

AN ECONOMIC AND INDUSTRIAL SURVEY OF
CHESTERFIELD COUNTY, VIRGINIA

by

William Frederick Keehne, Jr.

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INTRODUCTION

The trend in industrial expansion today is for manufacturers to investigate the potential of southern states as good locations for new plants. The state of Virginia until recently has been slow in its efforts to attract new industry. The state is at a point where it should do everything possible to encourage the location of new manufacturing and governmental facilities in Virginia, as well as to encourage the expansion of the existing industries in the state. This effort on the part of the state administration will be necessary if Virginia hopes to keep pace with the growth of adjoining states, as well as that of other states in the Union.

Virginia's counties have many of the assets and resources necessary to make them grow and be prosperous.

Chesterfield County, a part of the Richmond metropolitan area, is a county which apparently is making wise use of its assets and resources. Economic and industrial growth have made it one of the three largest growing areas in Virginia, the others being the area just on the outskirts of Washington, D. C., and the Hampton, Norfolk, and Newport News area.

PURPOSE OF THESIS

The purpose of this thesis was to present and analyze some of the economic data concerning Chesterfield County's past employment income and industrial experiences and its present resources and facilities, after which to draw a conclusion as to reasons for its present economic and industrial status and then to make some recommendations that would further improve its economic growth in the future.

Further, it is believed that the information gathered here will be of significant value to industries that are investigating possible plant location sites in Virginia in the near future.

HISTORY AND GENERAL DESCRIPTION OF THE COUNTY

Location and Description¹

Chesterfield County is located in Central Virginia between the James and Appomattox Rivers, at the point where the Tidewater plain meets the Piedmont plateau. The county has a land area of 465 square miles or 294,400 acres with a water area of nine square miles. Altitude ranges from 20 feet above sea level to 360 feet, with an average of 150 to 200 feet. The county is bounded on the north by the city of Richmond and Henrico County, on the south by the cities of Colonial Heights and Petersburg and Dinwiddie County, and on the east by the counties of Charles City and Prince George and the city of Hopewell.

The county is well served by transportation facilities. Deep water frontage along the James and the Appomattox Rivers provides good shipping by vessel through Norfolk. The Southern, Seaboard, and Atlantic Coast Line railroads all cross through the county

¹Division of Industrial Development and Planning, Economic Data, Chesterfield County, Va., p. 1, Dept. of Conservation and Economic Development, Richmond, Va., 1961.

providing good rail service to all parts of the nation. The county is also provided with adequate highway and freight transportation. Interstate Highways 95 and 81 will run directly through portions of the county in addition to the many existing U. S. and state highways. Nationwide air connections are made through Byrd Field in Richmond.

Chesterfield County is extremely fortunate in being located so near the many educational, recreational, and cultural facilities that exist in the nearby city of Richmond. Adult education is coordinated by the University of Virginia Center. Over 400 courses are offered in academic fields from vocations to Master's Degrees in some fields. There are five high schools and five colleges and universities participating in the program. The Virginia Museum of Fine Arts and the Valentine Museum are of great interest. In addition, Chesterfield County itself has a state park and tours are available through historic Civil War battlefields.

Chesterfield County is governed by a Board of Supervisors which is composed of a member from each of the six magisterial districts: Clover Hill, Bermuda,

Manchester, Matoaca, Midlothian, and Dale. The board members are elected by the people of the county for a four-year term.











The county has an Executive Secretary and a Planning Commissioner, both of whom aid the Board of Supervisors.



According to the 1960 Census of the Population, Chesterfield County has a population of around 71,197 persons. The population is estimated to reach 82,717 by 1964.

The county is closely tied to the adjoining cities of Richmond and Petersburg but has few urban centers within the county proper. There are some 13 communities, which are well populated, scattered throughout the county.

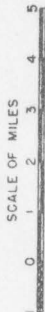
The county is still quite heavily engaged in agriculture. It ranks 38th among all counties in Virginia with sales of \$2,067,143. However, the primary source of income to the people is employment in the vast industrial operations in and around the county. A large amount of the income from manufacturing originates in the city of Richmond which is not a part of the county.

LEGEND

-  U.S. NUMBERED HIGHWAYS
-  VIRGINIA PRIMARY HIGHWAYS
-  RAILROADS
-  TRANSMISSION LINES
-  NATURAL GAS LINES
-  COUNTY BOUNDARY
-  CORPORATE LIMITS
-  COUNTY SEAT
-  POWER SUBSTATION
-  STREAM GAGING STATION

-  20 DIRECTION OF AND AVERAGE FLOW IN MILLIONS OF GALLONS PER DAY (FLOWS OF LESS THAN 5 M. G. D. NOT SHOWN)
-  VEP CO VIRGINIA ELECTRIC AND POWER COMPANY
-  NAV. PROJ. AUTHORIZED NAVIGATION PROJECT AND CHANNEL DEPTH IN FEET
-  C.N.G.C. COMMONWEALTH NATURAL GAS CORPORATION
-  MAGISTERIAL DISTRICT LINE

ECONOMIC DATA
CHESTERFIELD COUNTY
 VIRGINIA



1961

DIVISION OF INDUSTRIAL DEVELOPMENT AND PLANNING



History²

Early Settlement: 1607 - 1650. The early history of the region now known as Chesterfield County, Virginia, is closely related to that of Jamestown. In fact, according to the late E. S. H. Greene, "Had Sir Christopher Newport followed to the letter the instructions given him by the Virginia Company of London, he would probably have planted the first permanent English settlement in America at Bermuda Hundred. He was instructed to 'Go as far inland as a bark of fifty tons will float--the further up the better--to a place easily fortified. Find a fertile and wholesome place.' The James is navigable for a fifty ton boat to this point." Thus Newport violated orders and settled at Jamestown. However, he and his party did explore the waters and shores of Chesterfield for valuable mineral deposits to carry back to England. In 1608, Captain John Smith sent to English investors two barrels of stones rich in iron ore, presumably dug from the vicinity of Falling Creek. Here 11 years later in 1619, enterprising Englishmen built an iron furnace, this nation's first.

²Bettie Woodson Weaver, Chesterfield County, Virginia, (Virginia: Lewis Printing Company, 1957), p. 7.

When wise Sir Thomas Dale arrived as Lieutenant-Governor of Virginia in 1611, he immediately planned a new town on a peninsula about 50 miles up the river from Jamestown. This town was named Henricopolis or Henricus. Dale cut a narrow ditch across the neck of this land, having learned the technique in Holland. The ditch, called Dale's Dutch Gap, was strongly faced with Palisades. On the other side of the James, Dale impaled the bend west of Henricus, forming two tracts, "Hope in Faith" and "Coxendale." They were secured by five forts, among them "Mt. Malady," the first hospital in the United States. Near the Coxendale tract was the parsonage, "Rock Hall," home of the Reverend Alexander Whitaker who came to Virginia with Dale as a missionary to the Indians.

Around Christmas, 1611, Dale took the town of the Appomattox Indians, situated at the confluence of the James and Appomattox Rivers, calling it New Bermudas. He annexed to it many miles of woodland in several hundreds, among them Rochedale Hundred, now Jones' Neck. The building of the city of Bermuda within the area of Bermuda Nether Hundred was postponed until 1613. The earliest extant Virginia will devising privately owned

land was made by Captain Robert Smalley of Bermuda Hundred and was dated December 19, 1617. The first free English farmers in America tilled the soil of Bermuda City and Hundred. Bermuda Hundred remains the oldest continuing English settlement in America west of Jamestown.

The Great Massacre of March 22, 1622, almost wiped out the county's population. At the iron furnace on Falling Creek, the Indians killed all the workmen and their families, except two small children. "Mt. Malady" was devastated. Among those murdered at Bermuda City and Hundred was John Rolfe, pioneer in the Virginia tobacco industry and husband of Pocahontas. This massacre was a great setback to the colonists, yet the survivors were more determined than ever to conquer the wilderness.

By 1634 the Colony of Virginia was populous enough to be divided into eight shires. The present Chesterfield County became a part of Henrico County or shire. Soon several large plantations were established, usually near the rivers and creek lines. Captain Thomas Osborne settled along Proctor's Creek; the Branch and Ward families patented land on Kingsland

Creek; along Falling Creek, Dr. Thomas Mathews held a large estate. Farther up the James River on Goode's Creek, Colonel John Goode lived at "Whitby." On the Appomattox River "Conjuror's Neck" was established by Richard Kennon, and Ambrose Cobbs had 350 acres between the Appomattox River and Swift Creek known as "Cobb's." Adjoining "Cobb's" was "Point of Rocks" patented by Abraham Woods. For the protection of the plantations along the James and Appomattox Rivers an outlying defense post was constructed near the present town of Ettrick. Many early settlers built homes around Matoax, also on the Appomattox River. This Indian town had been the girlhood home of Pocahontas whose secret name was Matoaka.

Western Development: 1650 - 1749. The Chesterfield area advanced steadily from 1650 until 1749. Already one-third of its land, the Tidewater portion, was settled. Soon sturdy frontiersmen moved into the western or Piedmont two-thirds of the county. As they came, primitive roads and trails stretched out to them. By 1700 the fierce Monacan Indians, members of the Sioux Tribe, had deserted their hunting and camping grounds in the northwestern tip of the county.

Exiled French Huguenots, anxious for peace and quiet, found this section a ready refuge. The General Assembly of Virginia, composed of the Royal Governor, his Council, and the House of Burgesses, was so pleased to have these courageous people that they exempted them from all taxation, except parish taxes, for seven years. Their descendants' surnames were repeated often in county affairs: Ammonett, Salle, Michaus, Trabue, Chastain, Tullit, Perdue, DuVal, La Fon, Dupuy, Belcher, and others. Several fine examples of Huguenot architecture remain in the western portion of Chesterfield today. Their houses, usually one room deep, had an exceedingly simple interior with end fireplaces, a cross partition, and an enclosed stairway to two small rooms upstairs. These Huguenot houses frequently had two front entrance doors side by side.

The Winterpock section of Chesterfield located along the Appomattox River was settled in this period also. By 1730, families such as Eppes, Archer, Hill, Cheatham, and Goode were established here. Undoubtedly the finest colonial mansion standing in Chesterfield today is "Eppington," built by Francis Eppes near

Winterpock Creek. Thomas Jefferson considered Francis Eppes, Sr., "the first horticulturist in America."

Independence: 1749 - 1800. An act of the General Assembly in 1749 made a separate county of that part of Henrico lying south of the James River. This newly created county was named Chesterfield in honor of Philip Dormer Stanhope, Fourth Earl of Chesterfield, noted for his courtly manners. The county promptly set up business by naming Hohn Bolling, a descendant of Pocahontas, presiding justice of the court. Benjamin Watkins was elected clerk. The original document dated May 12, 1749, declaring the official beginning of Chesterfield was called "The Commission of the Peace." It was captured by a Northern soldier in 1865 and recently found for the county by Earle Lutz. The document now hangs in the Clerk's office.

Soon a court house and jail were constructed near the county center. During the Revolutionary War, the British General Phillips burned the jail and the interior of this court house. He also burned an army hospital and log barracks which had held Continental recruits. According to the late Judge N. P. Cox, Chesterfield Court House was a second Valley Forge,

since the recruits suffered greatly from the lack of food and clothing. Other Chesterfield communities received heavy destruction from British raiders, among them Warwick, a James River port town, larger than Richmond at the time. Not all action was limited to the enemy, however; for Chesterfield troops under the command of Lt. Colonel St. George Tucker made a valiant stand at the Battle of Guilford Court House, North Carolina, in 1781.

Following the Revolution, the county economy received a much needed boost as coal production increased. America's first coal mines had been in operation in the Midlothian area prior to 1730. Now Scotch, Welsh, and English miners and scientists hastened to teach the latest mining techniques. The numerous mines in this section were so lucrative that their owners were soon called "Coal Barons." Their heavy coal carts rumbled over the Buckingham Road to the wharves in Manchester.irate citizens constantly complained about the rutted condition of the road which finally led to the beginning of construction in 1802 of a toll road following the general route of the old road.

This was the Manchester and Falling Creek Turnpike, now Route 60.

While the coal trade was prospering, Chesterfield County had received two famous visitors. Governor Patrick Henry made his home at "Salisbury" from 1784 until 1786. Governor Henry rented this property from Thomas Mann Randolph. Meanwhile Thomas Jefferson, whose father, Peter Jefferson, was born at Osbornes, brought to "Amphill," home of Archibald Cary, his three motherless daughters, for their inoculation against smallpox. The following year when he left as Minister Plenipotentiary to Europe, his two youngest girls remained with their aunt at "Eppington." Here Baby Lucy died and lies buried.

The Nineteenth Century. The beginning of the nineteenth century found Chesterfield busy planning additional industries and roads--even schools. Trouble with England led to the establishment in 1810 of the Bellona Foundry on the south side of the James River about 12 miles west of Richmond. Major John Clarke, first superintendent of the Virginia State Armory, and William Wirt, a Richmond lawyer, were partners in this enterprise which manufactured cannon and shot for the United States Army. The road used to haul the ordnance

still bears the name "Old Gun Road." The United States Government, persuaded by Major Clarke, constructed Bellona Arsenal on adjacent land bought from William Trabue in 1815. The arsenal consisting of eight brick buildings joined by a 17 foot high brick wall, was built in 1816-1817. Ordinance troops and later artillerymen were garrisoned here until 1833. For the next 23 years the arsenal was left to a military caretaker, Sergeant Moses McArthur. In 1856 Jefferson Davis, then United States Secretary of War, sold the arsenal to Dr. Junius Archer who later leased it to the Confederacy. Today Bellona Arsenal has been carefully restored into a peaceful country estate.

Another industry encouraged by difficulty with England was gunpowder manufacture. America's first gunpowder plant had been established by Jacob Rubsamen and Archibald Cary during the Revolution. Around 1811 the company of Brown, Page, and Burr began making powder on Arbor Spring Branch near the present Miniborya Farm. Virginia's first tramway carried this powder about a mile to a storage magazine.

By 1815 residents in Richmond and Petersburg were demanding a road comparable to the Manchester and Falling

Creek Turnpike. Twelve years later the directors announced the completion of the Manchester and Petersburg Turnpike. The road's stone bridge spanning Falling Creek on U. S. Route 1 is said to be the nation's oldest standing double arched stone bridge. It stands today as the center of Virginia's first wayside park.

The economy of Chesterfield showed rapid gains from the end of the War of 1812 until the outbreak of the War Between the States in 1861. In the decade 1830-1840, several industrial enterprises were chartered on Swift Creek and around Matoaca and Ettrick. Among them were the Matoaca Manufacturing Company, the products of which were paper and cotton cloth; the Ettrick Manufacturing Company, which produced woolen, flax, metal, and wood products; and the Union Manufacturing Company at Swift Creek, which manufactured cotton, wool, flax, hemp, and silk products.

The productive Clover Hill coal mines began operating around 1840. Meanwhile the Midlothian "Coal Barons" had received a charter for the Chesterfield Railroad, Virginia's first. This line, constructed in 1831, used gravity and draft animals

to pull the coal cars the 13 miles to Manchester. Some of the animals rode in the rear car of each train down the final grade to the river, then pulled the empty cars back. It remained in use until the steam powered Richmond and Danville Railroad was built through Chesterfield in 1851. Portions of the old Chesterfield Railroad bed are visible yet along Route 60. These early railroads, along with the Richmond and Petersburg Line, and the Clover Hill Railroad, were of economic benefit to the county.

Many of the young people of Chesterfield were educated at home by tutors or attended one of the many private academies. There was little progress in public education. Around 1810 Mr. and Mrs. Haley Cole gave the county a brick house, still standing near Midlothian, for use as a public school. Another education-conscious citizen, Mrs. Margaret Faulkner, upon her death in 1817, bequeathed most of her property on Swift Creek to the establishment of a school for the poor in the county. The first school in America for deaf mutes was started at "Cobb's" in 1815.

Another leading Chesterfield citizen interested in education was Samuel Taylor who represented the county in the Virginia House of Delegates, 1817-1819. Delegate Taylor's efforts helped in the founding of the University of Virginia and subsequently in the creation of a public school system for the state. It was Mr. Taylor who presented to the legislature the bill containing the recommendations of Thomas Jefferson for establishing a system of public education.

The nineteenth century also produced great men in Chesterfield. In the period 1830-1840, Wyndham Robertson was elected Governor of Virginia and Benjamin Watkins Leigh was elected to the Senate of the United States. John W. Jones of "Dellwood" went to the U. S. Congress and served as Speaker in the House of Representatives from 1843 to 1845. The War with Mexico in 1846 gave the nation two outstanding officers from Chesterfield. Edward Johnson of "Salisbury" and Henry Heath of "Black Heath" received battle experiences which helped both to become generals in the War Between the States.

The War Between the States: 1861 - 1865. From 1861 to 1865 the loyal Virginians of Chesterfield fought with the South. Drewry's Bluff played an important part in the conflict. Here a fortress, ultimately named Fort Darling, was hastily thrown up on a 90 foot precipice overlooking the James. Sailing vessels and rubble were sunk in the river to obstruct the Federal gunboats. On May 15, 1862, a small force of young and old farmers under Captains Augustus H. Drewry and J. B. Jones, using guns from Bellona Foundry, defeated the Northern Navy, including the Monitor and the Galena, and sent it sailing back downstream out of range. They saved Richmond and locked the door to the enemy for three years. Drewry's Bluff was also the location of the Confederacy's only educational institution, the Naval Academy of the Confederate States. In May, 1864, General P. G. T. Beauregard defeated General Benjamin Butler at Drewry's Bluff. Casualties were heavy on both sides. Butler withdrew to his base at Bermuda Hundred where he and his approximately 35,000 men remained "bottled up." Confederate batteries along the Howlett line, nearly five miles long, blocked off the entire Bermuda Hundred peninsula. While thus

confined, Butler began digging the Dutch Gap Canal. Previously Butler had set up headquarters at the Halfway House on the Petersburg Pike. This old inn and the quarters he used at Bermuda Hundred are Chesterfield landmarks today. Shortly before the fall of Petersburg and Richmond in April, 1865, much heavy fighting occurred on Chesterfield soil. When the Retreat Order was given, the tired men trudged through Chesterfield toward Appomattox Court House. According to tradition, on the morning of April 3, 1865, General Lee paused at the old tavern "Forkland" at the intersection of River Road and Bevil's Bridge Road, where he watered Traveller. Near Winterpock, Judge James Cox sent a messenger to General Lee inviting him and his staff, including General Longstreet, to his home "Clover Hill" for dinner. The invitation was readily accepted. Both "Forkland" and "Clover Hill" are still standing.

Reconstruction was difficult for Chesterfield. Many homes, churches, businesses, fortunes, and men were gone; yet the spirit and the land remained. Public schools became a reality. Small farms held the economy until business could be revived. Before the turn of the century, cotton mills, lumber mills, brick yards, and

quarries were operating. Unfortunately the coal mines, set back by the war and plagued by a series of costly explosions, gradually began ceasing operations.

The Twentieth Century: 1900 - Present. January 1, 1900, saw Chesterfield on the threshold of startling changes. When the Tercentenary of the Jamestown landing was celebrated in 1907, the county was still in primitive state. According to County Historian Earle Lutz, "As yet Chesterfield had only an occasional automobile to operate on its two semi-improved highways; no airplane had yet winged its way across the county; the motion picture theatre had not arrived either in Richmond or Petersburg.... Kerosene lamps were still in vogue; gas and electric lights and the telephone were still awesome to the average Chesterfield lad and lassie. Instead of motor vehicles for motive power, there were 3,369 horses and mules listed for taxation in the county in 1907."

The next 50 years brought startling changes. Chesterfield turned from agriculture to industry for its economy. Following World Wars I and II, industries moved out to the spacious countryside for plant and factory locations.

ECONOMIC ANALYSIS

Existing Industry

Agriculture.¹ Agriculture continues to diminish in importance in the county's economy. However, many of the farms left are above average in the production of a diversity of commodities.

During the period 1954 to 1959, agriculture in Chesterfield County has shown an increase of \$550,000 in value of farm products sold. In 1954 the value of farm products sold was \$2,067,143, while in 1959 the value had increased to \$2,610,340. This represents an increase of almost 26 per cent in the value of farm products sold.

Chesterfield County, in 1959, topped 38 other counties in the value of farm products sold. It can be seen from the abbreviated table that Chesterfield County in 1959 ranked fifth in the state in poultry and poultry products and sixth in total sales of forest and horticultural products.

¹Division of Industrial Development and Planning, Economic Data of Chesterfield County, Va., pp. 8-9, Department of Conservation and Economic Development, Richmond, Va., 1961.

<u>Products Produced</u>	<u>Dollar Value</u>	<u>Standing in State (1959) Rank</u>
All farm products	\$2,610,340	
Dairy products	596,961	
Forest and horticulture products	571,663	6th
Poultry and poultry products	518,390	5th
Field crops	478,178	
Livestock	415,173	

According to the 1959 census of agriculture, there were 533 farms, averaging 133.1 acres in size. The value of land and buildings, based on a 20 per cent sample, averaged \$29,952 per farm.

Almost two-thirds of the farms in 1959 were residential and part-time farms. One out of every two farm operators worked off the farm 100 or more days in 1959. The 1960 county population totaled 71,197 with only two per cent, or 1,424 persons living on true farms.

Table 1 gives a detailed summary of the number, size, and types of farms and compares this information with the same data for Henrico County. The table reveals approximately the same developments have taken place

TABLE I
Agricultural Statistics for Chesterfield and Henrico Counties
for 1954 and 1959

	Chesterfield County		Henrico County	
	1959	1954	1959	1954
<u>Agricultural Statistics</u>				
Land in farms (acres)	70,953	78,783	64,624	68,792
Per cent of area in farm	23.8	26.4	37.5	46.0
Average size of farm	133.1	71.7	124.8	98.2
<u>Farms by Size</u>				
Under 50 acres	230	530	323	494
50-99 acres	104	134	71	81
100-179 acres	94	135	57	54
180-259 acres	52	48	15	24
260-499 acres	34	39	29	23
500-999 acres	10	18	12	10
1,000 acres and over	9	6	11	10
Total number of farms	533	910	518	696
<u>Farms by Type (Per Cent)</u>				
Field crops (other than vegetable, fruit, and nut)	9.6	9.0	1.4	5.2
Vegetable	0.9	1.1	-	-
Fruit and nut	-	0.5	-	-
Dairy	3.2	1.3	3.2	2.8
Poultry	10.3	10.0	15.8	17.5
Livestock	7.7	5.5	6.7	3.8
General	3.9	3.2	5.3	2.5
Miscellaneous	64.3	69.4	67.6	68.2

Source: U. S. Bureau of the Census. U. S. Census of Agriculture, 1954, Vol. I, pp. 103, 105. Counties and State Economic Area, Part 15. U. S. Government Printing Office, Washington, D. C., 1956. Same - Substitute 1959, pp. 187, 189, Part 24, 1961.

in the two counties during the period of 1954-1959; total land in farms has decreased, per cent of the county's area in farms has decreased, and the average size of the farm has increased.

The rapid growth of South Richmond, the Colonial Heights area, and other suburban areas during the past decade or so has required large segments of land formerly devoted to farming in Chesterfield County.

The information shows that neither of the counties contributes very significantly to the agriculture of the state as a whole.

Manufacturing. The total number of manufacturing industries in Chesterfield County is 18. Of these, nine employ more than 100 persons--with the DuPont Company, Allied Chemical Company, and Bellwood Depot providing employment for approximately 9,100 people. The Allied Chemical Company ranks as one of the 15 largest plants in Virginia in regard to employment. Table 2 gives the names of the industries, the product manufactured, and the number of persons employed.

During the period 1950-1962, three new plants were established in Chesterfield County with a total employment of 3,225. This total was the second highest

TABLE 2

Industry in Chesterfield County by Name of Company
Product Manufactured, and Number of Employees

Industry	Product Manufactured	Number of Employees
1. DuPont Co. (two plants)	Nylon, cellophane	3,900
2. Reynolds Aluminum Co.	Aluminum products	900
3. Allied Chemical Co.	Nylon, chemicals	2,400
4. Va. Elec. & Power Co.	Electric power	300
5. Southern Materials Co.	Gravel	200
6. Tredegar Iron Works	Iron products	150
7. Capital City Iron Works	Iron products	125
8. Concrete Pipe and Products Co.	Cinder block and pipes	150
9. Lyttle & Barnes Sanitation Co.	Install septic tanks and pipes	125
10. U. S. Filter Co.	Cigarette filters	100
11. Bellwood Depot	General services	2,800
12. McGuire Hospital	Veterans hospital	1,200
13. Battle's Welding Service	Welding	25
14. Houck & Greene Div. of Tredegar Co.	Steel fabricator	50
15. Brandon Silo Corp.	Concrete products	25
16. ABC Foundry Co.	Foundry	20
17. A. T. Curtiss & Son	Sawmill	23
18. W. B. Goodwyn & Sons	Millwork	10
19. Hallboro Mfg. Co.	Sawmill	8
20. C. D. Lefaivre Co.	Sawmill	13
21. J. D. Vest	Sawmill	16
22. R. R. Cashion	Logging contractor	17
23. Brenco, Inc.	Mechanical power transmission equipment	110
		11,767

among counties in Virginia. Albemarle County, which was first, attracted six new plants, with a total 1962 employment of 3,725 people.

During 1962, two businesses already located in Chesterfield County announced plans for expansion and one company announced plans for the building of a plant in the county. They are listed as follows:²

1. DuPont--proceeding with plans for a multimillion-dollar modernization and expansion program to increase the output of nylon yarn and other industrial fiber. Nylon manufacturers and certain other new synthetic fibers have superseded rayon operations at the plant. This DuPont plant is the largest nylon plant in the world.
2. U. S. Filter--constructing a \$400,000 manufacturing plant which is the second major expansion since the company located here in 1954.
3. Cardwell Machine Company--will construct a million-dollar factory and office building.

Chesterfield County is continually attracting new industries, and companies with existing facilities in search of additional room are expanding into the county.

²The Richmond Times-Dispatch, Dec. 1, 1963, p. 1 and p. 12, col. 1.

Taxation, as it applies to machines and tools, is a factor which accounts for this continued growth. Chesterfield County has a machinery and tools tax of 55 cents per \$100 assessed valuation. By comparison, Henrico County has a rate of \$2 and Richmond has a rate of \$1.

Space, labor supply, proximity to markets, raw materials, comparatively low-cost land, and water supply, not necessarily in that order, are among the resources that come to mind when an industry considers building in Chesterfield County.

Chesterfield County has accounted for more than half of the Richmond area's new plant employment during the past 12 years. Diversification, which offers employment opportunities in industries producing mechanical power equipment, metal products, chemicals, and plastics, has led to a most favorable employment and economic picture for the county.

Labor Situation

The purpose of this section of economic analysis is to present the present employment and income situation existing in Chesterfield County.

Employment. A total of 71,197 persons were living in Chesterfield County, as shown in the 1960 census. This represents an increase of 30,797 persons or approximately 76 per cent increase in population over the 1950 census. This increase may be attributed to an increase in births and to many new entrants of people working in Richmond but living in Chesterfield County.

According to Table 3, there were 48,025 persons 14 years old and over in Chesterfield County with 28,164 of these people in the labor force. About 79.1 per cent of the males and 37.5 per cent of the females were included in the labor force of those persons 14 years old or over. There were only 523 males and 263 females or 2.7 per cent of the civilian labor force unemployed in 1960. This represents an extremely small element of the labor force and is a favorable sign that employment is available to most of the population that is willing and able to work. However, the low unemployment figure indicates that

TABLE 3
Employment Status of Chesterfield County,
by Sex, 1960

	Male	Female
Total population	35,593	35,604
Employment status		
Persons 14 years old and over	23,742	24,283
Labor force	19,241	8,923
Armed forces	214	0
Civilian labor force	19,127	8,923
Employed	18,504	8,660
Unemployed	523	263
Not in labor force	4,501	15,360
Inmate of institution	753	131
Enrolled in school	2,155	2,192
Other, under 65 years old	697	11,264
With own children under 6	0	5,131
Married, husband present	0	5,042
Other, 65 years old and over	896	1,773
Age of persons in labor force		
14-24 years old	2,816	3,527
25-44 years old	10,653	5,010
45-64 years old	5,316	2,482
65 years old and over	456	184
Married women in labor force, husband present		5,954
Women in labor force without children under 6		1,552
Married, husband present		1,386

Source: U. S. Bureau of the Census. U. S. Census of Population: 1960, General Social and Economic Characteristics, Virginia, p. 48-225, Final Report PC (1)-48C, U. S. Government Printing Office, Washington, D. C., 1961.

the source of labor for any new industries would probably have to come from outside the present labor force. One of the main advantages of new industry locating in the county or of established industry expanding its operations is the creation of new jobs and the resultant addition of more people to the labor force. It normally takes less incentive to cause people not in the labor force to enter than to cause experienced persons already employed to change jobs. Normally, it is not the desire of new industry to deliberately take away personnel from existing industries. However, in order for the newer industry to acquire the experienced personnel it needs to operate, it will have to offer additional incentive to these people. Changes in employment would be more readily made if the new industries locating in the county were of the high wage scale group with more company benefits, better working conditions, and better chances for advancement than are present in the existing industries. This would not only be applicable to the persons that might consider changing employment but also for the ones who are considering employment. The location of the same type of industry, as is already in existence, will provide

little incentive to the better qualified men already employed, although it will create new jobs for persons available for work and outside the labor force.

The number of women married and living with their husbands, under 65 years of age and not in the labor force, is 5,042. This is a particularly good source of labor for industries, such as electronics, electrical components, and garments, that require a large number of women in production and assembling of parts.

The age group of 25 years old to 44 years old is generally considered to be the most productive. It is interesting to note that approximately 58 per cent of the males and 55.5 per cent of the females are in this age group.

The occupation of the existing employed and the experienced unemployed as given in Table 4 gives an idea of the type of skilled and unskilled personnel living in the county. The skills of the unemployed would appear to be of more value to new industry since it would have to depend mainly on this source for its particular personnel needs. The major occupation appears to be the craftsmen, foremen, and kindred group for male personnel. This group includes mechanics,

TABLE 4

Employed and Unemployed Persons in Chesterfield County,
by Sex and Occupation Group, 1960

Occupation	Employed		Experienced Unemployed	
	Male	Female	Male	Female
Total	18,504	8,660	498	255
Professional, technical, and kindred workers	2,049	1,139	4	10
Farmers and farm managers	189	9	0	0
Managers, officials, and proprietors, excluding farm	2,114	316	8	8
Clerical and kindred workers	1,414	3,156	42	46
Sales workers	1,422	766	31	20
Craftsmen, foremen, and kindred workers	4,891	89	155	8
Operatives and kindred workers	3,804	1,487	75	78
Private household workers	36	704	0	33
Service workers, except private household	895	690	15	34
Farm laborers and farm foremen	196	31	16	0
Laborers except farm and mine	917	31	105	0
Occupation not reported	577	242	47	18

Source: U. S. Bureau of the Census. U. S. Census of Population: 1960, General Social and Economic Characteristics, Virginia, pp. 48-236 and 48-237, Final Report PC (1)-48C. U. S. Government Printing Office, Washington, D. C., 1961.

repairmen, and construction and manufacturing foremen. There are 4,891 males, or 26.3 per cent, employed in this group. The second largest employed group is the operatives and kindred workers group. This includes drivers and machine operators in manufacturing plants, as well as operators in nonmanufacturing fields. Within this group, 3,804 males or 21 per cent find employment in this field. Over twice as many females are employed in the clerical and kindred workers group as in the next work group. In the clerical group 3,156 females, or 36 per cent of the total, are employed, while 1,487 females, or 17 per cent, are employed in the operatives and kindred workers group. It is interesting to note that the operatives and kindred workers group, combining male and female, is the largest employed group with 5,291 persons and 19.5 per cent of the total employed. The second largest work group is the craftsmen, foremen, and kindred workers with 4,980 persons, or 18.9 per cent of the total, employed. This is significant because these major occupations are all used in manufacturing industries and indicates the large supply of industrial labor already existing.

In addition to skilled workers, there is also a large number of unskilled labor to be found in construction and manufacturing employment. The majority of these unskilled laborers are in manufacturing, which gives some idea of the need for unskilled labor in industry. This is of value to new industries because their need for unskilled labor could probably be supplied from the agricultural workers without experience that would transfer from the farm to industrial employment if the opportunity arose.

Most of the experienced unemployed are operatives, craftsmen, and construction and manufacturing laborers. There are also many clerical operatives and private household workers who would welcome the opportunity to work in industry if the opportunity for employment existed.

Table 5 shows an increase of 80.2 per cent in the number of employed persons in 1960 over 1950. Of the total of 27,378 persons actually employed in 1960, 51 per cent, or 14,011, were classified as rural population. However, there has been a decrease in agricultural employment of 43.4 per cent since 1950, which comprised only 1.9 per cent of the total number of employed persons

TABLE 5

Employed Persons Living in Chesterfield County, by Industry Group,
and by Sex, for 1950 and 1960

Industry Group	Male		Female		Total	
	1960	1950	1960	1950	1960	1950
All employed persons	18,718	11,164	8,660	3,994	27,378	15,158
Agriculture, forestry, and fishery	475	878	48	45	523	923
Construction and mining	2,181	1,540	33	35	2,214	1,575
Manufacturing	6,787	3,889	1,986	985	8,773	4,874
Transportation, communication, and public utilities	1,538	880	417	129	1,955	1,009
Trade						
Finance, insurance, and real estate	691	240	642	223	1,333	463
Business and repair services	471	312	125	26	596	338
Personal services	325	255	946	589	1,271	844
Entertainment and recreation services	110	60	29	22	139	82
Professional services (including teachers)	1,262	707	1,858	820	3,120	1,527
Public administration (government)	1,474	643	713	240	2,187	883
Industry not reported	400	121	199	69	599	190

Source: U. S. Bureau of the Census. U. S. Census of Population: 1950, Vol. II, Characteristics of the Population, p. 46-105, Part 46, Virginia. U. S. Government Printing Office, Washington, D. C., 1952.

U. S. Bureau of the Census. U. S. Census of Population: 1960, General Social and Economic Characteristics, Virginia, p. 48-247, Final Report PC (1)-48C. U. S. Government Printing Office, Washington, D. C., 1961.

in 1960. This was a decrease from 6.1 per cent of the total in 1950. This decrease in agricultural employment was more than compensated for by the increase in manufacturing, professional services, and public administration. The majority of this increase was because of the 80 per cent rise from 4,874 persons in 1950 to 8,773 persons in 1960 in manufacturing employment. This work group represented 32 per cent of the total number of employed persons in 1960, while this same group represented 32.4 per cent in 1950. The significant factor is that as a group there was an 80-per cent rise of persons employed in the work group.

Of the total of 8,773 persons employed in manufacturing, 4,779 persons, or 54.5 per cent, were classified as rural persons. This indicates that Chesterfield County would be considered an urban-rural county with only slightly more than half of the manufacturing work group considered to be rural.³

The trade industry was the second largest employer of people in the county. Persons employed in this work

³U. S. Bureau of the Census, U. S. Census of Population, 1960, Virginia, p. 48-287, U. S. Government Printing Office, Washington, D. C., 1961.

group almost doubled from a total of 2,430 persons in 1950 to 4,618 persons in 1960. The trade industry continues to rank second to manufacturing as to the total number of persons employed in the county. The large rise in the number of persons employed in the trade group can be explained by the trend of providing more shopping and eating facilities as a convenience to rural people as well as nearby urban people. At present, there are some eight shopping centers with 120 stores located in Chesterfield County.

In the professional service field, there has been an increase of 104 per cent in the number of people employed since 1950. This field would include educational, welfare and related fields, hospital and medical services. The largest number employed in this group was in the educational field which amounted to 1,539 persons out of a total of 3,120.

There are 783 persons employed in hospital service to work with the 71,197 Chesterfield County residents. The ratio of county residents to hospital and medical personnel is approximately one to 90.5 persons. This compares favorably with the city of Richmond which has a ratio of one to 55.6 persons. It must be pointed out

that the city of Richmond, with its many hospitals, is actually the recipient of most medical cases of Chesterfield County residents, so that to obtain a more accurate representation, we should add 3,982 persons employed in hospitals of the city to the 783 persons employed in hospitals in Chesterfield County and obtain a ratio of one to 15 persons.

The employment of persons in manufacturing is of particular importance in this study. However, of more importance are the types of manufacturing industries that are presently employing the people and will have a definite bearing on evaluating the present employment status.

Table 6 shows that there has been an increase in the manufacturing industry of 80 per cent from 1950 to 1960. During this ten-year period, several of the occupation fields under the manufacturing industry have experienced great percentage changes while not experiencing very large additions in the number employed during the period. For example, the transportation equipment field had an increase of 1,625 per cent but had a personnel increase of only 61 persons. Of more importance is the fact that while

TABLE 6

Employed Persons, by Type of Manufacturing Industry,
for 1950 and 1960, Chesterfield County

Manufacturing	Total	
	1960	1950
Total employed	8,773	4,874
Machinery, except electrical	162	55
Electrical machinery, equipment, and supplies	118	12
Motor vehicles and equipment	32	14
Transportation equipment (excluding motor vehicles)	65	4
Furniture, lumber, and wood products	444	575
Primary metal industries (including fabricated metal industries and not specified metal)	989	289
Other durable goods	464	219
Food kindred products	438	221
Textile mill products	40	187
Apparel and other fabricated textile products	313	281
Printing, publishing, and allied products	2,456	1,601
Other non-durable goods (including not specified mfg.)	2,718	1,239

Source: U. S. Bureau of the Census. U. S. Census of Population: 1950, Vol. II, Characteristics of the Population, p. 46-105, Part 46, Virginia. U. S. Government Printing Office, Washington, D. C., 1952.

U. S. Bureau of the Census. U. S. Census of Population: 1960, General Social and Economic Characteristics, Virginia, p. 48-247, Final Report PC (1)-48C. U. S. Government Printing Office, Washington, D. C., 1961.

many of the increases were small as to total numbers employed; nevertheless, the increased employed were in fields of the higher wage paying industries--electrical machinery and primary metal industries. It is interesting to note that only two work fields showed a decrease in employment during the ten-year period. The furniture industry suffered a decrease of 21.1 per cent of persons employed and the textile industry had a decrease of 79 per cent. The significant information here is that both of these industries are of the type that are known for their low wage scale. The manufacturing industry has risen by 80 per cent but the persons employed in manufacturing are finding employment in the higher wage paying industries. Even more progressive types of industries, such as plastics, metals, electronics, and chemicals, are desirable to insure the maintenance of high wage scales for the presently employed and the prospective employees of the future.

Perhaps the single most important factor to consider when new industry enters is the creation of new jobs. Here must be considered the demands for additional jobs in excess of present jobs. The expected additional employment of people is the

primary factor which increases the total income and economic status of the county. However, of utmost importance to the new industry is the amount of labor available to fill jobs needed by new industries. This labor does not necessarily have to come from the immediate area surrounding the facilities of the industry but must be within an acceptable commuting distance.

Table 7 discloses that there are 476,287 persons living within a 25 mile radius of Chesterfield County. This includes the city of Richmond, Chesterfield County, and all or parts of ten other surrounding counties. However, the actual available labor supply within a 25 mile radius is estimated to be 15,450 persons, of which 7,630 are males and 7,820 are females.

There were 5,110 persons estimated to be unemployed, from which some of the experienced personnel could be supplied. According to Table 3 of this chapter, there were only 786 unemployed males and females living in the county. The sources within available labor seem to be pretty well distributed among each group allowing a flexible selection of employees as industry might require. The largest single group consisted of annual new

TABLE 7
Available Labor Within a Twenty-mile Radius of
Chesterfield County, by Sex and Race

	<u>Total</u>	<u>Male</u>		<u>Female</u>	
		White	Negro	White	Negro
Outside labor force	4,210	--	--	3,120	1,090
From agriculture	550	410	140	--	--
Unemployed	5,110	2,450	920	1,260	480
Annual new entrants	5,580	2,700	1,010	1,360	510
Total	15,450	5,560	2,070	5,740	2,080

1960 Population Within a Twenty-five Mile Radius
of Chesterfield County

City of Richmond	219,958
Chesterfield County	71,197
Henrico County	117,339
Charles City County	2,572
Goochland County	3,423
Dinwiddie County	11,525
Hanover County	27,550
King William County	3,574
New Kent County	1,995
Powhatan County	4,937
Caroline County	2,747
Prince George County	9,470
Total	476,287

Source: Virginia Electric and Power Company, An Economic Summary--Richmond Metropolitan Area, p. 32, Richmond Va., 1963.

entrants--5,580 persons, or approximately 31 per cent--which would be composed mainly of high school, business school, college, nursing, and technical school graduates. The unemployed persons comprise almost another 33 per cent of the available labor; and, as mentioned, some of the experienced personnel could be obtained from this source.

Males transferring from agriculture to manufacturing would provide another possible source. From 4,210 females outside the present labor force, applications would be made for manufacturing employment if jobs were available. Almost three-fourths of the total available labor is white, and slightly less than half of the total available labor is male.

The available labor in the area seems to be more than adequate for several large industries or numerous small industries. The main goal of attracting new industry to Chesterfield County would be to find suitable employment for the county's unemployed and the unemployed of the surrounding areas. The economic condition of the county would certainly improve if the newly-attracted industry was a high wage paying industry. This would provide a stimulus to the existing industry

of the low wage paying types, to increase their own wage scales to prevent the loss of their experienced personnel to these newer industries, thereby aiding directly in the economic growth of the county.

Income. The median family income, as shown in Table 8, for Chesterfield County in 1959 had more than doubled as compared to the 1949 income figure. From 1949 to 1959, the median family income of Chesterfield County had increased 102.7 per cent, while the state had an increase of 90.7 per cent and the city of Richmond had 57.3 per cent. The decrease in this ten-year period of 57.5 per cent of persons earning less than \$2,000 is of utmost importance. In 1949 persons earning less than \$2,000 accounted for 24.2 per cent of the total number of families reporting, while in 1959 the group accounted for only 5.3 per cent of the total families reporting.

In 1949, families in the \$2,000 to \$4,999 income group were represented by 5,195 families, or 54.2 per cent of the total families reporting. However, in 1959, 54 per cent of the total families reporting were now reported in the \$5,000 to \$9,999 income group.

TABLE 8
Family Income Distribution for 1949 and 1959, in Chesterfield
County, Richmond, and Virginia

	1949		1959	
	Chesterfield County	Richmond Virginia	Chesterfield County	Richmond Virginia
Number of families reporting	9,585	59,820	17,716	53,864
Under \$2,000	9,130	56,785	17,716	53,864
\$2,000 - \$4,999	2,205	14,450	938	7,469
\$5,000 - \$9,999	5,195	28,060	3,924	18,546
\$10,000 and over	1,500	11,525	9,574	19,902
Median family income	230	2,750	3,280	7,947
Median family income for families and unrelated individuals	3,306	3,283	6,707	5,156
	2,925	2,555	6,139	3,889
				4,043

Source: U. S. Bureau of the Census. U. S. Census of Population, 1950, Vol. II, Characteristics of the Population, pp. 46-127, 46-130, 46-47, Part 46, Virginia. U. S. Government Printing Office, Washington, D. C., 1952.

U. S. Bureau of the Census. U. S. Census of Population, 1960: General Social and Economic Characteristics, Virginia, pp. 48-258, 48-267, 48-168, Final Report PC (1)-48C. U. S. Government Printing Office, Washington, D. C., 1961.

In 1959, there were 444 more families represented in the \$5,000 to \$9,999 group than there were total families reporting in 1949. The 1959 comparison for the \$5,000 to \$9,999 group shows that Chesterfield County compared quite favorably with the city of Richmond and the state. In this group, Chesterfield County had 54 per cent of its families, the city of Richmond had 36.8 per cent of its families, and the state had 36 per cent.

The county's income appears to be ahead of that of the state and is a definite sign that the county is progressing. However, increases in family income occurred all over the state and the nation during the same period as a result of inflation and a rise in the cost of living. Taking into consideration, though, the inflation and rise in cost of living, the relation of the county's percentage gain still is favorable when compared to the city of Richmond and the state.

According to the Federal Reserve Bulletin issued in March, 1962, the cost of living or consumer's price index for 1950 was 113 and for 1960 was 164 based on the 1947-1949 dollar being equal to 100.

When the 1960 family income figure is multiplied by 68.9 per cent, which is the ratio of 113 to 164, it will be seen that the gain for the county was 39.5 per cent from \$3,306 to \$4,621. Richmond's gain was 8.2 per cent from \$3,283 to \$3,553 and Virginia's gain was 31 per cent from \$2,602 to \$3,420.

These figures give a much better idea of the actual gain in real income when applied to the various income ranges. A large per cent of this gain in income would have to be accredited to the increased industrialization of the county.

The income of persons in the county and city of Richmond will give a better indication of the wages being paid employees by industry and trade. Table 9 gives both the income of persons and the median earnings of selected groups of people. This furnishes some information as to what individuals are earning as well as what occupational groups are earning. It is interesting to note that the median male income in the county is 42 per cent higher than that of the city of Richmond, and female income in the county is slightly higher--approximately 15 per cent higher. This indicates

TABLE 9
Income of Persons in Chesterfield County, and Richmond,
by Sex, and the Median Earnings of Selected Groups
in Chesterfield County, Richmond, and Virginia

	Chesterfield County		Richmond	
	Male	Female	Male	Female
<u>Income of Persons, 1960</u>				
Income range total	23,742	24,283	73,999	91,529
Total with income	21,792	12,838	65,129	60,191
Under \$1,000	2,697	4,884	9,556	21,871
\$1,000 - \$1,999	1,683	2,035	8,239	13,547
\$2,000 - \$4,999	7,016	4,691	29,111	20,970
\$5,000 - \$9,999	8,811	1,179	13,757	3,308
\$10,000 and over	1,585	49	4,466	495
Median Income	\$4,815	\$1,726	\$3,392	\$1,504
<u>The Median Earnings of Selected Groups, 1960</u>				
	Chesterfield County	Richmond	Virginia	
Male total with earnings	\$5,129	\$3,792	\$3,795	
Professional, managerial, and kindred workers	6,844	6,617	6,604	
Farmers and farm managers	--	--	1,339	
Craftsmen, foremen, and kindred workers	5,391	4,326	4,563	
Operatives and kindred workers	4,532	3,321	3,201	
Farm laborers except farm foremen and unpaid workers	1,337	--	978	
Laborers, except farm and mine	2,064	2,517	2,082	
Female, total with income	2,601	2,173	2,004	
Clerical and kindred workers	2,955	3,052	3,016	
Operatives and kindred workers	3,286	2,354	2,058	

Source: U. S. Bureau of the Census. U. S. Census of Population, 1960. General Social and Economic Characteristics, Virginia, pp. 48-258, 48-267, 48-123. U. S. Government Printing Office, Washington, D. C., 1961.

that industry located in the county is paying a high wage scale to its employees.

Chesterfield County and the city of Richmond both have been able to attract new, more progressive, and higher wage scale industries that tend to improve the economic conditions in their respective areas.

In analyzing the median earnings of the ten selected groups, it is to be found that in six of eight groups, Chesterfield County has a higher income than the city of Richmond; and in a comparison with the state, Chesterfield County has a higher income in seven of nine groups. In the groups where Chesterfield County paid less, laborers (except mine and farm) and clerical and kindred groups, the income differences were extremely small, and in some groups were almost insignificant. This is further evidence that Chesterfield County has been quite fortunate in obtaining high wage paying industries.

COUNTY FACILITIES AND RESOURCES

Local Trade Facilities

Retail Trade. The Richmond metropolitan area, which encompasses the city of Richmond, Henrico County, and Chesterfield County, contains ten per cent of the state's population but accounts for 14 per cent of Virginia's retail trade. On the whole, the area has experienced a very healthy retail sales growth.

"The City of Richmond has long been Virginia's principal shopping center. In 1958 it was the leading city in the state in the volume of retail business with sales of \$448 million. Richmond can be cited as a prime example of a nationwide trend. With population and retail sales growing faster in the two counties, there has been a shift of an increasing share of the sales market from downtown Richmond to the outlying shopping centers of the metropolitan area. In 1948 the city conducted 94 per cent of the area's retail business; by 1958 its portion had fallen to 85 per cent."¹

¹Division of Industrial Development and Planning, The Virginia Economic Review, p. 4, Department of Conservation and Economic Development, Richmond, Va., March, 1962.

The need for going "downtown" to purchase retail goods has passed. As of 1962, there were shopping centers in Chesterfield County with a total of 130 stores.

Table 10 shows the tremendous growth of retail sales in the county. During the 1948 to 1958 period, retail sales in the county increased from \$9,190,000 to \$23,891,000, or an increase of 159 per cent. During the same period, retail sales in Richmond increased from \$319,524,000 to \$448,035,000, or approximately a 40 per cent increase. During the period of comparison, Chesterfield County's retail sales were increasing four times as fast as Richmond's retail sales. These retail figures indicate that more of the retail sales dollar is being spent in the county.

The number of establishments, the retail sales for each type of establishment, and per capita retail sales are shown in Table 11 for Chesterfield County and also Henrico County. The largest single group was the food store which accounted for \$7,318,000 of the total sales of \$23,891,000, or approximately 29 per cent. One of the smaller groups as to number within the category, automobile dealers, accounted for the next largest

TABLE 10

Retail Sales Trend for Chesterfield County, Henrico County, and Richmond, for 1939, 1948, and 1958

	Chesterfield County	Henrico County	Richmond	Area
<u>Retail Sales (000)</u>				
1939	\$ 2,947	\$ 3,859	\$108,306	\$115,112
1948	9,190	11,080	319,524	339,794
1958	23,891	52,186	448,035	524,112
<u>Per Cent Change</u>				
1939-1948	212%	187%	195%	195%
1948-1958	159	371	40	54
1939-1958	711	1,252	314	355
<u>Per Capita Sales</u>				
1939	94.50	91.96	56.10	43.24
1948	227.48	193.23	138.73	103.58
1958	335.56	444.74	203.69	128.30
<u>Per Cent Change</u>				
1948-1958	147%	231%	147%	123%

Source: U. S. Bureau of the Census. U. S. Census of Business: 1939, 1948, 1958. Retail Trade BC58 - WA 46, Virginia, U. S. Government Printing Office, Washington, D. C.

TABLE 11

Retail Establishments and Sales Statistics
for Chesterfield County and Henrico County
1958

<u>Retail Data</u> <u>Establishments</u>	<u>Total</u>	<u>Food</u> <u>Stores</u>	<u>General</u> <u>Stores</u> <u>with Food</u>	<u>Apparel</u> <u>Stores</u>	<u>Furniture</u> <u>Appliance</u> <u>Stores</u>	<u>Automobile</u> <u>Dealers</u>	<u>Gasoline</u> <u>Service</u> <u>Stations</u>	<u>Lumber</u> <u>Hardware</u> <u>Group</u>	<u>Eating</u> <u>Places</u>	<u>Drug</u> <u>Stores</u>	<u>Other</u> <u>Stores</u>
Chesterfield County	244	50	22	3	8	12	52	6	39	6	20
Henrico County	351	82	12	12	21	14	75	24	53	15	23
<u>Retail Sales (000)</u>											
Chesterfield County	\$23,891	\$ 7,318	\$3,840	\$375	\$ 647	\$4,361	\$2,580	\$ 983	\$1,500	\$ 746	\$2,197
Henrico County	52,186	24,227	1,819	930	1,867	4,876	3,320	2,188	2,479	3,090	4,110
<u>Per Capita Retail Sales</u>											
Chesterfield County	\$336	\$105	\$40	\$5	\$ 9	\$62	\$37	\$14	\$22	\$11	\$31
Henrico County	445	218	17	9	17	46	30	20	23	28	37

Source: U. S. Bureau of the Census, U. S. Census of Business: 1958, pp. 46-8, 9, Retail Trade, BC-58 - RA46, Virginia, U. S. Government Printing Office, Washington, D. C., 1960

volume of dollars. A surprising group, gas service stations, was the third highest retail sales group, with sales of \$2,580,000. However, when this figure is analyzed, it will be realized that Chesterfield County has several tourist highways running through the county's boundaries which should account for this figure.

In comparing Chesterfield and Henrico Counties insofar as a retail sales breakdown is concerned, it will be observed that the two compare proportionately well as to individual group breakdown.

Wholesale Trade. According to Table 12, the volume of wholesale trade in Richmond is very high; and, as previously mentioned, Richmond serves as the distribution point for a very large surrounding area. Chesterfield County's wholesale trade is only about one-twelfth as much as that of Richmond. This is to be expected, as wholesalers, by nature of their business, encompass a large distribution area. However, the average pay per employee in Chesterfield County in 1959 was \$4,673, which is slightly higher than the \$4,524 paid per employee for the same type work in Richmond. This is a pretty good wage and gives the indication that

TABLE 12
Wholesale Trade Statistics for 1939, 1948, and 1958
for Chesterfield County, Henrico County,
and Richmond

Information	Chesterfield County	Henrico County	Richmond
<u>Establishments</u>			
1939	10	7	453
1948	2	18	612
1958	12	56	702
<u>Volume of Sales</u>			
1939	\$ 1,137,000	\$ 2,549,000	\$ 208,066,000
1948	x	20,811,000	626,048,000
1958	9,514,000	43,466,000	1,119,456,000
<u>Proprietors</u>			
1939	8	4	208
1948	x	7	273
1958	6	37	271
<u>Employees</u>			
1939	47	104	8,913
1948	x	248	10,302
1958	95	375	10,728
<u>Payroll</u>			
1939	\$ 61,000	\$ 143,000	\$ 13,155
1948	x	671,000	633,213
1958	444,000	2,021,000	49,763,000
x - Withheld to avoid disclosure of individual figures.			

Source: U. S. Bureau of the Census, U. S. Census of Business: 1939, 1948, 1958; p. 8, p. 45.05, pp. 46-48, Wholesale Trade BC-58-WA 46, Va., U. S. Government Printing Office, Washington, D. C.

the wholesale trade business in Chesterfield County is probably very prosperous.

Transportation Facilities²

The city of Richmond serves as the transportation hub for a large surrounding area, of which Chesterfield County is a part. Petersburg and Hopewell, to a much smaller degree, perform the same function. However, Richmond with its railroads, a major airport, many large trucking terminals, and the converging of six major highways serves as the focal point for all transportation activities. Below is a table showing the expediency of travel from Richmond to major cities in the eastern and midwestern parts of the nation.

Days Required to Ship Full Load from Richmond to Selected Cities

	<u>Air</u>	<u>Rail</u>	<u>Truck</u>	<u>Bus</u>
Atlanta	1	2	1	1
Chicago	1	3	4	2
Cincinnati	1	2	3	2
Cleveland	1	3	2	2
New York	1	3	1	1
St. Louis	1	4	5	3

²An Economic Summary--Richmond Metropolitan Area,
pp. 57-60, Virginia Electric and Power Company, 1963.

Air. Chesterfield County is served by commercial airlines operating from the Richard E. Byrd Airport located just off Route 60 in Henrico County.

Byrd Airport, Richmond's 2,300-acre facility, has ample space for further development of the air service pattern and aviation oriented activities. Round-the-clock observation of weather conditions at the airport shows a long record of very good flying weather. The new terminal building provides modern facilities and comfort for air travelers.

There are approximately 45 daily scheduled passenger flights, and all operating airlines are equipped to handle air cargo. Jet service will be made available in the near future. Most of the principal markets in the eastern half of the United States are reached by quick flight service from Richmond. Four airlines form the pattern of service with direct flights to New York, Boston, Chicago, Washington, Louisville, Miami, Atlanta, Milwaukee, Minneapolis, Cleveland, and other centers.

Eastern and National Airlines operate in a north-south direction, Piedmont Airlines in an east-west direction, and United Airlines operates north-south and west.

Three charter companies offer flight services to fit the customer's travel requirements.

Northfield Airport, in northern Henrico County, offers air taxi service, complete shop service, and flight training. Parnell Airfield in Chesterfield County offers these same services. These services would be of interest to companies which might utilize executive aircraft for transporting their personnel to other parts of the country, and these fields would also serve as their base of operation.

Highways. The Richmond metropolitan complex, consisting of the city of Richmond, Henrico County, and Chesterfield County, is in a most favorable position for capitalizing on the pattern of future highway developments. The natural gateway at Richmond has been and will continue to be the shortest, quickest, and most economical route between Florida and New York or points farther north. At the same time, this area's proximity to intermediate points along the main traffic streams, such as Jacksonville, Baltimore, and Philadelphia, will not be eclipsed by points on other planned highway improvements.

Chesterfield County is served by several of the national highways which provides a very adequate system in the county. U. S. Routes 1 and 301 run the length of the county in a north-south direction, while U. S. Routes 60 and 360 run the length of the county in an east-west direction. The Richmond-Petersburg Turnpike, a 35-mile limited access facility opened in 1958 and a part of the north-south Interstate 95, further bolsters the highway network in the county. Interstate Highways 95 and 85 will also add to this highway system when they are completed.

Within the county, the State Highway Department builds and maintains the state system of roads that connects at numerous and strategic points to the major highway arteries and insures a strong, smooth, and safe flow of traffic through the area to other points in the county as well as in the state.

Highway passenger service is provided by the Greyhound and Trailway bus systems from terminals in Richmond and Petersburg. Greyhound has 102 departures and arrivals each day while Trailways has a minimum of 80 arrivals and departures. There are approximately 50 departures to New York daily and 34 of these are

through schedule to New York. Both companies provide service to the major metropolitan areas of the eastern seaboard and provide service for connections to all parts of the nation. These companies offer charter, freight, and express package service in the area.

Other companies providing transportation in the area are James River Bus Lines serving the area west of Richmond along the James River, and Winn Bus Lines providing scheduled service between Richmond and Petersburg via Chester, Chesterfield County, Virginia.

Freight transportation by truck is available daily throughout the Chesterfield County area with connections to all sections of the nation. There are 50 fixed route truck lines authorized to serve Chesterfield County and vicinity.

Railroads. Richmond is the "gateway" between the industrial North and the expanding South. It is the point of interchange; and six railroads provide a north, east, south, and west movement of passengers and freight.

Atlantic Coast Line - South
Seaboard Railroad - South
Southern Railway - South and West
Richmond, Fredericksburg & Potomac - North
Norfolk & Western (via Petersburg) - East and West
Chesapeake & Ohio - East and West

The Seaboard Railroad recently selected Richmond for its General Offices over all other communities within the six southern states it serves. The city is headquarters also for the Richmond, Fredericksburg & Potomac Railroad.

The Atlantic Coast Line Railway and the Seaboard Air Line Railroad run through Chesterfield County. There are no terminals within the county, but freight and passenger service from Richmond or Petersburg is excellent.

This network of rail lines assures fast freight service to all parts of the nation and will insure to new industry adequate rail service.

Natural Resources³

The purpose of this section is to present information concerning the resources that the county has that may be of interest to industries needing raw materials near their plant locations. These include mineral, water, and forest resources.

³Division of Industrial Development and Planning, Economic Data, Chesterfield County, Va., pp. 10-12, Department of Conservation and Economic Development, Richmond, Va., 1961.

Minerals. The eastern part of Chesterfield County is in the Coastal Plain province and the remainder is in the Piedmont province. The Coastal Plain portion is underlain by sedimentary rocks over which there is a veneer of sand, gravel, and clay. The Piedmont portion is underlain by igneous, sedimentary, and metamorphic rocks.

Coal was formerly mined from the Richmond basin in the western part of the county and ocher has been produced near Bermuda Hundred. These deposits are no longer a factor of economic significance.

Diatomaceous earth occurs in the eastern portion of the county, but commercial deposits of this material have not been established.

During 1960, clay, granite, sand, and gravel were produced in the Richmond area. The Southside Brick Works, Inc., and the Bedford Brick Company produced clay for use in the manufacture of bricks. Richmond Clay Products and Daniel's Brick and Tile Company, Inc., produced clay for use in manufacturing structural clay products, while Southern Pottery utilized clay in manufacturing pottery. Granite was produced for crushed stone purposes by Tidewater Crushed Stone Company. Sand

and gravel were produced by Southern Material Company, Inc., along the James River.

Water Supply.

Surface. Chesterfield County is well located to obtain large supplies of water by using either the James River on the northern boundary or the Appomattox River on the southern boundary. There are several good small streams in the county such as Falling Creek and Swift Creek.

Stream gaging stations have been maintained for many years on the James River at Richmond, on the Appomattox River near Petersburg, and on the Appomattox River near Matoaca.

Surface waters in and surrounding Chesterfield County are very soft. The James River above Richmond is a little harder due to chemicals from the upper James. The lower James is tide-affected but large supplies of water are available. A very large water supply is obtainable from the Appomattox River providing a storage reservoir could be established. Good supplies could be developed from either Falling Creek or Swift Creek, but reservoirs would be needed on these streams.

Ground. The eastern half of Chesterfield County is in the Coastal Plain province and is underlain by strata of clay, silt, sand, gravel, and marl. This series of sedimentary formations lies on granitic bedrock and increases in thickness from nothing at the western edge of the province to more than 250 feet near the eastern limits of the county. The western half of the county is in the Piedmont province and is underlain by sandstone, shale, and granitic rock.

In the Coastal Plain area, ground water is available from sand and gravel beds in the sedimentary series and from fractures in the underlying granitic bedrock. The most productive wells penetrate both types of rock. Such wells drilled to depths of 50 to 700 feet produce an average of 50 gallons per minute. Wells that penetrate only the sediments usually are drilled to depths of less than 150 feet and supply an average of 25 gallons per minute.

Most of the wells in the Piedmont province are for rural domestic use and have depths of less than 150 feet. In the granitic rocks that underlie the eastern half of the Piedmont area, wells that range in depth from 150 to 300 feet have an average yield of 25 gallons per

minute. In the sandstone and shale strata that underlie most of the western half of the Piedmont area, wells that range in depth from 200 to 400 feet yield 4 to 50 gallons per minute and average 25 gallons per minute.

Wells provide supplies for the towns of Morrisdale, Chesterfield, and the Wagstaff area. Wells are also used to supplement the county-owned system which supplies a number of areas in the eastern part of the county. In many parts of the county, geologic conditions are favorable for obtaining domestic supplies from bored or dug wells that are 20 to 50 feet deep. There are no indications of a general long-term lowering of the water table in the county. However, during periods of drought, there is a temporary lowering which may cause some shallow wells to become dry. Locally, there may be some lowering as a result of excessive pumping.

Water from shallow depths is generally of good quality. However, at some places in the Piedmont area, water from below depths of about 40 feet may contain objectionable amounts of acid and iron. In the Coastal Plain area, the water from deep aquifers may be slightly to moderately hard.

Forest Resources.⁴ Chesterfield County, according to the 1957 Forest Survey, contained some 225,399 acres of commercial and 2,000 acres of noncommercial forest land. The 2,000 acres of noncommercial forest is accounted for by the Pocahontas State Park, which is a unit surrounded by 5,600 acres of Pocahontas State Forest. Urban development since that datum has claimed a considerable area in the county and will claim more. However, this figure is offset to a considerable degree by acquisitions by industry of nonforest land which has been reforested. With these considerations, the 1957 figure is reasonably correct. The ownership of commercial forest land is 97 per cent private and 3 per cent public. The Pocahontas State Forest accounts for most of this, with approximately 900 acres of federally-owned forest set aside for other purposes within the county.

The forest types represented in the commercial forest area consist of 84,525 acres in loblolly pine, 8,050 acres in shortleaf pine, 32,200 acres in oak and pine, 72,450 acres in oak and hickory, and 28,174 acres in oak, gum, and cypress. It is estimated that 4,025

⁴Ibid, p. 9.

acres are poorly stocked with 10 to 39 per cent of normal stocking; that 12,075 acres are of medium stocking, with 40 to 69 per cent of normal stocking; and that 209,299 acres are well stocked with 70 to 100 per cent of normal stocking.

It was estimated that 56,350 acres were of large sawtimber; 80,499 acres, small sawtimber; 72,450 acres, pole-sized timber; and 16,100 acres, seedlings and saplings.

The net sawtimber volume was estimated at 788.9 million board feet, of which 274.4 million were oaks and other hardwoods; 91.3 million were poplar, gum, and other soft hardwoods; and 423.2 million were softwoods.

The current net volume of growing stock of all sound, merchantable trees five inches and over in diameter at breast height, including sawtimber, is estimated to be 4,082,000 cords. Of this total, yellow pines and other softwoods account for 1,921,000 cords, soft hardwoods for 636,000 cords, and hard hardwoods for 1,525,000 cords.

The estimated current annual cut and the estimated current annual net growth by broad species is shown in the following tables.

Species Group	<u>Current Annual Cut</u>	
	<u>Sawtimber</u> (million board foot)	<u>Growing Stock</u> (thousand cord)
Yellow pines and other softwoods	14.6	55
Soft hardwoods	2.1	11
Hard hardwoods	<u>11.6</u>	<u>24</u>
Total	28.3	95

Species Group	<u>Current Annual Net Growth</u>	
	<u>Sawtimber</u> (million board foot)	<u>Growing Stock</u> (thousand cord)
Softwoods	33.3	123
Soft hardwoods	4.4	29
Hard hardwoods	<u>11.2</u>	<u>61</u>
Total	48.9	213

The balance of growth and drain is excellent. The distribution of sizes in the county is healthy with more than 80,000 acres of small sawtimber which will grow into large sawtimber in the near future. The net sawtimber volume in the county has increased since 1957.⁵

⁵Ibid, p. 10.

GENERAL INFORMATION

The purpose of this chapter was to present information that would be of importance to new industries as well as to their personnel who may move into the area. This information includes climate, educational facilities, housing, public utilities, financial institutions, local and state taxes, medical services, and news media.

Climate¹

Chesterfield County has a very pleasant year-round climate. Summers are warm and humid, and winters are generally relatively mild. The coldest weather normally occurs in late December and in January when low temperatures usually average in the upper twenties and high temperatures in the upper forties. The average growing season is 216 days.

Table 13 gives some idea of the climate in the area. Byrd Field's complete weather stations compiled the information.

¹Virginia Electric and Power Company, Richmond Metropolitan Area - An Economic Summary, January, 1963.

TABLE 13
Richmond's Average Weather Conditions

<u>Temperature</u>	<u>Degrees Fahrenheit</u>		<u>Sunshine Per Cent of Possible</u>
	<u>Maximum</u>	<u>Minimum</u>	
January	48.1	28.4	January 50
April	68.3	43.8	April 62
August	86.3	65.4	August 64
Annual	68.6	46.7	Annual 61
<u>Total Precipitation</u>	<u>Inches</u>		
	<u>Rainfall</u>	<u>Snowfall</u>	
January	3.64	4.4	
April	3.23	.1	
August	5.05	0	
Annual	42.89	12.1	
<u>Relative Humidity</u>	<u>Per Cent</u>		
January	1:00 A.M.	78	
	1:00 P.M.	58	
April	1:00 A.M.	75	
	1:00 P.M.	46	
August	1:00 A.M.	90	
	1:00 P.M.	57	
Annual	1:00 A.M.	82	
	1:00 P.M.	53	

Source: Division of Industrial Development and Planning, Metropolitan Richmond - Location Factors, p. 24, Commonwealth of Virginia, Richmond, Va., 1963.

Educational Facilities

There are 35 public schools in Chesterfield County including eight high schools and 27 elementary schools. The school board is now completing a \$6,000,000 school construction program which will add two new high schools, one to accommodate 750 students and the other to accommodate 1,200 students, and one new elementary school to accommodate 600 students. On May 8, 1962, the citizens of Chesterfield County voted a \$10,000,000 bond issue which will be used over the next three years to build five elementary schools for 600 students each, one intermediate school for 900 students, two senior high schools for 900 students each, plus further additions to existing schools. County-owned school buses provide transportation for the students to and from the schools.

In addition to regular academic courses, the high schools offer courses in academic work, business education, vocational, shop, home economics, and a general course.

The enrollment of students in public schools during the school year 1962-1963 was as follows:

	<u>White</u>	<u>Negro</u>
Elementary	11,553	1,709
Junior High	00	00
High School	<u>5,445</u>	<u>589</u>
Total	16,998	2,298

Chesterfield County residents are extremely fortunate in being able to take advantage of a co-ordinated program administered by the University Center in Virginia for continuing adult education. Under this co-ordinated program, five of the member colleges which have their campuses or extension facilities in Richmond cooperate with the Richmond public schools to provide area citizens an opportunity to start or continue their education. Over 400 courses are offered in academic fields from purely vocational skills to a Master's Degree in some fields. All of this can be accomplished in a person's spare time while holding a full-time job. A list of full-time Richmond area schools is as follows:

Union Theological Seminary
Ministerial Graduate School - Presbyterian

University of Richmond
Liberal Arts and Sciences - Baptist

Medical College of Virginia
Professional - State Institution

Richmond Professional Institute
Technological - State Institution

Virginia Union University
Liberal Arts and Theological Seminary -
Baptist

Virginia State College
Liberal Arts - State Institution

Six commercial or business schools in the area specialize in a multiplicity of subjects that include speedwriting, secretarial training, accounting, business administration, cosmetology, and barbering. In addition, several of the hospitals have student nursing programs.

According to Table 14, the median number of school years completed by males 25 years old and over in the county is somewhat lower than that for females 25 years old and over. However, this is rather indicative throughout the state as well as the country. However, the number of males completing four years or more of college exceeds the number of females, which indicates that a great number of females are quitting school before obtaining their desired degree.

The median number of school years completed by males is 10.4 and by females, 11.6. This statistic compares quite favorably with the city of Richmond. Approximately 24 per cent of the total 25 years of age and older have

TABLE 14

The Years of School Completed for Persons
Twenty-five Years and Over, by Sex, 1960

	Chesterfield County		Richmond	
	Male	Female	Male	Female
Total 25 yrs. and over	18,541	18,977	58,522	73,341
No school yrs. completed	284	172	1,601	1,299
Elementary 1-4 yrs.	1,416	945	6,613	5,943
5-6 yrs.	2,084	1,555	7,662	7,705
7 yrs.	1,883	1,636	5,385	6,039
8 yrs.	1,644	1,542	6,277	7,524
High school 1-3 yrs.	4,139	4,241	11,321	15,084
4 yrs.	3,618	5,646	8,976	17,209
College 1-3 yrs.	1,443	2,003	4,661	7,440
4 yrs. or more	2,030	1,237	6,026	5,098
Median school years completed	10.4	11.6	9.5	10.6

Source: U. S. Bureau of the Census, U. S. Census of Population: 1960, General Social and Economic Characteristics, Virginia, p. 48-225, Final Report PC (1)-48C, U. S. Government Printing Office, Washington, D. C., 1961.

completed high school. It can be assumed that the educational level would be sufficiently high that industry could obtain satisfactory personnel for its specific needs and requirements.

Housing

Richmond has six major commercial hotels having a total of 1,768 rooms. There are six smaller hotels having a total of 372 rooms, which cater to longer-staying guests, as well as transients. The major hotels have public dining rooms, as well as a total of 35 rooms for private dinner parties and meetings. These rooms vary in size to accommodate meetings of from 20 to 1,100 persons, or from 14 to 700 persons for a dinner meeting.

In addition, there are 72 motels in the Richmond-Chesterfield-Henrico area with a total of 2,010 rooms capable of taking care of about 5,000 persons.

Construction during 1963 added another 600 motel rooms.

Chesterfield County has no hotels itself, but the convenience of the hotels located in Richmond offers no barrier to use of these facilities. However, of the 72 motels previously mentioned, 24 are located in Chesterfield County and offer 720 rooms. These motels

provide meeting rooms for conventions and sales meetings. The area is well equipped to handle travelers and visitors.

There are numerous real estate brokers and builders who build in the area and would be available for building new housing units as the need arises. This would supplement the houses that are available for rent and sale in the area.

In Table 15 of this section, we find there are 1,024 houses for rent or sale in Chesterfield County. This figure represents approximately five per cent of all housing in the county. The median gross rent was \$80 per month, which is slightly higher than the median rent in Richmond. Of interest is the fact that less than 10 per cent of the houses in the county are deteriorating or dilapidated and less than 25 per cent of the homes in the county were built before 1940. This compares quite favorably with the city of Richmond in which 74 per cent of the homes were built prior to 1940. An interesting highlight is that 35 per cent of the homes in the county have been built during the period 1955 to March, 1960. This compares with less than 7 per cent for Richmond during the same period.

TABLE 15

The General Housing Statistics for Richmond
and Chesterfield County, Virginia, 1960

	Chesterfield County	Richmond
All housing units	19,931	69,105
Occupied	18,907	66,595
Owner occupied	15,360	31,793
Renter occupied	3,547	34,802
Occupied by non-white	1,818	24,089
Rural farm housing units	486	---
Vacant - for rent and sale	1,024	2,510
With central heating	14,103	44,150
Sound units	17,526	56,572
Deteriorating	1,378	9,590
Dilapidated	1,023	2,935
Population in housing units	69,597	209,314
Population per occupied room	3.7	3.1
Median number of rooms	5.3	4.9
<u>Year Structure Was Built</u>		
1955 to March 1960	6,490	3,589
1940 to 1954	8,457	14,844
1939 or earlier	4,984	50,672
<u>Value of Homes</u>		
Owner occupied	13,310	29,532
Median value	\$11,900	\$10,300
<u>Rent per Month</u>		
Renter occupied	3,461	34,802
Gross median rent	80	68
Contract median rent	60	51

Source: U. S. Bureau of the Census. U. S. Census of Housing: 1960, Vol. I, States and Small Areas, Virginia, pp. 48-19, 48-33, and 48-37, Final Report HC (1)-48. U. S. Government Printing Office, Washington, D. C., 1962.

It is interesting to note that the median value of homes in Chesterfield County was \$11,900 as compared to a median value of \$10,300 in Richmond and \$9,400 in Lynchburg, Virginia. This leads us to assume that industries which are presently located in the county are paying their employees high wages which shows its effect on the quality of construction within the county. High-paying industries tend to stimulate construction of high quality residential homes, thereby building up existing residential areas.

Public Utilities²

Electric Power. The Virginia Electric and Power Company, a privately-owned company with its home office located in Richmond, provides the electricity utilized throughout the Chesterfield County area. In addition, the power company serves a major portion of Virginia, as well as northeast North Carolina and a small area in southeastern West Virginia.

The Company currently has a system capability in excess of 2,540,000 kilowatts and is due to reach 3,500,000 kilowatts by 1965. Generating facilities

²Ibid., p. 62, 65.

are composed of seven major steam plants, one of which is located at Chesterfield Court House, and two major hydroelectric generating plants. The Company recently put into operation the second major hydroelectric generating plant at Gaston, North Carolina, and has under construction a 1,800,000 kilowatt steam plant located in Grant County, West Virginia. The first unit at this plant is scheduled for completion in 1965.

The Richmond metropolitan area is supplied electricity through a high voltage network of transmission lines ranging up to 230,000 volts which are interconnected with all company-generating facilities as well as several neighboring utilities.

Chesterfield County has an abundant and readily available supply of electrical current furnished by the Virginia Electric and Power Company.

Gas. Commonwealth Natural Gas Corporation, a privately-owned natural gas pipeline transmission company, supplies natural gas to the Richmond metropolitan area. Natural gas is distributed in this area by the city of Richmond and the Commonwealth Gas Distribution Corporation.

Bottled gas is available from local distributors.

Water.

Sewerage Systems. Chesterfield County has only recently begun its sewer installation program, having completed ten miles of sewer lines with treatment being provided at several locations employing the lagoon system. A \$9,000,000 sewer bond issue has been approved and it is anticipated that within three years most of the county's built-up areas will have sewerage service. A sewerage treatment plant is now under construction at Falling Creek. With the continued expansion of the county's sewerage system, the need for existing individual septic tanks and small disposal systems will be eliminated.

Sewer rates, where available, consist of \$3.50 per month for each dwelling and 70 per cent of the water bill for each commercial account.

Waterworks Systems. The county-owned system serving the heavily populated area of Chesterfield County obtains water from an impounding reservoir on Falling Creek with storage of 300 million gallons. This supply is filtered and chlorinated in a plant having a capacity of three million gallons per day. Storage is provided in a number of elevated, covered steel tanks having a

combined capacity of 2.3 million gallons located throughout the area served, interconnected to the city of Richmond to supplement the central supply. The county system is interconnected with the city supply of Colonial Heights, and when needed approximately 200,000 gallons per day can be obtained from Colonial Heights. In addition, the county maintains five well pump stations which may be used to supplement the supply during extreme peak demands or emergencies. Present consumption varies from 2.0 to 3.3 million gallons per day. Hardness varies from 1.5 to 2.5 grains per gallon. The county-owned systems for supplying the communities of Morrisdale, Chesterfield Court House, and the Wagstaff area furnish water from wells. The first two furnish untreated water and that for Morrisdale is treated and filtered for removal of excess iron content. Wells serve the subdivisions of Rocoshock Heights and Longwood Acres as well as the development along Turner Road.

There are three privately-owned systems which supply other subdivisions. Wells supply these systems and the water is untreated.

The state owns water systems which supply the State Police Headquarters (two standby wells), Bon Air

Industrial School, and Pocahontas State Park. These furnish untreated well water.

The federally-owned system for Richmond Quartermaster Supply Depot at Bellwood uses surface water from Falling Creek. The water is filtered and chlorinated.

The E. I. DuPont Company at its Spruance Plant and the National Aniline Division of Allied Chemical Corporation operate water filtration plants for their industrial use. At both plants raw water is obtained from the James River, chlorinated, coagulated, settled, and then filtered through rapid sand or centrifilt filters. The E. I. DuPont's James River Plant obtains drinking water from a well which requires no treatment.

At Bellwood, the Printing and Extrusions Plants of Reynolds Metals Company obtain water from wells. This water is chlorinated. An auxiliary or emergency supply is obtained from Chesterfield County's central supply.

Wells supply the privately-owned drinking water supply for the Virginia Electric and Power Company's Chesterfield County Electric Generating Plant. This water is also chlorinated.

Water Rates. Chesterfield County does the direct billing of all residents of Chesterfield County. The water supply is more than adequate and in cases of emergency the county system is linked with that of Colonial Heights and the city of Richmond. Billings are rendered for an account every two months. The water rates of the county are given in Table 16.

Financial Institutions³

The Richmond area is a large financial center. The Fifth Federal Reserve District, encompassing Virginia, Maryland, the District of Columbia, West Virginia, North Carolina, and South Carolina, is a homogeneous financial area with headquarters in the Federal Reserve Bank of Richmond. This, along with Richmond's ten commercial banks which had assets of \$1,097,696,900 and bank debits of \$12,429,098,000 as of December, 1962, makes the Richmond area a top banking center.

In addition to the Richmond banks, most of these banks have established branch banks to serve better the residents of the county.

³Ibid., p. 56.

TABLE 16

Monthly Water Rates for Chesterfield
County, Virginia

\$3.00 per month for the first 500 cubic feet or less
.60 per 100 cubic feet for the next 2,500 cubic feet per month
.50 per 100 cubic feet for the next 3,000 cubic feet per month
.40 per 100 cubic feet for the next 3,000 cubic feet per month
.30 per 100 cubic feet for all over 9,000 cubic feet per month

Source: Department of Public Utilities, Chesterfield County, Virginia, Water Rates, 1963.

The banks in the Richmond area are very progressive and highly flexible in making loans to suit the needs of the borrower.

Local and State Taxation

The state of Virginia does not have double taxation. In general, whatever is taxed at the local level is exempt from taxation at the state level. Under the Virginia Constitution only the local governments can levy taxes on real estate, tangible personal property, and machinery and tools.

Chesterfield County imposes a rate of \$2.60 per \$100 assessed valuation on all real estate, \$3.00 per \$100 assessed valuation on tangible personal property, and 55 cents per \$100 assessed valuation on machinery and tools. No tax is applied to merchants capital, nor is there a merchants license fee imposed.

Real estate in Chesterfield County is assessed at about 31.3 per cent of fair market value with a tax levy of \$2.60 per \$100 of assessed value. The average effective true tax rate is therefore 81 cents per \$100 of assessed value.

The following table gives the local tax rates for the counties of Chesterfield and Henrico, and the city of Richmond for the tax year of 1962:⁴

	Tax Rates per One Hundred Dollars on			
	Real Estate	Tangible Personal Property	Machinery and Tools	Merchants Capital
Chesterfield County	\$2.60	\$3.00	\$0.55	None
Henrico County	2.30	3.20	2.00	None
City of Richmond	1.88	2.20	1.00	None *

* Merchants license tax is imposed.

The state levies certain taxes on corporations authorized to do business in Virginia. These include the charter fee, entrance fee, registration fee, franchise tax, and the corporation income tax.⁵

The Charter Fee - Domestic business corporations are required to pay a charter fee at the time of incorporation based upon their maximum authorized capital stock as follows:

⁴Department of Taxation, Real Estate Taxes in Virginia, p. 42, Commonwealth of Virginia, 1963.

⁵Department of Taxation, Tax Code of Virginia, p. 50, pp. 142-145, Commonwealth of Virginia, 1950.

Less than \$50,000 - \$10

\$50,000 to \$3,000,000 - \$0.20 per \$1,000 or
fraction thereof

Over \$3,000,000 - \$600

The Entrance Fee - Foreign business corporations at the time of obtaining a certificate of authorization to transact business in Virginia are required to pay an entrance fee based upon their maximum authorized capital stock at rates varying from \$30 on capital stock to \$5,000-\$50,000 on capital stock in excess of \$90,000,000.

Domestic and foreign business corporations are required to pay an annual registration fee based upon their maximum authorized capital stock as of January 1 as follows: The rates vary from \$5 on capital stock of not more than \$15,000 to \$25 on capital stock of more than \$300,000.

Domestic business corporations are required to pay an annual franchise tax based upon their maximum authorized capital stock at rates varying from \$10 on capital stock of not more than \$25,000 to \$15,100 on capital stock of \$300,000,000 plus \$10 for each \$1,000,000 or fraction thereof over \$300,000,000.

It should be noted that foreign corporations are not subject to the franchise tax.

All business corporations, both domestic and foreign, are required to pay a corporation income tax. The tax amounts to 5 per cent of the net income derived from business done in the state.

When a corporation conducts its business wholly within one particular state, it is only proper that such corporation pay an income tax based on its entire income. But when a corporation operates both within and without the state, some reasonable apportionment formula must be used which will allocate fairly that portion of the corporation business to the taxing state.

The General Assembly of Virginia enacted into law in 1960 a new set of rules regarding allocation and apportionment of income of corporations deriving income from sources both within and without the Commonwealth. This was done after an extensive study by the Virginia Advisory Legislative Council.

These new rules are known as a three-part formula and give equal weight to the ratios of property, payroll, and sales within the state to the totals of these items.⁶

⁶Ibid., pp. 51-52.

Medical Services⁷

Richmond is the medical center for the area and the care is of the very best. Richmond is classed as a "prime-primary" medical service center, the top designation of the American Medical Association for those areas where every type of medical care and surgery is available. Vital medical research is conducted in several facilities and future doctors are trained at the Medical College of Virginia, one of the leading medical colleges in the South.

Hospital facilities include private, charitable, city, state, and veterans institutions, with a total capacity of nearly 4,000 beds. These hospitals, all located in the Richmond area, are as follows: Crippled Children's Hospital; Grace Hospital; Johnston-Willis Hospital; Medical College of Virginia; Retreat for the Sick; Richmond Community Hospital; Richmond Ear, Nose and Throat Hospital; Richmond Eye Hospital; Richmond Memorial Hospital; St. Elizabeth's Hospital; St. Luke's Hospital; Sheltering Arms Hospital; Stuart Circle Hospital; and the Veterans Administration Hospital in Chesterfield County.

⁷Virginia Electric and Power Company, An Economic Summary - Richmond Metropolitan Area, p. 77, 1963.

In addition to the above mentioned, there are specialized hospitals, such as Tucker Hospital, Inc., and Westbrook Sanatorium, Inc., for the treatment of nervous and mental disorders; also, the Hope Harbor Hospital and Three Acres Sanatorium for the treatment of alcoholism.

Communication

The News-Journal in Chester is published as a weekly newspaper. The Richmond Times-Dispatch, a morning and Sunday publication, and The Richmond News Leader, an afternoon edition, are published in Richmond and distributed in the area. The two Richmond papers have a combined subscription in the area of 289,771 papers. The Petersburg Progress Index and The Hopewell News supply daily papers, but their subscriptions are small in relation to the Richmond papers.

Richmond serves the area with three television stations and each of the three major broadcasting networks is represented: WTVR - CBS; WXEX - NBC; and WRVA - ABC.

The major radio networks are represented by four radio stations in Richmond which provide service to the

area. In fact, stations WXGI and WRGM have their broadcasting facilities within the county.

CONCLUSIONS

Chesterfield County has many facilities and assets desired by industry. The county is fortunate to be located near the state capitol and to be a part of the fast-growing Richmond metropolitan area. The city of Richmond provides a good source for services and supplies to industries in the county and also serves as a good market for finished goods, as well as having excellent facilities for shipping these goods to all parts of the nation.

The county is fortunate in securing high wage paying industries, such as metal products, chemicals, plastics, and tobacco, and in having the industry well disbursed throughout the county.

Chesterfield County accounts for more than half of the Richmond area's new plant employment during the past 12 years. Diversification, which offers employment opportunities in industries producing mechanical power equipment, metal products, chemicals, and plastics, has led to a most favorable employment and economic picture for the county.

The county has a machinery and tools' tax of 55 cents per \$100 assessed valuation. By comparison,

Henrico County has a rate of \$2 and the city of Richmond has a rate of \$1. This rate of taxation in Chesterfield County is a factor which helps to account for its growth.

As a summary of these conclusions, it is suggested that county residents and leaders continue their effective present procedures of attracting and holding industry that locates and already exists in the county. Chesterfield County is a fast growing and progressive industrial county. Space, labor supply, proximity to markets, raw materials, comparatively low-cost land, and water supply, not necessarily in this order, are among the resources that come to mind when an industry considers building in Chesterfield County.

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ABSTRACT

The purpose of this thesis was to arrive at a solution that will continue to improve the economic and industrial growth of Chesterfield County.

Facts have been presented in the content describing the growth of population, the type of industry, the type and status of employment, family income, housing conditions, the educational level, transportation facilities, natural resources, and the county's assets in general.

After studying these facts, it was realized that there has been considerable growth in the county. The county has been able to attract industry of a high-wage paying type. This has resulted in high real estate values, excellent retail trade business, and good job opportunities for residents of the county.

Because of its large land area suitable for industry, its excellent highway and other transportation facilities, and its adequate labor supply, Chesterfield County will continue to attract more and better industry.