

POPULATION

INTRODUCTION

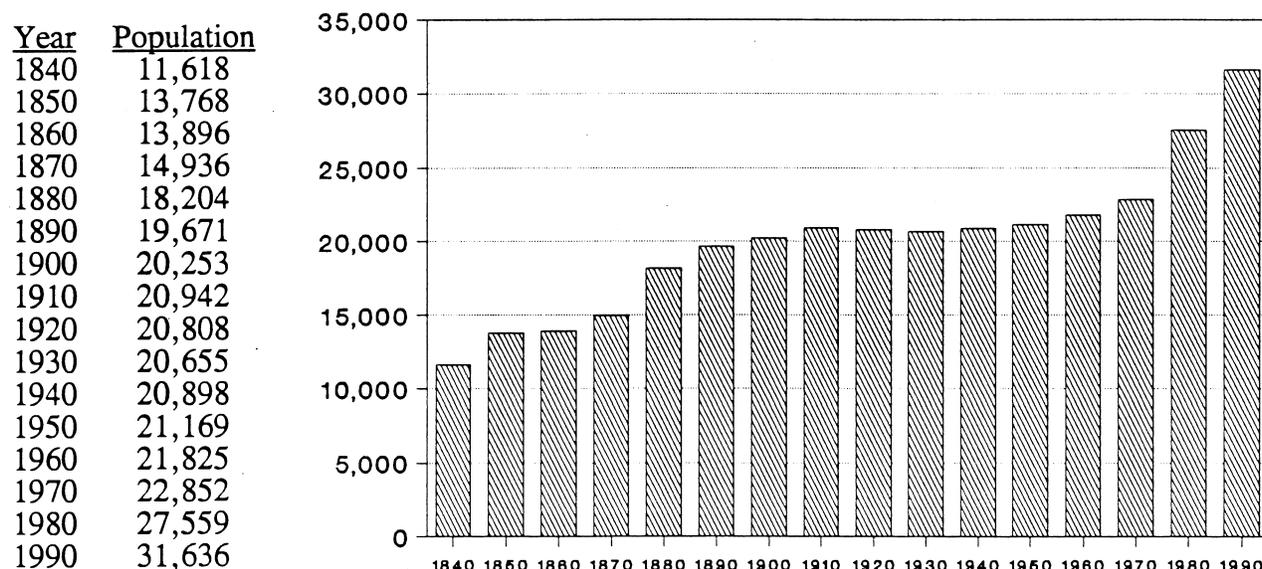
This section presents trends of the County's population, including its size, characteristics, and geographic distribution, discusses the components of change in the population, and presents projections of population growth. Detailed characteristics derived from sample data gathered by the 1990 census are not expected until 1993 or later, so some of the tables in this section contain data from the 1980 Census or 1988 estimates.

In the 1973 Plan, the 1990 projection for total population was 25,400. This was based on the 1960-70 trend. Higher growth in the early 1970's led to revised State population projections which were used in the June 1977 plan supplement, and the 1990 projection was increased to 30,700. The 1990 Census final population count for Shenandoah County is 31,636.

POPULATION GROWTH

Table 5-A presents the County's population counts from 1840 through 1990.

**TABLE 5-A
DECENNIAL CENSUS POPULATION**



Sources: Intercensal Estimates and Decennial Census Counts for Virginia Localities, 1790-1980, TMI, February 1983.
Summary Tape File STF-1A, Bureau of the Census, 1991.

From 1840 to 1900, the County grew at an average annual increase of 0.9%, reaching 20,253 persons. From 1900 to 1970, the average annual increase was only 0.2%. Between 1970 and 1980 the average annual rate of change for the County was 1.9% and from 1980 to 1990 it was approximately 1.4%.

Shenandoah County's average annual increase was less than that of Virginia as a whole from 1840 to 1970, but its 1.9% average annual increase between 1970 and 1980 outpaced the state's 1.4% rate during that period and between 1980 and 1990 it was equal to the state's 1.4% rate.

CHARACTERISTICS OF THE POPULATION

Characteristics such as age, education, income and geographic distribution of the population all influence the kinds of services the County may need to provide. This section presents an overview of such characteristics.

Table 5-B presents a summary of Shenandoah County's major demographic characteristics now available from the 1990 census, with comparative figures for Virginia and the U.S.

TABLE 5-B
SUMMARY DEMOGRAPHIC CHARACTERISTICS FOR 1990

	<u>Shenandoah County</u>	<u>Virginia</u>	<u>United States</u>
Total Population	31,636	6,187,358	248,709,873
Percent Male	48.3%	49.0%	48.7%
Percent Female	51.7%	51.0%	51.3%
Median Age	37.4	32.6	32.9
Percent Minorities	1.8%	22.6	19.8%

Source: Summary Tape File STF-1A, U.S. Bureau of the Census, 1991.

Age Distribution

Table 5-C shows the age distribution for Shenandoah County based on Census data from 1960 through 1990. The distribution is generally well-balanced, but the trend towards an older population is apparent as the median age has increased each decade. Persons under 20 years old decreased from 34.5 percent of the total population in 1970 to 29.1 percent in 1980, and has further decreased to 24.7% by 1990.

TABLE 5-C
AGE DISTRIBUTION: 1960, 1970, 1980, AND 1990

	1960		1970		1980		1990	
	Pop.	%	Pop.	%	Pop.	%	Pop.	%
Under 5	2,059	9.4	1,713	7.5	1,639	5.9	1,932	6.1
5 - 19	5,939	27.2	6,182	27.0	6,398	23.2	5,876	18.6
20 - 64	11,251	51.6	11,896	52.1	15,435	56.0	18,548	58.6
Over 64	<u>2,576</u>	<u>11.8</u>	<u>3,061</u>	<u>13.4</u>	<u>4,087</u>	<u>14.8</u>	<u>5,280</u>	<u>16.7</u>
Totals	21,826	100.0	22,852	100.0	27,559	100.0	31,636	100.0

Sources: U. S. Census of Population, 1960, 1970 and 1980.
Summary Tape File STF-1A, Bureau of the Census 1991

Educational Attainment

Details of educational attainment are not yet available from the 1990 Census since they are obtained from sample data. The information presented below is from 1980.

In 1980, approximately half of Shenandoah County's adults 25 years and over had earned a high school diploma. The County's employment emphasis in the past had been blue-collar-oriented in which twelve years of schooling was not always necessary. On the other hand, approximately 18 percent of County residents had completed at least one year of college education, with about 9 percent having completed four or more years. Table 5-D, on the next page, presents the 1980 data on educational attainment.

TABLE 5-D
EDUCATIONAL ATTAINMENT - 1980

Years of School Completed Number of persons 25 yrs. old & over with	Male	Female	Total
Elementary:			
0 - 4 yrs.	446	310	756
5 to 7 yrs.	1,797	1,628	3,425
8 yrs.	724	605	1,329
High School:			
1 to 3 yrs.	1,378	1,865	3,243
4 yrs.	2,461	3,188	5,649
College:			
1 to 3 yrs.	672	841	1,513
4 yrs.	381	542	923
5+ yrs.	426	213	639
Total Persons, 25+ yrs.	8,285	9,192	17,477
Percent High School Grads	47.6%	52.0%	49.9%

Source: Census of Population, General Social and Economic Characteristics, Table 175, 1980. U.S. Bureau of the Census

Density & Urban/Rural Distribution

The total land area of Shenandoah County is 507 square miles. There were 62.4 people per square mile in the county and the State's population density was 155.8 per square mile in 1990. Table 5-E, on the next page, shows comparative densities for other jurisdictions in the region as of 1990.

The U.S. Bureau of the Census defines an urban area as any incorporated area having at least 2,500 people. In Shenandoah County, only the Town of Woodstock fit that definition in 1980 with a population of 2,627. By 1990, both the towns of Strasburg (which had an annexation in 1984) and Woodstock met the Census Bureau's criteria for urban places: Strasburg's population was 3,762 and Woodstock's was 3,182. Strasburg was the fourth largest urban area within the Lord Fairfax Planning District in 1990, behind Winchester (21,947), Front Royal (11,880), and Luray (4,587).

TABLE 5-E
LAND AREA AND POPULATION DENSITY

Jurisdiction	Square <u>Miles</u>	1990 <u>Population</u>	1990 Density <u>per sq. mile</u>
Shenandoah	507.0	31,636	62.4
Clarke	174.0	12,101	69.5
Frederick	426.8	45,723	107.1
Page	316.0	21,690	68.6
Warren	219.0	26,142	119.4
Winchester City	9.2	21,947	2,385.5
Virginia	39,703	6,187,358	155.8

Sources: Areas of Virginia Localities, Bureau of the Census, 1986
Summary Tape File STF-1A, Bureau of the Census, 1991

Table 5-F, below, shows the growth rates and percentage of total population occurring in the towns and the unincorporated area of Shenandoah County from 1970 to 1990. After adjusting the town population counts to include areas annexed between 1970 and 1990, the percentage of County population in towns decreased from 37.6% in 1970 to 34.9% in 1990. Growth in towns for the period ranges from -12.0% in Toms Brook to 36.1% in Woodstock, while the unincorporated areas of the County grew by 44.3% during the same period.

TABLE 5-F
TOWN POPULATIONS

	<u>1970</u>	<u>1980</u>	<u>1990</u>	<u>% Change 1970-1990</u>
Edinburg	766	752	860	12.3%
Mount Jackson	1,320	1,419	1,583	19.9%
New Market	1,128	1,118	1,435	27.2%
Strasburg	2,775	2,826	3,762	35.6%
Toms Brook	258	226	227	-12.0%
Woodstock	2,338	2,627	3,182	36.1%
Rural Areas	<u>14,267</u>	<u>18,591</u>	<u>20,587</u>	<u>44.3%</u>
County Total	22,852	27,559	31,636	36.8%
Town % of Total	37.6	32.5	34.9	

* adjusted to reflect annexation area estimated population

Sources: Census of Population, 1970, 1980, Bureau of the Census
Summary Tape File STF-1A, Bureau of the Census, 1991

If Table 5-F is examined by decades, two very different patterns are seen. Between 1970 and 1980, the vast majority of the population growth was in the unincorporated area of the County. The towns grew only 4.4 percent during this period (adjusting for boundary changes from annexations), while the area outside of the towns grew by 30.3 percent. However, between 1980 and 1990, the population of the incorporated towns grew at a rate of 23.2 percent while the population of the unincorporated area of the County grew by only 10.7 percent.

Several factors contributed to this shift in patterns. Most notably, there was an increase in the amount and types of housing available in the towns to serve more segments of the population (apartments and townhouses), and many of the older residents moving into the County chose to live where services were more readily available.

COMPONENTS OF CHANGE

The overall trend for the County is that of a larger and older population, with an increasing number of newer residents moving in. This section discusses these and other changes in the characteristics of the population and identifies some reasons for those changes. This analysis will provide a basis for formulating expectations of development and county services demands.

Natural Increase and Net Migration

Table 5-G, on page 5-7, illustrates Shenandoah's population changes in relation to other Counties within the Lord Fairfax Planning District (LFPD), the City of Winchester, the Planning District as a whole, neighboring Harrisonburg and Rockingham County, and Virginia as a whole. The LFPD experienced a fairly rapid pace of growth between 1980 and 1990, adding 26,747 new residents to its total population. Shenandoah County ranked third in the Planning District in terms of net population growth. Shenandoah (14.8% growth) rated higher than neighboring Page County (11.8%) and the City of Harrisonburg and Rockingham County (8.0%), and was slightly lower than the statewide population increase of 15.7%.

TABLE 5-G
COMPARATIVE NATURAL INCREASE AND NET MIGRATION, 1980 - 1990

	<u>Net Increase</u>	<u>Percent Change 1980 - 1990</u>	<u>Natural Increase</u>	<u>Net Migration</u>
Shenandoah	4,077	14.8	270	3,807
Clarke	2,136	21.4	231	1,905
Frederick	11,573	33.9	2,779	8,794
Page	2,289	11.8	543	1,746
Warren	4,942	23.3	1,171	3,771
Winchester	1,730	8.6	390	1,340
LFPD	26,747	20.2	5,384	21,636
Harrisonburg/ Rockingham	6,496	8.0	3,893	2,603
Virginia	840,540	15.7	407,458	433,082

Source: Virginia Vital Statistics, Virginia Department of Health 1980 - 1989
Summary Tape File STF-1A, Bureau of the Census 1991.
U.S. Census of Population, 1980.

Historical figures show that between 1950 and 1970, almost all population increase could be attributed to natural increase. In other words, there were more births than deaths, and few people migrated into the area. Between 1970 and 1990, however, migration served as the primary cause of population increase in Shenandoah County. In fact, between 1970 and 1990, 94.5% of the County's new residents had migrated into Shenandoah County.

Two chief causes for Shenandoah's recent in-migration have been identified. The County's expanding economy has added job opportunities, enticing more people to live and work in Shenandoah. A second reason for the tremendous in-migration is the increasing number of retirees choosing to settle within the County. Its beauty and rural character, with a favorable location near major cultural and economic centers makes Shenandoah County an excellent retirement community. The result is a diversified population quite different from that of 1970.

Table 5-H, on page 5-8, helps explain the declining role of natural increase in population changes. The figures show that both birth and death rates declined from 1960 to 1989 in Shenandoah County and the State as a whole. However, longer life spans did not compensate for the fewer number of births in terms of increasing total population. Statistically, the death rate declined 9.9%, but the birth rate decreased by 37.4%. The State figures followed the same trend, with a drop of 34.4% in the birth rate. Table 5-I, also on page 5-8, carries this analysis even further, providing the numerical results of these trends between 1980 and 1990.

TABLE 5-H
BIRTH AND DEATH RATES PER THOUSAND POPULATION: 1960 - 1989

	Shenandoah County	State of Virginia
1960 - Birth Rate	19.5	24.4
Death Rate	12.1	9.2
1970 - Birth Rate	16.5	18.6
Death Rate	12.3	8.4
1980 - Birth Rate	13.4	14.7
Death Rate	11.4	7.9
1990 - Birth Rate	12.2	16.0
Death Rate	10.9	7.8

Sources: County and City Data Book, Bureau of the Census for 1967, 1977, 1983,
1989 Virginia Vital Statistics, Virginia Department of Health. December 1990.

TABLE 5-I
POPULATION CHANGE FACTORS, SHENANDOAH COUNTY AND VIRGINIA
1980 - 1990

	Shenandoah County	Virginia
Population		
April 1, 1990	31,636	6,187,358
April 1, 1980	27,559	5,346,818
Net Change	4,077	840,540
Total percentage change	14.8%	15.7%
Average annual rate	1.4%	1.5%
Components of change		
Births	3,541	855,017
Deaths	3,271	447,559
Natural increase	270	407,458
Total percentage change	1.0%	7.6%
Average annual rate	0.1%	0.7%
Estimated net migration	3,807	433,082
Total percentage change	13.8%	8.1%
Average annual rate	1.3%	0.8%

Sources: Census of Population, 1980, U.S. Bureau of the Census.
1980-1989 Vital Statistics Annual Reports, Table 1, Virginia Department of
Health, Center for Health Statistics

Shenandoah County exhibited moderate population growth between 1980 and 1990, recording a 14.8% increase for the period. This was a little behind the State growth rate of 15.7%. However, the composition of the County's population growth is quite different from that of the statewide growth. While natural increase accounted for over half the population gain statewide from 1980 to 1990, it represented only 7% of Shenandoah County's population gain for the period. This means that the trend of the 1970s has slowed, but 93% of the County's population growth is due to in-migration. Many of these in-migrants are retirees, which causes the natural increase figures to remain lower.

As shown below in Table 5-J, 57.1% of residents new to the County since 1975 had moved to Shenandoah from other areas of Virginia, and 42.9% arrived from a different state. Over half (54.6%) of those coming from other states came from the South, with another 21.5% moving to Shenandoah from the West.

TABLE 5-J
1975 RESIDENCE OF 1980 POPULATION

	<u>Total</u>	<u>Percent</u>	
Persons 5 years or over	26,236	100.0	
Same House	16,539	63.0	
Different House in U.S.	9,606	36.6	100.0
Same County	5,634	58.7	
Different County	3,792	41.3	100.0
Same State	2,269		57.1
Different State	1,703		42.6
Northeast	246		14.4
North Central	162		9.5
South	929		54.6
West	366		21.5
Abroad	91	0.4	

Source: Geographical Mobility and Commuting for Counties: 1980, Table 174, General Social and Economic Characteristics, 1980, U.S. Bureau of the Census

The native Shenandoah County population, as well as the Virginia, different state, and foreign-born distribution of population for the County are shown in Table 5-K on the next page.

TABLE 5-K
SHENANDOAH COUNTY RESIDENTS
PLACE OF BIRTH, 1970 AND 1980

	<u>1970</u>	<u>1980</u>
Total Persons	22,852	27,559
Native of U.S.	22,731 (99.5%)	27,346 (99.2%)
Born in State of residence	19,524 (85.4%)	21,735 (78.9%)
Born in different State	2,593	5,511
Northeast	506	1,105
North Central	346	729
South	1,655	3,389
West	86	288
Born Abroad, at sea, etc.	39	100
Foreign Born	121	213

Sources: Social Characteristics for Counties and Independent Cities: 1970, U.S. Bureau of the Census
Geographical Mobility and Commuting for Counties: 1980, Table 174, General Social and Economic Characteristics, 1980, U.S. Bureau of the Census

Migration obviously plays a major role in population changes in Shenandoah County. It has had an important impact on the County's population in the past decade, and must be carefully considered in the formulation of population projections.

Aside from the growth resulting primarily from in-migration, other characteristics of the population have been changing, which is likely to affect the kinds of services the County may be expected to deliver. These changes are discussed below.

Population Distribution by Sex

As shown in Table 5-L, on page 5-11, Shenandoah County's male-female ratio indicates that the County has a slightly higher ratio of females to males than does the State as a whole. This relationship has not changed much between 1980 and 1990, with the percentage of females increasing by one-tenth of a percent.

TABLE 5-L
MALE/FEMALE DISTRIBUTION: 1980, 1990

		<u>1980</u>	<u>1990</u>
Shenandoah Co.	Male	13,341 (48.4%)	15,280 (48.3%)
	Female	<u>14,218</u> (51.6%)	<u>16,356</u> (51.7%)
	Total	27,559	31,636
Virginia	Male	2,617,729 (49.0%)	3,033,974 (49.0%)
	Female	<u>2,729,089</u> (51.0%)	<u>3,153,384</u> (51.0%)
	Total	5,346,818	6,187,358

Sources: Census of Population, General Social and Economic Characteristics, part 48, Virginia, Bureau of the Census, 1980
Summary Tape File STF-1A, Bureau of the Census, 1991.

Median Age

Table 5-M compares median ages of Shenandoah County with the region and the state. From 1960 to 1990 the state experienced increases in median age. Shenandoah County maintained an older population at each decennial determination, and the thirty year net increase was higher for the County than the region or the State.

TABLE 5-M
MEDIAN AGE: 1960-1990

	<u>1960</u>	<u>1970</u>	<u>1980</u>	<u>1990</u>
Shenandoah County	31.9	32.8	33.9	37.4
Lord Fairfax Planning District	30.0	30.7	32.7	34.6
State of Virginia	27.1	26.8	30.0	32.6

Sources: Virginia General Population Characteristics, Bureau of the Census, 1960, 1970, and 1980,
Summary Tape File STF-1A, Bureau of the Census, 1991.

The expanding Washington, D.C. metropolitan area to the east offers amenities for which many wish to have easy access without being caught in the middle of tremendous development. Thus, many are choosing to retire in (or commute from) Shenandoah County in a rural or small town setting with considerably lower costs of living. The Shenandoah Valley is a beautiful area and many people approaching retirement age are buying second homes in the County with plans to eventually make them their retirement homes. The increasing median age reflects these occurrences.

Racial Composition

According to 1990 census data, over 98 percent of Shenandoah County's population is white. There were less than 400 blacks in the county in 1990. Although the white population increased 3,966 from 1980 to 1990, the number of blacks decreased by 15, dropping to merely 1.1% of total population. Other minorities increased to 0.7 percent. This differs greatly from the State population, which consists of 22.6 percent minorities. Data on racial composition are presented in Table 5-N.

TABLE 5-N
RACIAL COMPOSITION: 1980, 1990

	1980 <u>Persons</u>	Percent of <u>Population</u>	1990 <u>Persons</u>	Percent of <u>Population</u>
White	27,103	98.3%	31,069	98.2%
Black	374	1.4%	359	1.1%
Other	82	0.3%	208	0.7%

Sources: General Population Characteristics, U.S. Bureau of the Census, 1980.
Summary Tape File STF-1A, Bureau of the Census, 1991.

FUTURE POPULATION GROWTH

The population count for Shenandoah County in 1990 was 31,636, a 14.8% net increase over the 1980 population of 27,559.

Since the County has a low natural increase rate, an excess of births over deaths, the primary factor for growth since 1960 has been in-migration. At all times the County has had some in-migration, but in earlier periods the residents were leaving faster than new people moved in.

New residents are likely to move to the County for retirement, for local employment or as a commuter looking for lower cost housing or a lifestyle not available in the jurisdiction of employment. The distribution of new residents from among these groups may be determined in part in 1993 or 1994, after release of complete census data.

Population projections are necessary for planning. Projections extend mathematically historical trend numbers, many of which are estimates. For the purpose of this plan, projections prepared by the Virginia Employment Commission are used. They should not be mistaken as population targets.

Table 5-O shows recent growth and projections for Shenandoah County, the Planning District, and Virginia:

TABLE 5-O
POPULATION COUNTS AND PROJECTIONS

<u>Year</u>	<u>Shenandoah County</u>	<u>Planning District</u>	<u>State of Virginia</u>
<u>Census Counts</u>			
1950	21,169	89,568	3,319,000
1960	21,825	97,045	3,954,000
1970	22,852	106,372	4,651,448
1980	27,559	132,492	5,346,818
1990	31,636	159,239	6,187,358
<u>Population Projections</u>			
2000	33,700	176,600	7,023,300
2010	36,500	97,200	7,827,900

Sources: Intercensal Estimates and Decennial Census Counts for Virginia Localities, 1790-1980, Tayloe Murphy Institute, February 1983
Virginia Population Projections 2000, Virginia Employment Commission, January 1990
Population Projections 2000-2030, Richmond Regional Planning District Commission, January 1990
Summary Tape File STF-1A, Bureau of the Census, 1991

The projected population growth for the year 2010 is 36,500, a 15.4 percent increase from 1990. For the same period, the State population is expected to increase 26.5 percent and the Planning District population is to increase 23.8 percent. Once the 1990 detailed census data is available, the Virginia Employment Commission will develop population projections based on the age distribution of the 1990 county population, historical shifts between age groups, and birth and death rates. These are likely to be available by 1993 or 1994.

The prospect of population growth concerns many residents of Shenandoah County. Some fear the loss of the County's rural nature with too rapid growth, while others remember when there was little growth and consequently limited economic opportunities. Though a majority favor some growth for Shenandoah County, opinions conflict over what rate of growth is manageable.

Another way to consider population growth is using average annual increase. Due to the national recession, very little growth took place in the early 1980's. The 1990's could start out in the same mode. Average annual increase reflects the long term trend. A classification of population growth rates was published by the Virginia Housing Development Authority in its Statewide Housing Needs Analysis, 1975. There are:

- * less than 1% average annual increase - slow growth
- * between 1% and 5% average annual increase - moderate growth
- * greater than 5% average annual increase - fast growth

Shenandoah County's historical and projected growth, in terms of an average annual increase follows in Table 5-P.

**TABLE 5-P
AVERAGE ANNUAL INCREASE AND NET POPULATION INCREASE
SHENANDOAH COUNTY**

<u>Time Period</u>	<u>Net Increase</u>	<u>Percentage Increase</u>	<u>Percent Average Annual Increase</u>
1990-1950	916	4.5	less than 0.1
1950-1960	656	3.0	0.3
1960-1970	1,027	4.7	0.5
1970-1980	4,707	20.6	1.9
1980-1990	3,711	13.4	1.3
1990-2000	2,430	7.8	0.8
2000-2010	2,800	8.3	0.8

While growth between 1970 and 1990 is moderate by the average annual rate definition, the more visible growth has been in housing units. Dwelling units in the County increased from 8,773 in 1970 to 15,115 in 1990, an average annual rate of 2.8% over the twenty year period. This is both a function of second home development and the demographic factor of a declining average household size.

Households

The number of persons per household, as defined by the Census Bureau, includes all persons living in a single dwelling unit. Table 5-Q shows historical, current estimates, and projections of average household size for the County, the Lord Fairfax Planning District (LFPD), the State, and the U.S. In all cases, the household size exhibits a steady decline

which is projected to continue. This trend will significantly affect the need for housing in the County since more housing would be required just to maintain a constant population. This is addressed further in the Housing chapter of this Plan.

TABLE 5-Q
AVERAGE HOUSEHOLD SIZE

Historical	<u>Shen. Co.</u>	<u>LFPD</u>	<u>VA</u>	<u>U.S.</u>
1970	3.02	3.11	3.13	3.14
1980	2.72	2.74	2.77	2.75
1990	2.50	2.60	2.61	2.63
Projections				
2000	2.36	2.45	2.46	2.48

Sources: National Average Household Size Estimates, U.S. Bureau of the Census, March 1989
Household Projections, Lord Fairfax Planning District Commission, 1991
Summary Tape File STF-1A, U.S. Bureau of the Census, 1991

Table 5-R, below, shows the projections of the total number of households in Shenandoah County based on the persons per household shown above. The projected 7.8% increase in population between 1990 and 2000 combined with a decline in the average household size will generate a 10.2% increase in the number of households. The projected 8% increase in population between 2000 and 2010 will generate a 14% increase in the number of households.

TABLE 5-R
PROJECTIONS OF HOUSEHOLDS

	Actual		Projections	
	<u>1980</u>	<u>1990</u>	<u>2000</u>	<u>2010</u>
Population	27,559	31,636	33,700	36,500
Persons not in Households	261	530	566	613
Person per Household	2.72	2.50	2.36	2.23
Number of Households	10,035	12,452	14,040	16,093

Source: Household Projections, Lord Fairfax Planning District Commission, 1991

SUMMARY

Shenandoah County's population has been growing at a rate above or near the State average since 1970 and is attributable mostly to in-migration. Over half of the in-migrants from 1975 to 1980 came from other areas in Virginia. Over half of the in-migrants coming from other states came from the South. Many of the new residents live outside of the incorporated towns.

The median age of County residents is increasing faster than the State average, with the percentage of persons under 20 decreasing each of the last three decades.

Population growth is projected to continue, along with the trend to smaller households. The impact of this will be considered in the section on housing. Because they will be smaller and older, many of the new households might be accommodated in apartments or townhouses within the incorporated towns and areas where public services are available.

When there is a complete release of the detailed (sample) 1990 census data, the affected portions of this section should be updated. Since both State population projections and current population estimates are based on statistical models or administrative records, the County should consider development of a management information system to track local data such as building permits, occupancy permits, school enrollments, etc. which reflect growth and change. This could be part of a geographic information system.