 2026.
  - If the usage rate rose from 64.2 percent of three and four-year-olds in 2016 to 72.1 percent in 2021 and 67.8 percent in 2026, all of the projected pre-K slots in Benton County would be occupied.

<b>Benton County Early Childhood Education</b>		
	Infants/ Toddlers	Pre-K
<b>Early Childhood Education Center Slots (2016)</b>	2,802	6,358
<b>Vacancy Rates at Childhood Education Centers (2016)</b>	24.3%	15.1%
<b>Childhood Education Slots of Highest Quality (2016)</b>	20.3%	35.2%
<b>Estimated Usage Rate as a Percent of Overall Population (2016)</b>	18.4%	64.2%
<b>Estimated Early Childhood Education Slots in 2021</b>	3,104	6,917
<b>Estimated Usage Rate for Full Capacity in 2021</b>	23.7%	72.1%
<b>Estimated Early Childhood Education Slots in 2026</b>	3,438	7,304
<b>Estimated Usage Rate for Full Capacity in 2026</b>	23.4%	67.8%

WASHINGTON COUNTY EARLY CHILDHOOD EDUCATION

- There were 2,145 state-approved early childhood education center slots for infants and toddlers in Washington County in 2016.
  - On average, an estimated 19.2 percent of the slots were vacant during the year
  - Only 20.6 percent of the state-approved slots were in centers that had the highest state quality rating.
  - An estimated 17.8 percent of Washington County’s infants and toddlers made use of early childhood education centers in 2016.
  - Early childhood centers planned to offer a total of 2,269 slots for infants and toddlers in 2021 and a total of 2,320 slots in 2026.
  - If the usage rate rose from 17.8 percent in 2016 to 19.7 percent in 2021 and 18.5 percent in 2026, all the projected infant and toddler slots in Washington County would be occupied.
  
- There were 5,495 state-approved pre-K slots in early childhood education centers in Washington County in 2016.
  - On average, an estimated 11.9 percent of the slots were vacant during the year.
  - Nearly half (48.5 percent) of the slots were in centers that had the highest state quality rating.
  - An estimated 64.3 percent of the Washington County’s pre-K children made use of early childhood education centers in 2016.
  - Early childhood centers planned to offer a total of 5,926 slots for three and four-year-olds in 2021 and a total of 6,124 slots in 2026.
  - If the usage rate rose from 64.3 percent in 2016 to 69.8 percent in 2021 and 66.1 percent in 2026, all the projected pre-K slots in Washington County would be occupied.

<b>Washington County Early Childhood Education</b>		
	Infants/ Toddlers	Pre-K
<b>Early Childhood Education Center Slots (2016)</b>	2,145	5,495
<b>Vacancy Rates at Childhood Education Centers (2016)</b>	19.2%	11.9%
<b>Childhood Education Slots of Highest Quality (2016)</b>	20.6%	48.5%
<b>Estimated Usage Rate as a Percent of Overall Population (2016)</b>	17.8%	64.3%
<b>Estimated Early Childhood Education Slots in 2021</b>	2,269	5,926
<b>Estimated Usage Rate for Full Capacity in 2021</b>	19.7%	69.8%
<b>Estimated Early Childhood Education Slots in 2026</b>	2,320	6,124
<b>Estimated Usage Rate for Full Capacity in 2026</b>	18.5%	66.1%

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## INTRODUCTION

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Early childhood is generally defined as the period of a child's development between birth and the age of eight, when brain growth lays down the foundations for future development and learning.<sup>i</sup> Early childhood education providers are those that offer early care and education for children from birth to kindergarten entry, typically between birth and five years of age in the United States.<sup>ii</sup> The care and education of children between birth and five years of age takes place in a variety of settings which can include a family or relative's home, non-relative homecare, registered or licensed homecare, and early childhood education centers.

While early childhood education that occurs after the age of five is typically carried out by the school systems in the United States, particular attention is being paid to the patchwork of resources that constitutes the early childhood education providers for children between birth and five years of age. Supported by research on the long-term benefits of quality early childhood education, the promotion and improvement of early childhood education is at the forefront of public policy conversations.

Research, conducted by Bauer and Whitmore Schanzenbach at The Hamilton Project, shows that quality early childhood programs (Head Start was the specific program studied) improved high school graduation rates and increased the likelihood of participants receiving a post-secondary degree, license or certification. In addition to the positive educational outcomes, participants also had improvement in social, emotional and behavioral development that translated to better self-control, self-esteem, and positive parenting in adulthood.<sup>iii</sup> Karoly and Auger at the Rand Corporation found that high quality early childhood education was an important factor in producing the largest effects on school readiness and that the impacts tend to be larger for disadvantaged children. Their research also highlighted the effects of quality early childhood education on reduced use of special education, reduced grade repetition, and higher rates of high school graduation.<sup>iv</sup> In their 2013 study, Yoshikawa et al. estimate that quality early childhood education narrows the achievement gaps for low-income children, minority children, and English language learners, in addition to providing other benefits such as increased years of education completed, improved earnings, reduced crime, and reduced teen pregnancy.<sup>v</sup> Research highlighted by the Minneapolis Federal Reserve indicates that every dollar invested in quality early childhood education returns a twelve percent gain in benefits for the general public from improved earnings and reduction in crime, among other things.<sup>vi</sup>

The positive long-term benefits of quality early childhood education are an important component of a well-rounded approach to improving and sustaining the workforce of a region. Regional economic development organizations and community development organizations such as the Northwest Arkansas Council and the Walton Family Foundation are keenly aware of the important of quality early childhood education in developing a resilient and competitive regional workforce.<sup>vii</sup><sup>viii</sup> Year 2013 data from the National Center for Education Statistics estimated that

nationally, 18.1 percent of children between birth and three years of age were enrolled in an early childhood education center, while 59.4 percent of children aged between three and five years were enrolled in an early childhood education facility.<sup>ix</sup> A survey of Northwest Arkansas residents conducted by the Walton Family Foundation in 2015 indicated that 68.0 percent of the regional respondents thought the pre-K options in Northwest Arkansas were of high-quality, but only 28.0 percent considered the choices to be affordable.<sup>x</sup>

The Helen R. Walton Children’s Enrichment Center (HWCEC) opened the Early Childhood Initiatives Center in 2009 to share knowledge, resources and best practices in early childhood education. The Center works to improve the quality of early childhood education in Northwest Arkansas, specifically in Benton and Washington Counties. The work carried out by the HWCEC is an important component of improving the workforce in Northwest Arkansas by providing quality early education options for the children of a skilled, regional adult workforce and ensuring that the early childhood education providers continue to offer learning opportunities that lead to a future resilient, skilled regional workforce.

With the community goal of increasing access to quality early childhood education in Benton and Washington Counties, the HWCEC partnered with the Center for Business and Economic Research (CBER) in the Sam M. Walton College of Business at the University of Arkansas to conduct a study that will deliver insights to the Northwest Arkansas community about the existing landscape of early childhood education. As part of this study, the CBER collected and analyzed data about the availability and use of early childhood education in Benton and Washington Counties. The study also explored the barriers preventing early childhood education providers from gaining and maintaining quality accreditation. Additionally, the CBER researchers estimated the demand for and supply of early childhood education in Benton and Washington Counties by 2021 and by 2026.

The following section outlines the structure of this study.

## STUDY STRUCTURE

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Researchers from the CBER used a two-pronged approach to generate insights into the current landscape of early-childhood education in Northwest Arkansas. First, data were collected from the Division of Child Care and Early Childhood Education, an office within the Arkansas Department of Human Services. The data accumulated from the state agency provided researchers with a broad overview of the early childhood education services available to residents in Northwest Arkansas. Information about the total number of approved childhood education slots and the average rates charged were analyzed from the data and summaries are provided in the following section. Secondly, researchers supplemented the data provided by the state agency with additional information gathered from surveys.

In this study, early childhood education providers are separated into three primary categories based on the level of service and the age of children cared for. Early childhood education centers are categorized into those serving either or both infants and toddlers (birth to three years of age) and to those serving pre-K children (three to five years of age). The early childhood education homecare providers were in a third, separate category and served children between birth and five years of age.

Data gathered from the Department of Human Services also enabled researchers to categorize and quantify the numbers of early childhood education providers by their state quality rating. The Arkansas Department of Human Services manages a quality accreditation program for early childhood education providers called Better Beginnings.<sup>xi</sup> The voluntary Better Beginnings rating system has a three star quality improvement rating system. A provider with a one star rating has completed the minimum requirements to participate in the quality improvement program, while a provider with a three star rating meets or exceeds the highest standards set by the Better Beginnings program. As quality early childhood education is important for development of the region's children, it essential to understand the ratings of the current early childhood education providers in the Northwest Arkansas region.

A majority of early childhood education providers in both Benton and Washington Counties have fewer than three stars in the Better Beginnings quality improvement program. Only 26.7 percent of early childhood education centers and 13.0 percent of homecare providers have the highest accreditation level in Benton County. In Washington County, 42.3 percent of early childhood education centers and 12.0 percent of homecare providers have a three star rating. A significant percentage of early childhood education centers and homecare providers in Benton County and in Washington County do not participate in the voluntary Better Beginnings quality improvement rating system. Some of these centers may acquire accreditation or ratings from an alternative ratings agency. The data also do not include informal childcare providers who are neither registered nor regulated by the state. In the following section, analysis by researchers shows the availability and use of childhood education slots in the different quality categories and an

enumeration of the barriers and challenges that prevent providers from acquiring higher levels of quality accreditation.

TABLE 1: NUMBER OF EARLY CHILDHOOD EDUCATION PROVIDERS BY QUALITY RATING (2016)

<b>Number of Early Childhood Education Providers by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers</b>	28	5	29	43	105
<b>Percent of Total</b>	26.7%	4.8%	27.6%	41.0%	100.0%
<b>Washington County Early Childhood Centers</b>	41	4	29	23	97
<b>Percent of Total</b>	42.3%	4.1%	29.9%	23.7%	100.0%
<b>Benton County Early Childhood Homecare</b>	3	0	3	17	23
<b>Percent of Total</b>	13.0%	0.0%	13.0%	73.9%	100.0%
<b>Washington County Early Childhood Homecare</b>	3	1	8	13	25
<b>Percent of Total</b>	12.0%	4.0%	32.0%	52.0%	100.0%

Source: Division of Child Care and Early Childhood Education, Arkansas Department of Human Services

Additional information about the current usage of the early childhood education providers was gained by surveying the centers and homecare providers. Surveys were conducted by phone, online, and via email. The instrument gathered information from providers about current and average use of their facilities, numbers of students using a state provided needs based subsidy, and future capacity expansion plans. Survey instruments were implemented by student researchers from the CBER in coordination with staff at the HWEECC. In Benton County, 69.5 percent of the early childhood education centers and 52.2 percent of the homecare providers responded to the survey, while in Washington County, 76.3 percent of the centers and 84.0 percent of the homecare providers responded. Detailed data and analysis from the survey are provided in the following section. A copy of the survey instrument can be found in the appendix of this document.

TABLE 2: SURVEY RESPONDENTS BY COUNTY

<b>Survey Respondents by County</b>			
	Total	Respondents	Response Rate
<b>Benton County Early Childhood Centers</b>	105	73	69.5%
<b>Benton County Early Childhood Homecare</b>	23	12	52.2%
<b>Washington County Early Childhood Centers</b>	97	74	76.3%
<b>Washington County Early Childhood Homecare</b>	25	21	84.0%
<b>Total Early Childhood Education Centers and Homecare</b>	240	180	75.0%

Source: CBER Survey

In the penultimate section of this study, researchers projected the population growth in Benton and Washington Counties between 2016 and 2027 to estimate the future demand for early

childhood education facilities in these counties. Using information from the survey of providers in both counties about their capacity expansion plans, researchers also estimated the supply and demand for early childhood education facilities in the region. In the final section of this study, a summary of the results is provided.

## NORTHWEST ARKANSAS EARLY CHILDHOOD EDUCATION (2016)

In this section of the study, researchers analyzed data collected from the Arkansas Department of Human Services and additional information collected from phone and email surveys. The information presented is an overview of the availability of slots in early childhood education centers and homecare providers in Benton and Washington Counties. Where available, information about the early childhood education capacity is categorized by the Better Beginnings quality improvement rating and type of facility. This analysis shows the gaps that exist to meet the goal of providing the highest quality of early childhood education for all children in Northwest Arkansas.

### STATE-APPROVED CAPACITY BY QUALITY RATING IN BENTON AND WASHINGTON COUNTIES (2016)

In Benton County, there was a total state-approved capacity of 2,802 slots for infants and toddlers in early childhood education centers in 2016. A total of 20.3 percent of these approved slots for infants and toddlers was in centers with the highest Better Beginnings rating, while 37.7 percent was in centers with no rating from the Better Beginnings system. 42.0 percent of the approved capacity for infants and toddlers was in facilities that were awarded one or two stars in the ratings process.

In Washington County, there was a total state-approved capacity of 2,145 slots for infants and toddlers in early childhood education centers in 2016. A total of 20.6 percent of these approved slots for infants and toddlers was in centers with the highest Better Beginnings rating, while 24.2 percent was in centers with no rating from the Better Beginnings system. 55.2 percent of the approved capacity for infants and toddlers was in facilities that were awarded one or two stars in the ratings process.

TABLE 3: STATE-APPROVED EARLY CHILDHOOD INFANT/TODDLER SLOTS BY QUALITY RATING (2016)

<b>State-Approved Early Childhood Infant/Toddler Slots by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers</b>	569	253	923	1,057	2,802
<b>Percent of Total Capacity</b>	20.3%	9.0%	32.9%	37.7%	100.0%
<b>Washington County Early Childhood Centers</b>	441	226	959	519	2,145
<b>Percent of Total Capacity</b>	20.6%	10.5%	44.7%	24.2%	100.0%

Source: Division of Child Care and Early Childhood Education, Arkansas Department of Human Services

In Benton County, 6,358 slots were state-approved for pre-K in early childhood education centers in 2016. A total of 35.2 percent of these approved slots for pre-K was in centers with the highest Better Beginnings rating, while 39.9 percent was in centers with no rating from the Better Beginnings system. 24.9 percent of the approved capacity for pre-K was in facilities that were awarded one or two stars in the ratings process.

In Washington County, 5,495 slots were state-approved for pre-K in early childhood education centers in 2016. A total of 48.5 percent of these approved slots for pre-K was in centers with the highest Better Beginnings rating, while 21.5 percent was in centers with no rating from the Better Beginnings system. 29.9 percent of the approved capacity for pre-K was in facilities that were awarded one or two stars in the ratings process.

TABLE 4: STATE-APPROVED EARLY CHILDHOOD PRE-K SLOTS BY QUALITY RATING (2016)

<b>State-Approved Early Childhood Pre-K Slots by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers</b>	2,239	298	1,287	2,534	6,358
<b>Percent of Total Capacity</b>	35.2%	4.7%	20.2%	39.9%	100.0%
<b>Washington County Early Childhood Centers</b>	2,667	251	1,393	1,184	5,495
<b>Percent of Total Capacity</b>	48.5%	4.6%	25.4%	21.5%	100.0%

Source: Division of Child Care and Early Childhood Education, Arkansas Department of Human Services

In Benton County, 272 slots were state-approved for early childhood homecare in 2016. A total of 13.2 percent of these approved slots for homecare was in homes with the highest Better Beginnings rating, while 73.5 percent was in homecare with no rating from the Better Beginnings system. 13.2 percent of the approved slots for homecare were in homes that were awarded one or two stars in the ratings process.

In Washington County, 285 slots were state-approved for early childhood homecare in 2016. A total of 10.5 percent of these approved slots for homecare was in homes with the highest Better Beginnings rating, while 49.5 percent was in homecare with no rating from the Better Beginnings system. 40.0 percent of the approved slots for homecare were in homes that were awarded one or two stars in the ratings process.

TABLE 5: STATE-APPROVED EARLY CHILDHOOD HOMECARE SLOTS BY QUALITY RATING (2016)

<b>State-Approved Early Childhood Homecare Slots by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Homecare</b>	36	0	36	200	272
<b>Percent of Total Capacity</b>	13.2%	0.0%	13.2%	73.5%	100.0%
<b>Washington County Early Childhood Homecare</b>	30	16	98	141	285
<b>Percent of Total Capacity</b>	10.5%	5.6%	34.4%	49.5%	100.0%

Source: Division of Child Care and Early Childhood Education, Arkansas Department of Human Services

**EARLY CHILDHOOD EDUCATION RATES BY BETTER BEGINNINGS QUALITY RATING IN BENTON AND WASHINGTON COUNTIES (2016)**

The daily rates for infant slots in Benton County averaged \$31 at early childhood education centers and \$25 at early childhood homecare in 2016. In Washington County, the average rate for infants at early childhood education centers was \$31 per day and was \$22 per day at early childhood homecare providers. Assuming care was provided for 20 days per month, early childhood education centers in Benton and Washington Counties averaged a monthly cost of \$620 for infants. Early childhood homecare for infants averaged a rate of \$500 per month in Benton County and \$440 per month in Washington County. No significant differences in average daily rates for infants were observed among centers or homecare providers with Better Beginnings quality ratings.

TABLE 6: EARLY CHILDHOOD INFANT AVERAGE DAILY RATES BY QUALITY RATING (2016)

<b>Early Childhood Infant Average Daily Rates by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Overall Average
<b>Benton County Early Childhood Centers</b>	\$32	\$32	\$30	\$31	\$31
<b>Benton County Early Childhood Homecare</b>	\$26	NA	\$28	\$24	\$25
<b>Washington County Early Childhood Centers</b>	\$31	\$37	\$32	\$29	\$31
<b>Washington County Early Childhood Homecare</b>	\$18	\$26	\$25	\$20	\$22

Source: Division of Child Care and Early Childhood Education, Arkansas Department of Human Services

The daily rates for toddler slots in Benton County averaged \$28 at early childhood education centers and \$23 at early childhood homecare. In Washington County, the rates per toddler at early childhood education centers averaged \$29 per day and averaged \$19 per day at early childhood homecare providers. Assuming care was provided for 20 days a month, early childhood education centers in Benton County averaged a monthly cost of \$560, while the average monthly cost was \$580 in Washington County. Early childhood homecare for toddlers averaged \$460 per month in Benton County and \$380 per month in Washington County. No significant difference in costs for toddlers was observed among centers or homecare with Better Beginnings quality ratings.

TABLE 7: EARLY CHILDHOOD TODDLER AVERAGE DAILY RATES BY QUALITY RATING (2016)

<b>Early Childhood Toddler Average Daily Rates by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Overall Average
<b>Benton County Early Childhood Centers</b>	\$27	\$32	\$28	\$27	\$28
<b>Benton County Early Childhood Homecare</b>	\$21	NA	\$24	\$23	\$23
<b>Washington County Early Childhood Centers</b>	\$26	\$35	\$30	\$27	\$29
<b>Washington County Early Childhood Homecare</b>	\$17	\$19	\$23	\$18	\$19

Source: Division of Child Care and Early Childhood Education, Arkansas Department of Human Services

The daily rates for pre-K slots in Benton County averaged \$25 at early childhood education centers and \$21 at early childhood homecare. In Washington County, the rates per child at early childhood education centers averaged a cost of \$25 per day and averaged \$21 per day at early childhood homecare providers. Assuming care was provided for 20 days a month, early childhood education centers in Benton and Washington Counties averaged a monthly cost of \$500. Early childhood homecare averaged \$420 per month in both Benton and Washington Counties. No significant difference in costs was observed among centers or homecare providers with Better Beginnings quality ratings.

TABLE 8: EARLY CHILDHOOD PRE-K AVERAGE DAILY RATES BY QUALITY RATING (2016)

<b>Early Childhood Pre-K Average Daily Rates by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Overall Average
<b>Benton County Early Childhood Centers</b>	\$24	\$23	\$26	\$26	\$25
<b>Benton County Early Childhood Homecare</b>	\$20	\$-	\$23	\$21	\$21
<b>Washington County Early Childhood Centers</b>	\$24	\$29	\$29	\$23	\$25
<b>Washington County Early Childhood Homecare</b>	\$21	\$17	\$24	\$18	\$21

Source: Division of Child Care and Early Childhood Education, Arkansas Department of Human Services

#### OCCUPIED SLOTS BY QUALITY RATING IN BENTON AND WASHINGTON COUNTIES (2016)

Information about the number of early childhood slots occupied in Benton and Washington Counties was collected between June and August of 2016. Two separate measures of occupancy were collected: the actual slots filled with children during the summer months and the average annual slots filled with children. In Benton County, 2,168 total slots were occupied by infants and toddlers in early childhood education centers in the summer of 2016. Data compiled from survey respondents indicated that 22.6 percent of the total slots were available for infants and toddlers in Benton County in the summer of 2016. Over the course of the year, 2,121 total seats were occupied on average by infants and toddlers in early childhood education centers in 2016. 74.8 percent of seats for infants and toddlers were occupied on average in centers with the highest rating, while 75.2 percent of the seats were occupied in centers with no rating from the Better Beginnings rating system. 24.3 percent of the total approved seats were available on average for infants and toddlers in Benton County.

In Washington County, 1,700 total slots were occupied by infants and toddlers in early childhood education centers in the summer of 2016. Data compiled from survey respondents indicated that 20.7 percent of the total slots were available for infants and toddlers in Washington County in the summer of 2016. Over the course of the year, 1,733 total seats were occupied on average by infants and toddlers in early childhood education centers in 2016. 71.6 percent of seats for infants and toddlers were occupied on average in centers with the highest rating, while 66.9 percent of the seats were occupied in centers with no rating from the Better Beginnings rating system. 19.2

percent of the total approved seats were available on average for infants and toddlers in Washington County.

TABLE 9: OCCUPIED EARLY CHILDHOOD INFANT/TODDLER SLOTS BY QUALITY RATING (2016)

<b>Occupied Early Childhood Infant/Toddler Slots by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers Slots</b>	569	253	923	1,057	2,802
<b>Percent Occupied during Summer 2016</b>	80.0%	89.9%	74.7%	75.3%	77.4%
<b>Average Annual Percent Occupied</b>	74.8%	89.9%	72.9%	75.2%	75.7%
<b>Washington County Early Childhood Centers Slots</b>	441	226	959	519	2,145
<b>Percent Occupied during Summer 2016</b>	71.8%	83.6%	90.1%	63.5%	79.3%
<b>Average Annual Percent Occupied</b>	71.6%	83.6%	91.9%	66.9%	80.8%

Sources: Division of Child Care and Early Childhood Education, Arkansas DHS, CBER Survey

In Benton County, 5,097 total slots were occupied by pre-K children in early childhood education centers in the summer of 2016. Data compiled from survey respondents indicated that 19.8 percent of the total slots were available for pre-K children in Benton County in the summer of 2016. Over the course of the year, 5,401 total seats were occupied on average by pre-K children in early childhood education centers in 2016. 95.5 percent of seats for pre-K children were occupied on average in centers with the highest rating, while 84.8 percent of the seats were occupied in centers with no rating from the Better Beginnings rating system. 15.1 percent of the total approved seats were available on average for pre-K in Benton County.

In Washington County, 4,619 total slots were occupied by pre-K children in early childhood education centers in the summer of 2016. Data compiled from survey respondents indicated that 15.9 percent of the total slots were available for pre-K in Washington County in the summer of 2016. Over the course of the year, 4,840 total seats were occupied on average by pre-K children in early childhood education centers in 2016. 88.2 percent of seats for pre-K children were occupied on average in centers with the highest rating, while 86.4 percent of the seats were occupied in centers with no rating from the Better Beginnings rating system. 11.9 percent of the total approved seats were available on average for pre-K in Washington County.

TABLE 10: OCCUPIED EARLY CHILDHOOD PRE-K SLOTS BY QUALITY RATING (2016)

<b>Occupied Early Childhood Pre-K Slots by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers Slots</b>	2,239	298	1,287	2,534	6,358
<b>Percent Occupied during Summer 2016</b>	86.0%	67.0%	68.2%	82.7%	80.2%
<b>Average Annual Percent Occupied</b>	95.5%	66.5%	71.1%	84.8%	84.9%
<b>Washington County Early Childhood Centers Slots</b>	2,667	251	1,393	1,184	5,495
<b>Percent Occupied during Summer 2016</b>	83.4%	92.8%	84.5%	83.1%	84.1%
<b>Average Annual Percent Occupied</b>	88.2%	96.0%	87.8%	86.4%	88.1%

Sources: Division of Child Care and Early Childhood Education, Arkansas DHS, CBER Survey

In Benton County, 154 total slots were occupied by children in early childhood homecare in the summer of 2016. Data compiled from survey respondents indicated that 43.4 percent of the total homecare slots were available in the summer of 2016. Over the course of a year, 173 total seats were occupied on average by children in early childhood homecare in 2016. 38.5 percent of seats were occupied on average in homecare with the highest rating, while 66.3 percent of the seats were occupied in homecare with no rating from the Better Beginnings rating system. 36.4 percent of the total approved seats were available on average for homecare in Benton County.

In Washington County, 198 total slots were occupied by children in early childhood homecare in the summer of 2016. Data compiled from survey respondents indicated that 30.5 percent of the total homecare slots were available in the summer of 2016. Over the course of the year, 252 total seats were occupied on average by children in early childhood homecare in 2016. 100.0 percent of seats were occupied on average in homecare with the highest rating, while 84.3 percent of the seats were occupied in homecare with no rating from the Better Beginnings rating system. 11.6 percent of the total approved seats were available on average for homecare in Washington County.

TABLE 11: OCCUPIED EARLY CHILDHOOD HOMECARE SLOTS BY QUALITY RATING (2016)

<b>Occupied Early Childhood Homecare Slots by Quality Rating (2016)</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Homecare Slots</b>	36	0	36	200	272
<b>Percent Occupied during Summer 2016</b>	23.1%	N/A	57.7%	62.5%	56.6%
<b>Average Annual Percent Occupied</b>	38.5%	N/A	73.1%	66.3%	63.6%
<b>Washington County Early Childhood Homecare Slots</b>	30	16	98	141	285
<b>Percent Occupied during Summer 2016</b>	35.0%*	100.0%	68.4%	74.1%	69.5%
<b>Average Annual Percent Occupied</b>	100.0%*	100.0%	88.8%	84.3%	88.4%

\*Survey respondents indicated that they are typically full, despite reporting lower than 100.0% occupancy during Summer 2016. Sources: Division of Child Care and Early Childhood Education, Arkansas DHS, CBER Survey

**OCCUPIED SLOTS BY NEED BASED SUBSIDY IN BENTON AND WASHINGTON COUNTIES (2016)**

The income levels and poverty status of the families of the children in early childhood education in Benton and Washington Counties were unavailable, so researchers used proxies such as participation in the Special Nutrition Program (SNP), voucher programs, and the Arkansas Better Chance (ABC) programs. The set of factors that would qualify a student for services under these subsidy programs varies, although income is a factor in all of these programs. Other factors that would qualify children to receive subsidies through the programs include other risk factors such as low educational attainment of the parent, ESL family status, low birth weight, family member’s substance abuse, and others.

In 2016, 207 infants and toddlers in Benton County (or 7.4 percent of the number of state-approved early childhood slots) and 442 infants and toddlers in Washington County (or 20.6 percent of the approved slots) received meals at their early childhood education center through the Special Nutrition program. In Benton County, 5.2 percent of the infant and toddler slots were subsidized through a voucher program and 0.7 percent were subsidized through the ABC program. In Washington County, 4.9 percent of the infant and toddler slots were subsidized through a voucher program and 1.2 percent were subsidized through the ABC program. There is some overlap between the children that qualify for the Special Nutrition Program and the voucher and ABC programs.

TABLE 12: OCCUPIED EARLY CHILDHOOD INFANT/TODDLER SLOTS BY NEED BASED SUBSIDY

<b>Occupied Early Childhood Infant/Toddler Slots by Need Based Subsidy</b>			
	SNP	Voucher	ABC
<b>Benton County Early Childhood Centers Slots</b>	2,802		
<b>Percent of Children with Need Based Subsidy</b>	7.4%	5.2%	0.7%
<b>Washington County Early Childhood Centers Slots</b>	2,145		
<b>Percent of Children with Need Based Subsidy</b>	20.6%	4.9%	1.2%

Sources: Division of Child Care and Early Childhood Education, Arkansas DHS, CBER Survey

In 2016, 1,020 pre-K children in Benton County (or 16.0 percent of the state-approved slots) and 1,984 pre-K children in Washington County (or 36.1 percent of the approved slots) received meals at their early childhood education center through the Special Nutrition Program. In Benton County, 1.9 percent of the pre-K slots were subsidized through a voucher program and 17.3 percent were subsidized through the ABC program. In Washington County, 3.3 percent of the pre-K slots were subsidized through a voucher program and 10.1 percent were subsidized through the ABC program. There is some overlap between the children that qualify for the Special Nutrition Program and the voucher and ABC programs.

TABLE 13: OCCUPIED EARLY CHILDHOOD PRE-K SLOTS BY NEED BASED SUBSIDY

<b>Occupied Early Childhood Pre-K Slots by Need Based Subsidy</b>			
	SNP	Voucher	ABC
<b>Benton County Early Childhood Centers Slots</b>	6,358		
<b>Percent of Children with Need Based Subsidy</b>	16.0%	1.9%	17.3%
<b>Washington County Early Childhood Centers Slots</b>	5,495		
<b>Percent of Children with Need Based Subsidy</b>	36.1%	3.3%	10.1%

Sources: Division of Child Care and Early Childhood Education, Arkansas HS, CBER Survey

In 2016, 64 homecare children in Benton County (or 23.7 percent of the approved slots) and 130 homecare children in Washington County (or 45.7 percent of the approved slots) received meals at their early childhood homecare facility through the Special Nutrition program. In Benton County, no homecare slots were subsidized through a voucher program and 5.1 percent were subsidized through the ABC program. In Washington County, 0.4 percent of the homecare seats was subsidized through a voucher program and 10.5 percent were subsidized through the ABC program. There is some overlap between the children that qualify for the Special Nutrition Program and the voucher and ABC programs.

TABLE 14: OCCUPIED EARLY CHILDHOOD HOMECARE SLOTS BY NEED BASED SUBSIDY

<b>Occupied Early Childhood Homecare Slots by Need Based Subsidy</b>			
	SNP	Voucher	ABC
<b>Benton County Early Childhood Centers Slots</b>	272		
<b>Percent of Children with Need Based Subsidy</b>	23.7%	-	5.1%
<b>Washington County Early Childhood Centers Slots</b>	285		
<b>Percent of Children with Need Based Subsidy</b>	45.7%	0.4%	10.5%

Sources: Division of Child Care and Early Childhood Education, Arkansas DHS, CBER Survey

### BARRIERS TO ACQUIRING A HIGHER BETTER BEGINNINGS RATING

Respondents to the survey who had fewer than three stars from the state’s Better Beginning quality improvement rating system were given an opportunity to describe the barriers keeping them from acquiring a higher rating. Choices included not being aware of the program and its benefits, parents not having interest in the rating, the cost of achieving the three star rating being higher than perceived benefits, and “other.” In Benton County, 23.1 percent of the early childhood education centers that responded said the costs of acquiring a higher rating were larger than the perceived benefits. Another 39.1 percent of the Benton County early childhood education centers chose ‘other’ as their reason, and a plurality of the respondents that chose ‘other’ said that they were working on acquiring a higher rating. Among the Washington County early childhood education centers, 28.6 percent of respondents reported that parents of their children were uninterested in the centers’ ratings and 23.8 percent reported that the costs were higher than the perceived benefits. Half of the Washington County early childhood education centers that chose ‘other,’ said that they were working on acquiring a higher rating. Among early

childhood education homecare providers in Benton County, 66.7 percent of the respondents said that they did not seek a higher quality rating due to the parents' lack of interest in the ratings, while in Washington County homecare providers were evenly divided between those who reported that parents were not interested in the ratings and those who reported that the costs of acquiring the ratings were higher than the benefits.

TABLE 15: BARRIERS TO ACQUIRING A HIGHER BETTER BEGINNINGS RATING

<b>Reported Barriers to Acquiring a Higher Better Beginnings Rating</b>				
	Benton County Centers	Benton County Homecare	Washington County Centers	Washington County Homecare
<b>Not aware of program and it's benefits</b>	2.6%	0.0%	9.5%	10.0%
<b>Parents not interested</b>	15.4%	66.7%	28.6%	20.0%
<b>Cost is higher than benefit</b>	23.1%	16.7%	23.8%	20.0%
<b>Other</b>	39.1%	16.7%	38.1%	50.0%
<b>Number of Respondents</b>	39	6	21	10

Source: CBER Survey

## FUTURE DEMAND AND SUPPLY OF EARLY CHILDHOOD EDUCATION

In this section of this study, researchers projected the population growth in Benton and Washington Counties between 2016 and 2027 to estimate the number of children in both counties that are between the ages of birth and five years of age. Combining these estimates with information from the survey of providers about current usage rates and capacity expansion plans by 2021 and 2026, researchers estimated the demand for and supply of early childhood education facilities in the region. Researchers collected population estimates data for Benton and Washington Counties going back to 1980 and these data were used in producing a population forecast.

### POPULATION PROJECTIONS

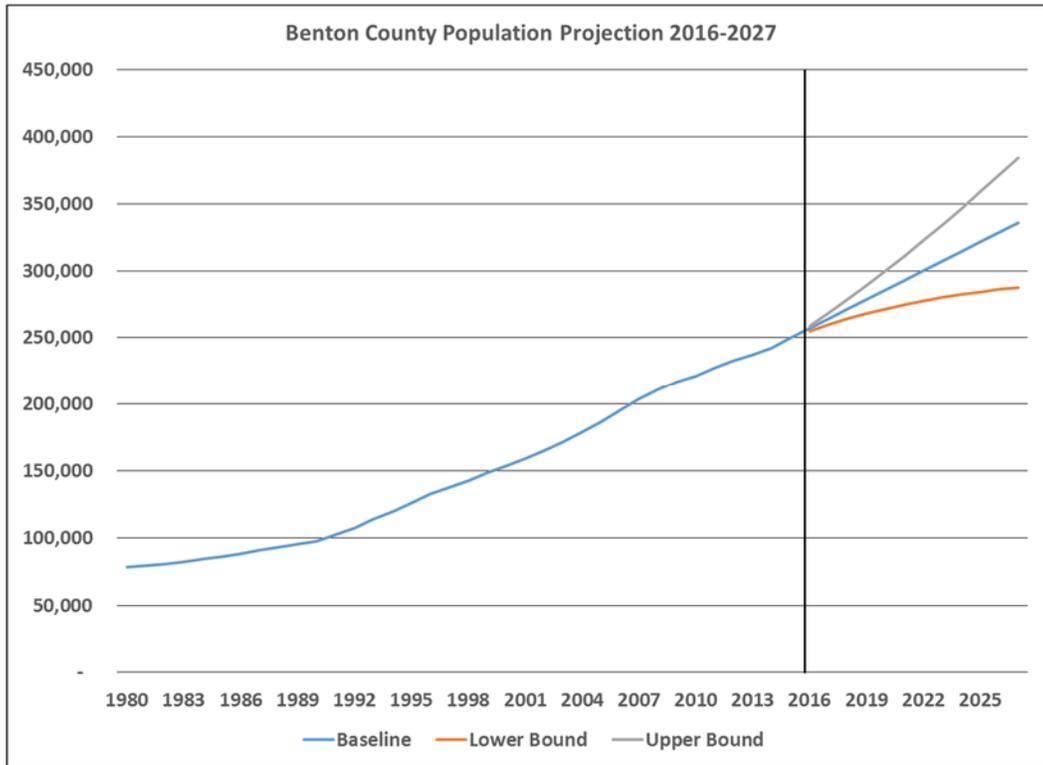
The following table shows the population growth in the Benton County from 78,115 in 1980 to 249,672 in 2015. Specifically, the population of Benton County grew 24.9 percent between 1980 and 1990, 57.2 percent between 1990 and 2000, 44.4 percent between 2000 and 2010, and 12.8 percent between 2010 and 2015. The annual population forecast for Benton County from 2016 to 2027 was developed using a Holt's Linear Exponential Smoothing Model. This model allows for forecasting of the data by using a smoothing equations for the level and trend each. The table and chart below shows the growth in Benton County's population. The population of Benton County is forecasted to grow from 249,672 in 2015 to 292,805 in 2021 and to 328,793 in 2026. The 95% confidence lower and upper bounds of the population estimates are also presented in the table and graph that follow.

TABLE 16: BENTON COUNTY POPULATION PROJECTION 2016-2027

Year	Baseline	Year	Baseline	Lower Bound	Upper Bound
1980	78,115	2004	179,010		
1981	79,240	2005	186,756		
1982	80,220	2006	195,569		
1983	81,850	2007	203,664		
1984	84,046	2008	210,807		
1985	85,837	2009	216,620		
1986	87,747	2010	221,339		
1987	90,922	2011	227,556		
1988	93,096	2012	232,739		
1989	94,972	2013	237,301		
1990	97,530	2014	242,321		
1991	102,583	2015	249,672		
1992	107,529	2016	256,816	254,789	258,844
1993	113,667	2017	264,014	259,644	268,384
1994	119,451	2018	271,212	263,981	278,442
1995	126,211	2019	278,409	267,883	288,935
1996	132,490	2020	285,607	271,402	299,812
1997	137,751	2021	292,805	274,573	311,036
1998	142,496	2022	300,002	277,425	322,579
1999	148,636	2023	307,200	279,979	334,420
2000	153,323	2024	314,398	282,254	346,541
2001	159,258	2025	321,595	284,264	358,926
2002	164,926	2026	328,793	286,022	371,563
2003	171,742	2027	335,990	287,540	384,441

Source: U.S. Census Bureau Population Estimates Program and CBER Estimates

FIGURE 1: BENTON COUNTY POPULATION PROJECTION 2016-2027



Source: U.S. Census Bureau Population Estimates Program and CBER Estimates

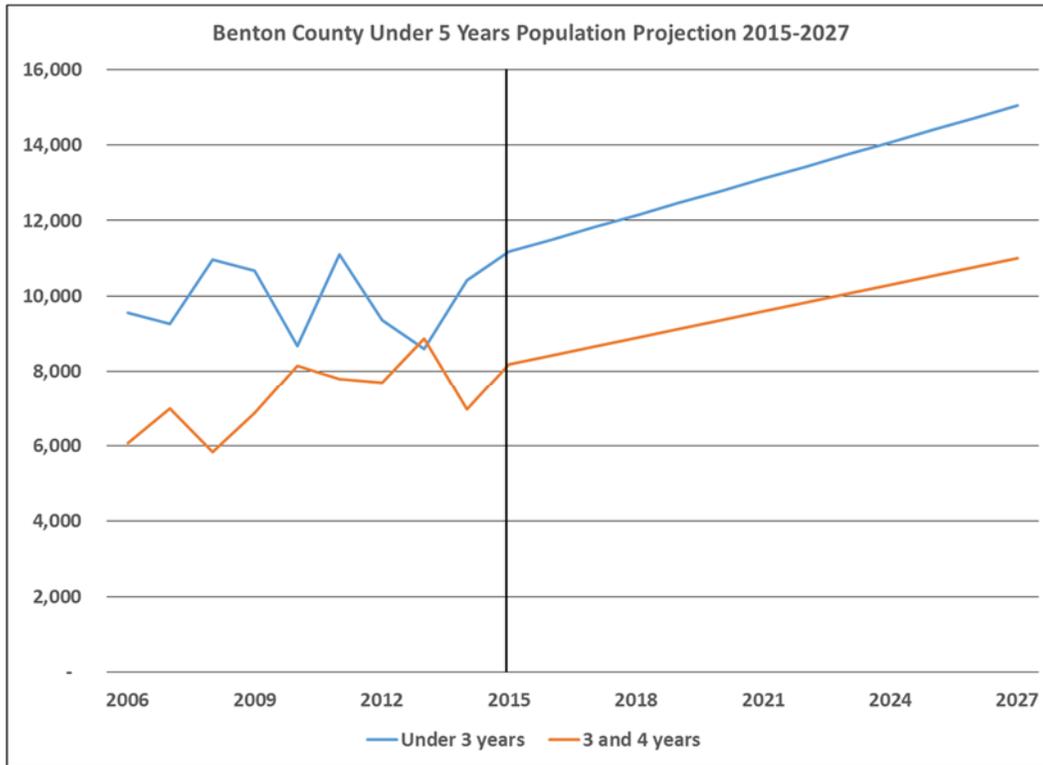
Data on school enrollment by category from 2006 to 2014 allowed researchers to calculate children under three and the number of children between three and five as a percentage of the total population. On average, 4.5 percent of the Benton County population was under the age of three and 3.3 percent was between three and five-years-old. These percentages were used to estimate the number of children under three-years-old and the number of children between three and five-years-old using the Benton County population projected above. These projections indicate that the number of children under age three will grow from 10,416 in 2014 to 13,110 in 2021 and to 14,722 in 2026. Similarly, the number of children between the ages of three and five-years-old will grow from 6,973 in 2014 to 9,595 in 2021 and to 10,774 in 2026. The detailed data on these projections are presented in the table and chart that follow.

TABLE 17: BENTON COUNTY UNDER 5 YEARS POPULATION PROJECTION 2015-2027

<b>Benton County Under 5 Years Population Projection 2015-2027</b>		
<b>Year</b>	<b>Under 3-years-old</b>	<b>3 and 4-years-old</b>
2006	9,547	6,066
2007	9,266	6,977
2008	10,961	5,827
2009	10,675	6,868
2010	8,673	8,145
2011	11,097	7,798
2012	9,359	7,696
2013	8,599	8,872
2014	10,416	6,973
<b>Projection</b>		
2015	11,179	8,181
2016	11,499	8,416
2017	11,821	8,651
2018	12,143	8,887
2019	12,466	9,123
2020	12,788	9,359
2021	13,110	9,595
2022	13,432	9,831
2023	13,755	10,067
2024	14,077	10,302
2025	14,399	10,538
2026	14,722	10,774
2027	15,044	11,010

Source: U.S. Census Bureau Population Estimates Program and CBER Estimates

FIGURE 2: BENTON COUNTY UNDER 5 YEARS POPULATION PROJECTION 2015-2027



Source: U.S. Census Bureau Population Estimates Program and CBER Estimates

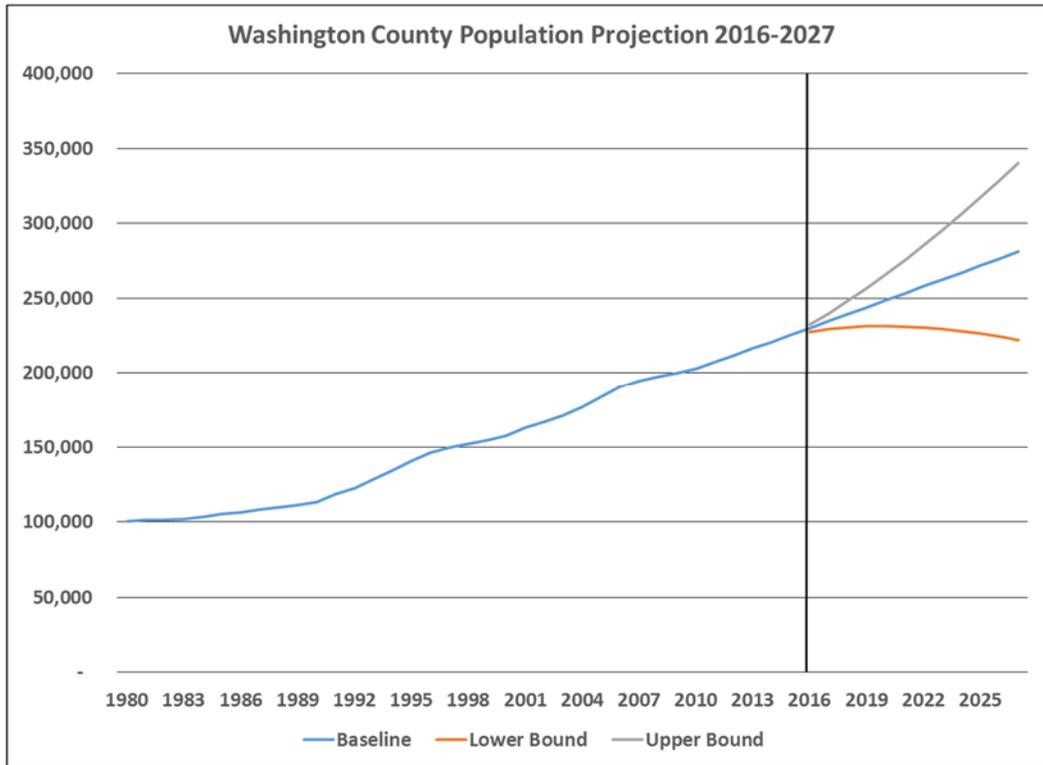
The following table shows the population growth in the Washington County from 100,494 in 1980 to 225,477 in 2015. Specifically, the population of Washington County grew 12.9 percent between 1980 and 1990, 39.1 percent between 1990 and 2000, 28.8 percent between 2000 and 2010, and 11.0 percent between 2010 and 2015. The annual population forecast for Washington County from 2016 to 2027 was developed using a Holt’s Linear Exponential Smoothing Model. The table and chart below shows the growth in Washington County’s population. The population of Washington County is forecasted to grow from 225,477 in 2015 to 253,237 in 2021 and to 276,387 in 2026. The 95% confidence lower and upper bounds of the population estimates are also presented in the table and graph that follow.

TABLE 18: WASHINGTON COUNTY POPULATION PROJECTION 2016-2027

<b>Year</b>	<b>Baseline</b>	<b>Year</b>	<b>Baseline</b>	<b>Lower Bound</b>	<b>Upper Bound</b>
<b>1980</b>	100,494	<b>2004</b>	176,837		
<b>1981</b>	101,197	<b>2005</b>	183,799		
<b>1982</b>	101,464	<b>2006</b>	190,314		
<b>1983</b>	102,041	<b>2007</b>	194,526		
<b>1984</b>	103,516	<b>2008</b>	197,223		
<b>1985</b>	105,092	<b>2009</b>	199,774		
<b>1986</b>	106,372	<b>2010</b>	203,065		
<b>1987</b>	108,088	<b>2011</b>	207,521		
<b>1988</b>	109,560	<b>2012</b>	211,734		
<b>1989</b>	111,127	<b>2013</b>	216,753		
<b>1990</b>	113,409	<b>2014</b>	220,792		
<b>1991</b>	118,789	<b>2015</b>	225,477		
<b>1992</b>	122,506	<b>2016</b>	230,087	227,681	232,493
<b>1993</b>	128,474	<b>2017</b>	234,717	229,498	239,936
<b>1994</b>	134,163	<b>2018</b>	239,347	230,659	248,034
<b>1995</b>	140,913	<b>2019</b>	243,977	231,280	256,674
<b>1996</b>	146,123	<b>2020</b>	248,607	231,426	265,788
<b>1997</b>	149,609	<b>2021</b>	253,237	231,145	275,329
<b>1998</b>	151,909	<b>2022</b>	257,867	230,470	285,264
<b>1999</b>	154,627	<b>2023</b>	262,497	229,429	295,565
<b>2000</b>	157,715	<b>2024</b>	267,127	228,044	306,210
<b>2001</b>	163,151	<b>2025</b>	271,757	226,335	317,180
<b>2002</b>	166,859	<b>2026</b>	276,387	224,316	328,459
<b>2003</b>	171,424	<b>2027</b>	281,017	222,001	340,033

Source: U.S. Census Bureau Population Estimates Program and CBER Estimates

FIGURE 3: WASHINGTON COUNTY POPULATION PROJECTION 2016-2027



Source: U.S. Census Bureau Population Estimates Program and CBER Estimates

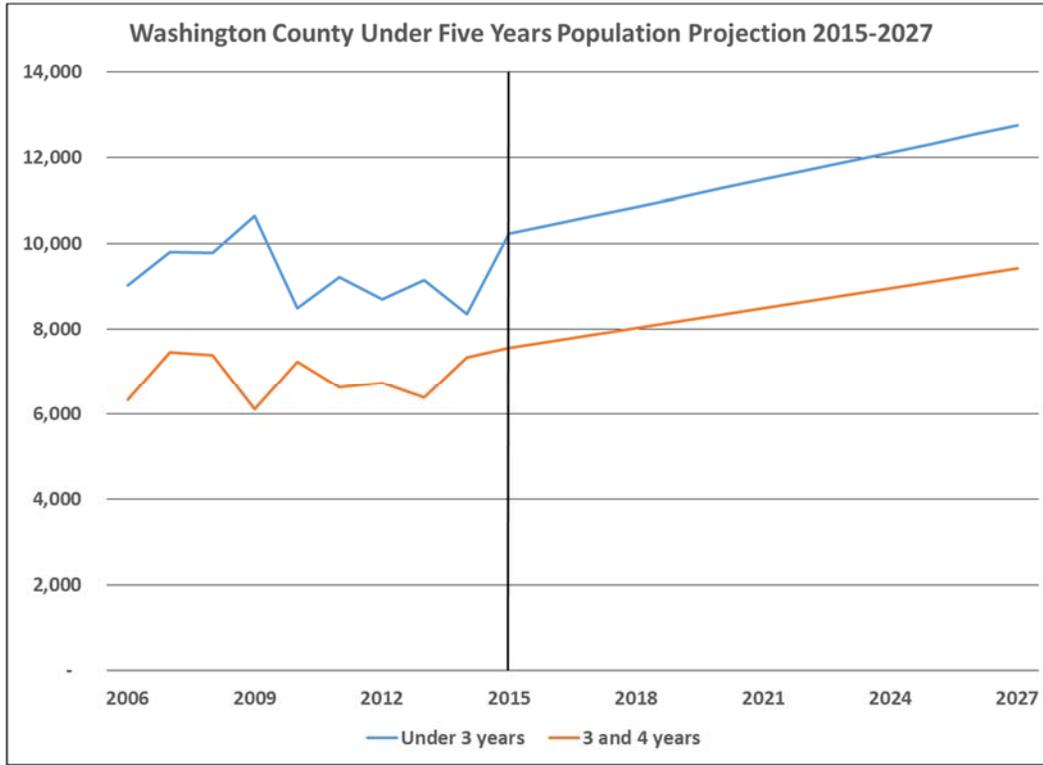
Data on school enrollment by category from 2006 to 2014 allowed researchers to calculate children under three and the number of children between the ages of three and five as a percentage of the total population. On average, 4.5 percent of the Washington County population was under the age of three and 3.4 percent was between three and five-years-old. This percentage was used to estimate the number of children aged under three and the number of children between three and five-years-old using the Washington County population projected above. These projections indicate that the number of children under age three will grow from 8,362 in 2014 to 11,491 in 2021 and to 12,542 in 2026. Similarly, children between three and five-years-old will grow from 7,343 in 2014 to 8,495 in 2021 and to 9,272 in 2026. The detailed data on these projections are presented in the table and chart that follow.

TABLE 19: WASHINGTON COUNTY UNDER 5 YEARS POPULATION PROJECTION 2015-2027

<b>Washington County Under 5 Years Population Projection 2015-2027</b>		
<b>Year</b>	<b>Under 3 years</b>	<b>3 and 4 years</b>
2006	9,032	6,342
2007	9,806	7,459
2008	9,792	7,385
2009	10,654	6,114
2010	8,500	7,238
2011	9,222	6,634
2012	8,711	6,737
2013	9,156	6,395
2014	8,362	7,343
<b>Projection</b>		
2015	10,232	7,564
2016	10,441	7,718
2017	10,651	7,874
2018	10,861	8,029
2019	11,071	8,184
2020	11,281	8,340
2021	11,491	8,495
2022	11,701	8,650
2023	11,912	8,806
2024	12,122	8,961
2025	12,332	9,116
2026	12,542	9,272
2027	12,752	9,427

Source: U.S. Census Bureau Population Estimates Program and CBER Estimates

FIGURE 4: WASHINGTON COUNTY UNDER 5 YEARS POPULATION PROJECTION 2015-2027



Source: U.S. Census Bureau Population Estimates Program and CBER Estimates

### PROJECTED EARLY CHILDHOOD EDUCATION SLOT GROWTH

Respondents to the phone and email survey estimated the number of additional early childhood education slots they planned to add to their facilities during the next five and ten years of operation. These numbers were used to estimate to the total number of slots that will be added by early childhood education providers in Benton and Washington Counties by 2021 and by 2026.

### ESTIMATED EARLY CHILDHOOD EDUCATION SLOTS BY 2021

Early childhood education providers in Benton County planned to add 302 slots for infants and toddlers by 2021. Of those, 132 slots were going to be added by providers who currently have no Better Beginnings rating, while 68 would be added by 2021 among providers with a three star rating. A total of 10 slots were going to be added by homecare providers in Benton County.<sup>1</sup> Early childhood education providers in Washington County planned to add 124 slots for infants and

<sup>1</sup> The estimated growth in homecare slots is excluded from the projections below because of the lack of availability of age-based data for those slots and the fact that there were so few reported.

toddlers by 2021. 117 slots were going to be added by providers who currently have a one star rating. No additional homecare slots were expected to be added in Washington County.

TABLE 20: ADDITIONAL SUPPLY OF EARLY CHILDHOOD INFANT/TODDLER SLOTS BY QUALITY RATING BY 2021

<b>Additional Supply of Early Childhood Infant/Toddler Slots by Quality Rating by 2021</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers</b>	68	15	87	132	302
<b>Washington County Early Childhood Centers</b>	(3)	5	117	6	124

Source: CBER Survey

By adding up the existing number of approved slots in Benton and Washington Counties with the estimated additions by 2021, researchers were able to estimate the total number of infant and toddler slots that will be supplied by early childhood education centers in Benton and Washington Counties.

In Benton County, 18.4 percent of the 2016 population of infants and toddlers (between birth and three years of age) make use of an early childhood education center based on the CBER survey results and population estimates. This percentage was slightly higher than the national average of 18.1 percent (from 2012 statistics).<sup>xii</sup> Assuming a similar percentage of use continues in five years, there will be an excess supply of 686 slots among providers in Benton County in 2021. The projected excess supply of infant and toddler slots in Benton County in 2021 will not be significantly different than the 2016 unused capacity of infant and toddler slots, at 681. If the usage rate rose from 18.4 percent in 2016 to 23.7 percent in 2021, all the available infant and toddler slots in Benton County would be occupied. Additionally, if Benton County parents wished to enroll every infant and toddler in 2021 in an early childhood education center, there would be a shortage of 10,006 slots.

In Washington County, 17.8 percent of the 2016 population of infants and toddlers (between birth and three years of age) make use of an early childhood education center. This was slightly lower than the national average of 18.1 percent (from 2012 statistics).<sup>xiii</sup> If a similar percentage of use continues in five years, there will be an excess supply of 223 slots among providers in Washington County in 2021. The excess supply of infant and toddler slots in Washington County in 2021 is significantly lower than the 2016 unused capacity of infant and toddler slots, at 412. If the usage rate rose from 17.8 percent in 2016 to 19.7 percent in 2021, all the available infant and toddler slots in Washington County will be occupied. If Washington County parents wished to enroll every infant and toddler in 2021 in an early childhood education center, there would be a shortage of 9,222 slots.

TABLE 21: DEMAND FOR AND SUPPLY OF EARLY CHILDHOOD INFANT/TODDLER SLOTS BY 2021

<b>Demand for and Supply of Early Childhood Infant/Toddler Slots by 2021</b>		
	Benton County	Washington County
<b>2016 Estimated Population of Birth to Three-Year-Olds</b>	11,499	10,441
<b>2016 State-Approved Infant/Toddler Slots</b>	2,802	2,145
<b>2016 Average Occupied Slots</b>	2,121	1,859
<b>2016 Estimated Usage Rate as a Percent of Population</b>	18.4%	17.8%
<b>2021 Estimated Population of Birth to Three-Year-Olds</b>	13,110	11,491
<b>2021 Estimated State-Approved Infant/Toddlers Slots</b>	3,104	2,269
<b>2021 Estimated Occupied Slots at 2016 Usage Level</b>	2,418	2,046
<b>2021 Estimated Excess (Shortage) at 2016 Usage Level</b>	686	223
<b>2021 Estimated Excess (Shortage) at Full Population Usage Level</b>	(10,006)	(9,222)

Source: CBER Survey and Population Estimates

Early childhood education providers in Benton County planned to add 559 slots for pre-K by 2021. Of those, 256 slots were going to be added by providers who currently have no rating, while 188 will be added by 2021 among providers with a three star rating. 10 slots were going to be added by homecare providers in Benton County. Early childhood education providers in Washington County planned to add 431 slots for pre-K by 2021. Of those, 231 slots were going to be added by providers who currently have a one star rating and 101 slots were going to be added by providers who currently have no rating.

TABLE 22: ADDITIONAL SUPPLY OF EARLY CHILDHOOD PRE-K SLOTS BY QUALITY RATING BY 2021

<b>Additional Supply of Early Childhood Pre-K Slots by Quality Rating by 2021</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers</b>	188	34	81	256	559
<b>Washington County Early Childhood Centers</b>	94	5	231	101	431

Source: CBER Survey

By adding up the current availability of slots in Benton and Washington Counties with the estimated additions by 2021, researchers were able to estimate the total number of pre-K slots that will be supplied by early childhood education centers in Benton and Washington Counties.

In Benton County, 64.2 percent of the 2016 population of pre-K children (three and four-year-olds) make use of an early childhood education center. This was higher than the national average of 59.4 percent (from 2012 statistics).<sup>xiv</sup> If a similar percentage of use continues in five years, there will be an excess supply of 759 slots among providers in Benton County in 2021. The projected excess supply of pre-K slots in Benton County in 2021 is lower than the 2016 unused capacity of pre-K slots, at 957. If the usage rate rose from 64.2 percent in 2016 to 72.1 percent in 2021, all the available pre-K slots in Benton County would be occupied. If Benton County parents

wished to enroll every pre-K child in 2021 in an early childhood education center, there would be a shortage of 2,678 slots.

In Washington County, 64.3 percent of the 2016 population of pre-K (three and four-year-olds) make use of an early childhood education center. This was higher than the national average of 59.4 percent (from 2012 statistics).<sup>xv</sup> If a similar percentage of use continues in five years, there will be an excess supply of 460 slots among providers in Washington County in 2021. The projected excess supply of pre-K slots in Washington County in 2021 is lower than the 2016 unused capacity of pre-K slots, at 655. If the usage rate rose from 64.3 percent in 2016 to 69.8 percent in 2021, all the available pre-K slots in Washington County would be occupied. If Washington County parents wished to enroll every pre-K child in 2021 in an early childhood education center, there would be a shortage of 2,569 slots.

TABLE 23: DEMAND FOR AND SUPPLY OF EARLY CHILDHOOD PRE-K SLOTS IN 5 YEARS

<b>Demand for and Supply of Early Childhood Pre-K Slots in 5 Years</b>		
	Benton County	Washington County
<b>2016 Estimated Population of Three and Four-Year-Olds</b>	8,416	7,718
<b>2016 State-Approved Pre-K Slots</b>	6,358	5,495
<b>2016 Average Occupied Slots</b>	5,401	4,966
<b>2016 Estimated Usage Rate as a Percent of Population</b>	64.2%	64.3%
<b>2021 Estimated Population of Three and Four-Year-Olds</b>	9,595	8,495
<b>2021 Estimated State-Approved Pre-K Slots</b>	6,917	5,926
<b>2021 Estimated Occupied Slots at 2016 Usage Level</b>	6,158	5,466
<b>2021 Estimated Excess (Shortage) at 2016 Usage Level</b>	759	460
<b>2021 Estimated Excess (Shortage) at Full Population Usage Level</b>	(2,678)	(2,569)

Source: CBER Survey and Estimates

#### ESTIMATED EARLY CHILDHOOD EDUCATION SLOTS BY 2026

Early childhood education providers in Benton County planned to add 636 slots for infants and toddlers by 2026. Of those, 420 slots were going to be added by providers who currently have no rating, while 121 will be added by 2021 among providers with a one star rating. 22 slots were going to be added by homecare providers in Benton County.<sup>2</sup> Early childhood education providers in Washington County planned to add 175 slots for infants and toddlers by 2026. 130 slots were going to be added by providers who currently have a one star rating. No homecare slots were expected to be added in Washington County by 2026.

TABLE 24: ADDITIONAL SUPPLY OF EARLY CHILDHOOD INFANT/TODDLER SLOTS BY QUALITY RATING IN 10 YEARS

<sup>2</sup> The estimated growth in homecare slots is excluded from the projections below because of the lack of availability of age-based data for those slots and the fact that there were so few reported.

<b>Additional Supply of Early Childhood Infant/Toddler Slots by Quality Rating in 10 Years</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers</b>	80	15	121	420	636
<b>Washington County Early Childhood Centers</b>	20	10	130	16	175

Source: CBER Survey

By adding up the current availability of slots in Benton and Washington Counties with the estimated additions by 2026, researchers were able to estimate the total number of infant and toddler slots that will be supplied by early childhood education centers in Benton and Washington Counties.

If the usage of infant and toddler slots in ten years remains similar to the 2016 percentage (18.4 percent), there will be an excess supply of 723 slots among providers in Benton County in 2026. The projected excess supply of infant and toddler slots in Benton County in 2026 is higher than the 2021 unused capacity of infant and toddler slots, at 686. If the usage rate rose from 18.4 percent in 2016 to 23.4 percent in 2026, all the available infant and toddler slots in Benton County would be occupied. If Benton County parents wished to enroll every infant and toddler in 2026 in an early childhood education center, there would be a shortage of 11,284 slots.

If the usage of infant and toddler slots in ten years remains similar to the 2016 percentage of use (17.8 percent), there will be an excess supply of 87 slots among providers in Washington County in 2026. The projected excess supply of infant and toddler slots in Washington County in 2026 is significantly lower than the 2021 unused capacity of infant and toddler slots, at 223. If the usage rate rose from 17.8 percent in 2016 to 18.5 percent in 2026, all the available infant and toddler slots in Washington County would be occupied. If Washington County parents wished to enroll every infant and toddler in 2026 in an early childhood education center, there would be a shortage of 10,222 slots.

TABLE 25: DEMAND FOR AND SUPPLY OF EARLY CHILDHOOD INFANT/TODDLER SLOTS IN 10 YEARS

<b>Demand for and Supply of Early Childhood Infant/Toddler Slots in 10 Years</b>		
	Benton County	Washington County
<b>2026 Estimated Population of Birth to Three-Year-Olds</b>	14,722	12,542
<b>2026 Estimated State-Approved Infant/Toddler Slots</b>	3,438	2,320
<b>2026 Estimated Occupied Slots at 2016 Usage Level</b>	2,715	2,233
<b>2026 Estimated Excess (Shortage) at 2016 Usage Level</b>	723	87
<b>2026 Estimated Excess (Shortage) at Full Population Usage Level</b>	(11,284)	(10,222)

Source: CBER Survey and Estimates

Early childhood education providers in Benton County planned to add 946 slots for pre-K by 2026. 503 slots were going to be added by providers who currently have no rating, while 285 will be added by 2021 among providers with a three star rating. Early childhood education providers in

Washington County planned to add 629 slots for pre-K by 2026. Of those, 281 slots were going to be added by providers who currently have a one star rating, and 187 slots were going to be added by providers who currently have a three star rating.

TABLE 26: ADDITIONAL SUPPLY OF EARLY CHILDHOOD PRE-K SLOTS BY QUALITY RATING IN 10 YEARS

<b>Additional Supply of Early Childhood Pre-K Slots by Quality Rating in 10 Years</b>					
	Three Stars	Two Stars	One Star	No Rating	Total
<b>Benton County Early Childhood Centers</b>	285	34	123	503	946
<b>Washington County Early Childhood Centers</b>	187	10	281	151	629

Source: CBER Survey

By adding up the current availability of slots in Benton and Washington Counties with the estimated additions by 2026, researchers were able to estimate the total number of pre-K slots that will be supplied by early childhood education centers in Benton and Washington Counties.

If the usage of pre-K slots in ten years remains similar to the 2016 percentage of use (64.2 percent), there will be an excess supply of 389 slots among providers in Benton County in 2026. The projected excess supply of pre-K slots in Benton County in 2026 is lower than the 2021 unused capacity of pre-K slots, at 759. If the usage rate rose from 64.2 percent in 2016 to 67.8 percent in 2026, all the available pre-K slots in Benton County will be occupied. If Benton County parents wished to enroll every pre-K child in 2026 in an early childhood education center, there would be a shortage of 3,470 slots.

If the usage of pre-K slots in ten years remains similar to the 2016 percentage of use (64.2 percent), there will be an excess supply of 159 slots among providers in Washington County in 2026. The projected excess supply of pre-K slots in Washington County in 2026 is lower than the 2021 unused capacity of pre-K slots, at 460. If the usage rate rose from 64.3 percent in 2016 to 66.1 percent in 2026, all the available pre-K slots in Washington County will be occupied. If Washington County parents wished to enroll every pre-K child in 2026 in an early childhood education center, there would be a shortage of 3,148 slots.

TABLE 27: DEMAND FOR AND SUPPLY OF EARLY CHILDHOOD PRE-K SLOTS IN 10 YEARS

<b>Demand for and Supply of Early Childhood Pre-K Slots in 10 Years</b>		
	Benton County	Washington County
<b>2026 Estimated Population of Three and Four-Year-Olds</b>	10,774	9,272
<b>2026 Estimated State-Approved Pre-K Slots</b>	7,304	6,124
<b>2026 Estimated Occupied Slots at 2016 Usage Level</b>	6,915	5,965
<b>2026 Estimated Excess (Shortage) at 2016 Usage Level</b>	389	159
<b>2026 Estimated Excess (Shortage) at Full Population Usage Level</b>	(3,470)	(3,148)

Source: CBER Survey and Estimates

## SUMMARY OF RESULTS

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### NORTHWEST ARKANSAS EARLY CHILDHOOD EDUCATION (2016)

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The information presented is an overview of the availability of slots in early childhood education centers and homecare providers in Benton and Washington Counties. Where available, information about the early childhood education capacity is categorized by the Better Beginnings quality improvement rating and type of facility.

### EARLY CHILDHOOD EDUCATION CENTERS FOR INFANTS AND TODDLERS

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- In Benton County, there was a total state-approved capacity of 2,802 slots for infants and toddlers in early childhood education centers in 2016.
  - 20.3 percent of these approved slots for infants and toddlers were in centers with the highest Better Beginnings rating.
  - Early child education centers for infants averaged rates of \$620 per month, while slots for toddlers averaged rates of \$560 per month.
  - During the summer of 2016, 2,168 total slots were occupied in early childhood education centers, yielding a vacancy rate of 22.6 percent.
  - Over the course of a year, on average, 2,121 total seats were occupied by infants and toddlers in early childhood education centers. On average, 24.3 percent of the total approved seats were unused for infants and toddlers in Benton County.
  - 7.4 percent of the total state-approved slots in Benton County were occupied by children who received meals through the Special Nutrition Program.
- In Washington County, there was a total state-approved capacity of 2,145 slots for infants and toddlers in early childhood education centers in 2016.
  - 20.6 percent of these approved slots for infants and toddlers were in centers with the highest Better Beginnings rating.
  - Early child education centers for infants and toddlers averaged rates of \$620 per month, while slots for toddlers averaged rates of \$580 per month.
  - During the summer of 2016, 1,700 total slots were occupied in early childhood education centers, yielding a vacancy rate of 20.7 percent.
  - Over the course of a year, on average, 1,733 total seats were occupied by infants and toddlers in early childhood education centers. On average, 19.2 percent of the total approved seats were unused for infants and toddlers in Washington County.
  - 20.6 percent of the total state-approved slots in Washington County were occupied by children who received meals through the Special Nutrition Program.

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## EARLY CHILDHOOD EDUCATION CENTERS FOR PRE-K

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- In Benton County, there was a total state-approved capacity of 6,358 slots for pre-K in early childhood education centers in 2016.
  - 35.2 percent of these approved slots for pre-K were in centers with the highest Better Beginnings rating.
  - Early child education centers for pre-K averaged rates of \$500 per month.
  - During the summer of 2016, 5,097 total slots were occupied in early childhood education centers, yielding a vacancy rate of 19.8 percent.
  - Over the course of a year, on average, 5,401 total seats were occupied by pre-K children in early childhood education centers. On average, 15.1 percent of the total approved seats were unused for pre-K in Benton County.
  - 16.0 percent of the total state-approved slots in Benton County were occupied by children who received meals through the Special Nutrition Program and 17.3 percent were occupied by children receiving ABC payments.
  
- In Washington County, there was a total state-approved capacity of 5,495 slots for pre-K in early childhood education centers in 2016.
  - 48.5 percent of these approved slots for pre-K were in centers with the highest Better Beginnings rating.
  - Early child education centers for pre-K averaged rates of \$500 per month.
  - During the summer of 2016, 4,619 total slots were occupied in early childhood education centers, yielding a vacancy rate of 15.9 percent.
  - Over the course of a year, on average, 4,840 total seats were occupied by pre-K children in early childhood education centers. On average, 11.9 percent of the total approved seats were unused for pre-K in Washington County.
  - 36.1 percent of the total state-approved slots in Washington County were occupied by children who received meals through the Special Nutrition Program and 10.1 percent were occupied by children receiving ABC payments.

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## EARLY CHILDHOOD EDUCATION HOMECARE

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- In Benton County, there was a total state-approved capacity of 272 slots for early childhood education homecare in 2016.
  - 13.2 percent of these approved slots for homecare were in homes with the highest Better Beginnings rating.
  - Early child education homecare for infants averaged rates of \$500 per month, care for toddlers averaged rates of \$460, and care for pre-K children averaged rates of \$420.
  - During the summer of 2016, 154 total slots were occupied in early childhood education homecare, yielding a vacancy rate of 43.4 percent.

- Over the course of a year, on average, 173 total seats were occupied in early childhood education homecare. On average, 36.4 percent of the total approved homecare seats were unused in Benton County.
- 23.7 percent of the total approved slots in Benton County were occupied by children who received meals through the Special Nutrition Program and 5.1 percent were occupied by children receiving ABC payments.
- In Washington County, there was a total state-approved capacity of 285 slots for early childhood education homecare in 2016.
  - 10.5 percent of these approved slots for homecare were in homes with the highest Better Beginnings rating.
  - Early child education homecare for infants averaged rates of \$440 per month, care for toddlers averaged rates of \$380, and care for pre-K children averaged rates of \$420.
  - During the summer of 2016, 198 total slots were occupied in early childhood education homecare, yielding a vacancy rate of 30.5 percent.
  - Over the course of a year, on average, 252 total seats were occupied in early childhood education homecare. On average, 11.6 percent of the total approved homecare seats were unused in Washington County.
  - 45.7 percent of the total approved slots in Washington County were occupied by children who received meals through the Special Nutrition Program and 10.5 percent were occupied by children receiving ABC payments.

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#### BARRIERS TO ACQUIRING A HIGHER BETTER BEGINNINGS RATING

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- Early childhood education providers were asked about the barriers to improving their quality accreditation ratings. Choices included not being aware of the program and its benefits, parents not having interest in the rating, the cost of achieving the three star rating being higher than perceived benefits, and “other.”
- In Benton County, 23.1 percent of the early childhood education centers that responded said the costs of acquiring a higher Better Beginnings rating were larger than the perceived benefits. 39.1 percent of the Benton County early childhood education centers chose ‘other’ as their reason, and a plurality of the respondents that chose ‘other’ said that they were working on acquiring a higher rating.
- Among the Washington County early childhood education centers, 28.6 percent of respondents reported that parents of their children were uninterested in the centers’ ratings and 23.8 percent reported that the costs were higher than the perceived benefits. Half of the Washington County early childhood education centers that chose ‘other,’ said that they were working on acquiring a higher rating.
- 66.7 percent of the Benton County homecare providers said that they did not seek a higher quality rating due to the parents’ lack of interest in the ratings, while homecare

providers in Washington County were evenly divided between those who reported that parents were not interested in the ratings and those who reported that the costs of acquiring the ratings were higher than the benefits.

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## ESTIMATES OF FUTURE DEMAND AND SUPPLY OF EARLY CHILDHOOD EDUCATION

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Researchers projected the population growth in Benton and Washington Counties between 2016 and 2027 to estimate the number of children in both counties that will be between the ages of birth and five years of age. Combining these estimates with information from the survey of providers about current usage rates and capacity expansion plans by 2021 and 2026, researchers estimated the demand for and supply of early childhood education facilities in the region.

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### EARLY CHILDHOOD EDUCATION DEMAND AND SUPPLY FOR INFANT AND TODDLER SLOTS

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- In Benton County, 18.4 percent of the 2016 population of infants and toddlers (between birth and three years of age) made use of an early childhood education center.
  - Assuming a similar percentage of use continues, there will be an excess supply of 686 slots among providers in Benton County in 2021 and an excess supply of 723 slots in 2026.
  - If the usage rate rose from 18.4 percent in 2016 to 23.7 percent in 2021 and 23.4 percent in 2026, all the available infant and toddler slots in Benton County would be occupied.
  - If Benton County parents wished to enroll every infant and toddler in an early childhood education center, there would be a shortage of 10,006 slots in 2021 and a shortage of 11,284 slots in 2026.
- In Washington County, 17.8 percent of the 2016 population of infants and toddlers (between birth and three years of age) made use of an early childhood education center.
  - Assuming a similar percentage of use continues, there will be an excess supply of 223 slots among providers in Washington County in 2021 and an excess supply of 87 slots in 2026.
  - If the usage rate rose from 17.8 percent in 2016 to 19.7 percent in 2021 and 18.5 percent in 2026, all the available infant and toddler slots in Washington County would be occupied.
  - If Washington County parents wished to enroll every infant and toddler in an early childhood education center, there would be a shortage of 9,222 slots in 2021 and a shortage of 10,222 slots in 2026.

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## EARLY CHILDHOOD EDUCATION DEMAND AND SUPPLY FOR PRE-K SLOTS

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- In Benton County, 64.2 percent of the 2016 population of pre-K children (three and four-year-olds) made use of an early childhood education center.
  - Assuming a similar percentage of use continues, there will be an excess supply of 759 slots among providers in Benton County in 2021 and an excess supply of 389 slots in ten years.
  - If the usage rate rose from 64.2 percent in 2016 to 72.1 percent in 2021 and 67.8 percent in 2026, all the available infant and toddler slots in Benton County would be occupied.
  - If Benton County parents wished to enroll every infant and toddler in an early childhood education center, there would be a shortage of 2,678 slots in 2021 and a shortage of 3,470 slots in 2026.
- In Washington County, 64.3 percent of the 2016 population of pre-K children (three and four-year-olds) made use of an early childhood education center.
  - Assuming a similar percentage of use continues, there will be an excess supply of 460 slots among providers in Washington County in 2021 and an excess supply of 159 slots in ten years.
  - If the usage rate rose from 64.3 percent in 2016 to 69.8 percent in 2021 and 66.1 percent in 2026, all the available infant and toddler slots in Washington County would be occupied.
  - If Washington County parents wished to enroll every infant and toddler in an early childhood education center, there would be a shortage of 2,569 slots in 2021 and 3,148 slots in 2026.

## APPENDIX

### EARLY CHILDHOOD SUPPLY SURVEY

#### Script:

Hello, my name is \_\_\_\_\_ and I am from the Center for Business and Economic Research at the University of Arkansas. We are conducting a study to estimate the demand for and supply of early childhood education in Northwest Arkansas and I was wondering if I could ask you a few questions. Should you choose to participate; all information will be kept confidential to the extent allowed by law and University policy. No personally identifying information will be used in any publication resulting from this research. You are under no obligation to answer any particular question, and you may cease participation at any time. This study is being conducted under the guidelines of the Institutional Review Board at the University of Arkansas and you should feel free to contact Iroshi Windwalker, Compliance Coordinator, (irb@uark.edu) if you have any concerns. May I begin?

#### Questions:

**From the Arkansas Childcare Information Portal, we understand that you have \_\_\_\_ infant/toddler spots and \_\_\_\_ preschool spots at your facility. Is this correct? (Y/N)**

1. How many of your approved daycare spots at each level (infant/toddler, preschool) are currently taken? \_\_\_\_ Infant/Toddler, \_\_\_\_ Preschool
2. On average, during a year, how many of your daycare spots at each level (infant/toddler, preschool, school age) are taken? \_\_\_\_ Infant/Toddler, \_\_\_\_ Preschool
3. How many users of the daycare facility make use of supplemental nutrition programs at each level? \_\_\_\_ Infant/Toddler, \_\_\_\_ Preschool
4. How many users of the facility qualify for state-funded tuition vouchers at each level? \_\_\_\_ Infant/Toddler, \_\_\_\_ Preschool
5. How many users of the facility qualify for ABC payments at each level? \_\_\_\_ Infant/Toddler, \_\_\_\_ Preschool
6. How many spots, if any, do you plan to add at each level (infant/toddler, preschool, school age) over the next five/ten years?

Infant/Toddler (5 Years)	Preschool (5 Years)
Infant/Toddler (10 Years)	Preschool (10 Years)

7. What are the barriers to acquiring and maintaining the Arkansas Better Beginnings 3 star rating?  
\_\_\_\_ Not aware of the program and its benefits \_\_\_\_ Parents are not interested in the rating \_\_\_\_ Cost of achieving the three star rating is higher than perceived benefits  
\_\_\_\_ Other \_\_\_\_\_

## SOURCES

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- <sup>ii</sup> <http://www.ed.gov/early-learning/elc-draft-summary/definitions>
- <sup>iii</sup> [http://www.hamiltonproject.org/papers/the\\_long\\_term\\_impacts\\_of\\_head\\_start?wpmm=1&wpisrc=nl\\_wonk](http://www.hamiltonproject.org/papers/the_long_term_impacts_of_head_start?wpmm=1&wpisrc=nl_wonk)
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- <sup>v</sup> <http://fcd-us.org/sites/default/files/Evidence%20Base%20on%20Preschool%20Education%20FINAL.pdf>
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- <sup>vii</sup> <http://www.aradvocates.org/nwa-business-leaders-praise-early-education-investment/>
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- <sup>ix</sup> [https://nces.ed.gov/programs/digest/d14/tables/dt14\\_202.30.asp?current=yes](https://nces.ed.gov/programs/digest/d14/tables/dt14_202.30.asp?current=yes)
- <sup>x</sup> <http://www.waltonfamilyfoundation.org/~media/documents/2015-nwa-quality-of-life-final.pdf?la=en>
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- <sup>xiii</sup> Ibid.
- <sup>xiv</sup> Ibid.
- <sup>xxv</sup> Ibid.