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# BROWN & ROOT IMPACT STUDY

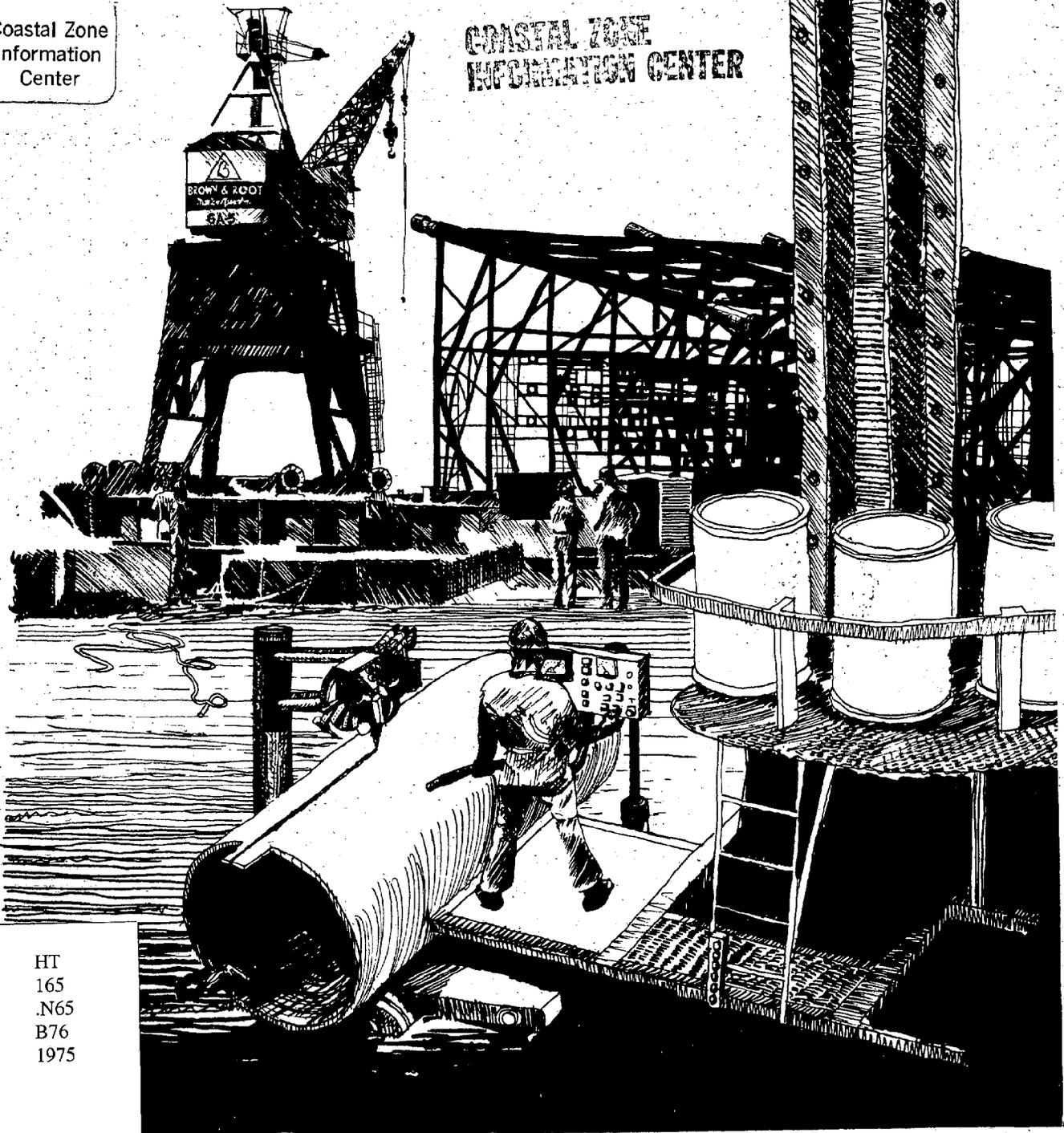
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# BROWN & ROOT IMPACT STUDY

Prepared for:  
Northampton County Planning Commission  
Courthouse  
Eastville, Virginia 23347

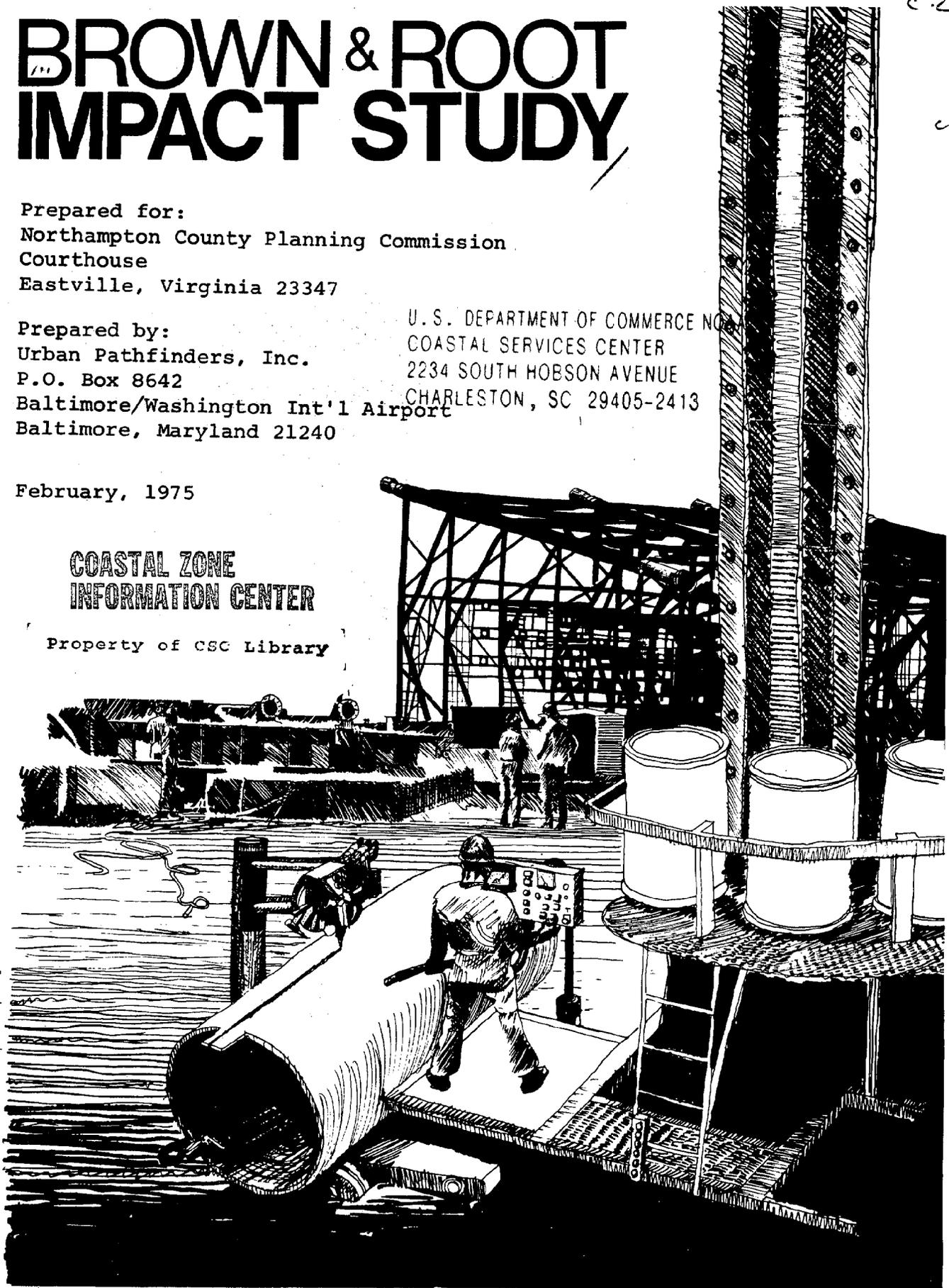
Prepared by:  
Urban Pathfinders, Inc.  
P.O. Box 8642  
Baltimore/Washington Int'l Airport  
Baltimore, Maryland 21240

U. S. DEPARTMENT OF COMMERCE  
COASTAL SERVICES CENTER  
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# INTRODUCTION

## THE BROWN & ROOT PROPOSAL

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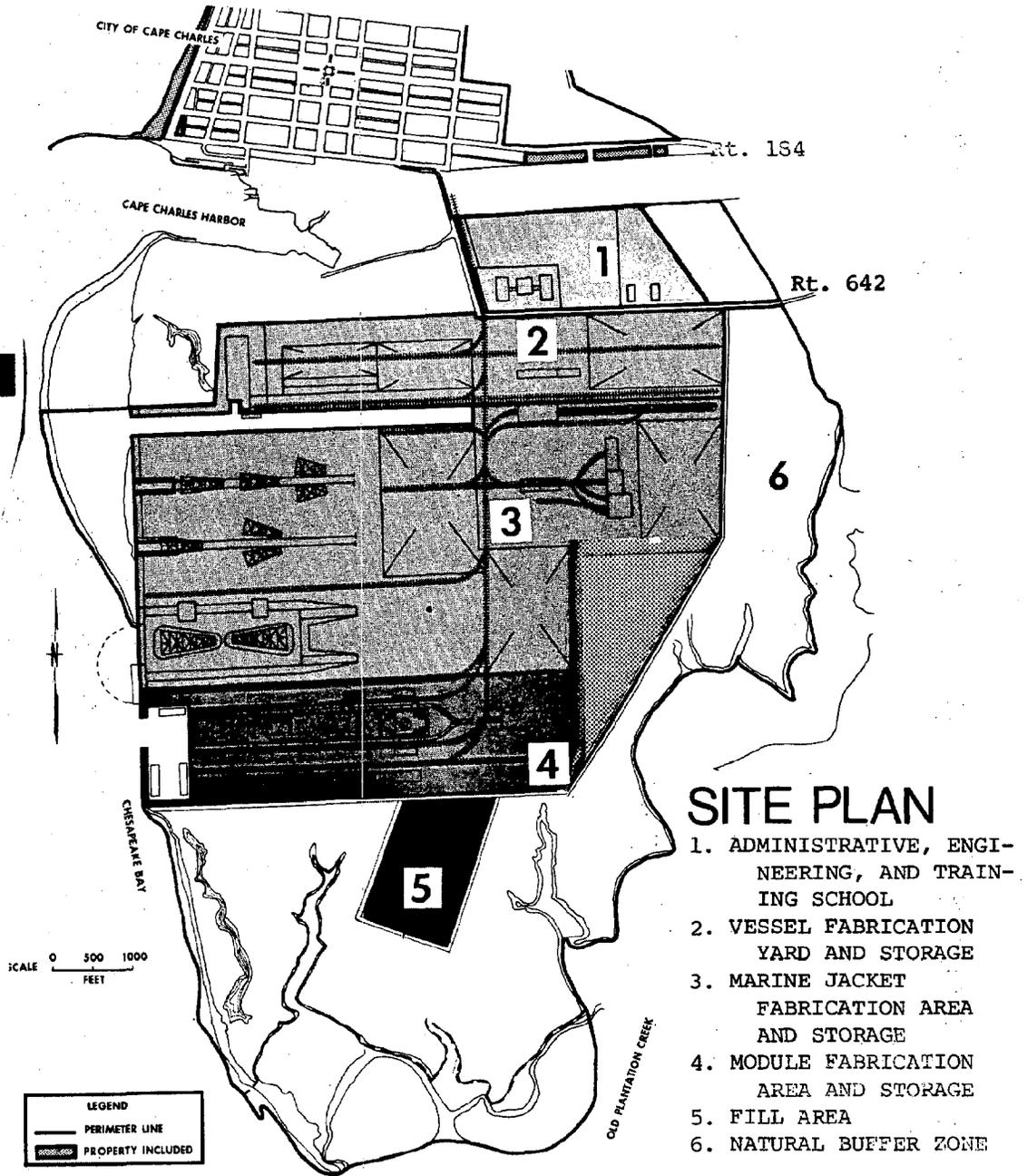
In December 1974, the Northampton Planning Commission received an amended request from Brown & Root, Inc. of Houston, Texas, to re-zone 980 acres of land known as Hollywood Farm from agricultural to industrial use.

Brown & Root is one of the world's largest engineering and construction companies. The company designs and constructs a variety of large-scale industrial and transportation facilities including off-shore oil platforms, power plants, pulp and paper plants, petroleum and chemical refineries, hydroelectric dams, bridges and marine terminals. Brown & Root's headquarters, major manufacturing facilities, and principal engineering offices are located in Houston. From time to time, the company's construction projects are located throughout the world.

Brown & Root desires to use its Cape Charles property as a permanent East Coast manufacturing facility. The site was chosen by Brown & Root because it offers large, generally level acreage on deep water. Work to be conducted at the site would include fabrication of large metal structures including off-shore oil and gas platforms, modular processing plants, liquefied natural gas apparatus and large diameter pipe. The company's operations would begin with metal plate and structural shapes shipped to it from steel and aluminum mills. The metal would be cut, rolled, bent and welded into large structures and tanks. These products would then be shipped out of the county for use elsewhere. Brown & Root has clearly stated that its Cape Charles facilities would be used only for fabrication and that the company would not store or process any hazardous or polluting materials including petroleum.

Figure I-A, Schematic Site Plan, shows the Brown & Root site in relationship to the town of Cape Charles and illustrates the company's anticipated facility layout.

FIGURE I-A  
Schematic Site Plan



## BROWN & ROOT IMPACT STUDY

URBAN PATHFINDERS INC.

## THE IMPACT STUDY

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The Brown & Root proposal, if implemented, would have a profound effect on Northampton County. Brown & Root employment is estimated to reach 1,500 persons, nearly 29 percent of the county's current employment level. New people and new businesses would be attracted to the county and require significant amounts of new housing and public services. These and other ramifications would affect all aspects of county life and touch every citizen in the county, in one way or another, for years to come.

The Northampton County Board of Supervisors and the County Planning Commission intend to make a timely and proper decision on this most complex and significant proposal. The county must carefully consider every advantage and disadvantage of the Brown & Root proposal in its review. The decision will not be easy to make.

To assist Northampton County in the technical evaluation of the Brown & Root proposal, the Board of Supervisors retained Urban Pathfinders, Inc. (UPI), a private planning firm, to conduct a community impact study.

The UPI study will be conducted in three parts:

- Phase I: Background Study
- Phase II: Brown & Root Impact Study
- Phase III: Public Review and Official Decision

Phase I was completed in January 1975 and published as a separate report entitled Northampton Background Study. It identifies existing conditions and trends within Northampton County; thereby establishing a benchmark or baseline upon which the merits of the Brown & Root proposal, as well as other future proposals or county projects, can be measured. The background study report is designed as an encyclopedia of information on Northampton County as it exists today.

Phase II, Brown & Root Impact Study, is contained within this second report. It examines how the proposed project, if implemented, would likely impact on Northampton County. Using the

background data from the Phase I report as a base, it identifies, analyzes and evaluates all of the significant advantages and disadvantages of the Brown & Root project to Northampton County and its citizens. This report is designed to provide county officials and citizens with the information they need to make an informed decision on the rezoning application.

Phase III, Public Review and Official Decision, will inform the general public as to the findings of Phases I and II. Newspaper articles and public meetings will be used to generate public awareness and understanding of the issues involved with the Brown & Root proposal.

After appropriate public hearings and debate, Phase III will conclude with an official county decision on the Brown & Root rezoning request.

#### PHASE II REPORT

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This report is organized into the following seven chapters.

- Chapter One: Economics
- Chapter Two: Population
- Chapter Three: Housing
- Chapter Four: Public Services & Transportation
- Chapter Five: Natural Features & Land Use
- Chapter Six: Public Finance
- Chapter Seven: Conclusions & Recommendations

The first six chapters present the various impacts by topical areas. In analyzing these impacts, Urban Pathfinders has followed five guidelines.

1. Be comprehensive - The analyses not only look at the direct impacts of the Brown & Root Company and its Cape Charles site, but also look at the indirect impacts that its employees would have on the community in general.

2. Be quantitative - To make the evaluation as objective as possible, impacts have been quantified wherever possible (e.g., number of new housing units, dollars of new business generated).
3. Examine both short and long term impacts - Brown & Root would have both short term (1 to 5 years) and long term (5 years or more) impacts. The report analyzes both; however, more emphasis has been placed on long term impacts because of their continuing nature.
4. Relate impacts to existing conditions - The Phase I Background Study report documents the county's current conditions and trends. Phase II has been conducted so that the effects of Brown & Root can be judged as positive or negative changes from existing conditions.
5. Be conservative - Predicting future occurrences requires assumptions. When it was necessary to make assumptions they were selected to represent a reasonable, but conservative forecast.

These six chapters present all the significant impacts likely to be created by the Brown & Root proposal. They are presented so that each county citizen can become informed on the issues and make up his or her own mind.

The seventh chapter, Conclusions & Recommendations, is designed to give the county an independent, third party point of view - Urban Pathfinders'. The multitude of impacts from the first six chapters have been boiled down into a more manageable "OK, now what does it all mean?" type of statement. The chapter also suggests specific actions to be taken by the county to successfully respond to the Brown & Root request.



CHAPTER ONE  
**ECONOMICS**

## NORTHAMPTON COUNTY EMPLOYMENT TRENDS

In the spring of 1972, 5,232 persons were employed in Northampton County. Twenty-six percent of the workforce was engaged in agriculture, 15 percent in manufacturing, 43 percent in non-manufacturing occupations, such as trade and services, and 16 percent in other miscellaneous employment.

Overall, Northampton County employment has been declining; in 1972 it was 24 percent less than it was in 1950.

Farming, the single most important industry in the county, has experienced marked change in recent years as evidenced by consolidation of small farms into larger ones and increased mechanization. As a result, year-round farm employment in Northampton County dropped 28 percent between 1950 and 1969. The migrant workforce has dropped 46 percent. An additional 30 percent decline in year-round farm employment is anticipated by the year 2000.

The manufacturing sector, chiefly processing of farm and seafood products, has undergone a similar trend. Competitive pricing, plant closings and consolidations, and automation have reduced personnel needs. Food processing employment declined 41 percent between 1950 and 1972. Under present conditions, an additional 34 percent decline in manufacturing is projected by the year 2000.

Non-manufacturing and other sectors of the local economy support the needs of the agricultural and food processing industries as well as the population in general. Declines in the two primary industries will cause corresponding declines in the secondary ones. Under present conditions, a 14 percent decline in non-manufacturing employment and a 33 percent decline in the miscellaneous category is predicted by the year 2000.

Total employment in all sectors is expected to decline by approximately 1,285 jobs, 24 percent of the total employment by the year 2000.

BROWN & ROOT LABOR NEEDS

Brown & Root's estimate of the type and amount of employment it would provide at its proposed Northampton County plant for the first ten years of operation is shown on the following table.

FIGURE 1-A  
Projected Brown & Root Employment

	Average Number of Employees By Year*									
	1	2	3	4	5	6	7	8	9	10
Construction Workers	380	310	190	120	120	20	20	20	20	20
<u>Manufacturing Workers</u>										
<u>Managerial</u>										
Executive & Prof.	0	30	32	34	39	42	45	49	53	60
Clerical & Adm.	0	50	63	66	70	74	78	83	88	100
<u>Craftsmen</u>										
Journeymen	0	360	410	443	479	530	573	621	674	760
Helpers	0	160	190	210	213	236	251	267	285	310
Laborers & Misc.	0	130	150	161	173	186	201	217	235	250
TOTAL, ALL WORKERS	380	1040	1035	1034	1094	1088	1168	1257	1355	1500

\*Figures are for the end of each year and assume simulataneous development of both Marine Fabrication Yard and Allied Industries.

SOURCE: Brown & Root, Inc.

The first years efforts, employing 380 workers, would be solely devoted to site development and construction. Manufacturing would commence during the second year and result in a total on-site work force of 1,040. Total employment would rise to approximately 1,500 workers 10 years after the start of construction. This would amount to a 28 percent increase in the year-round Northampton County work force and more than offset the expected decline in the county's other economic sectors.

Because of the heavy physical work involved, at least 90 percent of the Brown & Root construction and production workers (1,350 individuals) would be male; however, there would be limited opportunities for women as welders, inspectors and machine operators. The plant's clerical staff would be predominantly female.

A variety of professional, skilled and unskilled workers would be required by Brown & Root. Some of these new employees would be present Eastern Shore residents; others would be from outside the shore. The following discussions examine the expected source of these workers and the anticipated impact on existing industries.

#### CONSTRUCTION WORKERS

Construction of the Brown & Root plant would require a team of skilled professionals. Brown & Root estimates approximately 380 trained construction workers would be employed at the project's onset.

By the fifth year, initial construction would be completed and the number of construction workers would drop to a continuing force of 20. Therefore, it is anticipated that a significant proportion of the 380 initial construction workers would come from Norfolk and other areas on a temporary basis. Some might be re-employed in Brown & Root's manufacturing operations.

#### MANAGERIAL EMPLOYMENT

At the commencement of manufacturing, Brown & Root would require a cadre of approximately 30 executives and professionals. The number of executive and professional personnel would double to 60 employees when the Northampton facility became fully operational. Because of the skills required, these individuals would most likely come from outside the county.

During the second year, Brown & Root would need 50 clerical workers. When the plant became fully operational, 100 clerical workers would be employed. Many could be recent Eastern Shore high school graduates with secretarial and administrative training. Others would likely be former employees of local businesses hired away by Brown & Root and wives or other relatives of new Brown & Root workers.

## SKILLED CRAFTSMEN

Approximately 360 journeymen craftsmen (skilled welders, fitters, heavy equipment operators, mechanics, electricians, machinists, etc.) would be needed during the second year. Four hundred more would be needed when the plant is fully operational.

Few of the craftsmen needed at the project's onset could be hired locally. Most would come to Northampton County from Norfolk and other industrial areas. The 400 additional craftsmen required in subsequent years would be a mixture of outsiders and existing country residents who would become qualified through on the job training.

## UNSKILLED LABOR

At the onset of manufacturing (the 2nd year), 290 helpers, laborers, and other unskilled employees would be employed by Brown & Root. Ultimately, 560 unskilled workers would be required.

Brown & Root would likely find that the Eastern Shore labor force could satisfy most of this unskilled labor need.

Three major sources of unskilled male labor are available: teenagers entering the work force, seasonal workers, and unskilled year-round Eastern Shore employees.

Each year, an average of 460 Northampton and Accomack County County males turn 18 years of age. Approximately 25 percent can be expected to seek higher education. (At Northampton Senior High School in 1974, for example, 22 percent of the male graduates went on to four year colleges). The remainder,

approximately half, 170 individuals, join the military, work in a family business, or follow specific trades. Currently, the remaining 170 young men leave the Shore to find employment elsewhere.

Brown & Root would offer these young men the opportunity to stay on the Shore. These 170 young men could meet 58 percent of Brown & Root's initial unskilled labor demand.

A second source of labor is workers in low paying seasonal occupations such as fishing, forestry, agriculture and food processing. In 1970, 1,821 Northampton County men and 3,144 Accomack County men were employed in these industries. It is estimated that approximately 790, 25 percent of such workers, could be attracted to Brown & Root by the higher pay and year-round employment.

Northampton County's agriculture and food processing industries still require large numbers of laborers. Any tapping of their work force would adversely impact both industries, severely compounding their already acute summer labor shortage.

A third possible source of unskilled manpower would be year-round Eastern Shore employees. Many Eastern Shore firms may lose unskilled workers to Brown & Root at a time when demand for their companies' services is increasing.

The construction industry would be hard hit. In March 1972, contract construction employed 85 workers in Northampton County and 279 in Accomack County. If the Brown & Root project is implemented, the demand for new residential dwellings, store renovations, and other private construction would escalate, generating an employment requirement for an additional 40 to 50 construction workers. Brown & Root would be competing with the construction firms for this labor. The competition would create a critical construction labor shortage and push construction wages upward. The

higher labor costs would ultimately be reflected in higher costs for housing and other construction. On-site labor to construct conventional housing accounts for one-half of the total building cost.

#### BROWN & ROOT WORKERS' RESIDENTIAL AND COMMUTING PATTERNS

Seven out of every eight existing jobs in Northampton County are filled by county residents. The county's relative isolation from major industrial centers means that few Northampton County residents commute out-of-county. Significant industrial employment is available to the north in Maryland and Delaware but the 2 to 3 hour round trip discourages such employment. Other employment opportunities are available in Norfolk and Hampton, but the \$6.00 one-way toll on the Chesapeake Bay Bridge-Tunnel and the long drive prohibits much commuting to the south.

Establishment of significant new industrial employment opportunities in Northampton County would have similar effect in the opposite direction. Maryland and Delaware residents wishing to work for Brown & Root or fill vacancies created in other industries as a result of Brown & Root would be turned back by the long drive to Northampton County much as Northampton County residents are thwarted by the long northern commute. Norfolk residents would also be discouraged by the long daily trip to Northampton County even if car pools or commercial transportation overcame the high Bridge-Tunnel toll. Those out-of-town workers hired by Brown & Root or other Northampton County firms would likely commute only for a few months. Once they were secure in the knowledge that they has a long term job, they would seek to move to the Virginia Eastern Shore. As a result of these commuting obstacles, the presence of Brown & Root is expected to result in 900 more workers being in Northampton County than would be the case if Brown & Root would not move in. The re-

maining 600 jobs would be filled by commuters, mostly from Accomack County. Some of these 900 new workers would be people who would have normally left the county but decided to stay. Some of these workers would work for Brown & Root directly and others would fill vacancies created in other Northampton companies by Brown & Root. The net effect of all of these cases is the same; and therefore to simplify the impact analysis, these 900 new people are assumed to be new residents, working directly for Brown & Root.

BROWN & ROOT PAYROLL

When the 900 permanent Brown & Root employees settle in Northampton County, they would earn an annual payroll totaling \$9,540,000. The expected occupations and wage rates of these 900 new Northampton County residents are shown on the following table.

FIGURE 1-B

Projected Brown & Root Payroll

	<u>No. of Workers</u>	<u>Annual Wages</u>
Construction	12	\$ 15,000
Executive & Professional	36	20,000
Clerical & Administrative	60	8,000
Craftsmen: Journeymen	456	12,000
Helpers	186	8,000
Laborers	150	8,000
TOTAL OR AVERAGE	900	\$ 10,600

SOURCE: Brown & Root, Inc.

In 1969, median family income in Northampton County was \$4,778. Adjusting for inflation, present day median family income is probably \$6,500 - \$7,000. Average Brown & Root salary and wages would be \$10,600 per worker --- substantially higher than present family incomes.

#### BROWN & ROOT BUSINESS IMPACT

Most of Brown & Root's material would be shipped to the plant from other areas. Some gasoline and diesel fuel, building materials and office supplies may be purchased locally. These local purchases of materials and supplies are estimated to total \$100,000 annually.

Brown & Root estimates that each year 200 to 400 visitors would come to its Northampton County facility for stays ranging from one day to one week in length. Assuming 300 visitors staying for three days and spending \$25 per day on food and lodging, \$22,500 per year would be spent in motels and restaurants.

The 600 Brown & Root employees commuting from outside Northampton County areas would likely purchase few goods and services locally. On the other hand, the 900 Brown & Root employees expected to live in Northampton County would make extensive purchase for major items such as automobiles and everyday necessities such as food and clothing.

Brown & Root employees residing in Northampton County would spend approximately \$5,700,000 annually on local purchases. Current county purchases average about \$26,000,000 annually. Assuming an average commercial establishment has a sales volume of \$80 per square foot, Brown & Root employees living in Northampton County would support approximately 71,500 square feet of commercial space. The infusion of new money in local business would not necessarily be evidenced by all new construction. Many Northampton County businesses have closed in recent years; others are struggling to remain open. The increased local trade would primarily increase the profitability of existing businesses.

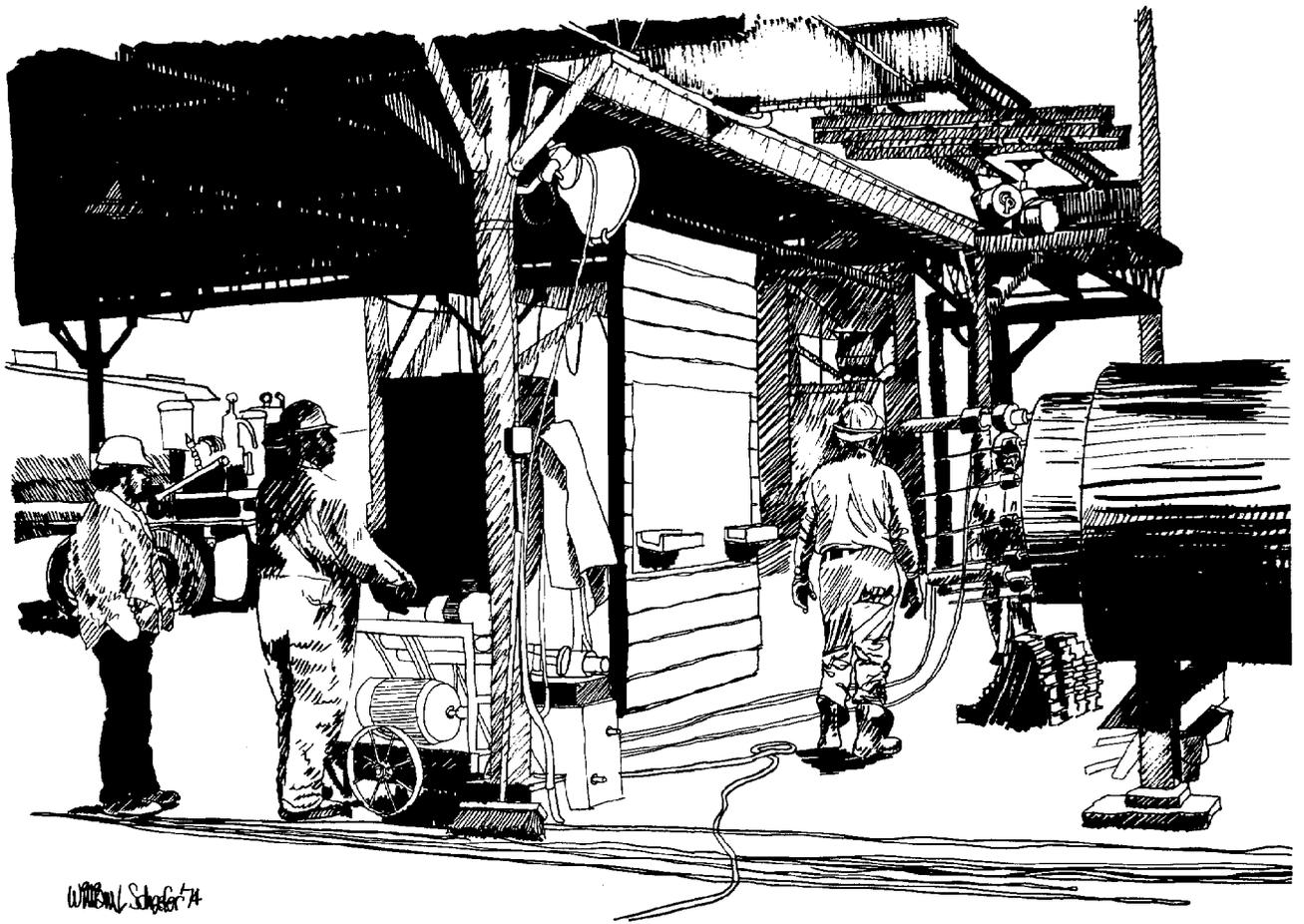
However, the added payrolls and sales volume would result in additional sales and support employment. Ultimately, a total of 200 additional new jobs, (service, sales, construction, etc.) could be expected in Northampton County due to the presence of Brown & Root. For study purposes, it is assumed that all of these new employees would live in Northampton County. Salaries and wages of these 200 additional employees are expected to

average \$8,000 per year. This would generate an additional \$1,600,000 in local payrolls and \$1,012,000 in local sales.

#### IMPACT ON FINANCIAL INSTITUTIONS

Brown & Root, the new residents and the local merchants would contribute substantial deposits to local financial institutions, thereby expanding the local credit base.

Assuming Brown & Root would maintain \$300,000 (approximately 1 week's payroll) in demand deposits in local banks, and Brown & Root workers and local businessmen followed national banking patterns, approximately \$2,100,000 in additional monies would be deposited in local banks and available for loan. However, as will be noted later, this would not meet the expected demand by Brown & Root worker's for home mortgages.



CHAPTER TWO  
**POPULATION**

Brown & Root would not mean just additional employees working and living in Northampton County, it also would mean new families and children.

Northampton County, like most rural areas, has experienced a sustained population decline in recent decades. Total Northampton County population decreased from 18,000 in 1930 to 14,442 in 1970. If past trends continue, future declines can be expected.

Brown & Root's presence would result in 900 new workers living in Northampton County. In addition, another 200 support personnel would live in the county.

Some Brown & Root employees would be part of families, others would be unmarried. Marital and family status of the Brown & Root workers living and working in Northampton County is assumed to be the same as the general Virginia population under age 65. In 1970, 77 percent of the Virginia population under 65 were in families. The remaining 23 percent lived alone or in rooming houses and other group quarters.

Using these same proportions, Brown & Root would have 694 workers in families and 206 single individuals. The 694 workers in families are assumed to comprise 625 separate family households because of the possibility of both husbands and wives working.

Approximately 150 of the 206 individuals are assumed to be living alone. The remaining 56 are assumed to be living in rooming houses or boarding with local families.

Applying the same assumptions to the 200 workers in the industries supported by Brown & Root would mean an additional 138 families and 46 single individuals, 33 of whom will be living in separate households.

In 1970, the Commonwealth of Virginia contained 3.57 persons per family unit; Northampton County contained approximately 3.6 persons per family. Based upon a national ratio of 3.5 persons per family, an additional 2,923 residents, distributed among 763 family units and 250 individuals would be expected in Northampton County. Northampton County population would then total approximately 16,000 - a 15 percent increase over 1970 and close to the county's 1950 level.

Northampton County, in 1970, averaged 1.02 school children per family. Each new Brown & Root generated family is expected to contain 0.94 school children, the 1970 average for the Commonwealth of Virginia.

In the past five years, a significant decline in births has been noted. However, the state figure of 0.94 school children per family is considered appropriate because the full impact of the declining birth rate will not be felt for several more years. Furthermore, offsetting the declining number of school children, is an increasing tendency of children to stay in school longer. This tendency coupled with the recent addition of kindergarten classes in Northampton, should maintain the 0.94 students per family ratio for many years.

Using this ratio, 717 new school age children would be living in Northampton County as a result of the proposed Brown & Root development.



CHAPTER THREE  
**HOUSING**

## EXISTING HOUSING NEEDS AND SUPPLY

There is already an acute demand for economical and sound housing in Northampton County. The county currently has about 5,500 year-round housing units. Many of these units are overcrowded or substandard. The Phase I Background Study calculated that 2,200 sound housing units are needed to correct existing housing problems.

## BROWN & ROOT GENERATED HOUSING NEEDS

Brown & Root employees and new support personnel living in Northampton would require an additional 952 houses in which to live. A general rule is that a person or family can afford to own or rent housing valued at 2 1/2 times their annual income. Based upon this criteria, the following table depicts the amount and value of new housing needed.

FIGURE 3-A  
Brown & Root Generated Housing Needs

<u>Number Of New Units</u>	<u>Price Range</u>	<u>Average Price</u>	<u>Total Value of New Housing Required</u>
31	\$50,000+	\$58,000	\$ 1,798,000
10	\$40-50,000	\$45,000	450,000
395	\$30-40,000	\$34,500	13,628,000
<u>516</u>	<u>\$18-30,000</u>	<u>\$23,000</u>	<u>11,868,000</u>
TOTAL <u>952</u>		<u>\$29,100</u>	<u>\$27,744,000</u>

SOURCE: Urban Pathfinders, Inc.

In addition to the 952 units required to house new workers, the county would also require an additional 34 housing units to provide a reasonable number of vacancies. This would create a total demand for 986 new units with a total market value of \$28,735,000.

These 986 new homes represent about 30 percent of Northampton's existing supply of sound housing. On a long term basis, the new middle and upper priced housing need (\$30,000 or more) required because of Brown & Root would be filled by the construction of conventionally built homes. Among the lower priced housing; \$18,000 to \$30,000, one half of the demand would likely be provided by sectional homes and one half by mobile homes.

Both sectional and mobile homes have become increasingly popular in recent years. Sectional homes often sell for less than \$20,000 and are attractive to qualified lower income families who can secure subsidized financing through the Farmers Home Administration.

Nationally, 90 percent of all new housing valued at \$15,000 or less is composed of mobile homes. Mobile homes are already growing in popularity in Northampton. In 1970, the U.S. Census recorded 165 units in the county. In the last five years, the number has doubled; and in 1974, for the first time, new mobile homes exceeded all other types of housing built in the county.

The provision of this required new housing on a long term basis should not be a problem. If people want or need housing and can afford it (as Brown & Root employees could) private enterprises will provide it.

However, there would clearly be a problem in meeting the demand for conventional housing within the very short time period scheduled for Brown & Root's commencement of operations. To meet the demand within 5 years would require the construction of 150 houses per year. In 1974, 69 new conventionally built residences were constructed in Northampton. Consequently, if Brown & Root moved into Northampton, new residential construction would have to be at a rate three times greater than present building activity. This problem would be compounded because the on-site Brown & Root plant construction would be competing with the housing industry for locally available workers.

A second area of concern would be the availability of mortgage money. Nearly \$28 million in housing construction and mobile homes would likely require at least \$21 million or more in additional financing, a sum not easily found under current national economic conditions.

What is likely to happen on a short term basis is that the new people moving to Northampton would seek existing rental

housing until such time as they feel secure in their new employment, have decided to make Northampton their permanent home and permanent housing becomes available. During the interim they would compete with existing residents for the county's limited supply of sound rental housing. This competition would certainly drive rents up: perhaps as much as double current levels in some cases. Because Brown & Root workers would be earning more money than most people and because most renters have either short term leases or no leases at all, the new people would tend to drive the existing residents out of their housing. Older and retired people would be particularly vulnerable in this situation. This housing crises could result in widespread and substantial hardship lasting for several years.

The other avenue open to new house hunters would be increased use of mobile homes.

Mobile homes offer four advantages over conventional housing which would be highly attractive in a Northampton housing crises.

- a. They have a very low initial purchase price: \$8,000 to \$20,000.
- b. Financing is easier to secure (higher interest rates can be charged than for conventional housing).
- c. A lower down payment is required.
- d. They require very little in-county construction (only the pad and utilities).

In a housing crises, as much as one-half of the new housing demand might be fulfilled by mobile homes (about 500 units).

Mobile homes in larger number do not represent an attractive solution from the county's standpoint. Mobile homes rapidly depreciate in value as opposed to conventional housing which normally increases in value. As a result older mobile homes pay little in taxes and often become unwanted items, troublesome to dispose of. They also represent a much higher fire risk than conventional housing.

In summary, the suddenness and magnitude of the Brown & Root development is likely to cause serious and widespread disruptions in the county's housing supply and residential stability.



CHAPTER FOUR

# PUBLIC SERVICES AND TRANSPORTATION

The Brown & Root plant and the 2,923 new residents linked to Brown & Root would require the full range of community services present residents enjoy. This chapter focuses primarily upon the service needs of these new residents.

## EDUCATION

The most costly government service is education. Schools account for over 70 percent of Northampton County's expenditures. The recently revised Northampton County School Board Building Program identifies over \$4.5 million of new school facilities required in the next ten years to meet existing student needs.

The expected influx of 717 Brown & Root generated school children would increase enrollment in Northampton County schools by over 20 percent. The estimated cost of new school facilities for 717 students is approximately \$2,800,000. Assuming the county could use 6 percent, 20 year bonds to finance this school construction, annual redemption costs would be \$239,000.

In addition to an annual expenditure to pay for new school construction for the 717 students, Northampton County would also have to increase its operating expenses. In 1974, general school operating expenses were \$869 per pupil. This figure includes salaries, school maintenance, equipment, transportation, and other general education expenditures. At this rate, the additional enrollment in Northampton County public schools would raise total operating expenses to \$623,000.

Total additional education expenditures for the 717 new students would amount to approximately \$862,000 annually.

Since it takes several years to design, fund and construct new school facilities, some relocatable classrooms might have to be used on an interim basis. In large numbers, this is considered to be an unsatisfactory arrangement which could disrupt the county's school system and have an adverse effect on the overall quality of education provided.

## HEALTH CARE

Northampton and Accomack Counties share the 125 bed NAM Hospital just outside of Nassawadox. The expected population increases in both Northampton and Accomack Counties would require approximately 17 additional hospital beds, assuming a ratio of 3.7 beds per 1,000 population.

The hospital's ultimate capacity, if the two upper floors which are now unfinished are completed, is 203 beds. Thus, the additional population growth expected in both counties would not create a problem.

However, the increased population in both counties would aggravate the present physician shortage. The Eastern Shore ratio of physicians in direct patient care is presently 1 to 2,172 residents in comparison with a national average of 1 per 770 persons. Unless additional physicians are recruited, the physician/resident ratio would rise to approximately 1 to 2,500, further over taxing physicians on the Eastern Shore. Approximately, two more doctors would be required to serve the increased population at the present ratio, and six more doctors would be required to service the increased population at the national ratio.

Because most of the Brown & Root workers and their families would be young persons, no additional geriatric facilities would likely be needed. The present plans for a 120 bed nursing home at Nassawadox will be adequate to serve the county's long term health care needs.

## RECREATION

Increased population would result in increased demand for recreation facilities. The additional 2,923 residents would require an additional 30 acres of public parks and 3 boat landings based on national recreation criteria.

## FIRE PROTECTION AND AMBULANCE SERVICE

Northampton County is provided fire protection by volunteer fire companies in each of its five incorporated towns. Emergency ambulance service is provided in Exmore, Nassawadox and Cape Charles.

Construction and heavy manufacturing are highly hazardous industries. Thus, Brown & Root would likely represent a significant and perhaps disruptive increase in the demand for emergency service. The influx of new residents and their 986 new homes would also impose an additional burden upon the local fire companies and ambulance squads. Brown & Root, like large employers in other areas, could make a contribution to the Cape Charles and other companies to offset additional equipment and material costs.

One benefit from the population increase could be improved staffing. A common problem in rural areas is how to maintain a sizeable pool of able-bodied volunteers to serve the local companies at all times. As more younger men moved into Northampton County to work for Brown & Root, this difficulty would be alleviated.

## SOLID WASTE

Brown & Root would generate substantial quantities of scrap metal waste. This scrap would be sold and trucked from the site. Scrap paper and other wastes would be incinerated or hauled to the county's landfill.

Each of the 2,923 new county residents will generate approximately 6 pounds of trash daily for a total of approximately 8.7 tons.

The county presently provides 87 waste collection boxes; approximately 1 for every 170 persons. At this same ratio, approximately 17 more collection boxes would be needed to serve the new residents.

Northampton County maintains a 51 acre landfill near Oyster. No estimates of the expected life of this landfill are currently

available. However, an unexpectedly high water table in recently opened areas may shorten the landfill's anticipated usefulness. The additional volume of trash would further shorten the landfill's useful life and may require the county to seek an additional site in the near future.

#### SOCIAL SERVICES

Northampton County has an extensive program of social services coordinated through the County Department of Public Welfare. These programs are chiefly assistance to the poor and indigent. Aid to dependent children, aid to the permanently and totally disabled, and old age assistance are the most important.

Because of their high incomes and salaries, Brown & Root employees and the anticipated 200 support personnel would not likely draw upon these public assistance programs to any significant degree.

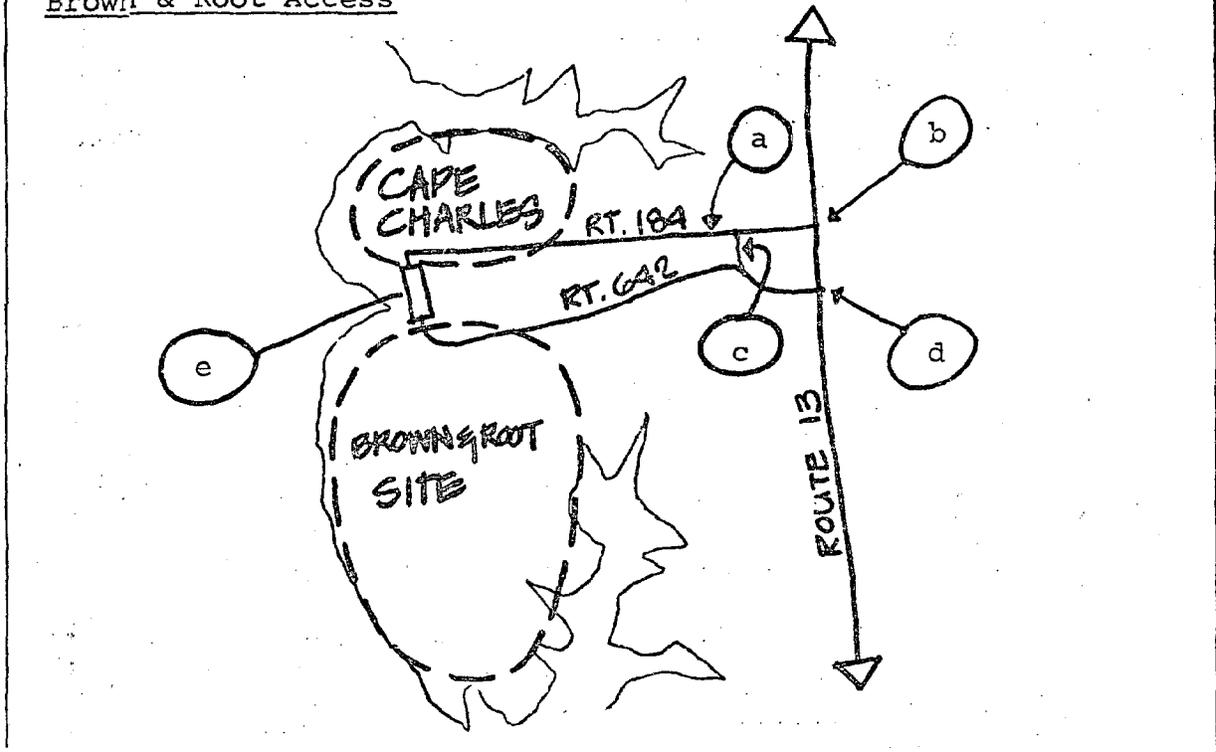
#### HIGHWAYS

Northampton County has a sound road system. The majority of its roads are hard surfaced, year-round facilities. However, in many areas, rights-of-way are narrow with sharp curves and turns which need improvement. A continuing improvement program by the Virginia Department of Highways is correcting many of these problems.

In general, new Brown & Root induced residential and commercial development would not over tax the county's highway system, if the development is properly situated. However, additional strip development along U.S. 13 and other important roads could cause serious traffic congestion.

Highway access to the Brown & Root site, via Routes 184 and 642, schematically shown on Figure 4-A, presents a serious problem under present road conditions.

FIGURE 4-A  
Brown & Root Access



Route 642 is a narrow, high crowned two lane road with pavement width of approximately 16 feet. The road is adequate for present traffic volume which averages 750 cars per day.

Route 184 is a wider three lane highway with the center lane for turns. Average daily traffic on Route 184 is approximately 3,700 vehicles.

With the opening of Brown & Root, a morning and evening rush hour peak of 1,500 vehicles should be expected. Average daily traffic on Routes 184 and 642 would increase by 3,500 to 4,000 vehicles. Most of the additional traffic would be between the Brown & Root site and U.S. 13, however, considerable traffic between the site and Cape Charles should also be anticipated.

To accommodate this additional traffic, several improvements to the road system would be required.

- a. Upgrading of Route 184 to 4 lanes between U.S. 13 and Route 641. This is necessary to accommodate traffic turning on to and off of U.S. 13 and on to Route 641. Paving and construction cost of the additional lane excluding right-of-way acquisition, moving of utilities, etc. would be approximately \$102,000.
- b. Improvements to the U.S. 13/Route 184 intersection including additional turning lanes on U.S. 13 and improved traffic control would cost approximately \$50,000.
- c. Widening and Upgrading of Route 641 to three lanes. These improvements would cost approximately \$40,000 plus right-of-way acquisition, moving of utility lines, etc.
- d. Reconstruction and improvement of Route 642 from the Brown & Root site to U.S. 13. Three lanes of traffic and improvements to the U.S. 13 intersection are needed. Construction costs would be approximately \$955,000.

A detailed engineering study should be conducted to examine the feasibility of moving the Route 642 alignment south of the Cape Charles cemetery and the Delmarva Power and Light Company office on U.S. 13.

- e. Improved access into Cape Charles along Route 642. The present bridge over the Penn Central rail yard carries approximately 1,250 vehicles per day. Increased traffic between the Brown & Root site and the town would cause backups and congestion. Construction of a parallel bridge or construction of a new wider bridge with improved bridge approaches would cost approximately \$750,000.

Total highway construction improvements to provide proper flow of traffic in the Cape Charles vicinity are estimated at \$2,022,000. Highway improvement costs are normally a state responsibility. However, the state has an established highway needs program which exceeds available funding and therefore might not be able to make these needed improvements for many years. In similar cases, the state has asked the local jurisdictions to fund all or part of the necessary improvements.

Failure to make these improvements prior to the commencement of Brown & Root operations would create traffic congestion and safety hazards.

#### RAILROAD

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Many Eastern Shore firms depend upon the Penn Central Railroad for inbound materials and supplies and outbound shipment of products. In 1972, approximately 3,080 rail cars were shipped to points in Northampton and Accomack Counties and 1,010 cars were shipped out.

The Penn Central, citing low traffic volume and operating losses, has announced plans to abandon rail service to the Virginia Eastern Shore. Abandonment would have a serious impact on the Northampton and Accomack economies.

Twenty-six Eastern Shore businesses depend upon the railroad. Nine of the twenty-six businesses are Northampton County firms. A conservative 1972 estimate found that these nine Northampton County firms employed 420 individuals and had payrolls of over \$2,200,000.

To replace the rail line with truck transport would cost the Northampton industries over \$390,000 in additional shipping charges. This additional charge might cost some firms their competitive edge and force others out of business.

Brown & Root could become one of the largest rail users on the Virginia Eastern Shore improving the traffic volume on the Penn Central. Brown & Root cannot now predict the actual rail volume its fabrication projects might generate. However, if its experiences at its Houston plant are indicative, Brown & Root's Northampton County rail traffic could be as much as 300 cars a year.



CHAPTER FIVE

# NATURAL FEATURES & LAND USE

A key element of Northampton County life is its abundant natural resources and rural life style. Brown & Root would impact these areas directly through its actions on its property and indirectly through the actions and activities of its workers, their families, and other support personnel and establishments.

#### AIR QUALITY

Brown & Root would not process petroleum, chemicals, natural gas or other substances, nor would it generate large quantities of energy. It might burn wastes which is controlled under state air quality law. Consequently, air quality should not be significantly affected. Northampton County can further insure that no pollutants are emitted into the atmosphere by specifying such restrictions in its zoning controls.

#### NOISE

Noise pollution -- a loud and distracting sound --- on the Brown & Root property should not be a significant problem. The movement of railroad cars and whine of cranes would likely be the loudest sounds generated. These on-site noise levels would be regulated by the National Occupational Health and Safety Act, insuring safe limits are maintained.

Brown & Root has agreed to maintain a minimum buffer strip of 200 feet long its property edge to protect adjacent farms and residential properties from possible noise. This buffer distance should be adequate. However, Northampton County should reserve the right to review any Brown & Root development plans to insure that these properties would not be adversely affected.

#### WATER QUALITY

Brown & Root proposes that sanitary sewage on its property be handled by an on-site treatment system, such as that used by the Cape Charles Coast Guard station. Any effluent discharged into the bay must meet appropriate federal and state health and environmental regulations and therefore should not represent a threat to the bay or its aquatic life.

Cape Charles presently discharges its sewage untreated into the town harbor. The town needs and desires a local sewage treatment plant, and has recently been able to secure federal financing. It is possible that Brown & Root and the town of Cape Charles by working together could construct one facility to meet both their needs. This could be a benefit to Cape Charles.

During construction of its facilities, Brown & Root would necessarily remove the land's vegetative cover and alter storm drainage. This work should be conducted in accordance with an approved sedimentation plan meeting U.S. Soil Conservation Service standards. If such a plan is adequately designed and maintained, neither Plantation Creek nor the bay would be adversely affected by storm water runoff.

Brown & Root's development plans call for dredging a navigation channel to connect its property to the Cape Charles channel. The company proposes that dredged materials be placed within a diked area on its property to settle. Permits for this dredging, as well as bulkheading, must be obtained at the federal, state, and county levels. At the federal level, permits would not be issued until the Army Corps of Engineers, the U.S. Department of the Interior, the Environmental Protection Agency, and the Virginia Marine Resources Commission, among others, have evaluated the project and satisfied themselves that no significant damage would occur as a result of the proposed construction.

As currently proposed, this dredging would have no adverse environment effect as long as proper disposal is made of the dredge "spoils".

#### GROUNDWATER SUPPLY

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It is also unlikely that the channel dredging would have an adverse impact on the county's upper aquifer. The upper aquifer is recharged by local precipitation. The flow of water moves outward towards the coasts. Hydrostatic pressures should prevent any substantial salt water encroachment into the aquifer.

Brown & Root estimates its on-site water requirements to be over 100,000 gallons per day.

The Tidewater Regional Office of the Virginia Water Control Board is presently conducting a study of the groundwater supply in Northampton County, including the Cape Charles area. Preliminary findings will be available in the spring. Based on the study's findings and under provisions of the Virginia Groundwater Act of 1973, the State Water Control Board (SWCB) will determine whether the Cape Charles vicinity is a critical groundwater area. If the area is so designated, the SWCB can prescribe maximum limits of water withdrawal for wells in the area with 50,000 gallons per day pumping capacity and thus would have the authority to regulate Brown & Root's water usage.

As a further safeguard, Northampton County should include a requirement for pumping tests within its zoning ordinance and require Brown & Root, if its rezoning is approved, to conduct appropriate tests before a building permit is issued.

The additional water demand attributable to the 2,923 new residents expected as a result of Brown & Root will total approximately 290,000 gallons per day. This quantity of water can be furnished from the county's upper aquifer in most areas without serious lowering of the water table provided wells are adequately distributed.

#### LAND USE

The Brown & Root property for which rezoning is being requested is believed to contain a total of about 1,700 acres. It contains about five miles of shoreline, one-half on Plantation Creek and the other half on the Chesapeake Bay. At the present time, approximately one-half of the site is tilled, and the remaining one-half is wooded or wetlands.

Brown & Root proposes to develop 980 acres of the property for its industrial purposes. (See Figure I-A, Schematic Site Plan, page ii).

To the north, the Brown & Root property abuts the Penn-Central's rail yards and the industrial properties along the southside of the Cape Charles Harbor. To the west, the property faces the bay. No adverse land use effect would be realized by these adjoining areas. To the south, Brown & Root faces the mouth of Plantation Creek and on the east, it faces the upper reaches of Plantation Creek and several farm properties. Brown & Root's proposed 200 foot buffer zone, if properly designed,

should adequately protect the creek's natural character and these adjoining properties from any adverse land use impacts.

Within the general community, new development to house and service the Brown & Root generated population is expected to require the conversion of approximately 500 additional acres of agricultural and forest land.

Northampton County contains approximately 140,000 acres of land; mostly farmland, forest, and marsh. At present, about 5 percent of the county's land, 6,400 acres, is developed. Collectively, the Brown & Root site and community development would convert additional 1,500 acres of open space to development (an additional 1 percent of the total county).

If planned properly, the additional development could be accommodated without serious effect or alteration of the county's rural character. However, the county's existing land use controls are not designed to deal with the sudden demand for development that would occur if Brown & Root's proposal is approved. Some of the problems which could occur include:

- a. localized lowering of the water table,
- b. congestion of farm roads,
- c. strip development along roads,
- d. overloading of public services, and
- e. mixing of incompatible land uses.

These problem could be controlled through the development of a countywide comprehensive plan and revisions to the county's zoning ordinance and subdivision regulations.



William Schaefer '74

CHAPTER SIX  
**PUBLIC FINANCE**

The Brown & Root project and its related development would significantly impact Northampton County revenues and expenditures.

GOVERNMENTAL EXPENDITURES

The Brown & Root plant and its 2,923 new county residents would require all the public services and facilities now enjoyed by local residents. Education would be the most significant additional county expense --- approximately \$862,000 annually.

Other general government operating expenditures excluding public welfare but including county administration, public works, tax assessment and other services are expected to rise \$51,500, based upon a 1974 per capita cost of \$17.62.

Total additional Northampton County government expenditures for the new residents are summarized in the following table.

FIGURE 6-A  
Anticipated Additional Northampton County Expenditures Per Year

School Construction Debt Service	\$239,000
School Operating Cost	623,000
All Other County Operating Expenditures	<u>51,500</u>
TOTAL	\$913,500

SOURCE: Urban Pathfinders, Inc.

In 1973, county expenditures totaled \$4,122,000. With the above additional costs, the county budget would exceed \$5,000,000 annually.

## COUNTY REVENUES

The Background Study arrayed Northampton County's revenue sources under three broad headings: federal grants, state grants, and local revenues.

### FEDERAL GRANTS

The new Brown & Root related workers would expand the county's federal revenue sharing funds. Northampton County expects to receive \$188,284 in federal revenue sharing funds for the last quarter of fiscal year 1974 and the first three quarters of FY 1975. Assuming federal revenue sharing is distributed according to total population, an additional \$38,100 can be expected annually based on the estimated 20.2 percent population increase.

In 1975, Northampton County expects \$470,000 in federal funds for education including a \$195,000 grant for special education programs for migrants. Brown & Root would not effect grants under the program.

U.S. Public Law 874 provides for assistance for school operation due to the presence of non-taxed federal facilities and a large federal work force. This amounted to \$15,000 in 1974. Brown & Root would not effect the grants under this program.

The majority of Northampton County's federal school aid falls under Public Law 89-10, commonly known as Title I of the U.S. Elementary and Secondary Education Act. In fiscal year 1975, \$260,000 in Title I funds are expected for operation of the county's schools. The assistance under this program is solely for the education of children of low income families. Because of the high salaries of Brown & Root workers, Northampton County would not likely receive additional Title I assistance.

### STATE FUNDS

Northampton County receives substantial revenue from the state to defray its operating expenses. One of the most significant is the county's share of state sales tax receipts.

The state sale tax is apportioned to the counties and cities based upon the school age population 7 to 19 years of age as determined by a state Board of Education census taken every 3 years. The county received \$340,800 in 1973 as its share of state sales taxes. Brown & Root generated population increases would result in an increase of \$68,800 from this source and total \$409,600.

According to the 1974-1975 Northampton County School Budget, the county's single largest source of state school revenue was the Basic State School Fund. It accounts for over \$1,100,000 in revenue, 83 percent of all state school grants. Northampton County's share of the Basic State School Fund depends upon four elements: average daily membership in the school system, (approximately 3,000 in 1973); in minimum per pupil expenditure set by the state as the foundation cost for a quality education (presently \$687); a composite index based on local need (0.36); and the county's share of the state sales tax. Anticipating \$409,600 in state sales tax receipts, an average daily student membership of 3,717, the present composite index, and the per pupil cost for quality education, Northampton County would receive approximately \$1,372,100 from the Basic State School Fund --- \$272,100 more than expected for the 1975 fiscal year. The difference can all be attributed to the larger school population.

Expected state assistance for pupil transportation expenses in fiscal year 1975 amounted to \$61,288. A proportional 20.2 percent increase due to the new influx of students would generate an additional \$12,400.

In FY 1975, Northampton County anticipated receiving \$109,450 in state aid to pay for the extra costs of special and vocational educational programs, such as speech, improvement of education of the mentally retarded or handicapped, agricultural, business and distributive education programs. Assuming the 717 new students would utilize these programs in the same proportion as present students, an additional \$22,100 in state revenues could be expected.

Current state assistance for supplemental reading and mathematics improvement programs in the elementary schools is \$14,700. The additional students are expected to increase these revenues by \$3,000.

A summary of expected state revenues for the education of the 717 new students is shown on the following table.

FIGURE 6-B

Anticipated Additional State Education Revenues

Basic State School Fund	\$ 272,100
Pupil Transportation	12,400
Special & Vocational Education	22,100
Elementary Reading & Mathematics	3,000
	<hr/>
TOTAL	\$ 309,600

SOURCE: Urban Pathfinders, Inc.

Other Northampton County revenues from the Commonwealth, such as its share of ABC profits and the state wine tax are distributed on a per capita basis. These two revenue sources amounted to over 48 percent of the remaining miscellaneous state grants to Northampton County. Assuming other minor grants are also distributed on a per capita basis, these miscellaneous revenues would increase 20.2 percent or approximately \$16,100 due to the expected Northampton County population increase.

Total additional state revenues Northampton County could anticipate are shown on the following table.

FIGURE 6-C

Additional Northampton County State Grants

State Sales Tax	\$ 68,800
State Education Grants	309,600
Miscellaneous State Revenues	16,100
	<hr/>
TOTAL	\$ 394,500

SOURCE: Urban Pathfinders, Inc.

## LOCAL REVENUES

Current taxes (real estate, personal property, machinery and tools, public service corporations, etc.) are Northampton County's chief local revenue source. In 1973, they accounted for over 70 percent of local revenue. Brown & Root would contribute tax revenues in two major areas, machinery and tools and real estate property taxes.

The following shows Brown & Root's estimated capital improvements program for its first five years of operation.

FIGURE 6-D  
Projected Brown & Root Capital Improvements

<u>Year</u>	<u>Value</u>
1	\$ 18,000,000
2	10,000,000
3	6,000,000
4	3,300,000
5	2,500,000
	<hr/>
TOTAL	\$ 39,800,000

SOURCE: Brown & Root

Capital improvements valued at \$39,800,000 and land valued at approximately \$5,000,000 means a total facility worth approximately \$44,800,000.

Assuming a 14.5 percent assessment ratio, the plant's assessed value would be \$6,496,000. Property tax revenues at the current rate of \$4.50 per \$100 of assessed value would be \$292,300 per year.

Brown & Root estimates the original value of its tools and equipment at \$10,000,000. Assuming this equipment is fully depreciated, or would be a few years after commencement of operations, its minimum book value for county tax purposes

would be \$1,000,000; appraised value would be \$250,000. Minimum tax revenue to Northampton County would be \$11,300.

Total county revenue from Brown & Root real estate and machinery and tool taxes would total \$303,600 annually.

The housing analysis identified a demand for 986 new housing units with a possible total market value of \$28,735,000. Approximately 79 percent of this demand will be met by conventional housing with an estimated value of \$22,906,000. At the current 14.5 assessment value/true value ratio, and present tax rate approximately \$149,000 in real estate taxes would be generated annually.

Real property appreciates in value, but mobile homes which are considered personal property depreciate. Northampton County presently assesses mobile homes at 20 percent of value according to the Insurance Underwriters' depreciation schedule. If one-half of the demand for lower priced homes is satisfied by mobile homes, total mobile home property tax revenues would be approximately \$17,400.

Tangible personal property taxes, primarily on vehicles, would generate an additional \$22,300, assuming each of the 1,100 new Northampton County workers owned an automobile with a \$1,500 value.

Another Northampton County tax is on merchants' inventories or "capital". In 1973, local merchants paid \$17,669 in taxes on their year end inventories. Assuming merchant inventories are proportional to population, an additional \$3,600 would be contributed in merchants capital taxes.

In 1973, Northampton County's one percent local sales and use tax generated over \$197,000 in revenues. The additional \$5,700,000 in local purchases by the Brown & Root employees and local purchases for the Brown & Root facility would give Northampton County an additional \$58,000 in local sales tax revenues. The 200 support personnel will generate another \$10,100 in sales tax receipts.

In 1973, other local revenues, such as fines, dog tag sales, auto decals sales, etc., amounted to \$8.79 per person. Assuming this relationship continues to hold, the 2,923 new residents would contribute \$25,700 in miscellaneous revenue.

The following table summarizes the expected locally generated Northampton County revenues and expenditures.

FIGURE 6-E

Anticipated Additional Local Taxes and Fees

Brown & Root property taxes	\$ 292,300
Brown & Root machinery & tool taxes	11,300
Residential real property taxes	149,400
Mobile home property taxes	14,400
Tangible personal property taxes	22,300
Merchants inventory	3,600
Local sales tax	68,100
Miscellaneous local fees	25,700
	<hr/>
TOTAL	\$ 587,100

SOURCE: Urban Pathfinders, Inc.

The following table compares expected Northampton County revenues and expenditures due to the presence of Brown & Root.

Initially, it would appear that Brown & Root would create a county surplus of \$106,200. However, given the nature of the assumptions made, the uncertainty of continued funding of many grant programs at present levels and other factors, this conclusion would be unwarranted. Furthermore, the possibility of having to fund all or part of the needed highway improvements could easily erase any surplus.

Lagging real estate property tax receipts would be a further constraint significantly cutting into much of this surplus. Real property taxes from Brown & Root and the related residential properties account for over 41 percent of the anticipated additional revenue.

Real property is presently reassessed once every six years. Consequently, except for additional tax revenue from new construction, Northampton County's real property tax receipts are frozen for six years. This denies the county a substantial proportion of the revenues needed to finance additional services.

FIGURE 6-F

Comparison of Expected Additional Annual Revenues and Expenditures

Revenues	
Federal grants	\$ 38,100
State grants	394,500
Local Taxes & Fees	587,000
	<hr/>
TOTAL	\$ 1,019,700
Expenditures	
Annual school construction	
debt service	\$ 239,000
Annual school operating cost	623,000
General government operating	
expenses	51,500
	<hr/>
TOTAL	\$ 913,500

SOURCE: Urban Pathfinders, Inc.

On the other hand, operating costs for schools and general government functions increase annually due to inflationary pressures on wage and material costs. At present rates, this rise in expenditures could be as much as \$60,000 annually.

It also should be noted that the new residents, on the whole, would not pay for their full share of government expenditures.

Excluding tax revenue from Brown & Root, the 2,923 new residents would generate \$716,000 in annual Northampton County revenues, but require yearly county expenditures of \$914,700.

Based upon 1,100 new county employees this amounts to \$651 per workers in revenues versus \$832 in expenditures. Only Brown & Root executives and higher paid craftsmen would pay their share of county expenditures.

The estimated \$303,600 that Brown & Root would pay Northampton County in real estate and machinery and tool taxes would be sufficient to offset the deficit to Northampton County finances caused by the new workers and residents.

If Brown & Root increased its capital and equipment investments, and therefore its real and personal property taxes, or reduced its employment, the county would realize a financial benefit. On the other hand, if Brown & Root reduced its investments or increased its employment, the county could adversely be effected. As presently constituted, the Brown & Root proposal has no adverse impact on Northampton County's financial situation. If however, the company maintained capital investments at projected levels and raised employment to the range of 2,000 employees, the county would likely realize a net financial loss and be required to raise taxes generally.

SHORT TERM REVENUES AND EXPENDITURES

It is estimated that it would require approximately five years to fully implement the Brown & Root project and for the 2,923 permanent residents to settle in Northampton County. The following table shows average annual expenditures during the five year period.

The comparison assumes that 10 percent of the 2,923 permanent residents would move into Northampton County the first year and the remaining 90 percent are evenly distributed over the next four years. In addition, it assumes that relocatable classrooms costing only \$15,000 each are added to the school system each year until new schools or building additions can be provided.

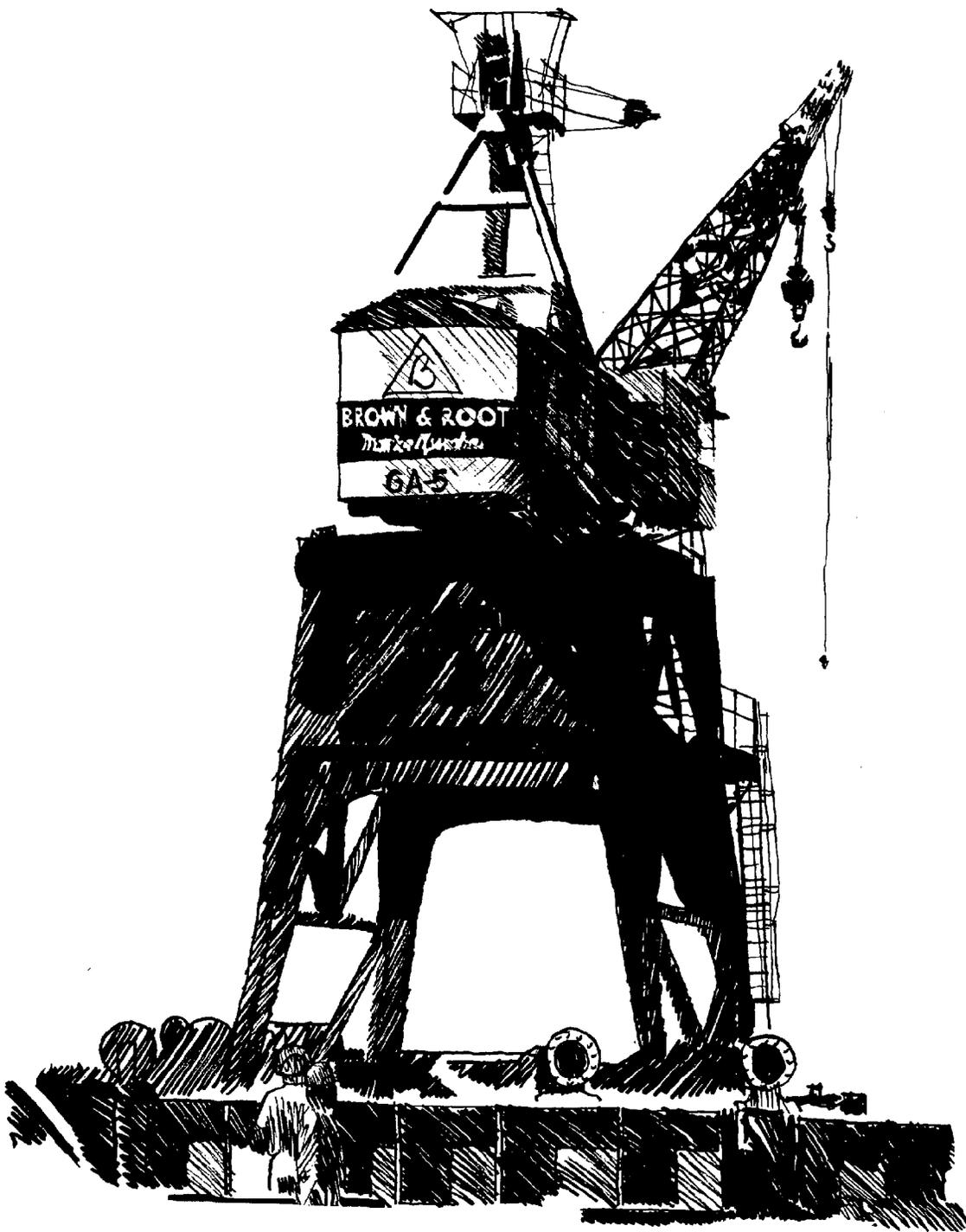
FIGURE 6-G  
Short Term Reveunes and Expenditures

<u>YEAR</u>	<u>REVENUES</u>	<u>EXPENDITURES</u>
1	\$ 239,000	\$ 111,800
2	459,000	324,000
3	659,000	455,700
4	842,300	628,100
5	1,019,700	760,000

SOURCE: Urban Pathfinders, Inc.

It appears apparent that revenues would likely exceed expenditures each year during the transition period. This would be due to the following factors:

1. Brown & Root would construct a significant proportion of its facility in the first year, thereby generating immediate and substantial local property tax revenue; and,
2. The minimum initial expenditure required for temporary classrooms.



CHAPTER SEVEN  
**CONCLUSIONS &  
RECOMMENDATIONS**

## CONCLUSIONS

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The previous six chapters have identified the significant impacts that Brown & Root's presence would likely have on Northampton County and its citizens. The impacts are numerous and complex, some are positive, some negative.

To make a decision on the Brown & Root rezoning request, it is necessary to weigh the varied impacts and decide "on the whole" if the advantages outweigh the disadvantages or if the reverse is true.

Most of the major impacts discussed previously can be reduced to the following four summary conclusions:

1. Brown & Root would increase job opportunities and stimulate county population growth.

Brown & Root would generate 1,700 new jobs in Northampton County, 1,500 through direct employment, and an additional 200 jobs due to increased business activity. This new employment in general would be year-round and well paying; two qualities not found in many of the county's existing jobs. Without Brown & Root, it is estimated that year-round employment in Northampton would decline from its present level of about 5,200 jobs to about 4,600 jobs by 1985. With Brown & Root, total 1985 employment would likely increase to 6,300 jobs.

As a result of this increased employment, the county population would also grow. Without Brown & Root, the county's 1985 population is expected to be 12,700, down from the current level of about 14,000. With Brown & Root, population would increase to about 16,000 persons.

These employment and population gains would have a direct and beneficial effect on a large number of existing county residents. In particular, many young people who would have left the county because of a lack of employment opportunity, would have the option of staying home. Adults

in existing jobs would have the option of joining Brown & Root at increased pay. Due to competition for skilled and trainable workers, many workers who work for other employers would also benefit from increased salaries. Workers in trade and service industries would benefit from better business and higher commissions. In all, perhaps as many as one-third of all existing workers would realize such benefits. On the other hand, retired persons, and persons not qualified to work for Brown & Root or in the other unaffected industries would not likely realize any wage benefit.

This overall economic benefit is judged to be significant, substantial and long term.

2. Brown & Root's presence would increase, but not adversely affect the county's budget.

Increased public services, principally education, due to population growth, would cost Northampton County an estimated \$914,000 annually, a 22 percent increase over the current budget level. Anticipated increases in revenues would offset the increased expenditures, making the Brown & Root project self-sufficient from a governmental standpoint. (This assumes no county cost for highway improvements). However, it should be noted that because of needed new school capacity, the county would be required to obligate itself to more than \$2,800,000 in additional long term school construction bonds.

3. Brown & Root would not likely create any serious environmental impacts.

As a result of Brown & Root induced development, both at its site and in the community in general, approximately 1,500 acres of open space would be converted to development. This would raise the percentage of developed land in the county from the existing level of 4.6 percent to 6 percent, not a significant change.

No serious air, water, or land pollution would be generated. Assuming all appropriate governmental regulations are followed.

The area of greatest concern is the possible groundwater draw-down in the vicinity of the Brown & Root site. Although not likely to be a problem, a program of on-site test wells should be required prior to any construction to validate this assumption.

4. Because of the rapid build up of operations, the community would feel significant and widespread disruption and in some cases personal hardship.

Brown & Root proposes to implement its project in a very short time period. It anticipates hiring by the second year of development 1,100 of its 1,500 ultimate workers. Necessarily, most of these workers would come from outside the county and many others would come from established Northampton employers. This rapid change in county life and sudden influx of new people, if not properly controlled, would likely cause serious problems in at least three basic areas.

#### HOUSING

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As many as 300 to 400 new housing units would be needed by the second year of Brown & Root's operations and a total of nearly 1,000 new units by the sixth year of operation. The county has a serious housing shortage at the present time and the additional Brown & Root induced requirement would likely push the situation to the crisis stage. Rapidly escalating rents, overcrowding, people living in campers, and widespread use of mobile homes would be some of the consequences. The most serious part of this crisis would likely last for at least five years.

#### EDUCATION

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Brown & Root related employment would add an estimated 717 new students to the county's school system (a 20 percent increase in total enrollment) within five years and perhaps one-third of that

by the second year. County schools are currently operating at capacity and such a substantial influx could seriously overcrowd the system. Relocatable classrooms and doubling up of facilities could be required until the county could construct additional permanent classroom space. Realistically, it would likely require several years to return the school system to its present balanced state. During the interim, the school system's ability to provide quality education could be adversely affected.

#### LABOR

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Even with the anticipated influx of new workers, Northampton would experience a serious labor shortage for a number of years. Since Brown & Root would pay better than average wages, it would likely attract many Northampton workers away from their existing employers. This would create difficulties within these businesses. Skilled or trainable workers in agriculture, food processing, transportation and construction are the most likely ones to be attracted to Brown & Root. In food processing and agriculture, the impact could be especially severe, perhaps to the point of disrupting operations for lack of supervisory personnel or trained equipment operators.

Assuming that Brown & Root implements its employment projections as presented, the projected labor shortage would likely last for five to seven years.

The above mentioned housing, education, and labor disruptions represent the most significant adverse impacts likely to occur due to the Brown & Root project.

In summary, Brown & Root would provide new jobs and increase the county's population and business activity, a long range benefit. In the process, however, and due principally to the suddenness of the implementation, Brown & Root would generate widespread community disruption lasting up to ten years, a significant adverse impact. In Urban Pathfinders' opinion, the disruptive impacts negate the economic benefits and make the Brown & Root proposal of very questionable value to Northampton County. However,

the disruptive impacts could be significantly reduced if the county and Brown & Root were to make a strong commitment to solve these problems before they occur. Under such circumstances, the employment and business benefits would give the Brown & Root proposal a clear advantage to the county and implementation could be recommended.

#### URBAN PATHFINDERS' RECOMMENDATIONS

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Urban Pathfinders recommends that Northampton County implement the Brown & Root proposal, but only on the condition that both the county and Brown & Root take strong action to smooth the transition period. Without such commitments, UPI recommends that the project not be implemented.

Essential actions which the county must commit itself to undertake as part of approving the Brown & Root rezoning include the following:

1. Develop a comprehensive planning program.

If Brown & Root is implemented, the county would be faced with substantial new private development and would need to expand its existing public services. Existing county planning techniques and land use ordinances are not designed to deal with these challenges and must be revised. Specific actions required include:

- a. Adoption of a long range countywide master plan: This document would provide standards and guidelines for controlling private development and designate the location, cost and priority of needed public improvement projects to service the expanding population.
- b. Revise zoning ordinance and subdivision regulations: Upon adoption of the master plan,

the county should revise its zoning ordinance and subdivision regulations. It is through these regulations that the county exercises legal control over private development.

- c. Establish annual capital improvements program: This program should identify by cost and priority all major county capital projects. It should cover at least a five year planning period, be revised annually and incorporated into the county's overall budget. This program would help conserve the county's financial resources.

2. Revise its long range educational master plan.

The County Board of Education must revise its existing master plan for expanding the county's school system to meet the anticipated population growth. This plan should include interim solutions to meet immediate needs (such as relocatable classrooms) as well as identify long range construction projects. The plan should address facilities, staff, and operations with special attention on funding requirements.

The revised educational plan must be developed concurrent with the county's master plan in order to insure that residential growth and school expansion are coordinated.

3. Revise property tax assessment practices.

It is current county policy to conduct a comprehensive property reassessment every six years. The last such assessment was conducted in 1971-72. During the six year cycle, new construction is assessed as it is built, but its assessment is adjusted downward to make it consistent with existing development. During the implementation of the Brown & Root project, this policy would deny the county significant new tax revenue needed to fund expanding services. A policy of annual property reassessment during at least the first ten years of Brown & Root development would protect existing county residents

from having to shoulder a disproportionately large share of expanding county expenditures.

4. A commitment and time schedule from the Commonwealth of Virginia for reconstruction of access routes to the Brown & Root property.

Routes 184 and 642 are not adequate as existing to handle the anticipated increase in traffic to the Brown & Root site. The county must secure a commitment from the state, or make arrangements with Brown & Root, to insure that these needed improvements are constructed before significant employment at the site begins.

Brown & Root commitments that the county must attach as binding conditions to approval of the rezoning include the following:

1. Zoning restrictions to be placed on the Hollywood Farm property.

In approving the industrial zoning for Brown & Root, the county must attach the following conditions:

- a. The zoning should clearly state the industrial activities to be permitted (fabrication) and clearly state that other uses are not permitted (petroleum processing).
- b. That employment at the site be limited, certainly to no more than 2,000 workers. As previously mentioned, the county's budget could be adversely affected if employment rose above 2,000 workers. The National Ocean Policy Study Group in its October 1974 report entitled North Sea Oil and Gas; Impact of Development on the Coastal Zone contains the following quote:

"Brown & Root, an American construction firm building production platforms, initially anticipated hiring 900 employees. Actual employment, however, soon grew to 3,000. The

company brought in instructors and established a welding school, but housing and other facilities could not be provided fast enough. Shortages of housing, skilled labor, berths in the harbors, and equipment have had an adverse impact on some of the older established industries."

c. Site plan review

The county's planning commission should be given the authority to review the actual development plans for the site to insure that all reasonable care has been taken in the site's layout. Specific items to be reviewed should include:

1. traffic and parking layout for adequacy and safety
2. conduct and review of test well program to insure adequacy of groundwater supply
3. drainage plans for adequacy of sedimentation measures
4. buffer zone for effectiveness.
5. protection of wetlands and shoreline
6. sewage disposal techniques for health and environmental protection
7. fuel or hazardous substances storage for safety
8. provision of emergency medical facilities for adequacy
9. such other provisions as the master plan and zoning ordinance may identify.

2. Provision by Brown & Root of interim worker housing.

A great deal of the adverse housing impact can be eliminated if Brown & Root provides temporary housing for its new workers until the local construction industry can provide sufficient permanent housing. Brown & Root should prepare such a plan concurrent with the development of the county's master plan. The plan should be approved by the planning commission before a county building permit is issued.

The following are examples of measures that Brown & Root could incorporate in its housing program. Brown & Root could establish and operate one or more mobile home parks. When they hire an out-of-county worker, he would be automatically assigned to a unit in the park. This assures the worker of a place to live when he arrives and keeps the worker out of the local rental market where he could adversely compete with existing residents. At such time, perhaps six months after arrival, when the worker's permanent housing is available, he would move out of the park and a new worker could move in and start the cycle over again. The Brown & Root mobile home park should provide necessary public facilities such as recreation to allow the county time to expand its public services.

At the conclusion of the transition period, perhaps after five to seven years, or when the potential for a housing crisis has passed, Brown & Root should be required to dismantle the mobile home park. At this point, Brown & Root might be willing to sell the depreciated but still useful units to the county or to non-profit groups for use in upgrading existing substandard housing in the county.

Brown & Root could accelerate the building of permanent housing by contracting directly with local builders for new housing in advance of its workers' arrival. With the sale of the homes guaranteed, the builder could immediately begin the process of subdivision approval, material ordering, labor scheduling and construction

financing approval. When the workers arrived in Northampton County, the homes would be ready for occupancy or well under construction. The workers would repurchase the homes from Brown & Root.

Other methods that Brown & Root could use for stimulating housing would be to increase its deposits in local banks to provide additional mortgage money, co-sign its worker's mortgage notes, and if local bank financing is exhausted, actually hold the worker's first trust.

The adequacy of the housing program should be reviewed and approved by the Planning Commission before a building permit is issued.

3. Conduct a job training program for local residents.

The more local residents are employed by Brown & Root, the fewer outsiders would be attracted to Northampton County. This reduces the impact on county services and housing and increases the economic benefit to existing citizens. To assist in this effort, Brown & Root should establish a job training program to qualify as many local residents for employment as possible. The training program should identify the trades or skills to be taught, the number of students accepted, commitments required of the students and responsibilities for administering and funding the overall program. This program could be conducted in cooperation with the county school system or the community college. Classes should be scheduled so that workers are trained and available when construction begins.

The adequacy of the training program should be reviewed and approved by the Board of Education and the Planning Commission before a building permit is issued.

Clearly, the county and Brown & Root must work closely together to fulfill their respective commitments.

The following schedule of actions should be taken to implement the recommendations.

1. Conduct Phase III of the Impact Study to insure maximum public awareness of the issues.

2. Draft industrial zoning district regulations for Brown & Root property based on above recommendations.
3. Render an official decision on the Brown & Root rezoning request.
4. After the zoning decision has been made, develop county comprehensive plan, revise the county's zoning ordinance and land use regulations and prepare a capital improvements program.
5. Concurrent with item 4, revise the county's educational master plan.
6. Secure state commitment on necessary highway improvements.
7. Review Brown & Root's housing and job training programs for consistency with the comprehensive plan. A Brown & Root building permit should not be issued until all of the above actions have been successfully accomplished.

Phase II Brown & Root Impact Study, Urban Pathfinders, Inc.

ADDENDUM I

Impact on Agriculture

This addendum summarizes the projected impacts of the proposed Brown & Root project on Northampton County agriculture. It presents in a single discussion, information contained in several sections of the Phase II report.

THE IMPORTANCE OF AGRICULTURE

Historically, agriculture has been the backbone of the Northampton economy. Agriculture currently provides 25 percent of the county's year-round employment. Overall the Northampton County farms are well run and efficient operations. In 1964, the county contained 315 farms averaging 203 acres in size; by 1969 the county contained 241 farms averaging 212 acres in size. In 1950, 2205 individuals were employed full time in agriculture, by 1972, only 1344 individuals were employed, a 39 percent decline. These trends toward increased farm productivity, consolidation, and mechanization coupled with declining farm employment are expected to continue.

THE BROWN & ROOT IMPACT ON AGRICULTURE

The Phase II report shows that if the Brown & Root project is implemented, its impacts would be significant and would affect all aspects of county life, including agriculture. The following four areas of impact deserve special attention with regard to agriculture.

1. Labor - Brown & Root would employ 1500 workers, mostly males, in a variety of manufacturing trades. Brown & Root would recruit most of its skilled workers from outside Northampton, but it would fill most of its unskilled jobs with local residents including persons currently employed on farms and in farm related industries such as food processing, farm supply and transportation. Brown & Root would offer these individuals higher wages and year-round work.

The result would likely be a serious labor shortage in agriculture and related industries lasting from five to seven years. The shortage could be severe enough to disrupt farm operations. Because of the competition for labor, farm wages would rise, the use of migrant workers may increase and some farmers may choose to switch from labor intensive crops such as vegetables to crops requiring less labor such as soybeans or grains.

In summary, farm owners and operators would likely suffer a significant negative impact due to the labor problem. On the other hand, farm workers would benefit from increased employment opportunities and higher wages due to increased demand for their services.

2. Ground Water - It is estimated that 4.427 billion gallons of water per year are needed to supply the current requirements of Northampton and Accomack Counties. Field irrigation uses about 1.356 billion gallons per year and food processing an additional 1.120 billion gallons. Collectively, these uses represent over 55 percent of the total two-county water requirement.

The Brown & Root plant and the increased population generated by Brown & Root are expected to require an additional .196 billion gallons per year, a 4.4 percent increase in water demand in the two counties.

Although the overall ground water supply is judged to be adequate to meet both present demand and the Brown & Root generated increase, the county should not permit Brown & Root to develop until an on-site testing program demonstrates no serious local water problem would result and county zoning regulations have been strengthened to deal with the expected additional residential development. Failure to do so could seriously aggravate existing localized water problems.

3. Farm Acreage - Brown & Root's development of its Hollywood Farm property plus the construction of homes to house new workers, would likely result in the loss of about 1500 acres of open space. If the 1500 acres are all farm property, the loss would be about 3 percent of the county's total farm acreage. However, any farmland lost would be developed because the owner willingly chose to do so, presumably for his financial benefit.
4. Railroad - The Penn Central Railroad provides an important transportation service. In 1972, nearly 5000 rail cars either terminated or originated on the Virginia Eastern Shore. Farmers and food processors are major uses of the railroad. For example, approximately 9 percent of the rail cars contained agricultural fertilizer which was shipped to the Shore in 1972. The Penn Central has proposed abandonment of rail service to the Eastern Shore. If this occurs, farmers would probably pay higher prices for fertilizer. Some food processing plants might be forced to close.

Several proposals have been brought forth to purchase the Penn Central lines and keep rail service to the Shore alive. Brown & Root estimates that it would require 300 rail cars annually, adding a small plus to the likelihood that a viable solution to keeping rail service alive can be found.

