



Residential Demand





The population of Franklin County is constantly changing, the result of births, deaths, in-migration, and out-migration. In recent decades, Franklin County has ranked among the fastest-growing counties in the state of Virginia. The population has grown from approximately 28,500 people in 1970, to more than 52,500 people today – an increase of nearly 17 % per decade over the last 40 years.

Franklin County's **land development** ordinances help to make sure that there is enough land available to meet future population demand. Moreover, the ordinances attempt to arrange this residential demand in a way that mitigates any negative impacts and accommodates the efficient delivery of County services.





Background

In order to plan for future residential demand, it is helpful to understand historical population patterns. To do this, we compare data from various sources, and identify the statistical trends that best explain how Franklin County is growing.

Most people are familiar with the U.S. Census Bureau, which conducts a nationwide population survey every ten years. In addition to the Census, other agencies and private companies provide demographic surveys and analysis. For the purposes of this study, Franklin County is also using data supplied by the Virginia Employment Commission and Woods & Poole Economics, Inc., a Washington D.C.-based research firm.

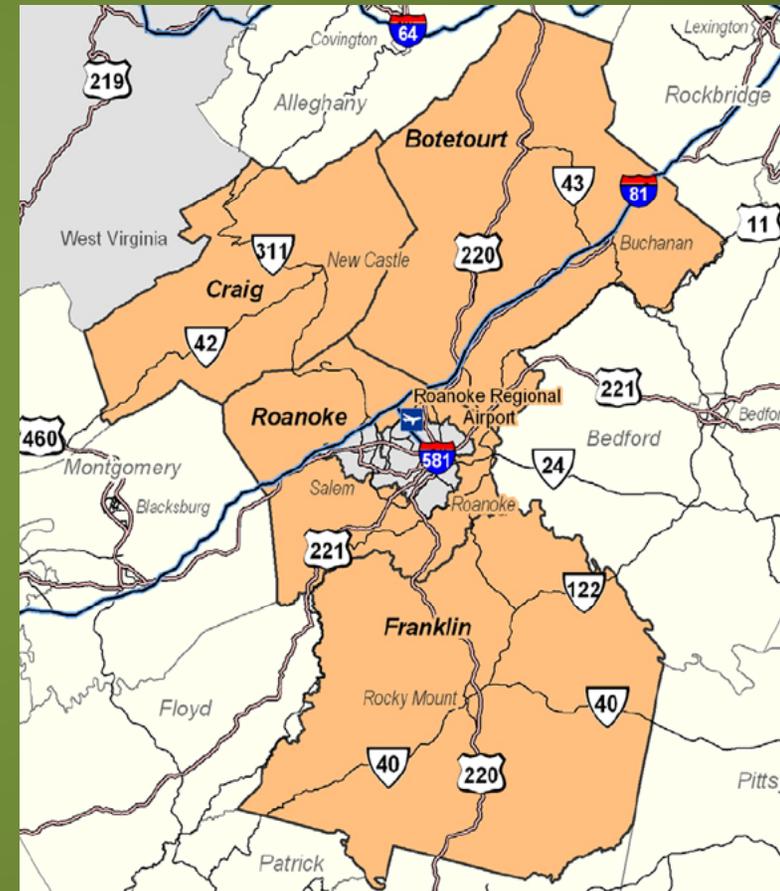


Background

As we begin to look at the history of Franklin County's population growth, it is useful to also look at the growth of the greater Roanoke region.

The Roanoke **Metropolitan Statistical Area** includes the following jurisdictions:

- Roanoke City
- City of Salem
- Botetourt County
- Craig County
- Franklin County
- Roanoke County





Background

Looking back over the last four decades, we can see that the population of Franklin County has nearly doubled since 1970. Franklin County has added **24,419** new residents over the last 40 years – an average of about 610 new people per year.

The Roanoke region has also grown over the last four decades. The region has added **69,296** new residents over the last 40 years – an average of about 1,732 new people per year.

Source: U.S. Census

Year	Franklin County	Roanoke MSA
1970	28,163	231,316
1975	32,500	253,400
1980	35,740	260,081
1985	36,926	263,208
1990	39,549	268,513
1995	42,751	275,696
2000	47,286	288,309
2005	49,755	291,810
2010	52,582	300,612



Background

To some degree, Franklin County's population growth can be explained by residential demand in the greater Roanoke region. As the region gains in population, it stands to reason that Franklin County will receive a share of those new residents.

To see how much of a factor regional growth plays, we compare Franklin County's population as percentage of the region's population.

Source: U.S. Census			
Year	Franklin County	Roanoke MSA	Franklin County as % of MSA
1970	28,163	231,316	12.2 %
1975	32,500	253,400	12.8 %
1980	35,740	260,081	13.7 %
1985	36,926	263,208	14.0 %
1990	39,549	268,513	14.7 %
1995	42,751	275,696	15.5 %
2000	47,286	288,309	16.4 %
2005	49,755	291,810	17.1 %
2010	52,582	300,612	17.5 %

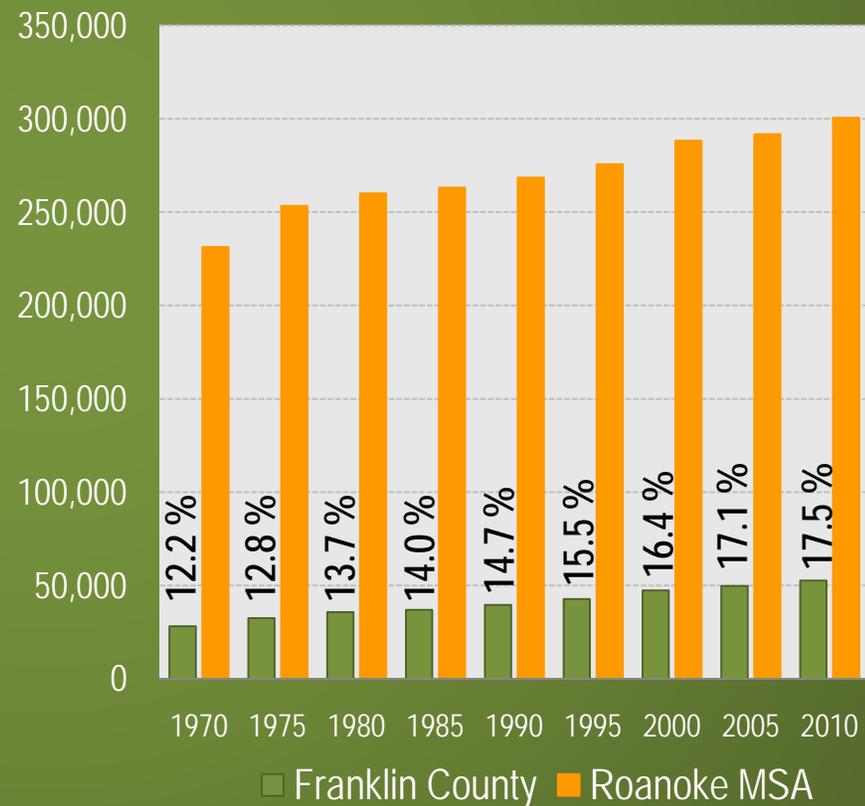


Background

This analysis shows that Franklin County represents an increasing share of the Roanoke region's population. In 1970, Franklin County accounted for about 12 % of the region's population. By 2010, Franklin County accounted for more than 17 % of the region's population.

From this, we can conclude that Franklin County is growing **faster** than the region as a whole.

Franklin County & Roanoke MSA
Population Estimates
1970-2010





Background

To get a sense of how fast Franklin County is growing, we look to see how the population has changed from one year to the next. The **% change** gives us an annual rate of population growth.

Because this rate can vary from year to year, it is helpful to “smooth-out” the data by calculating an average annual growth rate for each decade.

Using this method, we see that Franklin County grew at an average rate of **1.07 %** per year over the last decade.

Source: U.S. Census

Year	Population	% change from previous year	average annual % change for decade
2001	47,882	1.26 %	1.07 %
2002	48,267	0.80 %	
2003	48,669	0.83 %	
2004	49,220	1.13 %	
2005	49,755	1.09 %	
2006	50,340	1.18 %	
2007	51,272	1.85 %	
2008	51,477	0.40 %	
2009	52,027	1.07 %	
2010	52,582	1.07 %	



Background

Repeating this analysis, we see that Franklin County grew at an average annual rate of **2.42 %** in the 1970s, **1.02 %** in the 1980s, and **1.81 %** in the 1990s.

Year	Pop.	% change from previous year	average annual % change for decade
1971	29,400	4.39 %	2.42 %
1972	30,200	2.72 %	
1973	30,500	0.99 %	
1974	31,300	2.26 %	
1975	32,500	3.83 %	
1976	33,200	2.15 %	
1977	34,300	3.31 %	
1978	35,00	2.04 %	
1979	35,800	2.29 %	
1980	35,740	-0.17 %	

Year	Pop.	% change from previous year	average annual % change for decade
1981	35,859	0.33 %	1.02 %
1982	36,165	0.85 %	
1983	36,313	0.41 %	
1984	36,672	0.99 %	
1985	36,926	0.69 %	
1986	36,765	-0.44 %	
1987	37,374	1.66 %	
1988	37,958	1.56 %	
1989	38,932	2.57 %	
1990	39,549	1.58 %	

Year	Pop.	% change from previous year	average annual % change for decade
1991	40,506	2.42 %	1.81 %
1992	40,941	1.07 %	
1993	41,502	1.37 %	
1994	41,997	1.19 %	
1995	42,751	1.80 %	
1996	43,367	1.44 %	
1997	43,973	1.40 %	
1998	44,604	1.43 %	
1999	45,220	1.38 %	
2000	47,286	4.57 %	



Background

1970s		1980s		1990s		2000s	
Year	average annual % change for decade	Year	average annual % change for decade	Year	average annual % change for decade	Year	average annual % change for decade
1971	2.42 %	1981	1.02 %	1991	1.81 %	2001	1.07 %
1972							
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		1986		1996		2006	
		1987		1997		2007	
		1988		1998		2008	
		1989		1999		2009	
		1990		2000		2010	

Over the 40-year time period from 1971 to 2010, Franklin County grew at an average annual rate of **1.55 %** per year.

Average Annual Growth Rate from 1970-2010

1.55 %



Background

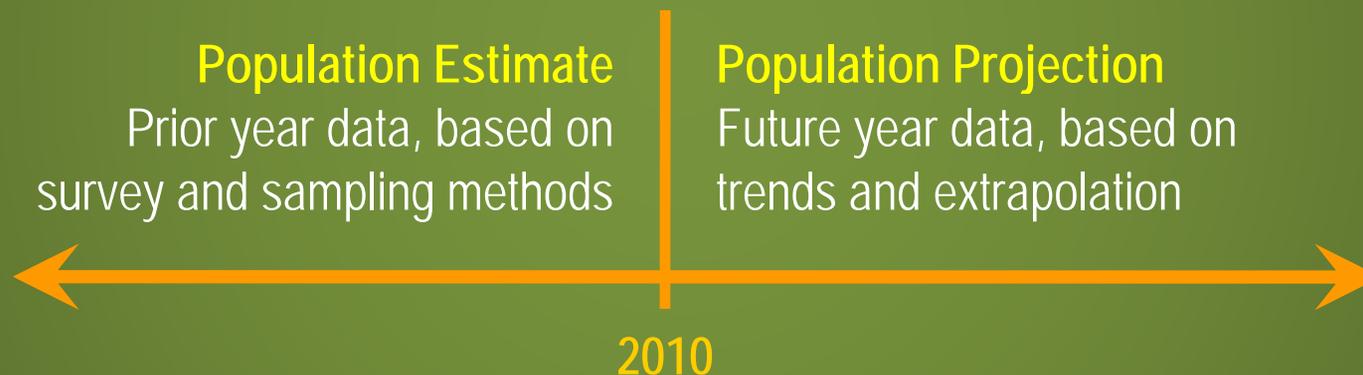
Observations

1. **Franklin County is growing faster than the Roanoke region** as a whole. This implies that there are some factors unique to Franklin County (i.e. not shared by the region) that have been driving residential demand here.
2. **Franklin County's growth rate may be slowing.** Franklin County grew the fastest in the 1970s at a rate of 2.42 % per year. The 40-year trend shows an average annual growth rate of 1.55%. In the 2000s, however, Franklin County grew at a somewhat slower rate of 1.07% per year.
3. This implies that, **absent some new factor driving residential demand,** Franklin County will continue to grow, but at a slower rate in the future.



Population Projection

Once we understand how Franklin County has grown in the past, we can begin to anticipate how the county will grow in the future. A population **projection** is a best-guess of what the future population will be, based on the extrapolation of various data inputs from prior years.





Population Projection

Given historical population information, there are several methods we can use to project population into the future:

1. **Direct Source.** This method relies on forecasts prepared by various government agencies and private companies that specialize in demographic analysis. For this study, we'll use projections prepared by the Virginia Employment Commission and Woods & Poole Economics, Inc.
2. **Straight-Line Projection.** This method uses a prior-year statistical trend (i.e. an average annual growth rate), and carries the trend out to a future year. For this study, we'll use a 10-year average annual growth rate (2001 to 2010) and a 40-year average annual growth rate (1971 to 2010).
3. **% Share Projection.** This method compares Franklin County's population to that of the Roanoke region, and assumes a future population for the County as an increasing percentage of the region's future population.



Population Projection

Method 1: Direct Source

According to the Virginia Employment Commission, Franklin County is expected to grow from 52,406 residents in 2010 to 62,443 residents by year 2030. This represents a net increase of **10,037** new residents over the next 20 years.

Source: Virginia Employ. Com.	
Year	Franklin County Population
2010	52,582
2020	57,357
2030	62,443

According to Woods & Poole, Franklin County is expected to grow from 53,229 residents in 2010 to 71,395 residents by year 2030. This represents a net increase of **18,166** new residents.

Source: Woods & Poole	
Year	Franklin County Population
2010	53,229
2020	62,192
2030	71,395



Population Projection

Method 1: Direct Source

The Virginia Employment Commission's population projections for Franklin County show an average annual growth rate of 0.88% over the upcoming decade; 0.85% for the years 2021 to 2030; and a cumulative 20-year average annual growth rate of **0.86%**

Source: Virginia Employ. Com.			
Year	Franklin County Population	Avg. annual % change per decade	Avg. annual % change over 20 yrs.
2010	52,582	0.88 %	0.86 %
2020	57,357		
2030	62,443	0.85 %	

Woods & Poole's population projections for Franklin County show an average annual growth rate of 1.57% over the upcoming decade, 1.39% for the years 2021 to 2030; and a cumulative 20-year average annual growth rate of **1.48%**

Source: Woods & Poole			
Year	Franklin County Population	Avg. annual % change per decade	Avg. annual % change over 20 yrs.
2010	53,229	1.57 %	1.48 %
2020	62,192		
2030	71,395	1.39 %	

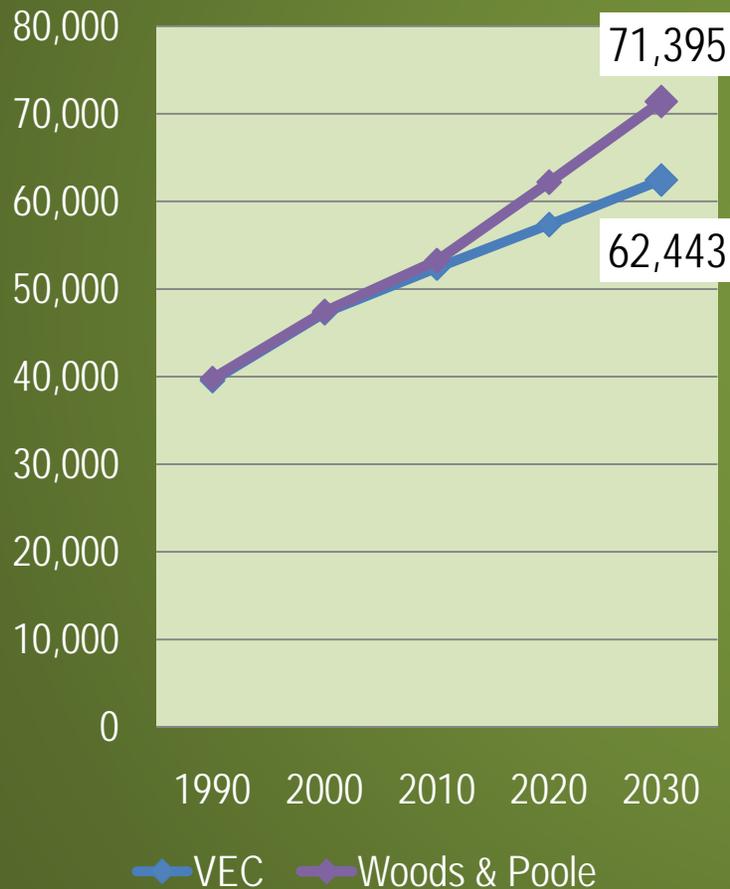


Population Projection



Observations

Method 1: Direct Source



The graph at left shows the variation between Woods & Poole's and VEC's projections.

Woods & Poole projects that the County's annual growth rate will **accelerate** over the coming decades (1.48%), compared to the previous decade (1.07%).

The Virginia Employment Commission projects that the County's annual growth rate will continue to **slow** over the coming decades (0.86%), compared to the previous decade (1.07%).

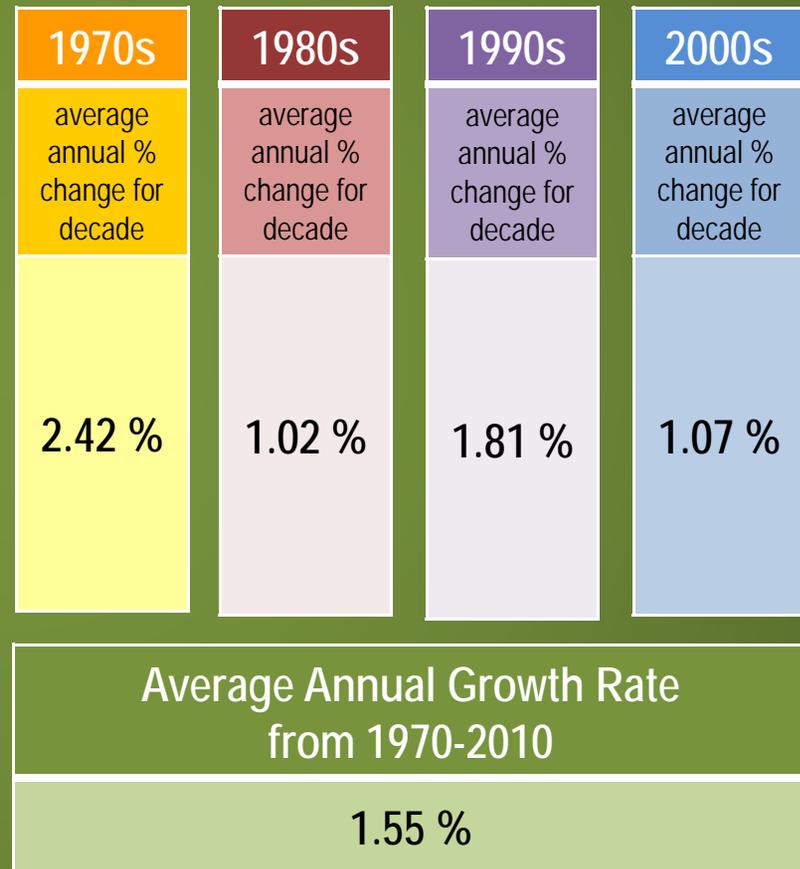


Population Projection

Method 2: Straight-Line

Earlier, we identified Franklin County's average annual growth rate for each of the last four decades, based on the % change from year to year (source: U.S. Census).

We found that Franklin County grew at an average annual rate of **1.07%** for the years 2001 to 2010. We furthermore calculated a 40-year average annual growth rate of **1.55%** for the years 1971 to 2010.





Population Projection

Method 2: Straight-Line

We can now apply these average annual growth rates to future years.

If Franklin County grows at an average annual rate of 1.07% over the next two decades, then the population will be 65,056 in year 2030. This represents an increase of **12,474** residents.

If Franklin County grows at an average annual rate of 1.55% over the next two decades, the population will be 71,522 in year 2030. This represents an increase of **18,940** residents.

Projected Population		
Year	Assuming 1.07% average annual growth	Assuming 1.55% average annual growth
2010	52,582	52,582
2015	55,456	56,786
2020	58,487	61,325
2025	61,684	66,228
2030	65,056	71,522

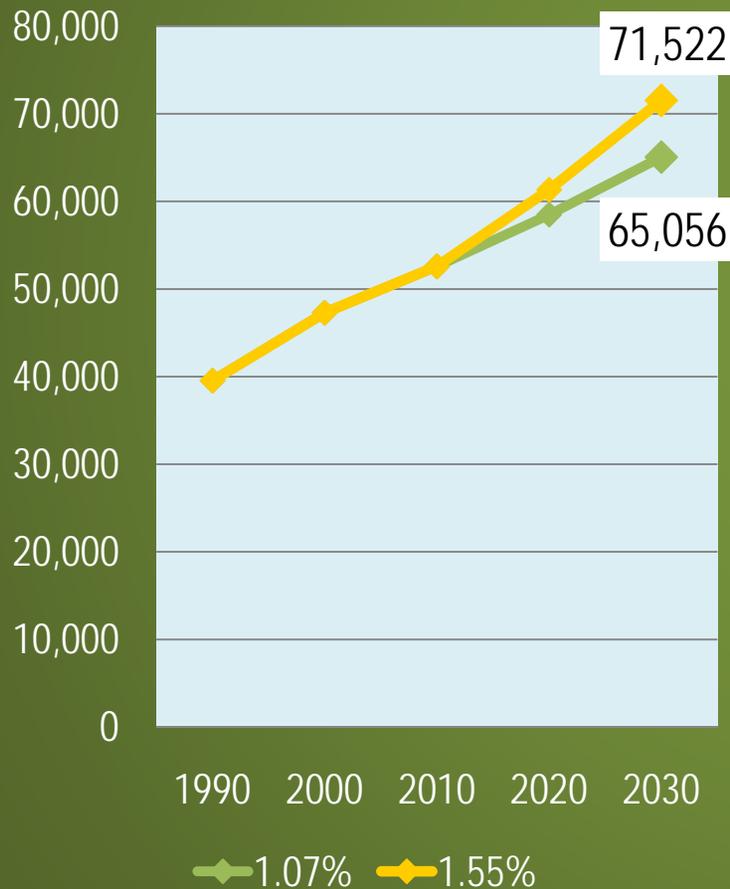


Population Projection



Observations

Method 2: Straight-Line



The graph at left shows the range of variation, depending on the average annual growth rate used to project future population.

Based on last decade's growth rate (1.07%), Franklin County's population in year 2030 would be **higher than the VEC's projection, but lower than Woods & Poole's projection.**

Using the 40-year average growth rate (1.55%), the population in year 2030 would **exceed Woods & Poole's projection.**



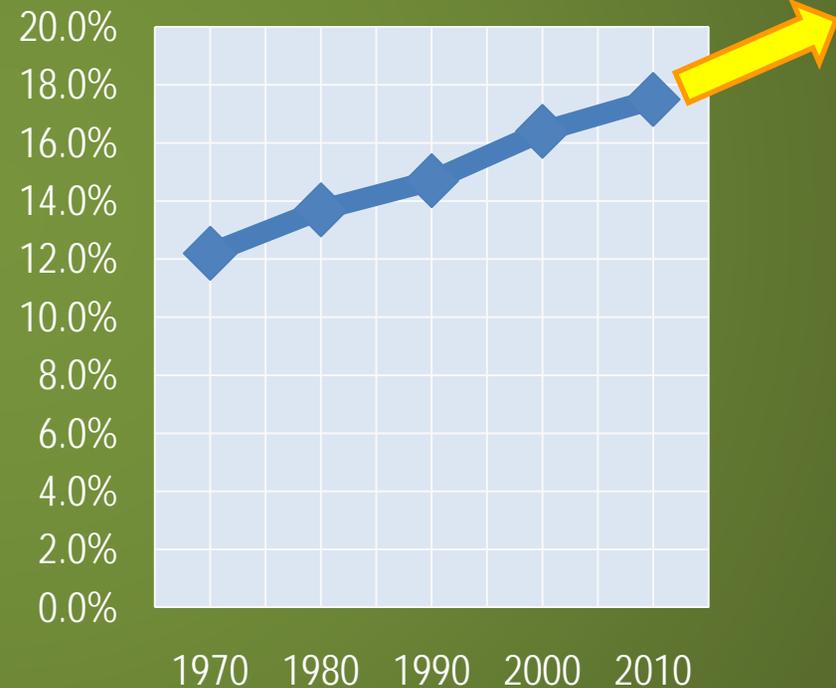
Population Projection

Method 3: % Share

Another method of population projection involves the relationship between Franklin County's population and that of the greater Roanoke region.

If – over the last 40 years – Franklin County has contributed an increasing share of the region's population, then it may be reasonable to assume that the County will contribute an even larger percentage in the future.

Franklin County as % of MSA





Population Projection

Method 3: % Share

We must first determine how fast Franklin County is growing **as a share** of the Roanoke region.

In 1970, Franklin County contributed 12.2% of the region's population. By 2010, the County contributed 17.5% of the region's population.

By extending this trend, we can conclude that Franklin County will contribute **20.2%** of the region's population in year 2030.

Source: U.S. Census			
Year	Franklin County	Roanoke MSA	Franklin County as % of MSA
1970	28,163	231,316	12.2 %
1980	35,740	260,081	13.7 %
1990	39,549	268,513	14.7 %
2000	47,286	288,309	16.4 %
2010	52,582	300,612	17.5 %
2020	?	MSA Projection	18.8 %
2030	?	MSA Projection	20.2%



Population Projection

Method 3: % Share

We have two direct sources that offer population projections for the greater Roanoke region.

The Virginia Employment Commission projects that the population of the Roanoke MSA will be 324,718 in year 2030. Assuming that Franklin County will contribute 20.2% of the region's population, then the County's population will be 65,593 in year 2030 – an increase of **13,011** residents.

Source: Virginia Employment Com.			
Year	Roanoke MSA	Franklin County as % of MSA	Franklin County
1990	268,398		39,549
2000	288,309		47,286
2010	297,698		52,406
2020	310,037	18.8 %	58,287
2030	324,718	20.2 %	65,593



Population Projection

Method 3: % Share

Woods & Poole projects that the population of the Roanoke MSA will be 346,496 in year 2030.

Assuming Franklin County will contribute 20.2% of the region's population, then the County's population will be 69,992 in year 2030 – an increase of **17,410** residents.

Source: Woods & Poole			
Year	Roanoke MSA	Franklin County as % of MSA	Franklin County
1990	269,440		39,773
2000	288,442		47,433
2010	302,161		53,229
2020	323,696	18.8 %	60,855
2030	346,496	20.2 %	69,992

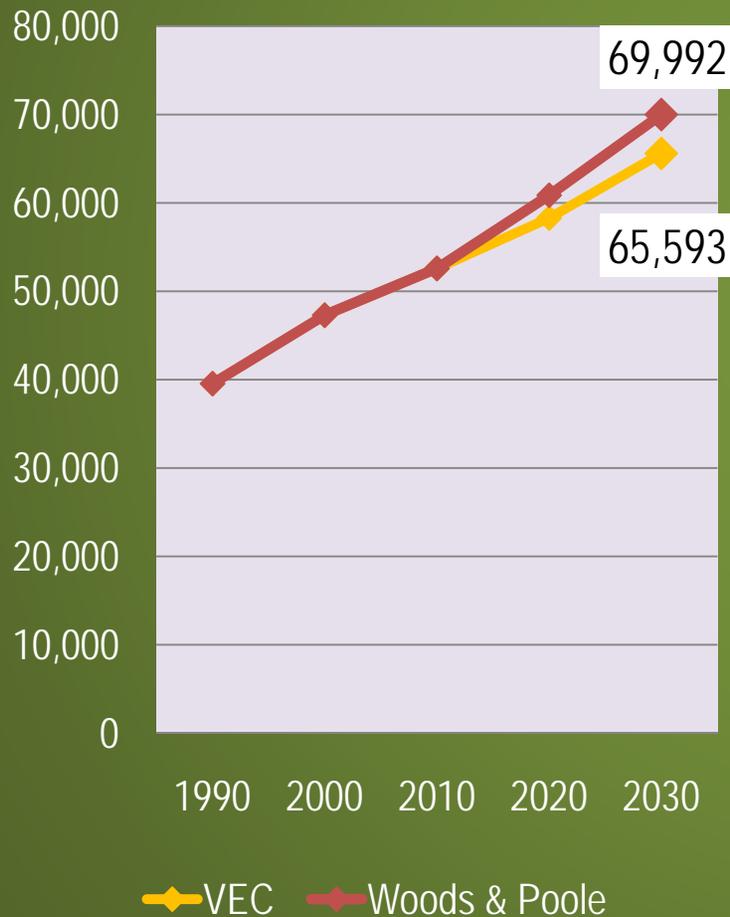


Population Projection



Observations

Method 3: % Share



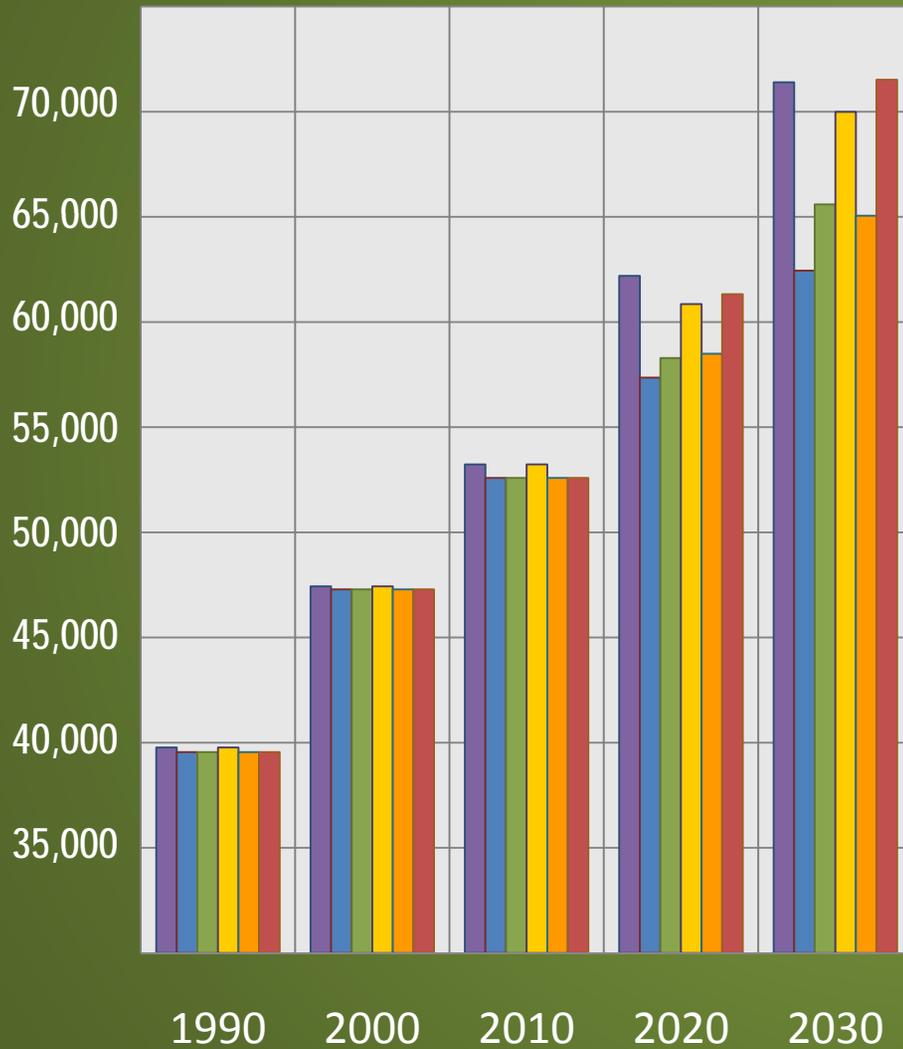
The graph at left shows the range of variation when using competing MSA population projections.

Based on Woods & Poole's MSA projection, Franklin County would grow at an average annual rate of **1.43%** over the next 20 years.

Using the Virginia Employment Commission's MSA projection, Franklin County would grow at an average annual rate of **1.11%** over the next 20 years.



Population Projection



We now have six divergent projections for Franklin County's population over the next two decades:

- Direct source, Woods & Poole
- Direct source, Virginia Employment Com.
- Straight-line, 10-year annual average (1.07%)
- Straight-line, 40-year annual average (1.55%)
- % share, using VEC MSA projection
- % share, using Woods & Poole MSA projection



Population Projection

Observations

Diverging Population Projections for Franklin County, 2010 to 2030

Method of Population Projection	2010 Population	2030 Population	Average annual % change	# of new residents over next 20 years
Direct source, Woods & Poole projection	53,229	71,395	1.48 %	18,166
Direct source, Virginia Employment Com. projection	52,582	62,443	0.86 %	10,037
Straight-line, 10-year annual average (1.07%)	52,582	65,056	1.07 %	12,474
Straight-line, 40-year annual average (1.55%)	52,582	71,522	1.55 %	18,940
% share, Virginia Employment Com. MSA projection	52,582	65,593	1.11 %	13,011
% share, Woods & Poole MSA projection	52,582	69,992	1.43 %	17,410



Population Projection

Which of these population projections is most believable? It is difficult to envision what Franklin County will look like based on the number of new residents we might have in the year 2030. It's a little easier when we have something to visualize – like **roof-tops**.

It is possible to translate population projections into something more tangible, such as the number of dwelling units that will be required to house Franklin County's future population. To do this, we need to know the average number of people who make up each **household**.





Population Projection

According to Woods & Poole, the average household size in Franklin County has consistently dropped over the last four decades. The average household in 1970 consisted of 3.34 people. Today, the average household consists of 2.31 people.

Woods & Poole projects that the average household size will continue to decline, with an average of **2.19** people in the year 2030.

Franklin County		
# Households	Avg. Household Size	
1970	8,126	3.34
1980	11,945	2.88
1990	14,731	2.59
2000	19,049	2.43
2010	22,498	2.31
2020	27,426	2.23
2030	32,109	2.19

data source: Woods & Poole

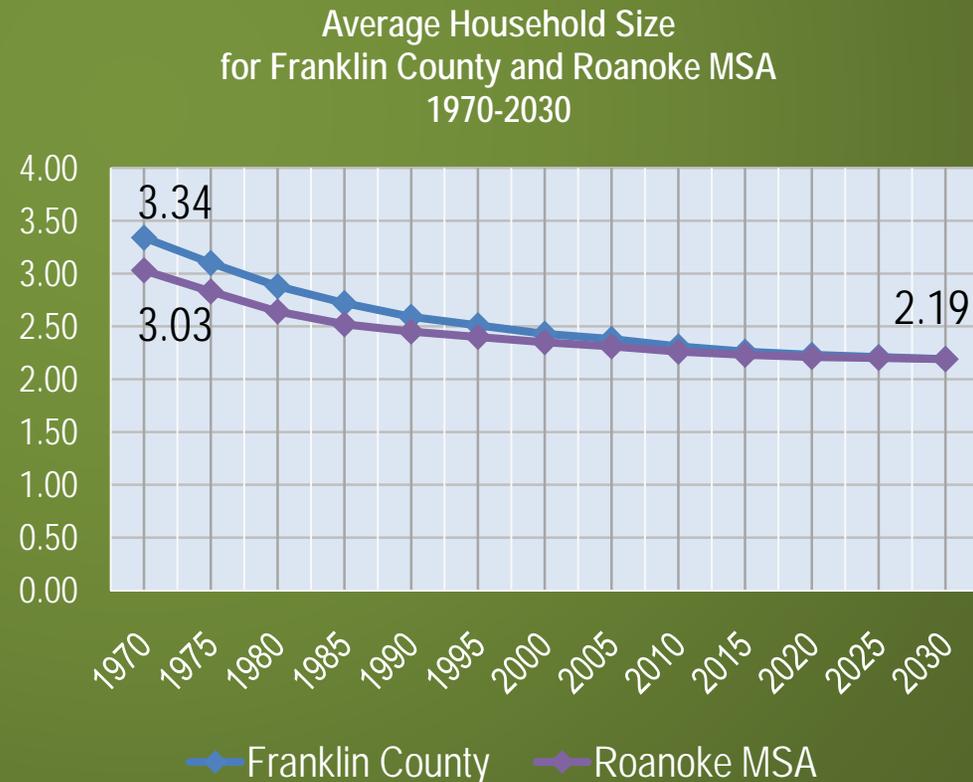


Population Projection

This projection is consistent with the regional forecast. According to Woods & Poole, the average household size for Franklin County and the Roanoke MSA will equalize at about 2.19 persons per household by the year 2030.

	Franklin County	Roanoke MSA
	Avg. Household Size	Avg. Household Size
1970	3.34	3.03
1980	2.88	2.64
1990	2.59	2.45
2000	2.43	2.35
2010	2.31	2.26
2020	2.23	2.21
2030	2.19	2.19

data source: Woods & Poole





Population Projection

Assuming an average household size of 2.19 persons per dwelling unit in the year 2030, the following table shows the number of new dwelling units that will be required over the next 20 years, based on various population projections.

Diverging Population Projections for Franklin County, 2010 to 2030				
Method of Population Projection	2030 Population	Average annual % change	# of new residents over next 20 years	# additional dwelling units needed
Direct source, Woods & Poole projection	71,395	1.48 %	18,166	8,295
Direct source, Virginia Employment Com. projection	62,443	0.86 %	10,037	4,583
Straight-line, 10-year annual average (1.07%)	65,056	1.07 %	12,474	5,696
Straight-line, 40-year annual average (1.55%)	71,522	1.55 %	18,940	8,648
% share, Virginia Employment Com. MSA projection	65,593	1.11 %	13,011	5,941
% share, Woods & Poole MSA projection	69,992	1.43 %	17,410	7,950



Population Projection

Observations

Based on the most conservative population projection, Franklin County will need to accommodate an additional **4,583** dwelling units over the next 20 years.

Based on the most optimistic population projection, Franklin County will need to accommodate an additional **8,648** dwelling units over the next 20 years.

Diverging Population Projections for Franklin County, 2010 to 2030

2030 Population	# of new residents over next 20 years	# additional dwelling units needed	Average annual growth rate over next 20 years
71,522	18,940	8,648	1.55 %
71,395	18,166	8,295	1.48 %
69,992	17,410	7,950	1.43 %
65,593	13,011	5,941	1.11 %
65,056	12,474	5,696	1.07 %
62,443	10,037	4,583	0.86 %

high

low



Discussion

We now have a range of population projections for Franklin County through the year 2030.

Some scenarios envision an **acceleration** of growth; others anticipate that the rate of growth will **slow down**.

Which of these scenarios seems most likely?

Diverging Population Projections for Franklin County, 2010 to 2030				
2030 Population	# of new residents over next 20 years	# additional dwelling units needed	Average annual growth rate over next 20 years	
71,522	18,940	8,648	1.55 %	<div style="text-align: center;"> <div style="border: 1px solid black; padding: 2px;">high</div> <div style="border: 1px solid black; padding: 2px;">low</div> </div>
71,395	18,166	8,295	1.48 %	
69,992	17,410	7,950	1.43 %	
65,593	13,011	5,941	1.11 %	
65,056	12,474	5,696	1.07 %	
62,443	10,037	4,583	0.86 %	



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