

Chapter Three

GROWTH AND DEVELOPMENT TRENDS

INTRODUCTION

The study of population is very important to the Comprehensive Planning process. Many decisions, planning and otherwise, are based on the need to serve a certain magnitude and type of population within an area. The study of population must be concerned with the size, composition, distribution, and projection of the population. These factors will have a direct bearing on land use planning for the future of Caroline County, the need for various categories of land use, and the amount and location of each type of use.

This section will discuss the population of Caroline County over the last several decades. In addition, the characteristics and changes in the County's population will be compared to other localities in the RADCO Region and to a much larger area as a whole. The localities within the RADCO region, in addition to Caroline County, include King George, Spotsylvania and Stafford Counties, and the City of Fredericksburg. To obtain an accurate assessment of the relative population changes in Caroline County, localities in a larger study area will also be discussed. This wider area includes adjacent Essex, King and Queen, King William, and Hanover Counties.

POPULATION CHANGES

Caroline County is located in the fastest growing region in the State of Virginia; the RADCO Region. During the thirty (30) year period between 1960 and 1990, there have been large fluctuations in the rate of population growth in Caroline County. This is shown in Table 3-1. Over the thirty year period, the County grew from 12,725 people in 1960, to its 1990 population of 19,217. The greatest growth, both in number and rate, occurred during the decade of the 1970's, when the County grew by about 4,000 people (28.6%), from 13,925 to 17,904.

However, it is interesting to note that recently, in the 1980's, the population growth in Caroline County has not kept pace with the growth in the larger RADCO region. Although the rate of population growth in the County has been less than that of the region and the State as a whole for those Census years depicted in Table 3-1, the County seems to be "lagging" further behind the region in rate of growth as time goes on. This, of course, is not necessarily a problem for

Caroline. It just exemplifies the fact that Caroline County is the most rural county in the region and is not "urbanizing" to the same extent as other localities.

As Table 3-1 indicates, the population of the County continues to decline as a proportion of the population of the RADCO region. Actually, its decline as a percentage of the regional population is increasing as time passes. This is due, in part, not just to the slower growth rate in the County, but rather, to the tremendous rate of growth being experienced in the other localities in the region. In the decade of the 1980's, Spotsylvania County was the fastest growing County in the entire State and Stafford was the third fastest growing County in Virginia. It is, of course, difficult to keep pace with either of these localities. In fact, as a planning decision, it must be determined whether Caroline even wants to keep pace with the tremendous growth occurring elsewhere in the region.

Of interest is the comparison of the growth that has occurred in Caroline County to the increase in population in neighboring localities outside of the immediate region. As noted, we will compare population growth and characteristics of Caroline County to those of the counties of Essex, King and Queen, King William, and Hanover. Table 3-2 shows these changes in total population for each locality in the entire study area over the past twenty years.

In the most recent decade, Hanover County grew faster than Caroline. This is due, in large part, to the fact that Hanover is part of the Richmond Metropolitan Area and has shared in the growth that the Richmond region has experienced. Still, this growth in Hanover County was not as rapid as that experienced by Stafford or Spotsylvania Counties. In Essex County, a rural locality to the east of Caroline, growth has been slower than Caroline. The same is true for King and Queen County. In fact, the population of Essex County declined between 1980 and 1990. This is the only locality in the entire study area to lose population in the decade of the 1980s or the entire twenty year period depicted in Table 3-2.

As noted, it is important to be aware of the distribution of the population of the County. Where are residents located and how fast are different sections of the County growing? The answers to these questions are critical to making appropriate planning decisions for the future of Caroline. When seeking appropriate geographic areas by which to show the distribution of population in the County, the Election District is a recognized unit. There

were four (4) Election Districts in Caroline County when the 1980 and 1990 Census were taken. A fifth Election District was created as a result of the 1990 Census. Although there are two (2) small towns in the County, the Election District will be used to discuss the population distribution in Caroline County.

Table 3-3 shows that the rate of population growth in the Election Districts has fluctuated greatly from one Census year to the next. On the surface, only the Port Royal District shows continued and increasing growth from 1970 through 1990. Another District, Reedy Church, has shown growth but at a declining rate. Other districts have actually shown a decline in population over the years.

However, these figures are somewhat misleading. Table 3-4, shown below, corrects for the "incomplete" information provided in the census. After the 1980 Census, and prior to the most recent 1990 Census, the County experienced "redistricting". In this process, the number of districts were not changed, but the boundaries between the four Election Districts were adjusted to reflect a more equal distribution of population among the districts (a fifth Election District was created after the 1990 Census). Table 3-4 places the 1990 population of the County within the same Election District boundaries as the 1980 Census. This was accomplished by RADCO using the ATLAS GIS System (geographic information system), census block information, and census mapping.

Table 3-4 shows that although the Madison District continues to be the area with the largest population (as in Table 3-3). Using the same boundary as in 1980, it was the fastest growing between 1980 and 1990, rather than having lost population during that decade as indicated in Table 3-3. Instead of experiencing the drastic decline in population shown in Table 3-3, the Bowling Green District remained relatively stable between 1980 and 1990, with only a slight loss of residents. The greatest "benefactor" of redistricting, on the surface, seems to have been the Port Royal District, as indicated in Table 3-3, which experienced major growth in population in the 1990 Census. However, the District grew only modestly when the 1990 population was compared to the population of the same area in 1980. It would seem then, that the areas of "real" population growth are the Madison District and the Reedy Church District, having grown 15.1% and 10.1%, respectively, between 1980 and 1990 (using the 1980 Election District boundaries).

Further analysis and use of the census block information and the RADCO GIS system can tell us more about the location of the population growth in the County. Table 3-4 shows that the Madison District (based on 1980 boundaries) grew by 891 people between the 1980 and 1990 Census. Census block mapping and information show that this growth can be attributed, almost entirely, to growth in and around the "lake communities" west of Route 1 in the Ladysmith Area. More specifically, Lake Caroline, Lake Land 'Or, and Lake Heritage accounted for more additional people in the Madison Election District than the overall population growth for the District between 1980 and 1990. This means that other areas within the Madison District lost population while the Lake communities were growing. For example, Lake Caroline and the immediate surrounding area grew by 643 people between 1980 and 1990, from 287 to 930 people. Lake Land 'Or grew by 337 people, from 700 to 1,037, and the area around Lake Heritage grew by 198 people totaling 381. Therefore, the three Lake Communities accounted for an increase of 1,178 people. With the "net" resulting growth in the entire District increasing to 891 people, the number of residents from other areas in the Madison District had decreased. For example, in 1990, there were 100 fewer residents counted in the area, including, the area west of Poplar Inn (west of Route 207, between Routes 639 and 601) than there were in 1980. Other areas throughout the District had slight population losses, while others had small gains.

In the Reedy Church Election District, where population increased by 419 people between 1980 and 1990, various areas gained and lost population. In the southern-most portion of Caroline County, the area south of Route 30 on both sides of Route 301, there were 163 people less in 1990 than there were in 1980. However, in the area north of Route 30 and east of Route 301, there were over 150 people more in 1990. Also, in the Athens-Penola area along Route 601 in the northern part of the Reedy Church District, there were 114 people more in 1990 than in 1980. In the section of the District near the Caroline Pines development, population grew by about 190 people between 1980 and 1990.

As shown in Table 3-4 (1980 boundaries), the Port Royal Election District experienced an increase of only 171 people during the decade ending in 1990. Of note is the fact that the area south and west of Corbin and Widewake (West of Route 2) experienced a population loss of approximately 150 people. However, the area in and around the Town of Port Royal (that portion east of

Route 301) grew by 115 people over the decade. The portion of the County around Briteston in the northern portion of Caroline also grew by just over 100 people. Of course, other sections of the Election District gained and lost population in relatively small amounts.

Between 1980 and 1990, the population of the entire Bowling Green Election District declined by 168 people when using 1980 District boundaries. However, growth occurred around portions of the Town of Bowling Green. To the east of Route 301 and Route 207, population grew by just over 150 people in the decade. There was also an "offsetting" decline in population in the area north and west of the Town. The section to the south and east of Bowling Green in the area of the village of Oak Corner and eastward, the area near the village of Beale, and the section south of that village experienced a combined population decline of almost 140 people.

This information begins to present an indication of the areas of Caroline County where substantial growth is occurring. These growth centers can be used to designate future planning areas for development of the County.

POPULATION CHARACTERISTICS

AGE DISTRIBUTION

A presentation concerning the age distribution of the population of Caroline County is important in order to gain insight into current and future community needs. For example, it is important for a locality to have a substantial number of people in the age group between 25 and 64. These are the people that will supply the labor force for new and expanding business and industry in the County. A strong labor force is critical to the economic development potential of Caroline County. In addition, the age distribution will indicate the need for school and other facilities for different age groups in years to come.

The age distribution for Caroline County and all localities within the study area for 1970, 1980, and 1990 is presented in Table 3-5. The median age for each locality is presented in Table 3-6. For Caroline County, the median age increased sharply between 1970 and 1980, and then increased again by a larger number of years between 1980 and 1990. When compared to other localities in the study area, Caroline's increase in median age was exceeded only by Essex County between 1980 and 1990. Although in 1990, Caroline County had the highest median age in the RADCO

region, other localities in the study area outside of the RADCO Region had higher median age levels than Caroline. Most of these localities are very rural in nature.

The overall age distribution in Caroline County seems to have shifted toward the older age groups over the past twenty years. This shift occurs in other localities, but not as rapidly as in Caroline.

The number and percentage of young children in Caroline is declining, except for the very young children under 5 years of age. This indicates a possible need for additional school spaces in the lower elementary grades, and a possible reduction in the need for space in the upper grades. The increase in the number of adults of labor force age speaks well of an available labor force in the County. The increase in number and percent of residents 60 years old and over may indicate an increasing demand for services for an aging population.

RACIAL COMPOSITION

As shown in Table 3-7, Caroline County has the largest number and proportion of minority population of any locality in the RADCO region. This is true for both 1980 and 1990. In the study area in 1990, as indicated in Table 3-8, only King and Queen County had a higher percentage of minority population than Caroline, although the number of non-white people was smaller than in Caroline. In 1990, 37.7% of Caroline County's population was African American (Table 3-7). However this was a decline from the 43.0% exhibited in 1980. A detailed look at the racial composition for the RADCO Region is shown in Table 3-7.

In the RADCO region as a whole, even though the proportion of African American people has declined from 17.8% in 1980 to 14.4% in 1990, the number of minority residents has increased. This indicates that in our rapidly growing region, the white population is growing at a faster rate than the African American population. This, of course, relates to the great influx of white people from the Washington Metropolitan area over the past decade.

Table 3-8 shows the racial composition of all localities in the study area for all non-white persons. The same trends are exhibited within the study area for this characteristic; that is, the proportion of non-white people is generally declining, while the number tends to increase.

NATURAL INCREASE AND IN-MIGRATION

The population of a locality changes either by natural increase; that is, the number of births minus the number of deaths, or by people moving into or out of that locality. The latter factor is called migration. These factors are important when beginning to look at the future population of a locality and the demand for services.

Between 1980 and 1990, the population of Caroline County grew by 1,313 people. During that same time period, 2,790 babies were born to residents of the County. Also, over that same period, 1,635 residents of Caroline County died. If we say that all families with babies born during the decade remained in Caroline, we see that 1,155 people were added by natural increase, and in-migration did not play a very big role in the population growth of the County. Of course, we know that some of the families with babies did move out of the County, so migration had affected the growth of the County, but not as much as in other localities in the RADCO Region or the study area.

If we look at the population change in King George County, also a relatively rural locality, we see that the County's population grew by 2,984 people between 1980 and 1990. However, the excess births in the County compared to deaths were 948 during that same time period. In urbanizing Spotsylvania County, the population grew by 22,968. The natural increase was only 4,450. The affects of in-migration in Spotsylvania County are apparent. The differences showing the part that migration has played in the population growth of Caroline and Spotsylvania Counties, as well as the other localities in the study area, can be seen in Table 3-9.

Also, note the population change in Essex County. Between 1980 and 1990, the population of the County declined by 175 people. Because there were 156 more births than deaths during the same period, Essex County was the only locality in the study area to experience a net out-migration of people.

The United States Census provides an indication of migration from questions relating to a person's place of residence 5 years prior to the census. Table 3-10 shows that of all of the localities in the study area, next to Caroline County, only Essex and King and Queen Counties had lower percentages of residents in 1990 who either moved into the county from another county in Virginia, from another State, or from another Country

since 1985. All the other localities had larger figures relating to this migration factor. Generally, the more urbanizing localities and faster growing areas have a larger portion of their population growth resulting from migration.

EDUCATION ATTAINMENT

Table 3-11 shows the educational attainment for people 25 years old and older for each locality within the study area and for the RADCO Region as a whole for 1990. Also note the fact that Caroline County has the highest proportion of residents 25 and older who had a high school diploma as their highest level of educational attainment (34.7 percent). This is beneficial for the work force. However, Caroline County was also tied with rural King and Queen County for having the highest proportion of people of any locality in the study area that had less than a 9th grade education (18.1 percent).

Table 3-11 also shows that in addition to King and Queen County, Caroline had the lowest percentage of residents 25 and older who had college degrees. This relates to the existence of a relatively unskilled workforce within both counties. This can work to the advantage of the residents of Caroline, because many types of industries seek a stable unskilled labor supply for their operations. However, because of the increasing technical nature of work in general, it is incumbent upon Caroline County to insure that an appropriately trained work force is available within Caroline.

HOUSING CHARACTERISTICS

Between 1980 and 1990, the total number of housing units in Caroline County grew by 765 units, or 11.7 percent. This growth in the total number of housing units was larger than the growth in housing units in Essex County which, according to the census, actually lost 9 housing units during the decade of the 1980's and that the 7.4% growth in units in King and Queen County occurred during the same period. This modest growth in Caroline is not unexpected since we have already noted that the population growth rate in the County has been lower than the rest of the localities in the region.

Housing construction figures for Caroline County and other study area localities are presented in Table 3-12. This table shows the number of residential building permits issued for each year from 1980 to 1990. The

number of units authorized by residential permits is greater than the increase in dwelling units noted above due to demolition and destruction of units that have occurred over a period of time, and the fact that a permit issued does not necessarily equate to a dwelling unit constructed. This is there because, in some cases and for a number of reasons, construction may never be started. In addition, the U.S. Census may undercount housing units in the more rural sections of a locality due to inability to locate all structures and units.

As in most localities, the number of residential building permits issued in Caroline County will fluctuate from year to year. There are many factors that will influence the number of building permits that are issued. These range from conditions affecting the money market, to overall economic and labor conditions, to local planning and to zoning policies and decisions.

It is clear that the number of housing units authorized in Caroline County increased greatly in the middle and later 1980's. Table 3-12 shows that this is the time when residential construction in the entire RADCO Region and the major portion of the study area (other than King and Queen County) was at its peak. This is the growth period that made the RADCO Region the fastest growing region in the State of Virginia between 1980 and 1990. Caroline County was definitely part of that growth, although not to the same extent as the other localities in the region. As a note, we must remember that between 1980 and 1990, Spotsylvania County was the fastest growing County in the State, and Stafford County was the third fastest growing County in Virginia. As these localities continue to grow, Caroline will continue to feel the effects of the expansion of urbanization and must plan for this situation.

Table 3-13 presents figures for various housing characteristics for each locality in the study area for 1980 and 1990. Most of the growth in housing units in Caroline County has been in "owner-occupied" units. This is important since it notes the relative stability of the population of a locality. The proportion of owner-occupied units in Caroline is slightly lower than that of Stafford, Spotsylvania, and Hanover Counties, the major growth sections of the study area.

Between 1980 and 1990, the number of vacant housing units in Caroline County declined. Caroline along with rural Essex and King and Queen Counties were the only localities in the study area to exhibit a decline in this characteristic. This shows the increasing "tightness" of the housing market in the County. We also note that the

speculative nature of housing construction that was exhibited in other localities was not shown in Caroline. The only localities to have a higher vacancy rate than Caroline (9.1 percent) in 1990 were rural Essex, King George and King and Queen Counties, at 20.0, 10.3 and 13.3 percent, respectively.

In 1990, King and Queen County had the lowest median value of owner-occupied housing units in the study area (\$54,400). Caroline County had the second smallest median value of owner-occupied units in the study area at \$64,200. Caroline County had the smallest increase in median value of any locality in the RADCO Region between 1980 and 1990 (86.1 percent). However, it is interesting to note that this increase in Caroline was higher than the increases experienced in any study area locality outside of the RADCO Region. This can be explained by the extremely high rate of increase in costs in the RADCO Region due to the expansion of the Washington, D.C. Metropolitan Area. Caroline has not been party to the full impact of this growth as yet, and this is reflected in the modest increases in housing values.

Median contract rent more than doubled between 1980 and 1990 for all localities in the study area. Only Essex County, at \$271, King William at \$244 and King and Queen County at \$223 had lower median rent figures than Caroline County, at \$287. However, the increase in rent between 1980 and 1990 in Caroline County (154.0 percent), was relatively high, exceeded only by the increase in Spotsylvania County (175.6 percent).

An indicator of the condition of housing units is whether a unit has complete plumbing facilities. Between 1980 and 1990, the number of units lacking complete plumbing facilities declined in all localities within the study area; some declining by greater rates and amounts than others. Table 3-13 shows these amounts and trends. Although the number of housing units lacking complete plumbing facilities in Caroline County declined by 151 units between 1980 and 1990, among all of the localities in the study area, Caroline continued to have the greatest number of housing units, 511 units, which lacked complete plumbing facilities in 1990. Of equal significance is the fact that this amount accounted for 7.0 percent of the total housing stock, about equal to the percentage in King and Queen County which was also the highest percentage among study area communities.

The above items indicate that Caroline County should consider developing a comprehensive housing policy

which would lead to the overall improvement of housing conditions. Various programs are available to assist in upgrading housing in the County. Caroline County should investigate participating in many of these programs.

ECONOMY

The economy of Caroline County has been in the process of changing from a primarily rural and agricultural economy to one that is diversified and supported by services, distribution, and industrial uses. It is important to look at this "mix" of activities in the Caroline economy in order to determine the direction that is best for the economy. Of course, it must be realized that there are a number of influences in the local economy over which the County has no control. The identification of these influences will help the County deal with them.

INCOME

Table 3-14 provides information on median family income in Caroline County and each locality in the study area, as well as the State of Virginia from 1970 to 1990. In 1990, Caroline County had the third from the lowest median family income of any locality in the study area. Only King and Queen County and Essex County had lower incomes, with King and Queen being the lowest. This same general pattern held true for the twenty year period presented in the Table.

Figures show that Stafford and Spotsylvania Counties consistently have the fastest growing incomes in the study area, while the others, although growing, lag behind the growth in income of the urbanizing Counties. In the most recent decade, Caroline County's income growth rate exceeded that of not only Essex County, but also the income growth rate in King George and Hanover Counties. This is an important indicator for the future economic vitality of the County.

Also important is a comparison of these income growth rates with the rate of increase in the Consumer Price Index. How fast are prices of goods and services increasing in relation to the ability of people to pay for these items? This relationship may have greater significance than the actual increase in income itself.

In the most recent decade between 1980 and 1990 (actual income figures for 1979 and 1989 as per the 1980 and 1990 Census), the Consumer Price Index (National annual average for each year) rose almost 71

percent. By looking at the changes in the median family income over the same period, it is evident that even the localities with the lowest income growth rate had "real" income growth; that is, income rose faster than the consumer price index. This is always beneficial for the residents of an area; however, it must be remembered that Caroline County had one of the smallest increases above the consumer price index of any locality in the study area. An improvement of the wages paid to County residents would be desirable. This relates, in part, to the type of business and industry that exists within a locality and the type of business and industry a locality would like to attract.

AVERAGE WEEKLY WAGE

The average weekly wage per employee who worked in Caroline County in June of 1992, as shown in Table 3-15, was \$342 dollars. Only the average wage in Essex County and King and Queen County were lower at \$310 dollars and \$279 dollars, respectively. Of course, it is true that some Caroline County residents worked in other localities and earned higher average wages, however, by looking at the average wages for jobs in the County, this gives an indication of the type of job that is available in the County. Efforts should be made to improve the average wage level of available employment in Caroline. Although these rates are subject to fluctuation, they represent a "snapshot" look at the wages that people who work in Caroline and other localities are paid.

In Caroline County, the lowest wages are paid in the service industry (an average of \$226 per week), with agriculture and trade wages slightly higher. The highest wages, by far, in Caroline are paid in the transportation, communication and utilities industry, at an average of \$621 dollars per week. Manufacturing wages are slightly above the overall average wage in the County. It is interesting to note that at least on the national level, it is the service and trade job opportunities, some of the lowest paying jobs in Caroline County, that are growing the fastest. Overall, the desirability of basic manufacturing jobs, because of the relatively high wages paid, can be seen in Table 3-15.

AVERAGE EMPLOYMENT BY INDUSTRY

Table 3-16 shows the average employment, by industry, provided within each locality in the study area as of June 30, 1992. The highest proportion of jobs in Caroline County is provided by various levels of government. This includes local, state and federal government

employment. The smallest number of people are employed in the agricultural industries (for some industries, employment is not "disclosed" to retain confidentiality). This shows the declining nature of the agricultural industry in Caroline. Agriculture provides the smallest number of jobs in all localities in the study area except in King and Queen County and Hanover County.

In the RADCO area, Caroline County had the highest proportion of jobs in manufacturing (18 percent). In the study area, this was exceeded only by Essex, King and Queen, and King William Counties, which had 25 percent, 34.8 percent, and 36.3 percent, respectively, of their jobs in the manufacturing sector. This is primarily because of certain manufacturing concentrations and fairly large individual manufacturing establishments, as opposed to a diversified economy. This is encouraging for Caroline County because manufacturing employment is relatively high compared to many of its neighbors and is an important tax base for local economy.

MAJOR EMPLOYERS IN CAROLINE COUNTY

Table 3-17 presents a listing of the major employers in Caroline County. This list is displayed in the Caroline County Economic Development Profile. The largest employer in the County is Keller Industries, an aluminum products fabricator. With over 250 employees, this company has been the mainstay in the County's economy. Fort A.P. Hill, a military training facility is growing in importance in the County as employment and activity increase on the base. Of course, this facility is the location of the National Boy Scout Jamboree every four years. This is a major economic event for Caroline and the entire region.

Other major employers include the Rappahannock Electric Cooperative and the Petro Truck Stop. Petro forms the nucleus of a growing commercial center at Carmel Church which provides services to long-distance trucking and other travelers. With the recent addition of the Russell Stover Candies distribution center at the Carmel Church Business Center, the economy of Caroline County is expanding and diversifying. The economic centers at Carmel Church, Milford, the Town of Bowling Green, and Ladysmith will increase in importance as the economic development efforts of the County increase.

UNEMPLOYMENT

The average annual unemployment rate for each year from 1980 through 1992 is shown for each study area locality in Table 3-18. Although rates tended to fluctuate from 1986 through 1992, for the most part, Caroline County had the highest unemployment rate of any locality in the study area. Unemployment rates were also higher than the State average for this period. The unemployment rate had returned to double digits in 1991 and 1992. This trend must be watched to insure that it is not a long term situation in Caroline.

Historically, Caroline County has always had the highest unemployment rate among localities in the RADCO area. However, from 1982 through 1985, Essex County and King and Queen County had higher unemployment rates in the study area for that period. Although the unemployment rate fluctuates over time, it is important for the County to attract employment opportunities, including the right type of opportunities for its residents so people can find suitable jobs in the County.

LABOR FORCE

The residents of a locality who are employed, or unemployed but looking for work, make up the labor force of that community. Whether they are seeking a position within their locality of residence or in another locality, they are still a part of the labor force of the community in which they reside. Table 3-19 shows the character of the labor force in localities within the study area. In attracting new businesses to a locality, the size and composition of the labor force becomes important. Even if the unemployment rate is rather high, this is not necessarily negative. It may mean only that there are people available to occupy the jobs of the potential employer.

Among localities in the RADCO Region, Caroline County has the second lowest civilian labor force participation rate, higher than the City of Fredericksburg. In the study area, only Essex County and King and Queen County had slightly lower labor force participation rates than Caroline. This means that a substantial portion of the residents of Caroline County who are 16 years old and older are not part of that group who are employed or looking for work. Detailed investigation is needed as to why this is the case. Are people occupied at home with other tasks such as child care and can't work, or are there no jobs for which people qualify and people are forced to leave the work force? Is this what is affecting the relatively low income level of the County and creating a demand for certain services from various levels of government? Answers to

these questions will be important to the future economy of the County. Detailed study is necessary into the cause and effect of this situation.

WORK FORCE BY OCCUPATION

Table 3-20 shows the occupations of those residents of study area localities who are employed. Figures are shown for 1980 and 1990. In Caroline County in 1990, the largest group of people were in "precision production, crafts, and repair" occupations (1,452 people). This was also the highest category in 1980 with substantial growth in this occupational category occurring during the decade.

The second highest category in both years among Caroline County residents was "administrative support occupations including clerical", with growth over the ten year period higher than that of precision production. "Service occupations" was also the occupation of a large number of Caroline residents. Over the decade during the 1980s, the greatest amount of growth occurred in the occupation of "sales" personnel. This tends to substantiate information shown in other sections of this report.

Occupations showing declines in Caroline over the decade include "private household" and "protective service" occupations, "farming" occupations, "machine operators", and "handlers and laborers". Many of these occupations which experienced declines in the decade during the 1980's, are those that might be filled with relatively unskilled residents. The lack of jobs for the unskilled might have contributed to the relatively low civilian labor force participation rate. Many localities, like Caroline County, are in need of new jobs for the unskilled labor force. The attraction of this type of job should be considered as one of the activities for the enhancement of the County's economy in the future.

RETAIL SALES

Retail sales comprise an important part of the local economy in Caroline County as is the case with every locality in the study area. This is not only important from the standpoint of enabling retail dealers to remain in business, but each locality is able to retain a portion of the sales tax revenue that is generated by retail sales. This is important for the operation of the local government and the provision of services and facilities for the residents of each locality.

Table 3-21 displays the number of retail dealers and the taxable sales from each category of establishment for

each locality in the study area for 1992. Essex County, King George County, King and Queen, and King William County all had a smaller number of retail dealers than Caroline. These, of course, are the more rural localities in the study area and are not located on an Interstate highway.

The 339 retail dealers in Caroline generated a total over \$52.1 million dollars of taxable sales for 1992. This amount was higher than King George, King and Queen, and King William Counties. The smaller number of dealers in Essex County generated more sales than the larger number of stores in Caroline. This may relate to the purchasing power of the very large "seasonal" population that exists in Essex County, especially in and around the Town of Tappahannock.

By far, the largest amount of sales in Caroline County is generated by food stores. This appears to be the case for every locality in the study area. With the addition of the new Food Lion near Bowling Green, this amount of taxable sales will increase as purchasing opportunities increase. Other stores in the new Food Lion shopping center will also benefit the town and the county. The status of the Safeway in Bowling Green will have to be monitored. Efforts must be made to insure that the building remains occupied and contributes to the economy of the town and county, whether as a food store or other type of establishment.

POPULATION PROJECTIONS

After studying the composition and characteristics of the population, it is necessary to look at the future population of the County and study area. The Virginia Employment Commission (VEC), the agency statutorily mandated to develop "official" population projections for the State and its localities, has recently completed a revised set of projections for all counties and cities in the State. These are the figures that will be used by various State agencies and organizations to determine financial allocations and distributions. The projections have been developed using a "cohort-component" methodology which considers base year population, projected fertility, migration, and survival rates.

Table 3-22 shows the "official" population projections for the years 2000 and 2010 for each locality, the RADCO Region, and the study area. Projections show that Caroline County population will increase by about 1,300 people to 20,503 by the year 2000.

The RADCO Region was the fastest growing area of the State between 1980 and 1990. Official projections indicate that our region will continue to be the fastest growing area in Virginia until the year 2000. However, the rate of growth is expected to be less than the 43 percent experienced in the 1980's. Between 1990 and 2000, the regional population growth is forecasted to be slightly over 27 percent, raising the RADCO population to approximately 216,800, from the 1990 figure of 170,400. The growth rate in Caroline County, however, is expected to be the smallest of any locality in the region at 6.7% over the decade. In the study area, only Essex County is expected to have a slower rate of population growth. The forecasted 6.7 percent growth in the current decade for Caroline is slightly lower than the 7.3 percent experienced in the County during the past decade, but Caroline County will increase population to 20,503 by the year 2000.

Between the years 2000 and 2010, the population of the region is, again, expected to be one of the fastest growing in the State. Growth, however, is not expected to be as rapid as in the current decade. Caroline County population is forecasted to rise to 21,702 by the year 2010, a growth of 1,200 people and a growth rate of 5.8 percent. This will be the slowest growth rate in the RADCO Region, with Essex County being the only slower growing locality in the study area with only a projected 1.1 percent growth rate over the next decade to the year 2010.

The "official" projections shown in Table 3-22 are considered by most local and regional planners and officials to be, at best, very conservative. Local records and indicators show that the County's current population is already close to the projection for the year 2000. Evidence of this includes that in 1991 and 1992, Caroline County issued 462 total Certificates of Occupancy for newly constructed permanent dwelling units. Figures indicate that construction activity in Caroline, which has remained "moderate" even during the current "recession", is not as susceptible to outside influences as construction in other faster growing localities. Coupled with occupancy permits issued after April 1, 1990 (Census day), and applying a conservative population per household of 2.2 people, the State projections seem quite low. This is compounded by the fact that State projections do not include consideration of recent determinations by the Caroline County Board of Supervisors to extend sewer service to the Ladysmith area. This area of the County has been growing rapidly, even without complete public sewer service. This extension of facilities will enhance the growth potential

of this section of Caroline. In addition, "official" projections have not fully considered the decision of the County to permit the Haymount development off Route 17 in northern Caroline. The creation of this and other communities will surely have an impact of the population on the County and the region.

If we suggest that the actual population growth in Caroline County will average one percent (1.0%) per year between 1990 and 2010, a faster rate than in the 1990's, this would yield a population projection of 21,000 for the year 2000 and 23,200 by the year 2010.

There are, of course, a number of different types of projections that can be generated. It is always advisable to look at several growth scenarios for population growth in a locality, especially one which is part of a rapidly growing area, and between two major Metropolitan Statistical Areas (Caroline County separates the Washington MSA from the Richmond MSA). These various methods of projecting population when combined into one tabular presentation, can begin to present a "range" of future populations. The "correct" projection may be selected as conditions change and align themselves with the assumptions made to derive the various figures.

Many times, it is easier and more reliable to project the population for a larger area than an individual locality and determine what part the smaller locality will play in the projected growth of the region. This is referred to by many as the "step-down" process of projecting population. As shown in Table 3-22, the RADCO Region is projected to grow to 216,786 by the year 2000, and to 245,372 by the year 2010. Referring to Table 3-1, we noted that the percentage of Caroline County's population had comprised the total regional population since the 1960 Census and has been declining. That percentage of decline as a proportion of the regional population has also been increasing - the largest amount occurring in the most recent census period.

Let us say that because of the southward expansion of the Washington area and the northward expansion of the Richmond area, that growth in Caroline County in the future will not equal the growth that will be experienced by localities like Stafford, Spotsylvania, and Hanover Counties, but will grow by a significant rate. Increased growth in Caroline, in part, resulting from development in the "Lake" communities and in the early sections of Haymount could have Caroline County equaling ten percent (10%) of the regional population by

the year 2000, and possibly higher, about twelve percent (12%) by the year 2010. If this is true, Caroline County's population will reach 21,679 by the year 2000 and 29,445 by the year 2010. Other percentages of regional growth can be used and changed as time goes on. The 10% and 12% figures may also prove conservative with the improvements that are being made around the County. However, we already begin to see the variation in projections that can be obtained when we apply our more detailed knowledge of occurrences within our community to develop a more reasonable picture of the population in the future.

During the 1980s, Caroline County grew by about 1,300 people. The greatest recent growth in the County, however, came in the 1970s when Caroline grew by about 4,000 people. Improved access to larger areas, improved economic development created by the County's strengthening of its Economic Development Department, and growth in new developments may cause population to return to this 4,000 person increase level. If this becomes true, the County's population will be 23,217 by 2000, and 27,217 by 2010. As we have noted, the Certificates of Occupancy issued in the first two years of the 1990s lead us to believe that the population of the County will soon surpass the "official" State projections and take us closer to these higher numbers.

The rates of population change in a locality will tend to fluctuate. Table 3-1 also shows this to be the case for Caroline County. Although our region will continue to grow rapidly, it is generally conceded that the rate of regional population growth will not be as high as in the 1980s (some of our localities even dispute this because of construction activity during the recent recession). We expect the rate of growth in Caroline, however, to increase slightly from its 7.3% rate between 1980 and 1990. Should the population increase by 10% per decade, the year 2000 population would be 21,139 and 23,253 by the year 2010.

Many population projections are based on the amount of construction and the characteristics of the population within the units that are constructed and have been constructed. Of course, we look at a number of variable items to determine population in the future, so that the greater the opportunity to have a projection will be less reliable. However, with our knowledge of local conditions, we can at least create a set of standards by which to generate some "conservative" population projections which can be compared with other figures

and then adjusted as conditions become "real" over time.

We know from Table 3-12 that in the first half of the 1980s, Caroline County was issuing residential building permits for the construction of over 100 dwelling units per year. In the latter portion of the decade, the County was issuing permits for the construction of over 200 dwelling units per year. In addition, we find from the census that the average population per household in the County declined from 3.66 persons per household in 1970 to 3.09 in 1980, and further declining to 2.86 people per household in 1990. By looking at these trends and making statements about the likelihood of certain occurrences, a reasonable population projection can be developed using this data.

To obtain a final projection of population for the County, we will say that with conditions in the economy coupled with new development, the County will call for the development of a minimum of 175 dwelling units per year for the decade of the 1990s. We already know that the County has issued an average of 230 occupancy permits for residential dwellings in the first two years of this decade, already surpassing our assumed construction amount. In addition, let us use a population per household that declines from the 1990 figure and continues the trend established over the past twenty years. A reasonable and conservative figure would be 2.5 persons per household to the year 2000. By combining these numbers over the ten year period, a projection of 23,592 people is obtained for the year 2000, an increase of 4,375 people over this decade. Holding this number constant to the year 2010 would yield a population of 27,967. Table 3-23 shows the results using various methods of projecting population for Caroline County.

Also, the highest projection for the year 2000 was obtained by the method that used the conservative figures relating to actual occurrences in the County. As noted earlier, the latest year of the projection, the more difficult it is to create a reliable number.

These figures show that a more reasonable population projection for the County is 24,000 people by 2000 and 28,000 to 30,000 people by the year 2010. These figures are, again, expected to be lower than the actual population at those times. These numbers can be used as indicators of population growth, given a certain set of circumstances.

It is imperative that the County monitor changes in the population and housing stock and update projections as necessary. These projected figures are not meant to be static, but will change as conditions change in order to be useful in planning for the future of Caroline County.