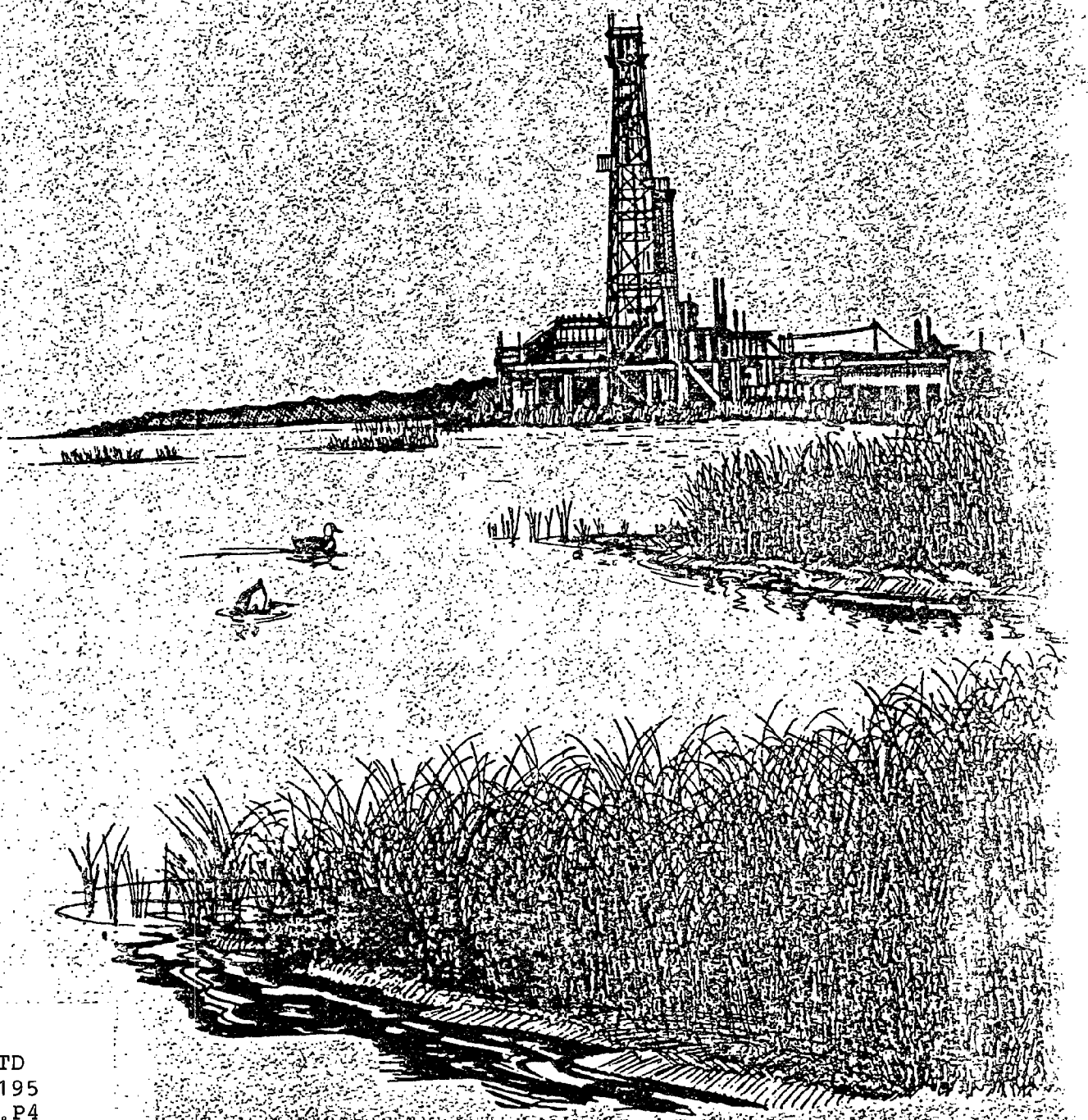
OFFSHORE OIL ONSHORE IMPACTS

Beaufort & Jasper Counties, S.C.



TD
195
.P4
O34
1981
c.2

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

BIBLIOGRAPHIC DATA SHEET	1. Report No.	2.	3. Recipient's Accession No.

4. Title and Subtitle

Offshore Oil - Onshore Impacts
Beaufort and Jasper Counties, South Carolina

5. Report Date

March 1981

6.

7. Author(s)

Lowcountry Council of Governments

8. Performing Organization Rept. No.

9. Performing Organization Name and Address

Lowcountry Council of Governments
Post Office Box 98
Yemassee, South Carolina 29945

10. Project/Task/Work Unit No.

11. Contract/Grant No.

CEIP-80-05,08

12. Sponsoring Organization Name and Address

National Oceanic and Atmospheric Administration
through the Office of the Governor, Division of
Natural Resources, Edgar A. Brown Building
Columbia, South Carolina 29201

13. Type of Report & Period Covered

FY 81 Final

14.

15. Supplementary Notes

16. Abstracts

This study analyzes and evaluates the oil and gas development activities which could occur along the southeastern South Carolina coast. Lower Beaufort and Jasper County energy corridor sites available for industry are discussed as well as the labor requirements of these industries and their associated growth impacts on community facilities. A framework for involving key public and private interests in a continuing planning and coordination program is presented.

17. Key Words and Document Analysis. 17a. Descriptors

17b. Identifiers/Open-Ended Terms

17c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
Available from: Lowcountry Council of Governments, Post Office Box 98, Yemassee, South Carolina 29945	UNCLASSIFIED	40
	20. Security Class (This Page) UNCLASSIFIED	22. Price

OFFSHORE OIL - ONSHORE IMPACTS
Beaufort & Jasper Counties, S.C.

U.S. DEPARTMENT OF COMMERCE NOAA
COASTAL SERVICES CENTER
2234 SOUTH HOBSON AVENUE
CHARLESTON, SC 29405-2413

Prepared by the

LOWCOUNTRY COUNCIL OF GOVERNMENTS

Planner-in-Charge
Joseph Noll,
Regional Planner

Stenographers
Lenora Davis
Doreen Plyler

Graphics
Janet Bowling
Judy Blankenship

AUG 25 1997

Property of CSC Library

The preparation of this report was financed in part through a Coastal Energy Impact Program Grant from the National Oceanic and Atmospheric Administration. CEIP-80-05,08.

LOWCOUNTRY COUNCIL OF GOVERNMENTS

BOARD OF DIRECTORS

Wyman D. Nettles, Chairman
William Hazel, Vice-Chairman
Eleanor H. Adams, Secretary
J. Patrick Vanderhoof, Treasurer

Harris Beach, Jr.
Thomas L. Berry
Leroy E. Browne
Charlie I. Crews
Gordon F. Craighead
William Hamilton
Joseph Kline
Henry C. Lawton, Sr.
Joseph McDomick
Harold S. McMillan
Isaiah Orr
J. Robert Peters, Jr.
Henry Robinson
Henry C. Simmons
J. C. Smoak
John Thomas
Fred S. Washington

STAFF

N. S. Thompson
Executive Director

John Allgood, Human Resources Director
Judy Blankenship, Draftsperson
Janet Bowling, Graphics Chief
Pat Crabtree, Public Information/EDA Planner
Phil Cromer, Energy Coordinator
Lenora Davis, Stenographer II
Rosemarie Fallon, Regional Planner II
Craig Hull, 208 Planner
Doreen Plyler, Stenographer I
Sue Scally, Aging Planner
Gloria Sholin, Finance Director
Marvile Thompson, Stenographer I
Hunter Walker, Public Safety Planner
Katherine Zook, Aging Accountant

March, 1981

TABLE OF CONTENTS

Page

INTRODUCTION....1

1. ENERGY CORRIDOR INDUSTRIAL SITES....3
   - Victoria Bluff....4
   - Chevron....4
   - Port Royal Seafood Park....4
   - Local Controls....6

2. FEDERAL AND STATE LAND USE CONTROLS....8
   - Bureau of the Interior....8
   - State Agencies....8

3. DEVELOPMENTAL TRENDS....10
   - Beaufort County's Growth Potential....10
   - Jasper County's Growth Potential....11
   - The Rental Market....12

4. LABOR REQUIREMENTS....14
   - Service Demands from Offshore Production....14
   - A Possible Energy Development Senario....17
   - District Impacts....18

5. COMMUNITY FACILITIES....19
   - Schools....19
   - Health Care....20
   - Highways....20
   - Airports....21
   - Railroads....21
   - Public Transportation....22
   - Water Quality Management....22
   - Water Supply Systems....23
   - Solid Waste Disposal....24
   - Fire Protection....25
   - Police....25
   - Recreation....25
   - Synopsis....26

6. LOCAL INVOLVEMENT....27

7. STANDARDS FOR ENERGY DEVELOPMENT....31
   - State and Federal Regulatory Controls....32
   - Mobile Home Controls....32

8. RAISING THE NEEDED REVENUE....34
   - User Charges....34
   - Taxes....34
   - CEIP Grants....34

CONCLUSION....35

References....36
Bibliography....37

LIST OF FIGURES

Page

Figure 1 - Proposed Target Areas for Sale #56.....2

Figure 2 - Energy Corridor Industrial Sites.....5

Figure 3 - Energy Development Corridor Future Land Uses - 1995.....7

LIST OF TABLES

Table 1 - Past and Present Populations, Future Projections - Beaufort.....10

Table 2 - Past and Present Populations, Future Projectons - Jasper.....11

Table 3 - Land Needs and Employment Impacts Associated with Various Onshore Oil and Gas Facilities.....16

Table 4 - Sample Impact Checklist.....30

INTRODUCTION

The stoppage of oil exports from Iran in 1973 and the 75 percent increase in gasoline prices by the end of 1974 underscores the vulnerability and dependence of the United States on imported oil from all foreign sources. President Carter, in his April 1979 Energy Message, set an unrealized goal for 1980 that our nation import only one-half of the 1979 rates. Development of east coast outer continental shelf resources will have a positive impact on domestic production and aid in accomplishing the goal of energy independence.

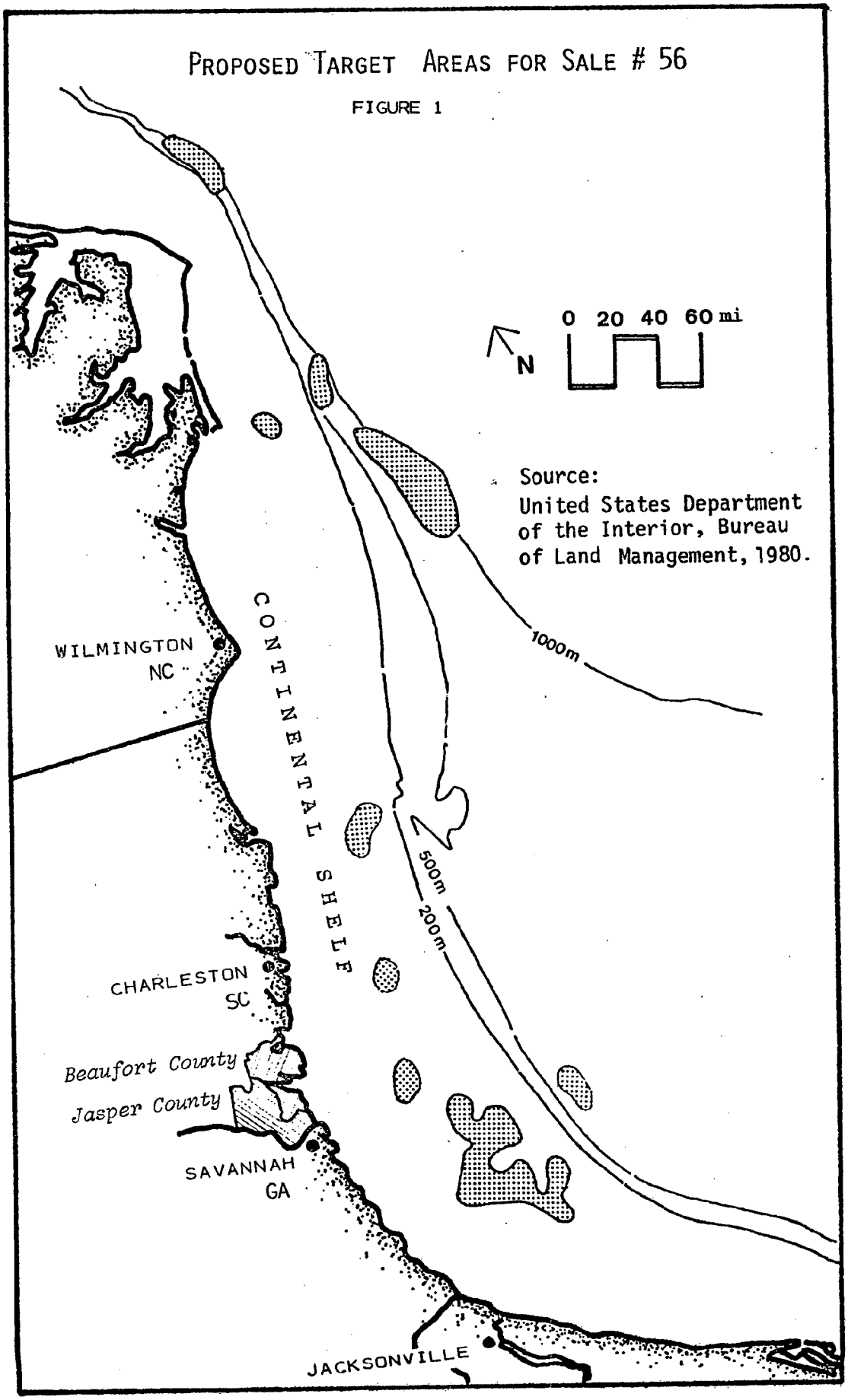
Activity in the search for oil and gas on the outer continental shelf (OCS) in the South Atlantic Region began in 1960 when geophysical surveys of the area were begun. In March 1978, the first lease sale, Sale 43, was held resulting in the drilling of six exploratory wells off the Florida and Georgia coasts by four oil companies. Although all were dry holes, many more wells will have to be drilled before the resource potential of the area is established.

The second South Atlantic lease sale, Sale 56, offers 286 tracts in federal waters off the coast of North Carolina, South Carolina, Georgia and Florida (Figure 1). Bids on tracts are scheduled to be opened in August, 1981. The Department of the Interior will make the decision to award a lease to the highest bidder after the Department has evaluated that bid in terms of its own appraisal of the tracts' value.

Exploratory drilling ordinarily starts in the more promising areas within a few months after the lease is issued. If a lease does prove productive, statistics show that the discovery usually will be made 1.5 to 4.5 years after the lease sale. Thus, the total time to achieve initial production would be 4 to 11 years. Peak production can be expected to be reached within another three years.

LOCAL IMPLICATIONS

If there is a major find, developmental activities could occur at a rapid rate along the southeastern coast of South Carolina. This study is particularly concerned with Beaufort County south of the Broad River and the lower third of Jasper County. This "energy corridor" is in a position to experience rapid population growth if continental shelf discoveries result in oil and gas facilities locating in the region. Because the impact area is primarily rural, the character and cohesion of both counties can be expected to be significantly altered. This report summarizes (1) the potential of existing industrial sites, (2) potential impacts associated with onshore support activities, and (3) recommendations for the development of a continuing planning, coordination and control program to enable the study area to respond to the management of these resources.


PROPOSED TARGET AREAS FOR SALE # 56
FIGURE 1
0 20 40 60 mi
N
Source:
United States Department of the Interior, Bureau of Land Management, 1980.
1000m
500m
200m
CONTINENTAL SHELF
WILMINGTON NC
CHARLESTON SC
Beaufort County
Jasper County
SAVANNAH GA
JACKSONVILLE

1. ENERGY CORRIDOR INDUSTRIAL SITES

VICTORIA BLUFF AND CHEVRON

Tracts available for OCS development in lower Beaufort and Jasper counties total two. Chicago Bridge and Iron (CBI) owns a 327 acre site in lower Beaufort County on Victoria Bluff (Figure 2) which will be used for the construction of a metal fabrication plant when market conditions are favorable. Plans for an industry employing 600 persons have been intensively studied.[1] With deepwater access, the size and weight limit of any industrial product can far exceed that of competing transportation modes. Although the site's development is not dependent on OCS discoveries, such finds would increase the options.

The Chevron Oil Company owns a 7000 acre site in lower Jasper County. No construction schedules have been released; oil companies are traditionally secretive about development plans because premature publicity would benefit speculators and competitors. A drilling rig service base, platform fabrication yard, pipe coating yard, gas processing plant or refinery are all possible uses. Only when it has been proven that this portion of the outer continental shelf contains commercial quantities of either oil or gas will OCS related development become a possibility of this site.

OTHER SITES

The State Ports Authority, formed to operate seaports in Georgetown, Charleston and Beaufort counties, controls a 175 acre tract adjacent to the CBI site. In order to maintain its option to develop a port at this deepwater location, this land will be left undeveloped.

In addition, a large-scale mariculture center with numerous experimental ponds is now being constructed near the CBI property. The center will serve as a Marine Resources Division field station where experimental results of laboratory work on fish and shellfish rearing will be tested on a commercial scale. Initial employment will be approximately eight.

In the remainder of Beaufort County, a seafood park site is located within the Town of Port Royal. This proposed facility is discussed in more detail on page 4. A 750 acre industrial park has been established five miles north of Port Royal. An oil or gas related industry, not dependent on water transportation, could easily locate here.

In the remainder of lower Jasper County, there is an 80 acre industrial park in Hardeeville. No other tracts have been designated industrial land although several other lower Jasper County industrial sites are listed in the South Carolina State Ports Authority Management Plan. The owners of these undeveloped parcels have indicated a willingness to sell to a suitable bidder. Until offshore oil or gas development appears feasible, however, the status of these tracts of land is not expected to change.

VICTORIA BLUFF SITE DETAILED

Victoria Bluff lies on the outside of a bend in the Colleton River where deep water has eroded into the land. This has created a 20 to 25 foot bluff immediately adjacent to a 25-foot-deep river channel - a unique combination on the marshy southeastern coast.

The Chicago Bridge and Iron facility was planned for the primary manufacture of liquified natural gas (LNG) tanks which have an inside diameter of 120 feet and a weight of up to 1,000 tons. The size and weight of the containers prohibits the use of any transportation mode except water. Although the market for LNG tanks has declined in recent years, other plate products which could be produced at this facility include: petroleum process containers, highway tunnel liners and oil rig assemblies. The fabrication received by rail, truck or barge and delivered to the proposed facility would be cut to size, formed and assembled by welding into completed tanks or other large metal containers. The finished products would be shipped by water for use at other locations.

Industrial development will be confined to a maximum of 145 acres, with 140 acres maintained in its natural state as a buffer zone, 30 acres used for disposal of dredged material, and 12 acres retained for access and utility rights-of-way.

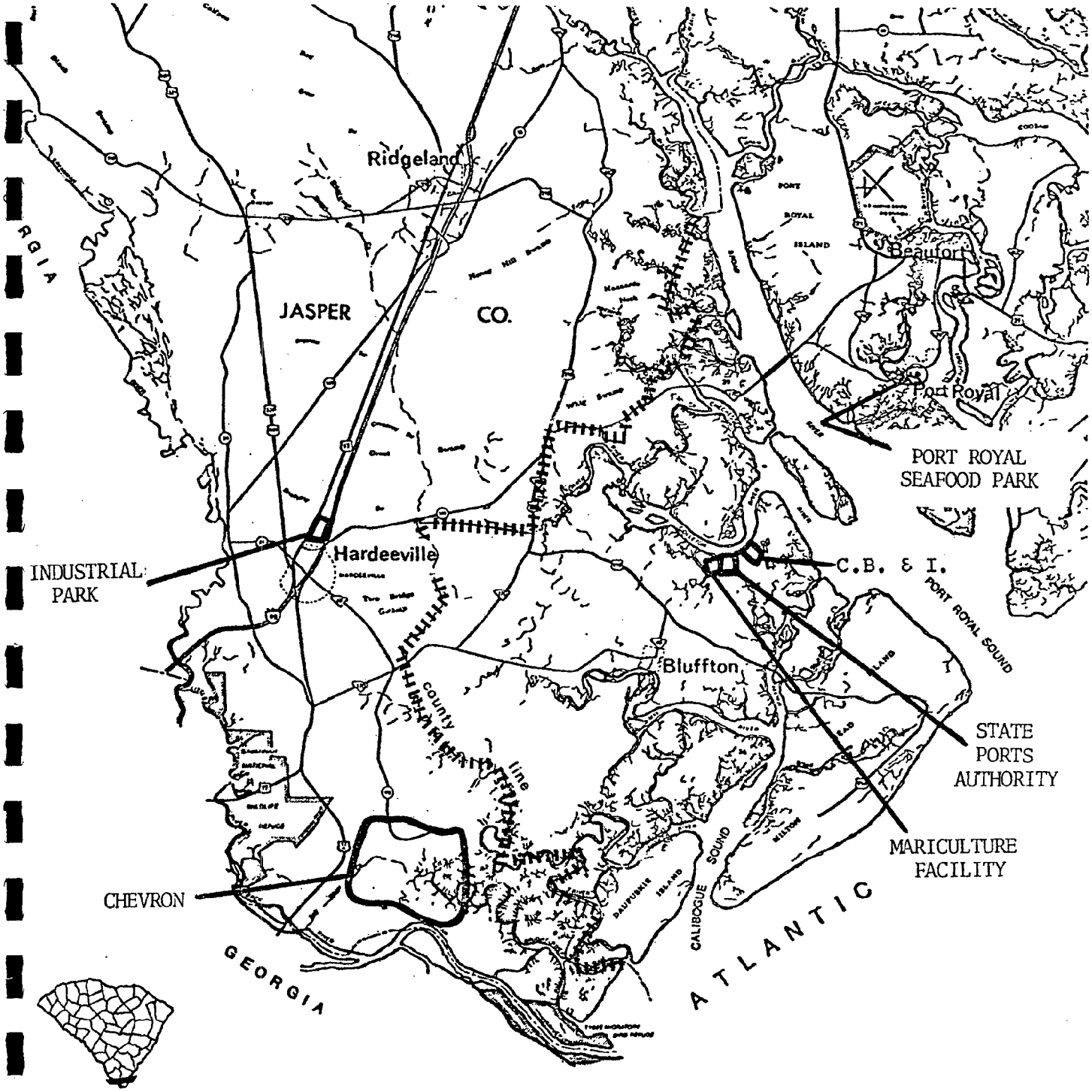
CHEVRON SITE DETAILED

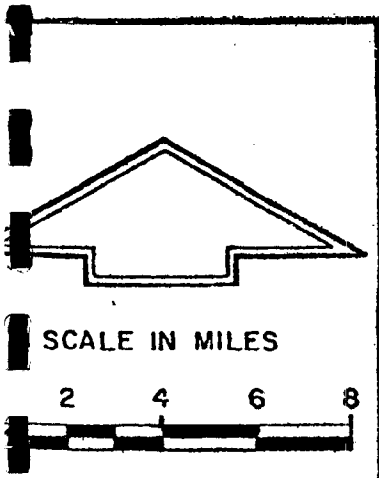
The leading candidate for energy related development is the 7000 acre Chevron site, located in wetlands and marginal residential lands adjacent to the Savannah River. Chevron has indicated that this land is being held in the event that substantial oil or gas discoveries are made off the South Carolina/Georgia coast. Because of the site size and coastal location, the local people assume that a refinery will be constructed here. Of the various options, only a refinery, with typical employment of around 400, would have a long term social and economic impact on the region.

PORT ROYAL SEAFOOD PARK

The long-proposed Port Royal Seafood Industrial Park, although not directly connected with OCS oil and gas development, is also included in the listing of industrial lands. This project is projected to increase the competiveness of the local seafood firms, presently hampered by inefficient seafood handling, transportation, and storage facilities. Cold storage, marine repair and seafood processing capability will be obtained at this site, and over 235 new jobs are expected to be created.

The success of the industry is dependent on a reliable catch. Commercial, recreational and subsistence fishing and shellfish gathering will undoubtedly be affected if oil from drill site accidents, tanker accidents, and pipeline failures washes into estuaries. Impacts from oil spills, the most common cause of OCS environmental pollution, depend upon wind and current conditions,





ENERGY CORRIDOR INDUSTRIAL SITES

FIGURE 2

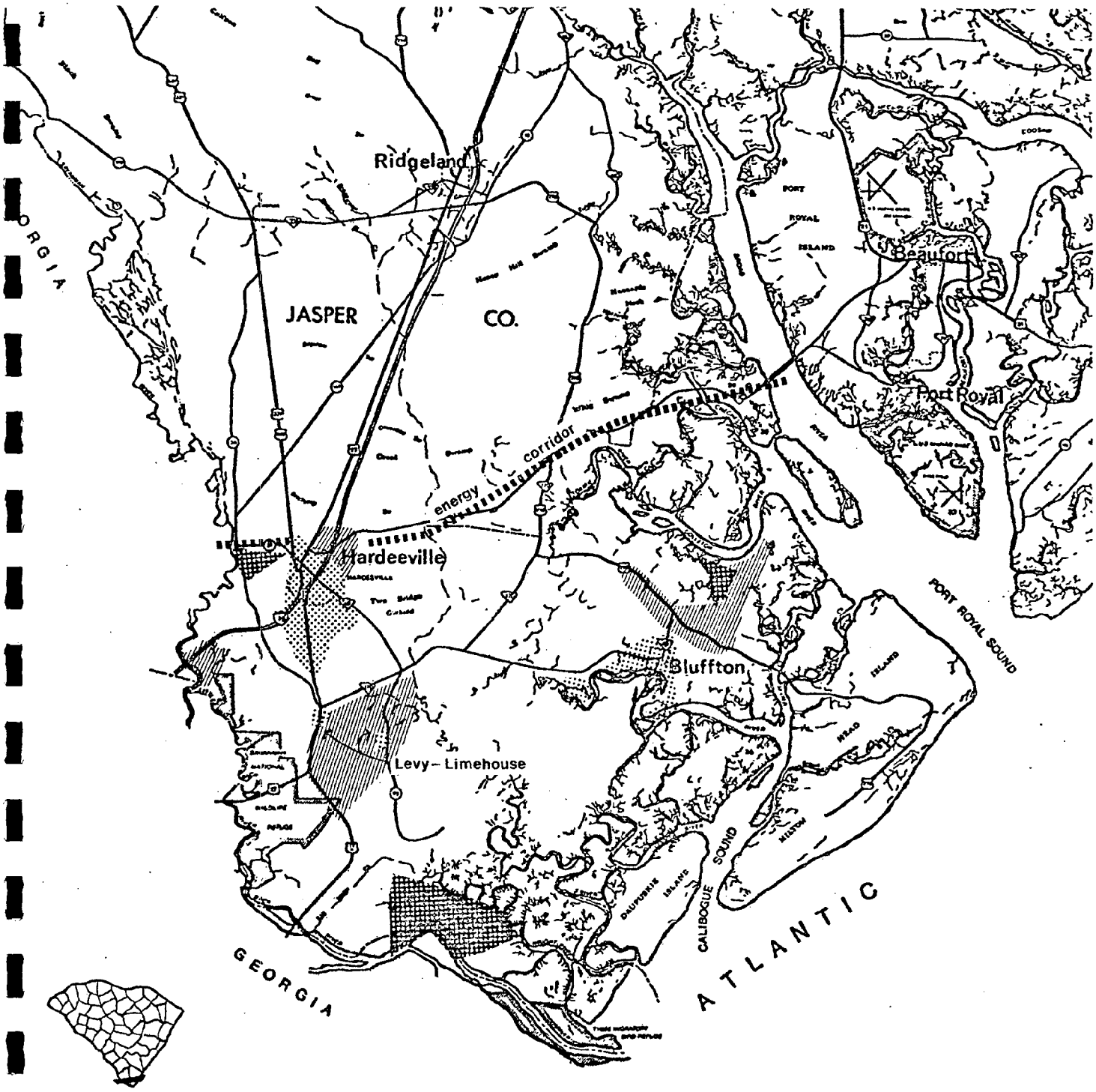
LOWCOUNTRY COUNCIL OF GOVERNMENTS

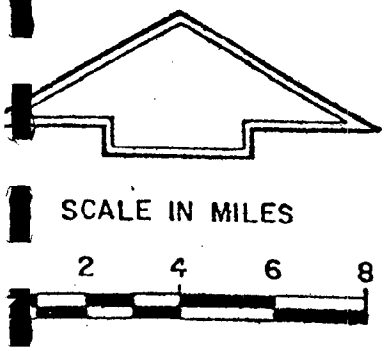
duration of the spill, weathering of oil prior to reaching coastal areas, and the effectiveness of mitigating measures. Within the Beaufort/Jasper Study Area, the sale 56 EIS rates the potential risks as "minor".

LOCAL CONTROLS

The CBI vicinity is not presently zoned, although it does come under the Beaufort County Development Standards Ordinance as it relates to district and subdivision standards. The area is designated as a potential industrial site in two county development plans (See Figure 3) and as having economic development potential in a third. No updates have been made to reflect CBI's construction ready status.

The Chevron Oil-Refinery Area in Jasper County is judged "suitable" for economic development potential in a 1974 plan and as a potential industrial site in a 1973 study. The area is unzoned, but will be covered by the proposed Jasper County Development Standards Ordinance if it is adopted by Jasper County Council.





ENERGY DEVELOPMENT CORRIDOR FUTURE LAND USES 1995

FIGURE 3

Industrial

Residential

Economic Development Potential

Source:
Beaufort and Jasper County Land Development Plans 1972, 1974, 1978

LOWCOUNTRY COUNCIL OF GOVERNMENTS

2. FEDERAL AND STATE LAND USE CONTROLS

BUREAU OF THE INTERIOR

In 1953, Congress enacted the Outer Continental Shelf Lands Act, establishing the basic administrative framework for offshore oil development. The act vested administrative authority in the Secretary of the Interior, who has delegated this authority to two agencies of the Interior Department; The Bureau of Land Management (BLM), which leases offshore tracts of the oil companies; and the U. S. Geological Survey (USGS), which regulates offshore operations after a lease is signed.

The Department of the Interior solicits the views and recommendations of state agencies, local governments, public interest groups, industries and the general public in identifying potential lease areas. Public hearings are held following the initial selection of lease tracts to determine the scope of issues to be discussed in the environmental impact statement. A public hearing is also held following the publication of the draft Environmental Impact Statement (EIS). The final EIS is prepared after comments on the draft are considered and testimony from the hearing is analyzed. This document is then made available to the public as well as to the Secretary of the Interior for consideration prior to his decision on whether or not to hold the sale.

STATE AGENCIES

The primary contact in South Carolina is through the Office of the Governor, Division of Natural Resources. The state's representative to the National OCS advisory board, as well as the OCS technical studies representative provide input to formulation of BLM policies and plans.

The South Carolina Coastal Council, established in 1977, is the state agency responsible for developing a comprehensive management plan to protect the South Carolina coast from destructive change as well as to foster viable development. Although lease lands are in federal ownership, all offshore activities have the potential to affect Carolina coastal resources. The Secretary of the Interior can not grant any license or permit for OCS operations unless the Coastal Council concurs. The Coastal Council also exercises permitting power out to the three mile state limit of jurisdiction and inland to the mean high water mark, including wetlands above mean high water. OCS activity such as pipeline corridors or new docks fall under the authority of the Council.

Sensitive Areas - Nearly any large tracts of land in Southern Beaufort and Jasper counties contain areas of wetlands. These "sensitive areas" come under federal protection as a result of the Coastal Zone Management Act of 1972.

Within the state, this program, Act 123 of 1977, is administered by the South Carolina Coastal Council which has been given the task of protecting the sensitive areas of the coast.

3. DEVELOPMENTAL TRENDS

The rate of growth is the most important factor in estimating new demands on public and private community services and facilities. Studies have shown that a population growth of 10 percent per year will severely strain a community's ability to provide an adequate level of social services.[2] Although OCS generated population growth in the Savannah Area is expected to be 1,800 annually, (less than one percent a year), there are often imbalances between the communities in which the OCS-generated industrial facilities are located and the communities where the new residents reside. Small towns such as Bluffton and Hardeeville, which receive a relatively small spillover of new residents, can be greatly affected.

To illustrate the point, the towns of Bluffton and Hardeeville contain 521 and 1,200 residents respectively. If only 20 percent of Savannah's OCS population is attracted to the outdoor amenities of rural South Carolina, existing facility capacities will in many cases be over-extended.[3] The cost of improvements, such as new schools and water systems is the main financial problem facing the towns. Such improvements cannot be charged directly to the oil companies because the improvements will benefit the entire community.

BEAUFORT COUNTY'S GROWTH POTENTIAL

Beaufort County has a current population of approximately 66,400. This is an approximate 30 percent increase from the 1970 total. The Bluffton division has grown at the same rate, from 2700 in 1970 to 3500 in the 1980 projection. Future projections give the county a 79,000 population in 1990, a 19 percent increase. The Bluffton division is expected to increase 31 percent to 4,643.

TABLE 1

PAST AND PRESENT POPULATIONS, FUTURE PROJECTIONS
BEAUFORT COUNTY

1960	1970	1977	1980	1990	1995	2000
44,187	51,343	61,822	66,433	78,992	85,831	92,393

Source: Beaufort County Joint Planning Commission, August, 1977.

Beaufort County is projected to need 4400 additional housing units by 1985, and an additional 4400 by 1995. Building permits issued during the 1977-1979 period totaled 4,721, paced ahead of these requirements. In addition, new mobile home units coming into the county totaled approximately 1,100. The Bluffton area increased by 211 housing units, which also exceeded the housing stock needed to meet the requirements of projected future growth.

In lower Beaufort County, 14 subdivisions have been established in the Bluffton vicinity, the most easily developable area from a soils and access point of view outside of Hilton Head. The housing market within the town remains very tight, however. The price of the new homes average $50,000 - 60,000, affordable by those looking for retirement and second homes, but not

As mandated in the act, the Council has direct authority to deny or issue permits in "critical areas": waters, wetlands, beaches or primary sand dunes. No person may legally fill, remove, dredge, drain or erect any structure on, or in any way alter any critical area without such approval. The Council advises all local governments and potential applicants to directly contact the Council in instances where a project may infringe on these areas. Staff will then verify, with an on-site visit if necessary, whether or not the proposed activity would fall within the critical areas and thus require a permit. While the state exercises absolute control over such areas, municipalities have planning tools such as zoning development standards and subdivision regulations within their corporate limits. It is imperative that to best coordinate efforts, local land use plans and controls reflect federal and state objectives in these critical areas.

Estuarine Waters - The South Carolina Department of Health and Environmental Control is the state agency responsible for water quality monitoring and protection. The Coastal Council has the authority to review and must also certify any discharge permit which would affect the critical areas. Discharge of treated waste into the streams surrounding the CBI site has, for example, the potential to violate the high quality standards of the estuary. Pollution from septic tank seepage and soil erosion can also reduce the marketability of shellfish in these waters. Adoption of Development Standards Ordinances by Jasper County and the enforcement of sanitary waste system and site alteration provisions by both counties will greatly reduce the chances of point and non-point sources of pollution.

suited to the needs of Hilton Head construction or service workers. As a result, mobile home parks have become an attractive alternative. Two have recently been established outside of Bluffton. Growth of parks has also been rapid in Northern Hilton Head where four more have been located.

Although the desirability of easy access to shopping and Hilton Head/ Savannah amenities has limited the establishment of new subdivisions to the Bluffton-U.S. 278 corridor, other areas are available. Prichardville, an area with elevations averaging a flood-proof 25 feet, has potential for low cost residential development. Waterlines could easily be extended from the Bluffton system six miles to the East. Septic tanks would be required for sewage disposal.

Growth Potential with Energy Development- Beaufort County, with the growth of energy dependent industries within the county or in the neighboring port of Savannah, could easily increase its yearly growth rate by an additional five percent. If oil or gas exploration activity begins in 1982 following lease sales in 1981, the following projections can be made:

1980	1985	1990
66,433	83,000	114,200
(base figure)	(16,900 increase)	(47,800 increase)

This estimated rate of growth far exceeds current county housing construction rates; the Bluffton Area housing increase of 211 units is primarily because of the resort oriented planned unit development of Moss Creek. This corner of the county is undoubtedly very short of both purchase and rental units available to assimilate new growth.

JASPER COUNTY'S 1980-1985 GROWTH POTENTIAL

Jasper County has an estimated current population of approximately 14,700. This estimate represents a 24 percent increase over Jasper County's 1970 population. The South Carolina Division of Research and Statistical Services latest population projections for Jasper County's population, in five year increments through the year 2000 are listed in Table 2.

TABLE 2

PAST AND PRESENT POPULATIONS, FUTURE PROJECTIONS
JASPER COUNTY

1960[1]	1970[1]	1977[2]	1979[3]	1980[2]	1985[2]	1990[2]	1995[2]	2000[2]
12,237	11,885	13,700	14,400	14,700	16,100	17,400	18,700	20,000

1 - U. S. Bureau of the Census.
2 - S. C. Division of Research and Statistical Services.
3 - LCOG Estimate.

Based on the County's projected population for 1990, an assessment can be made concerning the number of housing units that will probably be needed to accomodate Jasper's 1990 population. With a population increase of 2700 people and an average household size of 3.2 persons, Jasper County will need about 850 new housing units by 1990.

Building permit data indicates that for the past three years, new units have been constructed at a rate of about 120 per year. Because only 850 units will be needed to handle the expected increase in population, this rate would enable the replacement of many substandard units.

The majority of lower Jasper County's well drained land suitable for home sites is confined to an eight by two mile segment along the western edge of the county. Four subdivisions have been begun in this area, Hardeeville and south. The price of new units averages $20,000. Two mobile home parks have also been established. Rental properties in Hardeeville are, however, both scarce and expensive. Levy-Limehouse, with about 30 residences, is the only community in this extremely rural corner of the county.

Growth Potential with Energy Development - If it is assumed that because of energy related industry locating in the county by 1982, Jasper County's population will increase at an additional rate of 5 percent a year, the following changes are forecast:

1980	1985	1990
14,700	18,800	23,900
(Base figure)	(4,100 increase)	(9,200 increase)

A doubling of Jasper County's present building rate, with emphasis on rental housing, will be required to meet the need for an additional 2,875 units by 1990.

THE RENTAL MARKET

It is assumed from the Brunswick example that the housing needs of the energy production related population will be primarily in apartment units rather than single-family residences. A 1979 Brunswick, Georgia study, An Analysis of Community Impacts Resulting from the Development of Onshore Support Facilities for Offshore Energy Exploration, estimated that 90 percent of workers migrating to the area will rent lodging facilities.

Even if the number of housing starts can be increased to meet the additional units needed to accomodate an accelerated population growth, the mix of unit types has been less than optimal. No multifamily rental units were constructed from 1977-1979 in the Bluffton area, and the Hardeeville vicinity added 16. This represents only four percent of the 356 total units, in contrast to 12 percent district wide. Thus, rental opportunities have decreased relative to the area's total housing stock, which is exactly the opposite of the requirements of temporary construction workers and their families.

As a related concern, in addition to the unsatisfactory mix of rental units, a "sprawl" type of development is evident in both lower Beaufort and Jasper counties. Many of the new subdivisions are located in rural areas where basic community facilities and services are lacking. Sewer, water and fire protection are extremely costly in these situations and service extensions without annexations are doubtful. The encouragement by county and areawide agencies of multifamily rental projects with smaller demands on service extensions per unit would seem to be the best method to reduce capital and operating expenditures. This would, at the same time, increase residential choices for a potential influx of temporary and permanent workers.

4. LABOR REQUIREMENTS

SERVICE DEMANDS FROM OFFSHORE PRODUCTION

Temporary Support Bases - Tenneco, the first oil company to drill in the Southeast Georgia Embayment, chose Savannah as its support base for Sale 43 operations. A seven-acre marina served one offshore drilling rig and included a 500 foot frontage on the Savannah River, temporary warehousing for dry storage, loading cranes, railroad sidings, as well as berthage for two 200 foot supply boats. For a similar development in Brunswick, the Brunswick-Glynn County Joint Planning Commission study estimated that total employment will increase by 152 new jobs, both primary and secondary, for support base activities. Fifty-six percent (85) of these will be filled with local labor. Of the 67 workers migrating to the area, it was estimated that 78 percent (52) of these will be single, and the remaining 15 will bring dependants. Of the 52 single persons, about half will be boat crew members and will be berthed aboard the supply boats. The others will rent efficiencies or small apartments. Of the 15 families, it was assumed that only 25 percent will buy homes, the remainder will rent lodging facilities.

TYPE	INCREASED DEMAND
Single-Family Housing	4 Units
Apartment/Efficiencies or Housing Rentals	38 Units
Total	42 Units

It should be noted that temporary supply bases require a relatively small support staff compared to the scale of development if economically recoverable oil or gas reserves are found. If the USGS resource estimates are correct, increases in both local employment and residential development for the Beaufort and Jasper Energy corridor are virtually assured. Among the facilities that could locate in the area, depending on the nature and magnitude of an oil or gas find, are:

- Additional temporary support base facilities
- Permanent Service Bases
- Steel Platform Fabrication Yards
- Gas Processing and Treatment Plants
- Refineries

The impacts described on the next page and on Table 3 associated with these activities vary significantly in magnitude.

Permanent Support Bases - As with temporary bases, the siting of permanent bases is influenced by distance, cost, land availability, public attitude, available harbor facilities and community facilities. The permanent service base performs essentially the same functions as the temporary base. The principle differences are size, intensity of activity and ownership.

A typical permanent base will require 50 acres of waterfront land with 200 feet of wharf for each rig or platform serviced. In contrast to the short-term lease managements of the temporary support base, a permanent base requires land purchase by the oil company or a long term lease agreement. For each offshore platform engaged in drillings, 50 to 60 service base jobs would be provided. Approximately half of these would be filled from the local labor force.

Platform Fabrication Yards - A fabrication yard will generally only be established after a significant find has been made, its size has been determined and a development schedule has been set. A critical requirement is the direct and unobstructed access to the ocean with a channel depth of 15 to 30 feet.

Technically, the amount of land required for a steel platform fabrication yard depends on the maximum number of platforms likely to be constructed at any one time during the life of the facility. A general range is 200 to 600 acres with 50 percent of the work force employed as welders and shipfitters. Some fabricating companies use training programs at local schools to recruit and train unskilled labor.

Gas Processing and Treatment Plants - If a commercially valuable natural gas find is made offshore, the construction of one or more gas plants is virtually assured. These facilities are designed to recover valuable hydrocarbons and remove impurities from the gas stream. A waterfront location is not required, but cooling water, usually less than 200,000 gallons per day, must be available. The gas plant product can be transported by rail, truck or pipeline. A typical 50 to 75 acre plant would employ 45-55 people in operations and maintenance. The peak construction force could range up to 500 people, with the majority of the construction workers being hired from the local labor market.

Oil Refineries - A refinery consists of a series of units designed to produce a number of petroleum products by physically and chemically altering all or part of the crude oil stream.

Only when actual production rates have been determined will enough information be available to accurately assess the need for an OCS-related refinery in a region. The earliest a new refinery could be in operation is eight years after the first lease sale.

This industry prefers a site close to, but not actually in, a major urban area (where congestion might restrict expansion). A new domestic refinery is likely to require on the order of 1,000 to 1,500 acres of clear, flat, industrially zoned land.

Total direct employment for an average size refinery is approximately 500 people. Roughly, 80 percent of the work force can be hired from the local labor pool because most employees receive their training on-the-job.

TABLE 3

LAND NEEDS AND EMPLOYMENT IMPACTS ASSOCIATED

WITH VARIOUS ONSHORE OIL AND GAS FACILITIES

FACILITIES	LAND REQUIREMENTS (IN ACRES	AVERAGE NUMBER OF EMPLOYEES	ADDITIONAL EMPLOYMENT DURING CONSTRUCTION	OFFSHORE EMPLOYMENT
Development Drilling				200 per platform
Additional Temporary Support Base Facilities	5-10	45 per rig		
Permanent Service Base	50-75	50-60 per platform		
Steel Platform Fabrication Yards	200-1000	250-550	500+	
Concrete Platform Fabrication Yards	Min. of 50 per platform	350-450	600-1200	
Steel Platform Installation Service Bases	.5	25		100 (constr.)
Pipelines and Landfalls	40 (for a pump station)	20		250-300 (constr.)
Pipeline Installation Service Bases	5	25		
Pipe Coating Yards	100-150	100-200	3500	
Partial Processing Facilities	15 per 100,000 gal. processed	10	150	
Gas Processing and Treatment Plants	50-75	45-55	500	
Marine Terminals	30	10-90	560	
Refineries	1000-1500	Varies significantly	varies significantly	

TABLE 1

In general, a refinery takes three years to construct with temporary housing for the workers provided by the contracting companies. The total number of employees can vary from 1800 to 2200.

Special requirements include water transport as close as possible to the site with a heavy rail spur to carry large facility components to their final location. Fresh water needs of 5 to 15 million gallons of water per day could be reduced by using brackish or saltwater for cooling. There is a concern in neighboring Chatham County that heavy pumping from the aquifer could cause salt water contamination of the area's drinking supply. Treated water from the Savannah River is currently being used by Savannah's Union Camp Paper Mill, reducing groundwater consumption by a million gallons per day.

Two refineries to employ a total of 300 are already being planned in the northwest quadrant of Chatham County, in which Savannah is located. Ground will be turned for the Carolina Refinery possibly as soon as March, 1981. The Southland Oil Company plant is slated for construction as soon as a contract for crude oil supplies is secured. North Sea oil will be processed at these locations, but if OCS oil is discovered, the potential exists for expansion.

A POSSIBLE ENERGY DEVELOPMENT SENARIO

The U. S. Geological Survey (USGS) has estimated that there are 1.4 billion barrels of oil and 2.5 trillion cubic feet of natural gas in the lease sale #56 area; and that total development of these resources will require 101 exploratory wells, 56 production platforms, and 1,299 development wells. It is assumed that oil and gas production will be gathered from offshore production areas and transported to shore through trunk pipelines. Up to four such pipelines are projected.[4]

Additional assumptions include the use of 2 - 7 temporary and 2 - 8 permanent service bases, and construction of up to two gas processing plants. The development of oil refinery sites in the local region is assumed, although no totals are given. Based on interviews with government officials and oil and gas industry representatives, the following is considered to be a likely on-shore development senario if economically recoverable oil and gas deposits are found off the South Carolina coast.

Temporary Support Facilities - No facilities for this activity exist in the Beaufort-Jasper energy corridor. The docks at Port Royal are not large enough for the demands of the 200-foot crew boats and future industrial related expansion will be confined to meeting the requirements of the coastal fishing industry. A State Ports Authority site near Victoria Bluff has good natural deep water access and has potential for a base facility in the long-term. For the present, the port of Savannah will serve as the support facility for all local drilling activity.

Gas Treatment Plant - A gas treatment plant designed to remove impurities from the raw gas stream represents one of several onshore facilities

presently suited to the Chevron site. Gas must be discovered in sufficient quantity to justify the construction of a pipeline to the plant. If oil is discovered off the South Carolina or Georgia coasts, however, it should not be assumed that the two Chatham County refineries will have sufficient capacity to handle the new supply. A gas treatment plant facility represents the minimal level of employment growth which is projected for a district site.

Metal Fabrication - The Chicago Bridge and Iron plant at Victoria Bluff will be constructed as soon as a contract for metal fabrication can be secured. The deepwater site could have attraction for an OCS industry such as a platform yard which would employ 350 to 450 persons. Although it is presently anticipated that steel platforms will be towed to the Carolina coast from outside; a discovery larger than current estimates predict would increase the liklihood of such a plant being constructed in the local area.

DISTRICT IMPACTS

The employment growth associated with the gas treatment and fabrication plants is estimated for the Beaufort-Jasper Energy Corridor at approximately 550 permanent jobs, and 900 temporary jobs during the construction phase (See Table 3). Using these employment figures as a base, estimates regarding associated population growth can be made. If it is assumed that: (1) 50 percent of the local industrial jobs will be filled through immigration, (2) 20 percent of direct support and 50 percent of secondary workers have families, (3) the ratio of secondary employment to direct employment will be about 1.0, and (4) average family size is 3.2, the population growth attributable to oil and gas development within the energy corridor could be between 1,500 and 2,000 people, about half of whom would become permanent residents of the study area.[5]

Sudden growth of this magnitude will create problems for existing service delivery systems and facilities. The most significant impacts that could occur are discussed in the following chapter.

5. COMMUNITY FACILITIES

Both Beaufort and Jasper counties are in a position to benefit from OCS industry. However, activities associated with new development can be detrimental to communities within the Energy Corridor if not properly anticipated and planned for.

Local concerns over loss of desirable community characteristics brought about by energy-related population growth include: (1) sharply rising prices of housing; (2) physical facilities - sewer, water, and education which may not be able to meet the needs of new residents; (3) demands for health care, counseling and other social services and (4) the possibility of increased public disturbances created by large influxes of temporary, highly paid workers.

In contract, top-ranked considerations for manufacturing firms which wish to locate within an area are in descending order of importance; (1) good housing for production workers; (2) good medical services; (3) streets safe from crime both day and night; and (4) good elementary and high schools.[6]

All of the following Beaufort and Jasper county facilities and resources will be affected to a greater or lesser degree by energy related industry. For some, such as schools, (once the plant's employment needs are known) a cost figure can be generated by multiplying the county per-pupil expenditure by an assumed number of new students. The cost to improve highways can also be estimated once the access routes and traffic levels are known and a construction schedule has been determined. Broader-based services such as fire protection and hospital facilities are more difficult to calculate — both deal with levels of service rather than fixed needs.

SCHOOLS

Jasper County - In lower Jasper County, existing space needs are currently being met, but only marginally at West Hardeeville High. The school cannot be expected to meet the space requirements of the population projected by 1984-1985.[7] Any short-term OCS impacts will aggravate the problem and increase the urgency of a capital improvements program.

Hardeeville Elementary is in poor condition and is also at the limits of its capacity. The Jasper County Public Facilities Plan recommends the complete replacement of this structure. The existing site is recommended for the new building, but could shift if the center of population moves toward Levy-Limehouse.

Beaufort County - A new high school is planned for lower Beaufort County which will be able to absorb anticipated 15 - 18 year old population as well as an OCS related influx of 200 - 300 school aged children. However, additional elementary aged children will present problems to the two overcrowded elementary schools at Bluffton and Hilton Head. Non-mandated programs such as art, music, gifted and talented classes and salary increases may be reduced in order to absorb this additional growth. The Beaufort County tax limitation ordinance limiting yearly budget increases to 1.2 x the yearly inflationary factor limits the ability of the school system to respond to rapid change in enrollments.

Technical Schools - One factor reduces the positive impact of the energy-related development on the Beaufort County economy; there are relatively few skilled construction workers in the local labor force. For example, a 1973 Clemson Study estimated that 150 welders will be employed for metal fabrication at Victoria Bluff. Training programs can be instituted at the area's only technical school, Beaufort Technical College, when the go-ahead for plant construction is given. Assuming that additional state training money can be secured, it is estimated that enough welders can be trained to meet the gearing up and full demands of the industry. It is still expected that because of the city's proximity, a significant portion of the energy corridors skilled labor force will commute from Savannah, Georgia.

HEALTH CARE

Any population increase in Southern Beaufort and Jasper counties would be divided among the four Savannah hospitals as well as Beaufort Memorial, the Naval Hospital, Hilton Head Hospital, and Jasper County General Hospital. Beaufort Memorial alone has the capacity to handle an additional service population of five to ten thousand. Some delays in the scheduling of electric surgery may occur with a new population load, but no significant change in service is anticipated.

In private practice within the energy corridor, Hardeeville has one doctor and one dentist. Bluffton has no health care specialists. It is anticipated that future populations in these areas will be required to commute to Hilton Head, Beaufort and Savannah for health services.

The Beaufort-Jasper Comprehensive Health Facility has its main unit at Chelsea with four clinics located at Ridgeland and Hardeeville in Jasper County and St. Helena and Sheldon in Beaufort County. The indigent medicare and medicade population forms the majority of the clientele. Any three-month resident of Beaufort and Jasper counties can receive treatment, however, and full rates are usually less than those charged by a private physician. The Hardeeville unit will shortly be expanded to double its existing capacity.

The Comp Health staff does not anticipate any problem with meeting the health care requirements of OCS dependent workers moving to the area. Although moderate income groups generally use private health care facilities, inflation has begun to cause a shift in preference towards clinics. Up to 500 additional visits per year could be anticipated from the energy related population.

TRANSPORTATION - HIGHWAYS

The major highway route to Victoria Bluff, depending on how materials will be shipped, will be either U. S. 278 to I-95 or S. C. 170 to U. S. 17 to Port Wentworth, Georgia. In the case of the Jasper County Chevron site, S. C. 170 to connect with U. S. 17 and the interstate is the most logical access route. The cost of constructing dual lane highways is approximately $110,000 a mile, not including bridge improvements which can triple this

figure. The cost of expanding a two lane highway into a four lane road will be comparable. If additional state funds are required for local construction, the respective county councils must request their legislative delegations to formally recommend certain improvements. This recommendation is then considered by the Highway Commission and funds are appropriated as money becomes available. Local money is not involved.

AIRPORTS

Within the Lowcountry Planning District, there are a total of six civilian airports. The Hilton Head Airport, only 10 miles from the CBI Facility, primarily provides service for executives and other persons whose time is valuable to private companies. The runway is 3700 feet in length and a gas facility is present. Although an ordinance prohibits expansion, the airport with 50,000 operations annually is and should remain the busiest of the district's civilian installations.

Jasper County operates the Ridgeland Municipal Airport, 14 miles north of Hardeeville, which is 3100 feet in length and offers major repair capability. The South Carolina State Airport Systems Plan of 1973 recommends that a new 6,000 foot runway be installed by 1985. This would permit jet aircraft, which require at a minimum a 5000 foot runway, to make use of the facility.

Savannah's Travis Field offers major carrier service, and is within a one-hour drive from any point in the study area. A charter service is available to Hilton Head.

RAILROADS

The Seaboard Coastline Railroad, extending from Florida to Richmond, Virginia is the dominant rail line in the Lowcountry Region. SCL lines are centered in Yemassee, radiating outward in four directions, including a major connector south-westward through Ridgeland and Hardeeville.

A railroad right-of-way is owned by the State Ports Authority (SPA) from the Seaboard Coast Line Railroad near Hardeeville to U. S. Highway 278. The right-of-way from U. S. Highway 278 to Victoria Bluff was retained by the SPA when part of its land holdings were transferred to the S. C. Wildlife and Marine Resources Department.

CBI's need for a railroad would be for the transportation of raw materials and supplies to its proposed facility. CBI's estimated needs would require an average of two trucks per day; this potential volume of traffic is insufficient to justify a railroad. Before a railroad would be constructed on Victoria Bluff, additional industrial or port development would have to locate on other land at Victoria Bluff.

If the Chevron site is to be developed as a refinery, a heavy rail spur will need to be constructed between the Seaboard Coast Line tracks running through the northern end of the property, and the construction site. Alternately, if barge access to the site can be made available, a rail spur can carry construction materials from the dock.

For a gas processing and treatment plant at this location, trucks can handle small facility volumes. Generally, however, rail car or barge transportation is more economical.

PUBLIC TRANSPORTATION

The Beaufort-Jasper Rural Transportation Authority (BJRTA) is the district's only public mass transit operation. With the recent addition of four large capacity diesel buses, any short-term increase in ridership generated by an energy related industry can be absorbed. Further route expansion will depend on continuing local financing, $28,000 this year from Beaufort and Jasper counties, contractual arrangements with other agencies, and Federal Highway Administration grant assistance.

The maintenance of a reliable public transit system may give the district a competitive advantage. New workers will be able to purchase and rent housing throughout the district at the relatively low cost per mile commuting rate made possible by subsidized mass transit. This service is not available for workers living in Savannah, who will of necessity, drive to district OCS plants.

WATER QUALITY MANAGEMENT

The "208" Areawide Water Quality Management Plan, as written by the Lowcountry Council of Governments, assigns local responsibility for implementing water quality standards and cleaning up local problems. The most significant part of the 208 planning process is the identification of "designated management agencies." In the energy corridor these are Hardeeville and Beaufort County. Designation identifies the agency responsible for assuring that the pollution control alternatives listed in the water quality management plan are carried out.

Lower Jasper County - The Town of Hardeeville is designated as a management agency for sewage treatment service in and adjacent to its municipal boundary. A central treatment plant which discharges into the Savannah River, the highest volume stream in the county, has been constructed. The plant is presently operating at fifty percent of capacity with 650 units served, and at the present rate of residential and motel growth, should meet demands for another ten years.

A major sewage problem area without a sanitary sewer system is the Levy/Limehouse community. Soil suitability for septic tanks in this area is generally very poor, and drainage is also a problem. Septic tank malfunctions and open dumping are more wide-spread in this area than in any other part of the county.

Three alternatives for relief for this area are listed in the Jasper County Public Facilities Plan:

1) Installation of a county-subsidized sewer extension from the Hardeeville System. Consideration of this would depend upon the capacity potential of the new treatment plant, and the granting of extra-territorial powers by county council.

2) Declare (by county council) the Levy/Limehouse area its own Management Area, and build a small municipal tertiary treatment plant there, discharging into the New River. The question here is to determine when, if ever, user demand will financially support such a system, weighed against the cost of extending Hardeeville lines.

3) Study the feasibility of establishing alternative technologies such as raised septic tank fields.

All of these measures will require considerable capital expenditures not exclusively bearable by the residents of the area.

Lower Beaufort County, excluding Hilton Head - The Town of Bluffton has no waste treatment facilities, but one is planned in the mid 1980's. Beaufort County has been designated by the Areawide Water Quality Management Plan as the management agency over the Town of Bluffton for review, regulations, monitoring and grant applications. The potential impact of an OCS related population increase should be taken into consideration during the treatment plant and collector line design stage.

Moss Creek Plantation, located north of U. S. 278, just across the bridge from Hilton Head Island, encompasses approximately 1,160 acres with 10 miles of marsh frontage. The development is served by a waste treatment plant with spray irrigation used for effluent disposal. This facility is projected to handle the residential effluent through all phases of development.

Future Industrial Sites - The Areawide Water Quality Management Plan does not address future industrial development in lower Beaufort and Jasper counties. It was stated in the Corps of Engineers final environmental statement that industries locating at the Victoria Bluff site will dispose of secondary treatment waste water through spray irrigation in the forested area around the plant. The adjacent mariculture research facility, with a very small volume of waste, is expected to operate on a septic tank system.

For Jasper County, the remote Chevron site can be expected to be developed with a tertiary treatment plant and disposal of treated waste into the Savannah River. Developments closer to Hardeeville may, as in the case of Levy/Limehouse, be able to connect into an expanded Hardeeville system, develop on a separate facility, or utilize alternative technologies.

WATER SUPPLY SYSTEMS

There are at the present time three major water systems operating in Jasper County: Ridgeland municipal system, the Hardeeville municipal system, and the Levy/Limehouse/Bellinger Hill Water Project.

Population growth can continue to be accomodated in Jasper County by simply drilling new wells and extending water lines. However, the use of groundwater by Savannah industries causing lowered aquifer levels in Jasper County should be closely monitored. A 50-mile wide cone of groundwater depression is already centered in neighboring Chatham County. Savannah is predicted to exhaust its underground water supply by the year 2000 if only

20 million more gallons of water each day are withdrawn from the Principal Artesian Aquifer.[8]

Hardeeville - The Hardeeville water supply system draws water from the Ocala Aquifer through two deep wells having a supply capacity of over one million gallons per day. Two elevated storage tanks are used to maintain adequate pressures. The system is currently serving approximately 700 taps. Planned additions based on an EDA grant call for extending lines by (1985) west of town along S. C. 31 and then north along S. C. 34 for about one mile, as well as the addition of two elevated storage tanks.

Levy/Limehouse/Bellinger Hill - This water supply system is the result of the Nation's first rural National Demonstration Water Project. Installed in 1974 and consisting of 36 deep wells and a network of predominately two and three inch lines, the system currently serves approximately 200 families in the lower part of the county.

Originally designed to fill an immediate water supply need for an area of specific size and character, the system has reached its extension limits on many of its wells. It has no elevated storage tanks, relatively small distribution lines, wells and pumps, and as a result suffers periodic pressure inadequacies. This situation prohibits installation of fire hydrants for fire protection, and may not be able to support any substantial increase in development. However, lines continue to be extended and more customers continue to be added. The improvement of this system is critical to future growth and can be accomplished via such programs as HUD Community Development Block Grants or Farmers Home Administration loans.

The energy development corridor area of lower Beaufort County presently has two water systems. The first is private and serves Moss Creek Plantation exclusively. The second operates from Bluffton and extends from U. S. 278 on the east, to one and one-half miles west of the town. All lines are built to fire protection specifications and the system, with two 359 GPM pumps and 18" wells, is easily expandable. Growth measured by the number of new customers per year is higher here than for any rural area served by the Beaufort/Jasper Water Authority.

SOLID WASTE DISPOSAL

Jasper County does not presently operate a landfill. Their solid wastes are disposed of by agreement in Hampton County. This agreement, however, expires in July, 1981, making it necessary for Jasper to seek alternate means of disposal.

Beaufort County presently operates a shredder and landfill operation near Burton. The designed life of the landfill has expired and the need for additional capacity is crucial.

A 1000 acre site northwest of Bluffton has been recommended by engineering consultants for the development of a sanitary landfill for use by both counties. Only 100 acres would serve Beaufort County's needs through 1990.[9]

The Bluffton site is convenient for disposal of industrial wastes from lower Beaufort County. A cross-river development at Chevron, with the additional cost of transportation from Jasper County, might favor the alternative of separate county landfills.

FIRE PROTECTION

Bluffton's volunteer fire department has responsibility for the southern portion of Beaufort county, excluding Hilton Head Island. Running equipment consists of two fire trucks and a small tank truck primarily used for auto fires. The base fire station is being constructed with CEIP funds.

Water lines presently extend from highway 278 west to Pritchardville. Hydrants are therefore available for the majority of the scattered residential development outside of the Bluffton Town limits. In the long range, an additional fire truck may be required. For now, short range growth can be served by the present equipment.

The lower half of Jasper County falls under the Hardeeville fire district. A single pumper/tanker serves the area "inadequately" according to the Jasper County Facilities Plan (1979). The plan determined that the greatest need is a back-up tanker truck because there are no hydrants outside of the immediate Hardeeville vicinity. If no surface water is available, firemen are restricted to water carried in the fire truck tanks.

A fire station has been proposed by the Fire Coordinator for the Levy-Limehouse area. This would provide more efficient service, quicker response times and improved insurance ratings. Funds are not expected to be available before FY 81-82. It is mandatory that a fire house be established here, however, with or without energy related development. A single unit located twelve miles from a growing residential area is dangerously inadequate.

POLICE

It is anticipated that the burden of energy related population increases will fall most heavily on small municipalities. The addition of only one or two patrolmen here will result in a large percent increase in the budget.

For the Beaufort County Police Department, where one patrolman serves 6,000 people, the 400 man construction or operation crew in the southern portion of the county will have limited impact. Hilton Head Island is already adding between one and two thousand new residents per year. It is possible that one extra officer will need to be added; the per capita crime rate is usually higher among temporary workers.[10]

In Jasper County the police/resident ratio is 1 to 3000. Here again, the addition of one deputy following the initiation of construction of the Chevron development seems a reasonable estimate.

For the Town of Hardeeville, on the northern edge of the energy impact corridor, one patrolman must now cover the town's 1,800 to 2,000 population plus guests at the town's 350 motel rooms. Two men are presently overlapped

8 to 4 a. m. Thursday, Friday, and Saturday. The five existing patrol staff might be increased by two or three if the impact of OCS related residential development requires dual patrols at all times.

Bluffton presently maintains a staff of two patrolmen who cover the town limits during the daylight and evening hours. The county police force has responsibility from 11 p.m. to 6 a.m. With the beginning of heavy construction activity, it is likely that a third policeman would be necessary during daylight hours. A night shift will not be initiated until residential growth has substantially increased.

RECREATION

Lower Jasper and Beaufort County's recreational needs are presently served by six boat ramps, four neighborhood parks, and two playfields. Five more neighborhood parks and two playfields are required according to An Outdoor Recreation Plan for the Lowcountry - 1980, just to serve the present demands of the Bluffton and Hardeeville areas. The first facilities of a new 442 acre State Park located two miles north of Hardeeville will be in place by 1982. This recreation area offering camp sites, fishing and boating areas, and nature trails will be the first multi-use facility to serve the energy corridor area.

It cannot be expected that energy industries will provide on-plant recreation sites. A county ordinance which would require the dedication of recreation/open space acreage when developing subdivisions would greatly assist in meeting the recreational needs of the new population. For the present, the Land and Water Conservation Fund and matching local tax revenues will be depended upon to provide recreation facilities for both counties.

SYNOPSIS

This report has discussed energy corridor sites available for industry labor requirements of these industries, and growth associated impacts on housing and community facilities. The final three chapters (6, 7, and 8) outline response mechanisms which will enable local officials to better understand and respond to OCS energy projects.

Specifically, these chapters will

- Develop a framework for involving key public and private interests in a continuing planning and coordination program.

- Outline regulatory control programs that will permit government oversight of both the location and operations (to the extent the operations impact the community) of oil and gas industries.

- Outline potential ways that the local municipalities can raise the revenue needed to fund the services and facilities needed to support oil and gas exploration activities.

6. LOCAL INVOLVEMENT

If there is a discovery of recoverable oil and gas reserves off the South Carolina or Georgia Coasts, there will undoubtedly be a need to provide additional public services and facilities. These will be for both the oil and gas companies and for the increased population a find will bring to the area. All agencies that are involved in the provisions of such services must also become immediately involved in programs designed to increase their awareness and control over energy industry siting decisions in both the energy corridor and in Chatham County, Georgia.

Key public agencies within the Beaufort-Jasper study area that are responsible for providing services that will be affected by oil and gas development should it occur are:

- The Towns of Hardeeville and Bluffton
- Beaufort and Jasper County Councils
- Beaufort and Jasper County Boards of Education
- Beaufort Technical College and Beaufort-Jasper Career Education Center
- Beaufort County and Jasper County Department of Social Services

Additionally, if oil and gas support and production facilities are located in the Beaufort-Jasper Energy Corridor, it will be necessary to identify and make available land suitable for meeting the needs of these industries. Besides the institutions listed above, four additional agencies that control the use of land, own land that could be used for such facilities, or are responsible for planning the use of available land must also be involved in OCS decision making. These agencies are:

- Beaufort County Joint Planning Commission
- Beaufort County Development Commission
- Jasper County Joint Planning Commission
- Jasper County Development Board
- Lowcountry Council of Governments

These fifteen agencies should provide the core for any working group organized to anticipate, to plan for and to respond to oil and gas development on a continuing basis.

The proposed committee would not have any governmental powers or service delivery functions. Rather, it would provide a mechanism for enabling the local governments that do have these responsibilities to deal with the oil and gas companies as a single entity. For the regulatory control processes

described in Chapter 7, the committee would reach a consensus on needed decisions and then it would be up to the individual entities represented to implement the decisions by using their governmental powers. Such a concept will obviously work only so long as there is good cooperation among the agencies involved.

In addition to the local governmental agencies, and oil and gas companies, there are a number of other agencies operating in the Lowcountry that are conducting programs either related to or potentially affected by oil and gas development activities. Key among these are:

- The South Carolina Department of Wildlife and Marine Resources

- The South Carolina Coastal Council

Any or all of these agencies could be invited to participate in the activities of the main committee, although because they are not responsible for delivering local services or controlling land it is not necessary that they be full members.

The Committee should be assigned a number of specific responsibilities, including:

- the dissemination of information on a regular basis to member agencies and to other concerned and private interests. The committee would serve as a local clearinghouse for information related to oil and gas exploration and development.

- the review of proposals for local onshore facilities in the energy corridor area including Chatham County, Georgia and the selection of sites for any future support and production facilities that might be needed.

- the decision of who should provide the support services to the oil and gas companies and how these should be financed.

- the development of regulatory controls that could be used by the member agencies to help insure that potentially adverse impacts are alleviated.

Staff assistance in coordinating the groups activities and providing a contact point for the oil and gas companies should be provided through the Lowcountry Council of Governments. Periodic reports, monitoring of studies and convening committee meetings will also be the Council's responsibility.

REVIEWING PROPOSED OIL AND GAS FACILITIES

In Chapter 1, the onshore facilities that could be located in the Beaufort-Jasper energy corridor are identified and described. Potential impacts must be thoroughly assessed before permits to construct such facilities are issued. Even where such a facility is to be located on privately

controlled industrial land, local review is needed in order to assure the provisions of necessary public facilities and services.

Impact checklists for the review of onshore oil and gas related facilities have been developed and a typical example is shown in Table 4. If through review, potentially negative community impacts are identified, the proposing industry should be required to prepare a plan for mitigating the impacts. As a condition for project approval, some of the approaches that could be utilized are:

- Local government should set specific conditions for approval of the project. If potentially significant negative impacts are identified, the actions the proposing industry must take to make the project acceptable should be clearly defined.

- The proposing industry could finance the mitigating measures to be undertaken or could modify the project design if necessary. The general principle is that all negative impacts directly attributable to the project are the responsibility of the proposer to correct, if the corrective programs are not implemented by public agencies.

- Local governments could require that a reclamation plan for use of the site after activities are terminated be prepared. The community could also require that money be set aside for such purposes.

In addition to the actions described above, the affected local jurisdictions should develop corrective programs of their own. This can be done through the development of a capital improvements program.

A capital improvements program has the potential for assisting local governments in planning for and meeting the demands for rapid energy development by:

- Determining the magnitude of capital needs

- Setting priorities for construction

- Determining available financing

- Coordinating capital spending with operation budgets

While the new industry will obviously contribute to local revenues through tax payments, other steps may be necessary, particularly during the development phase. During this phase, heavy demands on public services precede revenues through tax payments. There may have to be corporate guarantees of debt or prepayment of taxes. A capital budget combined with annual operating budgets could be used to make a determination on whether such programs should be required.

TABLE 4

SAMPLE IMPACT CHECKLIST

IMPACT ON:*

Traffic
- Congestion at Peak Hour
- Safety Hazards
- Quality of Life Nearby

MUNICIPAL FINANCES
- Local Tax Rate
- Bonded Indebtedness

PUBLIC FACILITIES
- School Additions or Construction
- Improvements in Water System
- Improvements in Sewer System
- Improvements in Recreation
- Other Public Facility Improvements

ECONOMY
- Increase in Jobs
- Type of Jobs
- Sales Level of Existing Businesses
- Diversity of Value
- Property Value
- Entrepreneurial Opportunities

SOCIAL CHARACTER
- Community Population - Total and Growth Rate
- Local Housing - Supply, Range of Choice
- Community Amenities
- Visual Character
- Image of Community Held by Residents and Outsiders

COMMUNITY GROWTH AND PLANNING
- Departure from Master Plan or Local Growth Policy
- Site Valuable for Other Uses
- Precedents for Future Public Decisions
- Stimulus to Further Development

NATURAL ENVIRONMENT
- Level of Air and Water Pollutants
- Erosion
- Noise and Vibration Levels
- Natural Risks (e.g., Flood Plain)
- Wildlife
- Natural Vegetation

*For each item, impacts are recommended to be assessed either as Significant, Not Significant, or Don't Know - Deserves Further Study.

SOURCE: Evaluating Development Impact. Massachusetts Department of Community Affairs, Local Assistance Publication Series No. 3, Feb. 1976.

7. STANDARDS FOR ENERGY DEVELOPMENT

LOCAL REGULATORY CONTROLS

Cooperation between oil and gas industries and the local jurisdictions that will be affected by their operations is essential. Such a cooperative approach must also include the development of regulatory control programs. These programs will permit governmental oversight of both the location and operations of such industries in order to minimize potential adverse impacts.

The regulatory controls a community would place on an energy project are to a large extent similar to those it would place on any large-scale industrial facility. A number of the commonly used techniques for controlling industrial development are:

1) Special permits

2) Planned industrial districts

3) Industrial performance standards

4) Zoning

5) Development Standards

It is recommended that counties and local governments in Beaufort and Jasper counties utilize the best features of each of these techniques described below.

Special Permits - Special permits control where and how development can occur, with primary emphasis on the appropriateness of the use at the proposed site (i.e. they look more at impact on adjacent uses rather than site planning details). Permits can be used to allow OCS-related industries in existing industrial districts or, in some cases, in non-industrial areas. Development may, for example, only be allowed at locations with highway access and public water and sewer service.

Planned Industrial Districts - These are similar to PUDs (Planned Unit Developments), but are designed for industrial, not residential uses. PIDs (Planned Industrial Districts) are appropriate for most OCS-related industries because of their large acreage requirements and often unusual site planning details (e.g. the need for a large buffer area for a gas processing plant). This control is particularly useful to set apart and protect areas considered vital to the performance of, for example, a waterfront activity. In order to reserve such areas of scarce waterfront land, uses inappropriate for the district or which could be located elsewhere are excluded.

Industrial Performance Standards - Industrial performance standards regulate the types of industrial uses permitted in different industrial districts according to allowable levels of pollutants or environmental effects. These standards are particularly effective for regulating OCS industries because of noise levels and the presence of potentially hazardous or explosive materials.

Zoning Vs. Development Standards - The three previous planning techniques are used within two types of land use control systems; zoning and development standards. Special permits and planned industrial districts are administered through a zoning ordinance, industrial performance standards can be used with a development standard ordinance.

A development standards ordinance can be thought of as zoning without zoning districts or zoning maps. New industrial, commercial and residential uses can be proposed for any location in the county or community. Proposals are reviewed on case-by-case basis, and development permits are issued if established standards and criteria are met. Like the zoning ordinance, the ordinance which sets up development standards includes criteria for developments. These include requirements for lot size, setbacks, buffering and others that are commonly covered in the zoning code.

A county with development standards is not divided into zoning districts for particular types of uses, such as residential, commercial and industrial. Thus, the community is relieved of the responsibility of designating particular areas for specific kinds of uses when, in fact, there might be no basis for the designation. A permitting system is primarily and particularly useful for largely undeveloped areas where growth patterns are difficult to predict. In rural areas, they often are more politically acceptable since land values and the owner's perception of how he can or cannot develop his land are not altered by the creation of zoning districts.

STATE AND FEDERAL REGULATORY CONTROLS

In addition to the local controls described above, oil and gas industries depending on the nature of their proposed projects could also be required to obtain a number of federal and state operating permits. These might include:

- Dredging permits from the U. S. Army Corps of Engineers if waterway alterations (pier facilities, etc.) are proposed.
- A permit from the South Carolina Coastal Council if alterations to "critical areas"; waters, wetlands, beaches or primary sand dunes are proposed.
- A permit from the South Carolina Department of Health and Environmental Control (DHEC) for any proposed wastewater discharge.
- A permit from South Carolina DHEC for proposed air emission discharges.

MOBILE HOME CONTROLS

For the built-up portions of lower Beaufort and Jasper counties that have a very limited number of available housing units, the prospect of a large influx of temporary workers to construct oil and gas development projects should be of great concern. Temporary facilities (e.g. mobile homes) offer the best means of meeting such temporary needs. However, mobile home

facilities could reduce property values in such communities as Hardeeville and Bluffton, if not properly developed.

One approach to controlling mobile homes is a comprehensive mobile home park ordinance, which might include the following elements:

- Restriction of mobile homes to mobile home parks, with no single lot development except as a temporary project use on an unbuilt subdivision.

- Maximum density limit on mobile homes per acre.

- Requirements for open space and recreation facilities, paving, laundry and parking.

Another option is to use special permits to allow mobile home parks to be developed only in specified districts, thereby easing the strain on the existing housing supply.

8. RAISING THE NEEDED REVENUE

There are three potential ways that Beaufort and Jasper counties can raise the revenue needed to fund the services and facilities needed to directly support oil and gas exploration activities. These are:

1) Direct User Charges

2) Taxes

3) CEIP Grants

1. USER CHARGES - there are two basic requirements an equitable user charge system should meet:

   - Customer charges should be sufficient to cover the full cost of operations and maintenance of the system; and

   - Customer charges should be proportional to the cost of providing the service to each customer. In other words, if you use more you pay more.

   In order for a user charge system to work equitably, it must be possible to actually measure the quantity of service provided. The cost of water, sewer and solid waste collection and disposal services can be measured and will be based on user charge systems already in operation within the town or county. It is not possible to estimate how much revenue will be raised from CBI & Chevron through such a charge system. However, the quantity is unimportant as long as the charges are set high enough to cover the full costs of providing the services.

2. TAXES - exploration activities will result in increased local revenue from the imposition of property taxes. These taxes will be assessed against onshore equipment and support base structures. Although it is not yet possible to estimate the amount of revenue that will be generated from this source, an example can be given: In Jasper County, industry is taxed at 9½ percent of fair market value and the tax rate is $13.40 per $100 of assessed value. If it is assumed that about $1,500,000 in private improvements will be made, tax revenue generated from these improvements would be about $19,000.

3. CEIP GRANTS - the Coastal Energy Impact Program (CEIP) provides federal money to state and local governments to prevent or reduce the impact of OCS oil and gas exploration, development and production activities. These grants can be used to provide assistance in the following areas:

   - education;
   - environmental protection;
   - government administration;
   - health care;
   - public safety;
   - recreation;

- transportation;
- public utilities; and
- any other service authorized by law to be provided by a state or unit of general purpose local government.

Several types of grants or loans are available and include Formula Grants (Environmental and Recreational Loss Grants), Planning Grants and Credit Assistance. Repayment assistance is available when local governments cannot meet CEIP credit assistance obligations because expected energy activity revenues did not materialize. South Carolina has already received a total of 2.2 million dollars in the four categories for FY 78 and FY 79.

CONCLUSION

The United States is currently engaged in an effort to develop the oil and gas resources of the outer continental shelf. The offshore activities must be supplied and supported from land, and the onshore activities required pose both problems and opportunities for communities in which they occur.

Specialized training programs at technical schools can substantially increase the proportion of local workers in the total OCS facility work force, thus securing high paying industrial employment for the district. In addition, some energy corridor communities may be able to take advantage of the new industries and strengthen the local economic picture while receiving federal assistance for the improvements necessary to meet the needs of the energy facility.

Strict regulation of site alteration and construction practices can significantly reduce some of the most serious environmental impacts. For example, the use of sediment controls during site preparation and the control of run-off water during plant operation will assist in maintaining the biological productivity of the site.

With a population density only one-third of the state average,[11] even small discoveries of oil or gas can create significant social and economic impacts within the energy corridor. Substantially higher school enrollments, increased demand on ground water reserves and sharply rising housing costs may quickly follow the decision to construct an OCS-related industry. Local governments, if they are to avoid being overwhelmed, must formalize project review procedures now, during the initial energy exploration phase. A combination of impact checklist screening, capital improvement programs and local regulatory controls will help insure that local community response to problems of growth are adequate to meet 1) short-term construction impacts, 2) intermediate-term operational demands, and 3) structure and productivity of physical and biological systems.

REFERENCES

[1]James Hite and James Stepp, Estimates of State and Local Benefits and Costs of New Metal Fabrication Industries at the Port Victoria Site; (Special Report, Department of Agricultural Economics and Rural Sociology Clemson University; 1973).

[2]Brunswick-Glynn County Joint Planning Commission, 1979. An Analysis of the Community Impacts on Brunswick, Georgia Resulting From the Development of Onshore Support Facilities for Offshore Energy Exploration, Roberts and Eichler Associates, Inc., Atlanta, Georgia.

[3]A projected five percent (5%) military related population increase in Nassau County, Georgia is expected to have significant impacts on school facilities and housing prices. U. S. Department of the Army, 1980. Appendices to the Draft Supplement to the Environmental Impact Statement for Preferred Alternative Location for a Fleet Ballistic Missile Submarine Support Base, Kings Bay, Georgia, Environmental Science and Engineering, Inc., Gainesville, Florida.

[4]U. S. Department of the Interior, 1980. Draft Environmental Impact Statement, Proposed 1981, Outer Continental Shelf Oil and Gas Lease Sale 56, Bureau of Land Management, Washington, D. C.

[5]This calculation follows the methodology used to project OCS-related population in-migration for Brunswick, Georgia, Ref. Footnote 2.

[6]Battelle Columbus Laboratories, 1978. Monograph and Reprint Series - Factors of Location, Columbus, Ohio.

[7]Epstein, S., 1979. County Facilities Plan, Jasper County. Lowcountry Council of Governments, Yemassee, South Carolina.

[8]Savannah Morning News, Ground Water - The Crisis Below, Part Four; October 29, 1980.

[9]Post, Buckley, Schuh and Jernigan, Inc., 1980. Sanitary Landfill Site Selection, Beaufort and Jasper Counties, South Carolina. Atlanta, Georgia.

[10]James Hite and James Stepp, Estimates of State and Local Benefits and Costs of New Metal Fabrication Industries at the Port Victoria Site; (Special Report, Department of Agricultural Economics and Rural Sociology Clemson University; 1973).

[11]The energy corridor population density excluding Hilton Head is approximately 34 persons per square mile. The South Carolina average is 102 persons per square mile.

BIBLIOGRAPHY

Books, Pamphlets and Reports

American Society of Planning Officials. Onshore Impacts of Outer Continental Shelf Oil and Gas Development, South Atlantic, Vol. I and II, Chicago: ASPO, 1977.

American Society of Planning Officials. Onshore Impacts of Outer Continental Shelf Oil and Gas Development II. Chicago: ASPO, 1977.

Battelle Columbus Laboratories. "Urban and Regional Development: Monograph and Reprint Series": Factors of Location. Columbus, Ohio, 1978.

Beaufort County Joint Planning Commission. Beaufort County Land Use Survey and Analysis. Beaufort, South Carolina, 1973.

Brunswick-Glynn County Joint Planning Commission. An Analysis of the Community Impacts on Brunswick, Georgia Resulting From the Development of Onshore Support Facilities for Offshore Energy Exploration. Atlanta, Georgia: Roberts and Eichler Associates, Inc., 1979.

Cole, Cynthia D. Historic Resources of the Lowcountry. Yemassee, South Carolina: Lowcountry Council of Governments, 1979.

Day, Brenda T. Regional Investment Strategy: Lowcountry Region. Yemassee, South Carolina: Lowcountry Council of Governments, 1980.

Epstein, Steve. County Facilities Plan, Jasper County. Yemassee, South Carolina: Lowcountry Council of Governments, 1979.

Fallon, Rosemarie C. Jasper County Growth Potential Study. Yemassee, South Carolina: Lowcountry Council of Governments, 1980.

Fallon, Rosemarie C. Regional Housing Guide for the Lowcountry. Yemassee, South Carolina: Lowcountry Council of Governments, 1980.

Fallon, Rosemarie C. Hardeeville's Housing, Initial Housing Element. Yemassee, South Carolina: Lowcountry Council of Governments, 1977.

Forsgren, Jeffrey L. and Kirk, Joseph P. Lowcountry Areawide Housing Element. Yemassee, South Carolina: Lowcountry Council of Governments, 1976.

Francies, John and Swain, Norman. Scotland in Turmoil. Edinburgh: St. Andrews Press, 1973.

Goodman, Joel and Klouse, Peter. Environmental Planning for Offshore Oil and Gas. Washington: U. S. Department of the Interior, 1978.

Heape, David P. Coastal Zone Management Report for Jasper County, South Carolina. Ridgeland: Jasper County Supervisor's Office, 1977.

Hite, James C. and Stepp, James M. Estimates of State and Local Benefits and Costs of New Metal Fabrication Industries at the Port Victoria Site. Clemson: Department of Agricultural Economics and Rural Sociology, 1973.

Bibliography (Continued)

Lowcountry Council of Governments. Areawide Water Quality Management Plan. Yemassee, South Carolina, 1978.

Lowcountry Council of Governments. Lowcountry Overall Economic Development Program Update 1976-1980. Yemassee, South Carolina: Lowcountry Council of Governments, 1977.

Lowcountry Council of Governments. Lowcountry Policy Framework for Regional Development. Yemassee, South Carolina, 1977.

Lowcountry Regional Planning Council. Proposed Development Standards Ordinance - Jasper County, South Carolina. Yemassee, South Carolina, 1975.

Maye, Peter. Sanitary Site Selection, Beaufort and Jasper Counties, South Carolina. Atlanta, Georgia: Post, Buckley, Schuh and Jernigan, Inc., 1980.

Minshall, Charles W. and Moody, Cathy W. Monograph and Reprint Series - Factors of Location. Columbus, Ohio: Battelle Columbus Laboratories, 1978.

New England River Basins Commission. Choosing Offshore Pipeline Routes, Problems and Solutions - Draft. Boston: NERBC, 1979.

New England River Basins Commission. Onshore Facilities Related to Offshore Oil and Gas Development - Case Studies in OCS Planning. Boston: NERBC, 1978.

New England River Basins Commission. Onshore Facilities Related to Offshore Oil and Gas Development - Estimates for New England. Boston: NERBC, 1976.

New England River Basins Commission. Onshore Facilities Related to Offshore Oil and Gas Development - Methodologies. Boston: NERBC, 1976.

New England River Basins Commission. Onshore Facilities Related to Offshore Oil and Gas Development - Factbook. Boston: NERBC, 1976.

Office of the Governor, Division of Administration. Land Use Survey and Analysis for Beaufort County, South Carolina. Columbia, South Carolina, 1973.

Office of the Governor, Division of Administration, Physical and Economic Development. Land Use Survey and Analysis, Jasper County, South Carolina. Columbia, South Carolina, 1973.

Office of the Governor, Office of Planning, Division of Administration. Preliminary Land Development Plan for Lower Beaufort County. Columbia, South Carolina, 1972.

Piedmont Engineers, Architects & Planners. South Carolina State Ports Authority Management Plan, Volume I, Greenville, South Carolina: Piedmont, 1979.

Team Plan, Inc. Jasper County, General Land Use Master Plan. Columbia, South Carolina, 1974.

Bibliography (Continued)

U. S. Army Corps of Engineers, "Final Supplement to Final Environmental Statement." Application by Chicago Bridge and Iron Company to Dredge and Construct a Pier and Dolphins in the Colleton River at Victoria Bluff, Beaufort County, South Carolina. U. S. Army Engineer District, 1976.

Periodical Articles

Mitchell, James K. "Onshore Impacts of Scottish Offshore Oil: Planning Implications for the Middle Atlantic States." Journal of the American Institute of Planners, Vol. 42, No. 4, October 1976.

Mylroie, Gerald R. "The Coastal Energy Impact Program," Practicing Planner, Vol. 8, No. 4, December 1978.

Nicolson, James. "Long-Term Survival in Shetland." Oceans, Vol. 12, No. 2, March - April, 1980.

DATE DUE

GAYLORD No. 2333 PRINTED IN U.S.A.

NOAA COASTAL SERVICES CENTER LIBRARY

3 6668 14106 4693