



# **CUMBERLAND COUNTY COASTAL ZONE**

**AN ANALYSIS OF LAND USE  
PLANS AND REGULATIONS  
AND ITS CONSISTENCY WITH  
STATE OF N.J. COASTAL  
MANAGEMENT PROGRAM**

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**CUMBERLAND COUNTY PLANNING BOARD**

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An Analysis of Land Use Plans  
and Regulations and its Consistency  
with the State of New Jersey  
Coastal Management Program

U. S. DEPARTMENT OF COMMERCE NOAA  
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## INTRODUCTION AND PURPOSE

The importance of protecting the coastal zone of the United States was recognized in 1972, when Congress passed the Coastal Zone Management Act (P.L. 92-583), since amended in 1976 (P.L. 94-370). In accordance with the Act, states can plan coastal management programs and obtain financial assistance from the federal government for their implementation. The program is administered by the U.S. Department of Commerce.

Direct responsibility for the States' coastal programs is invested in the National Oceanic and Atmospheric Administration, Office of Coastal Zone Management.

The State of New Jersey has been participating in the federal coastal management program since 1974. As a result of this participation the New Jersey DEP/OCZM has finished its first segment (Bay and Ocean Shore) of the Coastal Management Program. It was recently approved by the Secretary of Commerce and the State received a federal grant for implementation of its program. The Coastal Management Program (BOSS) is based on existing laws: Riparian (water-front development), The Wetlands Act of 1970 and CAFRA (1973). The existing CAFRA area, together with the wetlands extending landward of the CAFRA boundary, define the Coastal zone as currently bounded.

In Cumberland County, the Coastal Zone encompasses 38% of the total area. Cumberland has a total of fourteen municipalities, ten of which are affected by the DEP/OCZM management program, (Greenwich, Stow Creek, Hopewell, Bridgeton, Fairfield, Lawrence, Downe, Commercial, Maurice River and Millville). Only one municipality, Greenwich, is totally within the Coastal Zone.

Now, the State is working on the preparation of the second segment of the coastal management program; it should be ready (draft form) in June, 1979.

In 1977, DEP/OCZM initiated the State-County Coastal Coordination project, inviting the twelve coastal counties (Hudson, Union, Middlesex, Monmouth, Ocean, Burlington, Atlantic, Cape May, Cumberland, Salem, Gloucester and Camden) to study the possible onshore impact from offshore drilling. The main purpose of this joint State-County cooperation project was to identify sites potentially suitable for the location of energy facilities. In 1978, as a continuance of the cooperative relationship between the State and the counties, DEP invited the same coastal counties to participate in a "State-County Coastal Coordination Project".

The purpose of this study is: a) to review and comment on all state documents related to coastal planning, addressing the accuracy and adequacy of the policies and management systems proposed for the County; b) to analyze consistency between county and municipal plans and zoning ordinances and their consistency or inconsistency with the State coastal policies; c) to actively seek cooperation with county and municipal governments, and d) to encourage public participation in the coastal planning process.

In this report are included both general and specific recommendation regarding coastal management planning and its implementation.

## ABSTRACT

This study includes a review and analysis of the county coastal municipalities' future land use plans and regulations governing land and water uses.

The study attempts to discern differences between local land and water use policies and regulations and the State of New Jersey's Coastal Management Program policies. If an inconsistency were discovered, some recommendations were made to the municipalities and/or were discussed at meetings with their representatives. Some municipalities will probably be more aware of the important issues of this study after the report has been released for public review.

Based on statements and opinions presented by coastal residents at public meetings, recommendations for changes in the Wetlands and Riparian statutes have been made. Recommendations of the Cumberland County Planning Board are also included in the report.

Officials of both the coastal municipalities and the County are of the opinion that this important program involving cooperation between State and local government should be continued. Municipal land use plans and regulations, if they are consistent with the State of New Jersey program, should be officially adopted by the State. The establishment of offices of coastal zone management in each county would greatly aid in implementing the State Coastal Management Program.

## ACKNOWLEDGEMENTS

I would like to thank the people who helped in the preparation of this report. The assistance of John J. Holland, Director of the Cumberland County Planning Board and Andrea Topper of the DEP/OCZM staff were of great value in shaping the final report.

Special thanks are extended to Howard Wolf, Student Intern of Rutgers University, for his help in analyzing the coastal municipalities' Future Land Use Plans and zoning ordinances and for his participation in the study using the CLAM methodology.

Thanks are also due to the staff of the Cumberland County Planning Board, in particular to Kenneth W. Sheppard and Frank Puller for help with drafting of the maps.

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Front cover: East Point Lighthouse on the Maurice River. Sketch by Frank Puller.

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I. COUNTY CHARACTER

## A. Site and Situational Location of Cumberland County

Cumberland County is located in South Jersey along the Delaware Bay. In terms of County character, it does not fit easily into any of the "standard" New Jersey categories (figure 1). It is neither urban/industrial, nor suburban/white collar/commuter, nor shore/resort/retired. Like Warren, Hunterdon and Salem counties, it is rather more reflective of the New Jersey landscape of the past, than of New Jersey as it has developed to the present. Adjacent to megalopolis it is not fully (nor typically) a part of it. Near to Philadelphia, it is not a part of that S.M.S.A. While industry is the major employer, the county still has a large, well-developed agricultural base. Its shore areas are only marginally developed for recreational boating and fishing; shell-fish harvesting and crabbing activities have considerable local importance. Not part of the pine barrens as officially conceived, nor developed for mountain resort (it is flat), it is in large measure a forested area. The Delaware Bay shore has not been well developed for either recreational or industrial activity and much of it has been allocated to fish, game and wildlife reserves. It is located too far from either the Delaware Valley industrial areas or the seashore to have experienced growth from either of those two poles.

The resources of the County include a considerable acreage of good agricultural land, a fair amount of decent grade, second-growth timber, an abundance of pure water, vast areas of open, undeveloped space, large deposits of commercially valuable foundry and glass sands, and a steadily improving transportation network. A major portion of the County has been assigned a low-growth, low-development priority status by State agencies.

## B. The Population Resource and Regional Variation in Economics

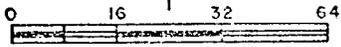
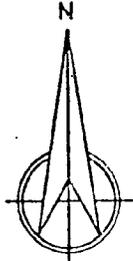
The bulk of Cumberland's population is concentrated in its three cities: Vineland, Millville and Bridgeton. The first two named contain enormous acreages of non-residential land within generous corporate borders. Bridgeton, however occupies a tight corporate area with little room for industrial or residential expansion. Almost 75% of the County's population live in these three municipalities.

The western townships (Hopewell, Stow Creek, Greenwich, Deerfield, Upper Deerfield, Fairfield) and the Borough of Shiloh have sound agricultural economies based on good soil and prudent management. The lightly populated eastern townships (Lawrence, Downe, Commercial, Maurice River), as well as the southern half of Fairfield Township, constitute a residual economic area. Largely wooded and containing great areas of wetlands and coastal beach, they are not well-developed economically. Sand mining (open pit), often marginal farming, and a depressed fishing industry employ most of those who are employed. Perceived as an historical treasure, a vast reserve of open space, a splendid ecological reserve, and a lush, attractive, quiet corner of New Jersey by people outside the area, few have given serious thought to the economic problems within Cumberland.

Its vast water resources (navigable rivers, the Bay, groundwater, lakes) and sheer open space make Cumberland potentially attractive to certain types of investment. Low real estate prices in the coastal segment have attracted only a small amount of private, second home development. These same low land prices, and plentiful water, have now attracted the interest of power companies in the form of potential sites for nuclear generating stations.

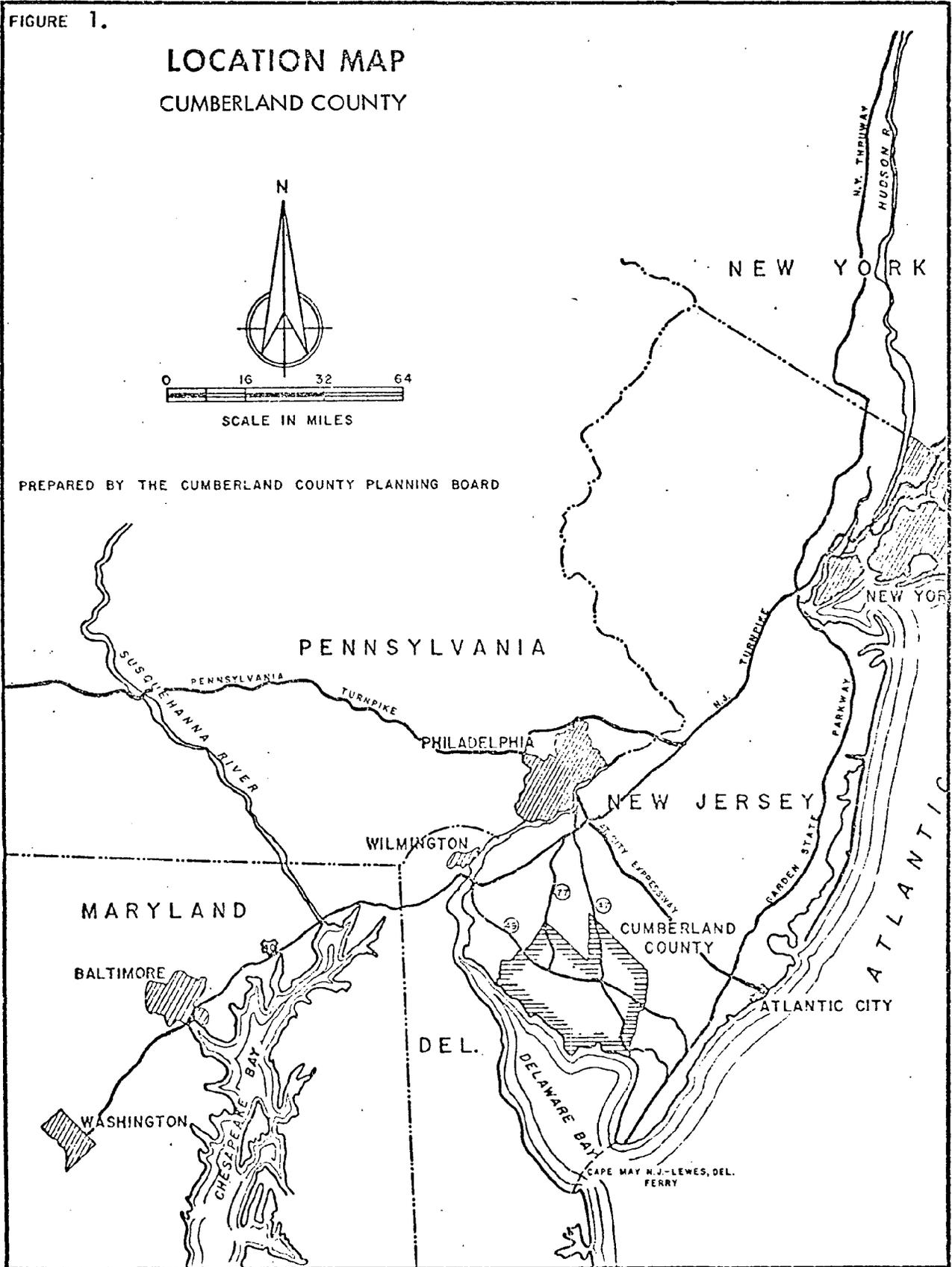
FIGURE 1.

# LOCATION MAP CUMBERLAND COUNTY



SCALE IN MILES

PREPARED BY THE CUMBERLAND COUNTY PLANNING BOARD



Residents of the area work largely within the County. Some 1000 people work outside the state in Pennsylvania and Delaware; 3000 commute to surrounding counties, particularly Salem County. The net inflow of commuters exceeds the outflow by a considerable rate. Over 7000 commuters complete the daily journey to work to Cumberland from surrounding counties (over 6000 from Atlantic, Salem and Gloucester). This commuting is largely to Vineland, reflecting the location of that city peripheral to Cumberland County and immediately adjacent to Salem, Gloucester and Atlantic. A major regional service center, Vineland concentrates many health, detention, geriatric and other public institutions. With 37% of the County's population, it concentrates over one-half of all the County's non-governmental administrators and managerial employees, over one-half of salaried employees, and 46% of its retail employees and sales personnel. The city is ringed with suburbs (eg. Newfield, Malaga, Buena) and exurban sprawl located outside the County's limits, but within its economic and commuting spheres.

C. The Traditional Economic Bases of Cumberland

The County's industrial base is dominated by light industrial types: glass, food processing, clothing, and textiles. Of these, the food, clothing and textile industries depend largely on unskilled or semi-skilled labor paid at low rates. The local industrial base has not been stable in recent years. Unemployment rates (12.5%) are very high and job opportunities are limited. The recent layoff of 300 persons at a glass firm in Bridgeton has been a harsh blow to an already-sagging regional economy. (Three hundred more layoffs are planned). A large printing and lithography firm also closed (1978) with a layoff of 250 persons. These are only the latest additions to a long list of plants and employers who have curtailed or reduced operations since 1972.

The County has suffered a net loss of some 2500 factory jobs since 1973. Increases in non-manufacturing employment have effectively countered this loss, but just barely. Of the 2600 jobs added since 1976 in the non-manufacturing categories, some 1300 are CETA jobs. Minority groups and teenage unemployment rates are even higher than County averages.

TABLE 1

Unemployment Statistics for Cumberland County:  
Projections for Fiscal 1979

Unemployment Rates for:	
White male	6%
White females	11%
Male/female white teenage group	13%
Non-white males	13%
Non-white females	24%
Male/female non-white teenage	19.5%

Source: Overall Economic Development Progress Report for 1977, Cumberland County, N.J., Bridgeton, Cumberland County Economic Development Board, 1978.

Because of these difficult economic conditions directly affecting many of Cumberland's households, economic redevelopment, not ecologic conservation, is uppermost in the public mind at this time. Mindful of their valuable environment, however, it is a selective desire for development. Labor-intensive types are preferred. Capital-intensive and/or environmentally destructive types are feared or considered less desirable. Their low employment potential, in the light of implied environmental deterioration, is viewed as no bargain. Nuclear generating facilities, for example, are a permitted use (as a water-oriented industry) in the wetlands portion of the coastal zone; other less destructive, non-water-oriented industries are not. Industry is discouraged from location in agricultural areas, regardless of type. Such apparent logical discrepancies are a source of confusion and dismay to local residents, - in particular in those areas which are dominated by coastal wetlands and/or agricultural uses. With 38% of the County in the CAFRA zone as now defined, many coastal residents see no hope for future development and employment. Tax benefits to be obtained from large capital investment facilities (capital intensive units with few employees) are seen, quite properly, as the only local benefit. Employment potential is so low (other than that of temporarily employed labor in construction), that they are seen as virtually of no benefit at all. Such communities as historic Greenwich found it difficult to understand the reasoning behind coastal area and wetlands regulations which would seemingly allow a nuclear power plant at the same time that they precluded light industry from a wetlands area. (See Appendix A). This situation has resulted in some degree of public alienation.

The area's farm economy is reasonably stable. However, it will not likely be an employment growth sector. Ever-increasing mechanization and a switch to low labor requirement crops such as grains and soybeans will likely result in even lower levels of employment in the agricultural sector. Increasing labor costs, agricultural price and market instability, and the closing of area food processing plants have all been instrumental in bringing about this basic crop production shift. Long term, gradual and continued decline in agricultural employment has been the forecast of the Cumberland County Economic Development Board as well.

The oyster industry, once a major area employer, was hit with MSX disease (and consequent declining production) in the 1950's. The oyster drill, an oyster destroying parasite, invaded the lower Bay in numbers during dry years, as increasing amounts of water were being withdrawn by residential and industrial users in the rapidly developing Delaware Valley areas upstream of the Bay. Wetter years, reduced developmental pace and, potentially, a new device and method devised by engineer Luther Jeffries, have helped reduce oyster drill damage. Unfortunately, despite prolonged research, the Rutgers University Oyster Research Laboratory has been unable to come up with an answer to the problem of MSX. Harvests are slowly improving, but MSX continues as a problem, preventing a return to former high production levels. The rapid siltation of the mouth of the Maurice River has made it increasingly difficult for oyster boats to use that natural channel. A maintenance dredging project (allowed under coastal area legislation) would be of some benefit to that industry and its operators. This environmentally sensitive industry will, on the whole, be protected by the coastal programs. The Economic Development Board has assigned a number one priority to the development of a Marine Research Lab in Commercial Township.

An area of past economic significance, but long neglect, is the recreation potential of Cumberland's Bayshore. In times past, a series of small resorts lined the Bay, catering to the area's population as well as to tourists from Philadelphia. Parts of the lower Bay are ill adapted

to such usage. Shallow, muddy waters would not attract users. In these same areas, however, recreational development might well disturb or destroy the oyster grounds. The shoreline between Stow Creek and Egg Island, however, presents considerable opportunity for carefully planned development. The waters are fairly clear, marinas and boat storage facilities exist, and the beaches are potentially attractive, if sometimes badly littered and poorly maintained at the present. The County contains additional tourist attractions: a zoo, several fine municipal parks, many lakes (most undeveloped), vast forested areas, and a considerable resource of historical houses and structures. Increasing numbers of people are beginning to avail themselves of these resources in a South Jersey almost devoid of state sponsored recreational facilities. (Cumberland itself contains not a single state park or tourist-oriented, state forest facility). Local recreational needs have been met virtually entirely by local investment. The residents of urbanized (Delaware Valley) South Jersey have few alternatives available to them except to use the already crowded beaches of the shore. This recreational need is chronic and growing; Cumberland's coastal areas and open space could do much to alleviate existing recreational pressures in South Jersey.

#### D. The Transportation Infrastructure

One of Cumberland's greatest difficulties in attracting and maintaining an industrial base is its inadequate transportation network. There are no major through-routes of importance. The completion of Route 55 in its entirety (it is long-completed within the County limits) will provide an important connection to the rest of the New Jersey network. Until the construction of 55, Cumberland was the only New Jersey county not served by the Interstate System, the Garden State Parkway, the New Jersey Turnpike, or similar, four-lane, limited access highways. The integration of 55 with the rest of the network will remove some of the problems inherent in the County's peripheral location. An excellent system of secondary and tertiary roads is well-maintained. The lack of a connection from Route 55 to other major arteries long rendered 55 an economic dead end. It was literally a road to nowhere, -from nowhere. With the impending completion of route 55, and the added advantage of an excellent network of existing secondary feeders, the network can begin to function properly.

The railroad system of the County has recently received a reprieve in the face of projected mileage cutbacks. Area sand mines are dependent on rail transportation, much as any other commodity with a low value to bulk ratio. Truck shipment (long distance) is out of the question under current economic conditions. The rail network has gradually decreased over the last 50 years (See Figure 2). Further decreases would pose a threat to many area industries; it would also reduce further the County's ability to attract future investment.

A large and expanding air service (Millville Airport) shows promise for the future. Few (and only highly specialized industries), however, can avail themselves of this expensive freight mode. Recent development of commuter flights and an engine repair facility are enhancing its value to the area's economy.

#### E. The Population: Growth, Distribution, Pattern and Change

Both recent and long term economic developments have been mirrored in the County's population distribution and change. The Vineland-Millville economic axis is experiencing rapid and continued growth. The rest of the county is experiencing much slower growth, stagnation,



or even decline (Table 2). The coastal areas are those which exhibit the slowest overall growth within the county. In the most recent decade, Lawrence, Downe, Greenwich, the coastal portion of Fairfield, and the City of Bridgeton experienced net population decline, while Shiloh and Stow Creek had very low growth rates (figure 3 and Table 3).

Table 2

Population Shifts and Growth in Cumberland County

	<u>Growth Rate 1920 - 1970</u>	<u>Growth Rate 1960 - 1970</u>
1. Southwest Region (Shiloh, Stow Creek, Greenwich)	29%	0.00%
2. Bridgeton Area (Upper Deerfield, Hopewell, Fair Fairfield, Bridgeton City)	85%	4.47%
3. Vineland-Millville Axis (Deerfield, Vineland, Mioo)	117%	21.17%
4. Eastern Bayshore (Lawrence, Downe, Commercial, Maurice River)	60%	6.01%
5. Cumberland County	99%	13.6%
6. New Jersey	127%	18.2%

Table 3  
Population Change Bay Shore Townships<sup>1</sup>

Municipality	DECADE			
	<u>1930-40</u>	<u>1940-50</u>	<u>1950-60</u>	<u>1960-70</u>
Commercial	-1.8	+ 1.5	+ 0.2	+13.0
Downe	-1.8	+15.5	+ 4.7	- 5.0
Lawrence	-1.0	+16.5+	+29.1*+	-11.7
Greenwich	-5.1	+ 4.0	+12.4	-11.3
Stow Creek	-9.5	+32.9*+	+ 5.5	+ 4.0
Maurice River	-2.5	+25.3*+	+ 9.5	+20.5
City of Bridgeton	+1.8	+15.2	+14.7	- 2.5
Cumberland County	+4.7	+21.0+	+20.6	+13.6
N.J.	+2.9	+16.2	+25.5	+13.3
U.S.	+7.2	+14.5	+18.4	+13.3

\* growth exceeding County Average

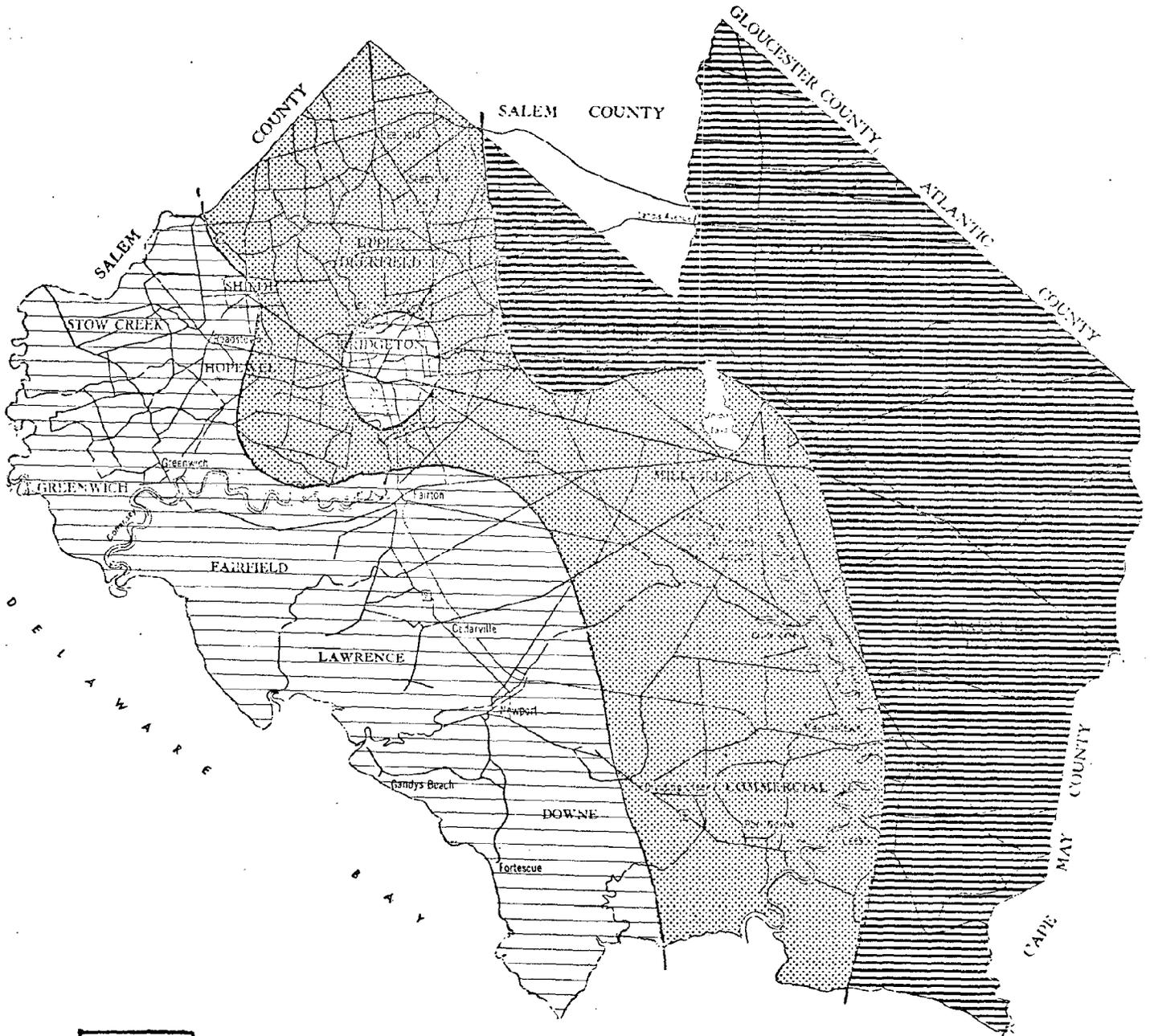
+ growth exceeding N.J. Average

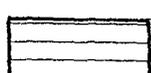
Source: U.S. Census

<sup>1</sup>N.B. Fairfield, an area of sustained growth, has been excluded from the table. Said growth has occurred in the area adjacent to Bridgeton as suburban growth and not in the Bayshore segment of that Township.

FIGURE 3

GENERALIZED REGIONS OF POPULATION CHANGE 1960-70  
CUMBERLAND COUNTY



-  Rapid Growth (over 20%)
-  Low to Moderate Growth (+10<sup>+</sup> to 20%)
-  Stagnation or Decline (-12% to +4%)

The greatest growth in the coastal area occurred by and large during the decade 1940-1950. Sporadic growth has occurred since that time in occasional areas, but low net growth or stagnation has been the rule. Relative decline has been the case throughout recent history (Table 4), and will probably be the case for some time.

Table 4

Relative Share of County Population Living in the Bay Shore Area

	Bayshore Area		Inland Area	
	Population	%	Population	%
1920 <sup>1</sup>	9,696	15.8	51,652	84.2
1930 <sup>1</sup>	11,162	15.9	58,733	84.1
1940 <sup>1</sup>	10,822	14.8	62,362	85.2
1950 <sup>1</sup>	12,732	14.4	75,865	85.6
1960 <sup>1</sup>	13,901	13.0	92,949	87.0
1970 <sup>1</sup>	14,397	11.8	106,977	88.2
1976 est. <sup>2</sup>	15,885	11.9	117,571	88.3
July, 1978 est. <sup>3</sup>	15,160	11.5	117,285	88.5

\*Bayshore Area includes: total area of Greenwich Township, parts of Fairfield, Lawrence, Downe, Commercial, Maurice River, Stow Creek and Hopewell Township

Sources: <sup>1</sup>U.S. Census, <sup>2</sup>N.J. Dept. of Labor and Industry (estimates), <sup>3</sup>C.E. Zimolzak, Glassboro State, Dept. of Geography (estimates).

F. The Problems of Growth and No Growth

While overall County growth may exceed the State average during this decade (there is much variety and conflicting data in estimates and projections), the region's growth is not necessarily based on a sound economic footing. Commercial Township, the area of lowest mean, median and per capita income in the County, experienced reasonable growth (13.0%) during the decade 1960-1970. The two factors, population growth and development, are not always effect and cause in an equation. Growth may continue to occur along with high regional unemployment and economic problems.

Attempts to attract industry have not always been successful. A bright note is the recent attraction of small industries to a number of industrial plants vacant for from 3 to 10 years. Several hundred jobs were added in three such old plants. These, however, were countered by layoffs or shutdowns at other area employers. Labor market forecasts assume continued decline in agricultural and industrial employment. Warehousing, distribution and supply facilities, with a low employment to space ratio, have been increasingly attracted to area industrial parks. New Jersey and the East Coast have seemingly entered into an era of economic decline. Cumberland, too, has seemed to follow this pattern. With a high local unemployment rate, continued inflation, and low median income (in 1970, only the seasonally unemployed, tourist-oriented counties of Ocean, Atlantic, and Cape May had lower income figures) it is natural that programs which are envisioned by the public as "limiting" to development will be carefully and critically

examined. This has been and will be reflected in attitudes toward programs dealing with land management in coastal areas.

Cumberland is in need of some economic diversity. Tourism is one such potential area of expansion. Light industry, however, is considered both desirable and necessary by most County leaders and citizens; it is viewed as the best way to solve unemployment problems and to diversify the economic base at the same time. Much of the capital plant (including structures) in Bridgeton is obsolete or obsolescent. Many of the area's industries suffer critical competition from imports. The local apparel industry has been characterized by some analysts as overdependent on government contracts.

Naturally, the prime consumer weapon in the attack on inflation has thus far been multiple incomes per household, - the working wife is the prototype. High area female unemployment (see Table 1), low female job opportunity, and low levels of median income are an argument for more development, not less, in the public mind.

#### G. Resources and Potential

The problems associated with Cumberland's economy do not match up with its potential. One of the few remaining uncongested areas of the State, it ranks among the least densely populated of New Jersey's Counties (242/sq. mile in 1970; 266/sq. mile as of 1976 estimates). The Bayshore area municipalities generally have densities of from 35 to 65 per square mile, with the exception of Commercial Township, in which two larger towns (Mauricetown and Port Norris) are located. The more populous northern municipalities support larger populations in an area characterized by large, prosperous farms and small industries. The three urban centers of Vineland, Millville and Bridgeton contain most jobs in both the manufacturing and non-manufacturing segments of the economy (other than agriculture and mining), supporting both high urban densities and outlying rural non-farm populations of commuters. (Vast corporate jurisdictions result in comparatively low densities in the cities of Vineland and Millville, however).

The area is one of New Jersey's flattest, typical of the outer coastal plain which covers most of the County. Only a few stream bank areas would exceed a 6% slope. Most of the inland area is between 20 and 100 feet above sea level. Most of the area designated as the coastal zone is between 0 and 20 feet above mean sea level. The abundance of flat land means that erosion, and consequent siltation, are relatively minimal problems. Construction of either highways or structures requires minimal excavation or fill at most sites.

Water rich, the entire County is drained by two major streams, the Cohansey and Maurice Rivers (both navigable) and by a series of small streams along the Bayshore between these two rivers. The major streams both have low gradients with consequently meandering courses and adjacent swampy flood plains. Because of this, the coastal area, and attendant wetlands, penetrate far inland to the north-central portions of the County. Tidal marshes extend from one to five miles inland from the shore of the Delaware Bay and up the two major streams to Bridgeton and Millville. Large manmade lakes (Union, Sunset, East and Laurel Lakes, as well as Clarks Pond, Sheppards Mill Pond, and others) have been built in the upper reaches of the two main rivers and along their tributaries. Some are so-called cedar lakes and many are impoundments once used for industrial water power in a past era. A maze of lakes and ponds, interlinked by confused drainage and resulting in part from water-filling of old sandpits, dots

the landscape of Maurice River and Commercial Townships while dominating the landscape of portions of Downe and Lawrence Townships.

This abundance of surface water is matched by a large reserve of groundwater. Some 16 to 18% of the County has a cover of permanent or seasonally standing water. The sandy soil facilitates vertical drainage in the upper two-thirds of the County and on interfluvial areas known locally as "necks". The geologic formations which underly Cumberland all dip to the south or southeast, most often increasing in thickness with depth. Some eleven formations have been researched, identified and mapped. The Cohansey Sands, one of the most water-rich of these levels, form a horizon which can be tapped for future needs (up to 1000 gallons per minute yields in a properly installed well). The Kirkwood formation is currently supplying water only to Millville; it, too, is a potential future water source for Vineland and Bridgeton (as well as Bridgeton's surrounding suburbs) currently being served by the Cohansey sands. The groundwater is relatively soft and free of impurities, though the high permeability of soils requires that careful treatment of water be undertaken lest groundwater become polluted.

The soils of the County are extremely sandy. The hillier, northwestern portion of the County contains finer sands, characteristic of the inner coastal plain. Coarser sands prevail in the southern and southeastern portions of the County. The sandy soil results in good soil drainage conditions over almost all areas of the county except in floodplains and areas adjacent to the shoreline. Soils in the County are highly variable and complex. Scattered areas of Class I and Class II soil exist, but economics often dictate use as much as natural conditions. Careful farming, heavy fertilization, increased cultivation of legumes (especially soybeans), and irrigation have often so improved upon nature that soil maps don't always reflect realities. Realistically, however, much of Cumberland has soils far below economic standards, and only about one-fourth of the land area is devoted to agriculture, (mainly in the northwestern portion of the County and around Vineland). This farming area surrounds the major urban centers, and together they contain about 85% of the population.

Like most coastal plain areas of recent sediments, Cumberland County has relatively few mineral resources. However, large sand and gravel deposits of commercial grade exist in the southeastern part of the County. Almost one-half of the area of Maurice River and Commercial Townships is underlain with "high economic potential" sands and gravels. A large portion of Downe Township and parts of Lawrence Township and the City of Millville contain similar deposits. The mining of these deposits is carefully regulated by federal and state reclamation laws. They are used in foundries and glass plants along the whole East Coast. Some deposits are used for fill, construction material and other uses as well. The area described is one of the largest and best developed industrial sand reserves in the United States.

Some 55% of the County is in open space designated as woodlands, wetlands and vacant land. Some 120,000 acres of woodland cover major portions of the county, in particular those areas east of Bridgeton and Deerfield and South of Vineland. Of this total, some 32,000 acres of privately owned woodland are located in Maurice River Township alone. Public open space, some in the form of parks, but especially in the form of State Fish and Game Preserves, covers about 11% of the County's area.

The County's finfish, shellfish, and wildlife resources are an important asset. Oyster, crab, and clam grounds front on the County's Delaware Bay shoreline. A wide variety of

waterfowl inhabit, winter in, or migrate through the area, in particular its lakes and coastal wetlands. The close juxtaposition, indeed interdigitation, of farms, forests, wetlands, tidal marsh, surface waters, and pasture, form a varied, almost ideal milieu for the development of a great quantity, quality and variety of wildlife species.

The scenic cultural and historic resources of the county are many and varied, including New England - like fishing villages, natural unspoiled coastal marshes, stately, (often opulent) 19th century townhouses, solid farmhouses of every era and style, as well as ethnic churches and foods. In all, there are 85 registered historic sites and structures, including virtually an entire town, Greenwich. Some hundreds more could qualify and many are being documented to that end. The rolling, hilly country of Stow Creek, Greenwich, and parts of Hopewell Townships constitute one of the best scenic reserves in South Jersey.

Sometimes characterized as "quaint", most always as "wild", the Delaware Bay shoreline may be Cumberland's greatest scenic attraction in the long run. Upwards of 1000 boats may be accommodated in existing docks and marinas. Commercial fishing craft rub shoulders with party boats and privately owned craft of every make, size and design. Recreational fishing is a growing economic endeavor in Cumberland. A series of restaurants, historic sites, museums and even a dinner theater are developing into a loosely knit network with a resort/sport function and base. Much of this shoreline area has been subjected to severe erosion during storms, and many of the structures have been damaged by repeated storms.

The Wetlands Act is often felt by locals to discriminate against Bayshore dwellers in favor of seashore dwellers "because the area is less developed." (See Appendix B). Much of the opposition to coastal legislation and management policies is based on the fears of those who use or dwell in this area. Much future research is needed to determine the best possible combination of uses for this major scenic and environmental attribute of Cumberland County.

While not all facets are detailed in this description, it is of sufficient length and breadth to characterize at one and the same time the diversity of Cumberland itself as well as its inherent difference from the three basic models mentioned on page 2 which account for the rest of New Jersey.

II. STATE COASTAL PLANNING PROGRAM AND THE COUNTY

## A. Implications of the Proposed State Coastal Program For the County

The environmentally sensitive areas in Cumberland's Coastal Zone include a variety of water and land features; among these are medium-sized rivers, streams, creeks, natural and man made lakes (including water-filled sand pits), the Delaware Bay, a series of coastal and riverine wetlands and agricultural areas. The scenic value of these areas is outstanding when compared to many other regions of the State of New Jersey. These areas also have a great potential for recreational development. Wetlands also serve to protect the inland areas from the force of the sea and assist in absorbing sewage discharge by the rivers. They should be protected in order to preserve the ecological balance of this area. The State DEP/OCZM Coastal Management Plan protects these and other environmentally sensitive areas by regulating land and water uses.

The County Coastal Zone is relatively undeveloped when compared with the northern part of the County; it is among the least developed areas in the State of New Jersey. This zone can be adequately compared with the Salem County Coastal Zone.

The CAFRA area includes approximately 186 square miles (37% of the total area of the County)<sup>1</sup>. The CAFRA area is included within the Coastal Zone. In addition to the CAFRA area, the Coastal Zone includes all tidal portions of the streams and their adjacent wetlands which extend landward from the existing CAFRA boundary. The County Wetlands area includes 44,893 acres (14% of total area of the County). See Figure 4.

The Wetlands Act of 1970 was effective in Cumberland County from February 21, 1975. The State Coastal Management Program (BOSS) defines the Delaware Bayshore region as a Low Growth Area (based on numbers of issued CAFRA permits and also on the State Development Guide Plan, prepared by the Department of Community Affairs). The general policy in this area is that conservation is more important than development, and, in particular, the conservation of agricultural land is given a priority. Low Growth Area designation does not exclude development entirely. In a low growth area with high development potential (and low or medium environmental sensitivity), moderate intensity development is acceptable.

In Cumberland County 9 municipalities are located partially within the State Coastal Zone and only one (Greenwich) is totally within it. This area is sparsely populated with little existing infrastructure; approximately 22,000 people live there. The region is largely wetlands (42%), forest (33%) and agricultural land (20%). The region will accommodate construction of small numbers of housing units adjacent to existing development and possibly several larger developments and new industries. More research is needed to determine the exact locations in which additional development should take place.

The Coastal Management Program's policies calls for the protection of the coastal ecosystem, concentration of development (residential, commercial, industrial and resort-oriented), and the preservation of open space.

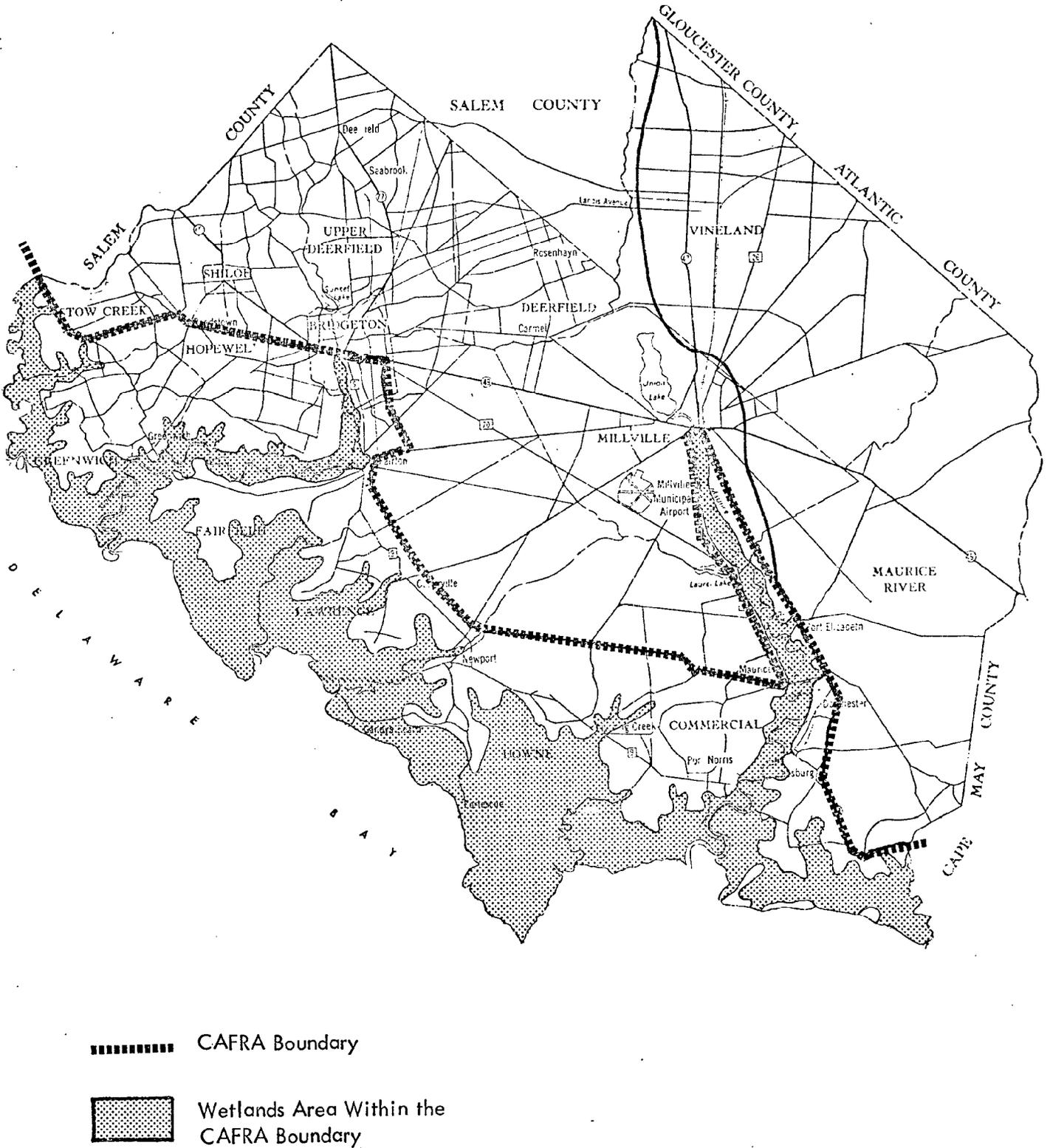
The coastal decision making process is based on location, use and resource policies. The locational policies consider both the environmental sensitivity and development potential of the site proposed for development.

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<sup>1</sup> According to the DEP estimate.

FIGURE 4

GENERALIZED AREA UNDER THE "WETLANDS ACT OF 1970"  
CUMBERLAND COUNTY



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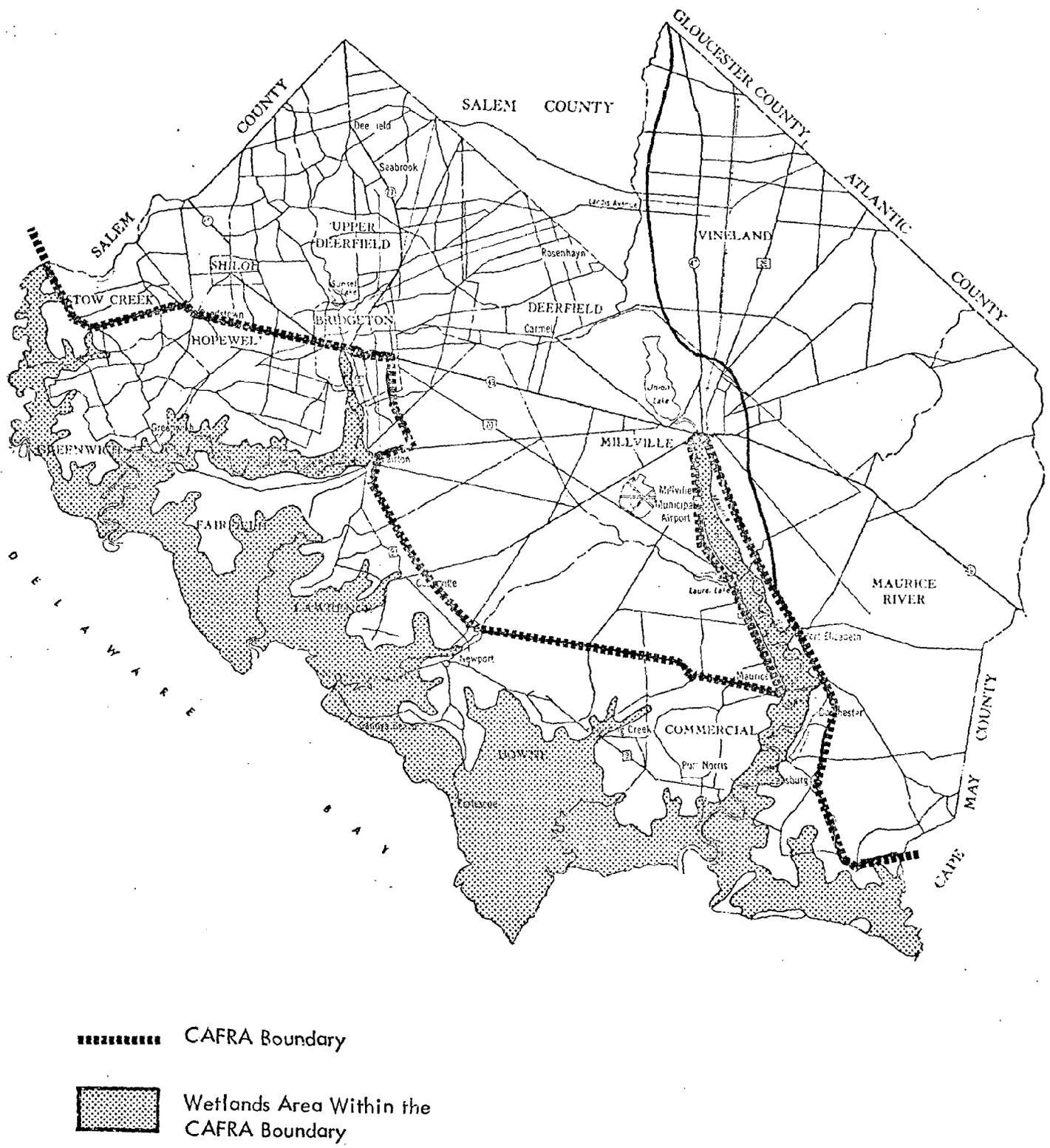
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<sup>1</sup> According to the DEP estimate.

FIGURE 4

GENERALIZED AREA UNDER THE "WETLANDS ACT OF 1970"  
CUMBERLAND COUNTY



In areas of moderate and low environmental sensitivity, the development has been limited to infilling. This allows a limited amount of growth within existing settlements. New housing development is prohibited in Water Areas and the Natural Water's Edge. The stabilization of existing lagoons through vegetation, bulkheading or other means is conditionally acceptable, provided that the conditions of the Retained Water's Edge and Filled Water's Edge are satisfied. Housing development that provides for a mix of dwelling types and for persons of different age and income groups is encouraged. Housing developments which contribute to a municipality's efforts to accommodate its fair share of low and moderate income housing are encouraged. Residential development involving the demolition and redevelopment of existing structures is discouraged, unless rehabilitation of the existing structures is demonstrated to be impractical, unfeasible, and contrary to the public interest. Recreation areas shall be incorporated in the design of all residential and industrial development. The spread of development is restricted. In developed portions of Cumberland County along the Delaware Bay, characterized as a high risk erosion area, development is prohibited. All types of development are discouraged in wetlands areas. In certain cases development in wetlands can be acceptable; if said development requires water access or is water oriented and there is no feasible alternative on a non-wetlands area, such development is permitted.

Resort and recreational uses are encouraged. New marinas are acceptable if there is no possibility for the enlargement of existing marinas and there is a great public demand for such facilities. This policy is especially important to Cumberland County. Existing marinas along the Cohansey and Maurice Rivers can't accommodate all tourists and users. Example: on Maurice River at Matt's Landing Road, there are four marinas: Anchor, Baileys, Driftwood and John Robinson. These marinas have no space for expansion. They docked 250 boats and have little possibility for further expansion. Every year more people come from the New York, North Jersey and Philadelphia areas and they can't use these facilities because there is simply no space. This case indicates that in the future there will likely be some number of proposals for new marinas.

Industrial development is limited to water oriented industries. Existing shipyards along the Maurice River (Dorchester, Newporter and Akerman) can potentially serve offshore drilling operations as a base for the repair and maintenance of vessels and equipment. The Coastal Program recognizes the value of these existing facilities and encourages their use for the off-shore drilling operations by the oil companies. In consistency with this policy, the Maurice River Future Land Use plan proposal indicates an enlarged industrial zone (adjacent to the Dorchester Shipyard Industrial Zone), for continuance and enlargement of the repair and maintenance functions. This is also consistent with Basic Coastal Policy on the concentration of industrial uses. New or expanded coastal-dependent industrial or commercial development is encouraged at or adjacent to existing sites, to the maximum extent practicable. Marine resources dependent industry, such as commercial fishing, is encouraged and shall have priority over other waterfront uses, except for recreation. The County oyster industry and fishing should be expanded in the Bivalve and Port Norris areas because of a new oyster drill control program. Non-coastal dependent development can be acceptable if it offers a high jobs/acre ratio.

The New Jersey glass industry uses the high quality silica sands of Cumberland County in its production. The Mining industry (sand) is one of the most important in the economy of the County. The mining policy states: "New or expanded mining operations on land, and directly

related development for the extraction and/or processing of sand, industrial sand, gravel, ilmenite, glauconite, and other minerals are conditionally acceptable . . . . " The conditions are listed below:

- 1) no disturbance of wildlife habitats is allowable,
- 2) it must be located nearby or adjacent to sites of existing mining operations,
- 3) adequate buffer areas must be provided between sand mines and areas of other uses,
- 4) each mine operation must submit a development and reclamation plan,
- 5) each operation must comply with federal, state and local regulations, and
- 6) standards used will not have a substantial adverse impact on coastal resources, the local economy and/or a long-term irretrievable impact on the mineral resources.

In Cumberland, the Townships of Downe, Commercial and Maurice River have economies that are virtually based on the mining industry.

The Coastal Resource and Development Policies involve the review of any proposed development in terms of its effects on various resources of the coastal zone. These policies have spelled-out performance standards which a proposed development must meet. New development must be visually compatible with their surroundings and provide visual and physical access to the waterfront. Coastal development must preserve, to the maximum extent practicable, existing vegetation within a development site. The design of a coastal development must incorporate management techniques which favor or maintain native wildlife. Wildlife management areas in Cumberland contain over 35,000 acres. Most of that acreage is located within the Coastal Zone and is owned by the State. The following Fish & Wildlife management areas are located within the coastal zone:

- 1) Osborn
- 2) Sea Breeze
- 3) Clarks Pond
- 4) Nantuxent
- 5) Fortescue
- 6) Egg Island
- 7) Turkey Point
- 8) Heislerville
- 9) Carson

The policies which are concerned with wildlife management areas are among the most important to Cumberland. "Preservation of areas and their dedication to open space, especially along drainageways and waterways, will be encouraged." Some municipalities already preserve areas along the streams and restrict all development therein.<sup>1</sup> The Maurice Township Proposed

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<sup>1</sup>It is difficult to summarize all the environmental policies and concern of all the coastal municipalities because of a lack of the F.L.U.P.'s in several cases.

Future Land Use Plan is one of the classic examples.<sup>2</sup> The developed site should also provide public services. In Cumberland, the coastal zone already has existing sewerage facilities in Bridgeton and Millville; areas that are densely populated. Other coastal areas do not have municipal or County sewerage facilities because there is no economic justification for them at the present time.

The secondary impact of major projects must also conform with the resource policies. Transportation and wastewater treatment systems obviously require such analysis. Runoff from parking areas should either be used to recharge the ground water or be treated before it is discharged. Policies also promote energy conservation, including the development of passive and active solar power. Policies encourage the protection of neighborhoods and special communities.

In the flood hazard areas, resource policies discourage coastal development. Some development is acceptable on floodplain areas but it must comply with applicable flood hazard reduction standards as adopted by the Federal Insurance Administration in HUD, (Federal Register, Volume 41, No. 2-7, Part II, October 26, 1976), as amended. These policies are of special importance to the coastal municipalities in Cumberland County.

#### B. Recommendations for Legislative Change of the Existing CAFRA Boundary in Cumberland County

The Cumberland County Planning Board recommends that the area of the County under CAFRA jurisdiction be reduced. (The CAFRA boundary is shown on Figure 5). The proposal calls for an inland boundary line to follow the ten foot contour interval (above mean sea level), as it is shown on Figure 5. Proposed by the Planning Board, the inland boundary is the same as that proposed in bill A-722 "Coastal Area Protection Act" introduced in the N.J. Legislature early in 1972. The inland boundary of A-722 was the 10 foot contour. This bill was never approved; it died in the Senate Committee. However, the inland CAFRA boundary as it was described in the original bill A-722, (proposed and recommended by the Rutgers Law School staff and students) complied with the intent of Congress as it was described in the OCZM threshold paper number 1, which stated: "It is clear that it is the intent of Congress that States delineate boundaries with a relatively conservative approach, including only those "shorelands" the uses of which have a direct and significant impact on coastal waters".

Later in 1972, (July 17) substitute bill (A-1429) was introduced in the Legislature. In that bill the DEP recommended the inland CAFRA boundary. (See Figure 6). The DEP prepared the recommended "Coastal Area" boundary (CAFRA boundary) by analyzing the geography of New Jersey in terms of five criteria:

- 1) Limit the Coastal Area to the Coastal Plain Geological province;
- 2) Include wetlands;
- 3) Include tidal portions of streams, and their adjacent fast lands, that empty into the Raritan Bay, Atlantic Ocean, Delaware Bay, and Delaware River;

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<sup>2</sup>Maurice River Future Land Use Plan will be approved in January, 1979.

# PROPOSED CHANGES FOR CAFRA BOUNDARY CUMBERLAND COUNTY, N.J.

FIGURE 5

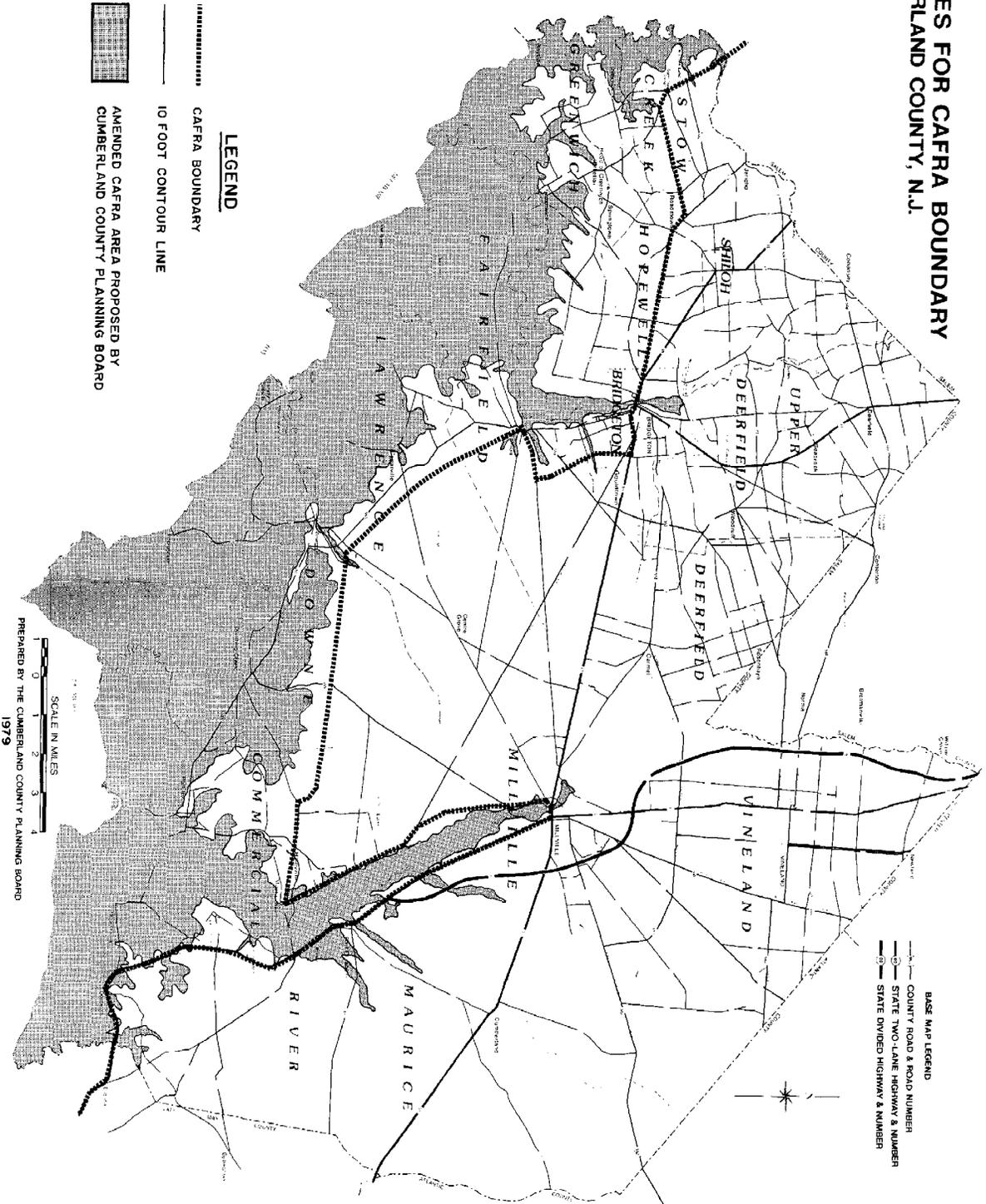
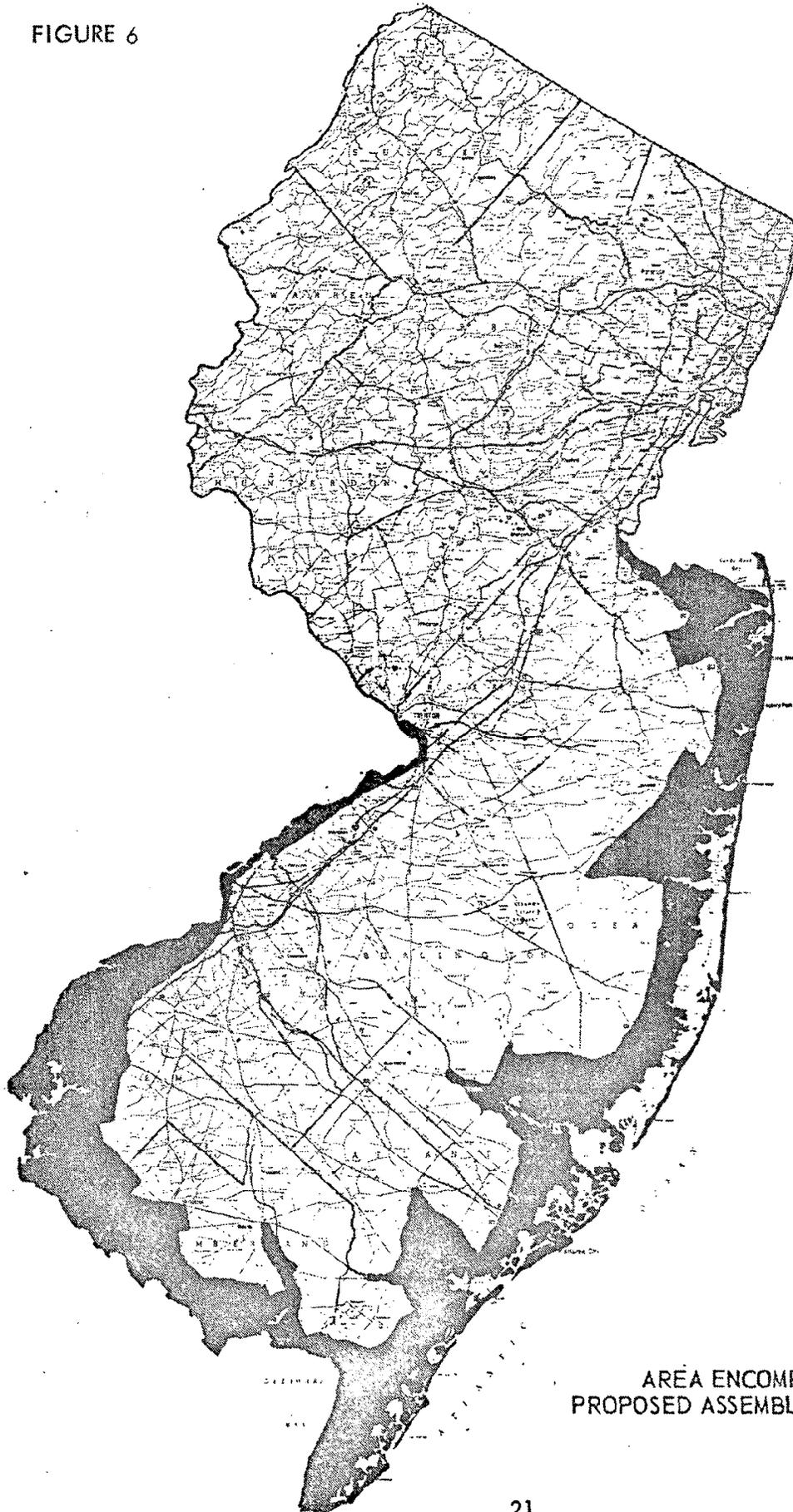


FIGURE 6



AREA ENCOMPASSED BY  
PROPOSED ASSEMBLY BILL NO. 1429

- 4) Include areas with soil limitations such as poor drainage, propensity for flooding, poor septic tank suitability, poor landfill suitability, limited agricultural value, regions with muck, tidal marsh, swamp, and bog soils, and areas with (0) depth to seasonal high water table; and

- 5) Include densely populated areas whose sanitary wastes could affect water quality.

DEP then interpreted aerial photography and soil surveys to delineate a recommended inland boundary by using fixed, legally-describable cultural features (such as roads and railroads) to define the land area that met the boundary criteria.

In the case of Cumberland County, criteria 1 to 5 were applied. Criteria 1, 2, 3 and 5 do not raise any objection. However criterion four (4) was not analyzed by DEP quite so carefully. This is why the "CAFRA" boundary stretches too far inland in Cumberland County, including well drained silty soils on the upland (Matapeake-Chillum-Mattapex association and Aura-Downer-Sassafras association). See General Soil Map for Cumberland County (Figure 7). Classic examples of the municipalities in which coastal area includes too much upland are: Hopewell, Bridgeton and Greenwich. Other coastal municipalities of Cumberland County have some small portion of these characteristically upland, well drained soils which are also included in the "Coastal Area".

The "Coastal Area" boundary (CAFRA Boundary) proposed by DEP for Cumberland and other of New Jersey's counties was approved by the Legislature on June 20, 1973, after several amendments revising the boundary were added and is now known as the Coastal Area Facility Review Act.

The revised and final "Coastal Area" boundary:

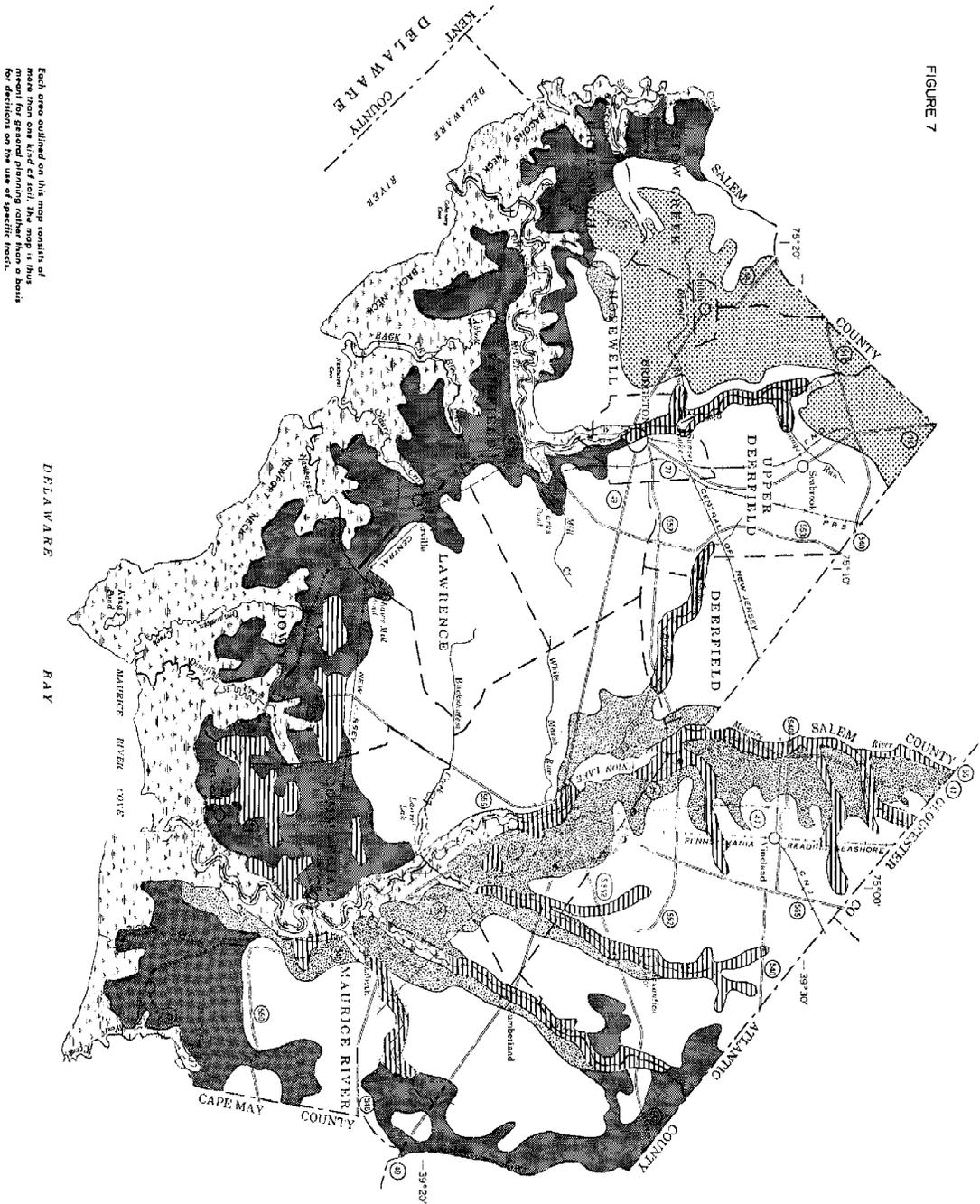
- 1) deleted the Delaware River industrial waterfront, from Trenton to the Delaware River Memorial Bridge (four miles south of the Memorial Bridge);
- 2) excluded a relative small area around Cape May County Airport to facilitate economic development; and
- 3) reduced the Coastal Area proposed in Middlesex and Monmouth Counties.

The Planning Board sees no reason why the CAFRA boundary must follow cultural features; or why such features must be limited to roads and railroads. Any advantage of easy boundary line identification is far outweighed by the disadvantages that will accrue to the many additional upland property owners made subject to regulation. An upland boundary based on the ten foot contour interval could be accurately mapped with the aid of topographic sheets interpreted in critical cases by municipal engineers. In fact, precedent for this approach already has been set by DEP since, for a portion of the Coastal Zone which extends landward of the CAFRA boundary along the tidal creeks (which flow through the CAFRA area), the contour concept is utilized.

The rationale for the reduction of the CAFRA boundary:

- 1) Consistency with the Federal Coastal Zone Management Act is insured; and 22

FIGURE 7



Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

DELAWARE RIVER  
MAURICE RIVER  
ATLANTIC RIVER

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE  
NEW JERSEY AGRICULTURAL EXPERIMENT STATION  
COOK COLLEGE, RUTGERS, THE STATE UNIVERSITY  
NEW JERSEY DEPARTMENT OF AGRICULTURE  
**GENERAL SOIL MAP**  
CUMBERLAND COUNTY, NEW JERSEY



**SOIL ASSOCIATIONS\***

- Matapoga-Clifton-Matamoras association: Nearly level to sloping, well drained and moderately drained soils on uplands.
- Ayr-Dowse-Scarsize association: Nearly level to sloping, well drained, loamy, sandy and gravelly soils; on uplands.
- Hampton-Fallsington-Pocconde association: Nearly level to gently sloping, moderately well drained to very poorly drained, loamy and sandy soils; on uplands and lowlands.
- Evesboro-Klep-Lalwood association: Nearly level to moderately steep, excessively drained to somewhat poorly drained sandy soils; on uplands.
- Much-Aston-Berryland association: Nearly level, poorly drained and very poorly drained, organic and sandy soils; on lowlands.
- Tidal March association: Nearly level, very poorly drained, silty and muchy tidal flats that are subject to daily flooding; on lowlands.

\* Texture terms in the name of the associations refer to the surface layer of the major soils in each association.

Compiled 1977

- 2) It would relieve a substantial number of upland property owners from the costly, time-consuming and discouraging permit application process.

### C. Recommendation for Changes in the Coastal Policies

Coastal wetlands are the most environmentally valuable land areas within the coastal zone. In Cumberland the Wetlands area contains 44,893 acres (14% of total area of the County). These environmentally sensitive areas should be protected with special care. The policies which spell out the type of development which can be permitted on wetlands should be described in great detail, so that municipalities can use the Coastal Management Program as a guide in the preparation of Master Plans and zoning ordinances. Presently, the wetlands policies are explained on a half page. (N.J. Coastal Management Program, BOSS p. 43). A very helpful aid for the coastal municipalities would be a model wetlands ordinance which could be distributed by DEP or be made available upon request.

III. STATE-LOCAL COASTAL POLICY CONSISTENCY

## A. Summary of County and Municipal Plans, Zoning, and Maps

The Cumberland County Plan of 1966 was adopted in 1967. This is a comprehensive twenty year development program. The Plan was based on the findings and proposals contained in nine preliminary studies. The Plan also describes future projected growth for Cumberland to 1985. In accordance with this Plan, residential growth should be encouraged in areas adjacent to the existing population centers. New development should follow a pattern of in-filling, proceeding in areas between already developed lands. Other undeveloped areas, not adjacent to existing development, should be used for the fulfillment of park and open space demands. Concentration of new development near to already developed centers is beneficial, because it is reasonably close to central services and preserves agricultural land and other open space uses.

The Cumberland County Future Land Use Plan shows concentrations of residential development in the Vineland, Millville and Bridgeton areas, (all types; low, medium and high density). The Plan also provides for greenbelt buffers, areas which should include sites for recreational purposes, prevent compounding congestion and preserve community identity.

In accordance with the Plan new industrial development should be located in both areas adjacent to existing industrial parks (Bridgeton, Millville and Vineland) and also in new, adequate sites. The latter is inconsistent with the coastal management program, in spirit, but new industrial investment is not completely precluded by that program. All of the industrial areas in the County Master Plan are conveniently close to multiple transportation facilities, residential areas and necessary utilities. The utility and suitability of each site will require further research.

The Plan includes a proposal for the building of a new superhighway (Route 55), along which new residential and industrial development were to be concentrated. Much of Route 55 is completed and development will likely result because of the approved northern extension plan. (Already connected with U.S. 40, Route 55 will continue to N.J. 42 in Gloucester County; completion will likely bring some development along this corridor, generally at or near interchanges). The Plan predicted that Cumberland County would lose 6% of its agricultural land to some urban type of development by 1985, though the Plan strongly encourages the protection of prime agricultural lands. This was one of the important planning objectives for municipalities. Undeveloped land was categorized as land reserved for the future (woodland, wetland and vacant land). In accordance with the Plan tidal wetlands should be preserved (through sound zoning and planning measures) for conservation and open space purposes.

The Cumberland County Plan of 1966 recognized the importance of all tidelands and environmentally sensitive areas before the Wetlands Act was signed into law. The Cumberland County Land Use Plan had as one of its major aims the protection of environmentally sensitive areas. A new land use map will be prepared in 1979, incorporating data from the various municipal land use plans.

### a. The 1966 Plan and the Cumberland County Coastal Zone

The 1966 land use map, as amended in 1972, shows the major land use categories within the Coastal area designated as woodlands and wetlands, State-owned open space

areas, agricultural areas and conservation areas. Only small areas were designated as residential, including both existing residential areas as well as those planned for future residential development. Said residential areas are concentrated in a few distinct locations: 1) around Greenwich town (an unincorporated settlement designation in Greenwich Township, 2) around the peripherae of the City of Bridgeton, 3) south of New Jersey Route 49 within the corporate limits of the City of Bridgeton, 4) near the settlement of Fairton (Fairfield Township), and 5) in the vicinity of the settlement of Cedarville (in Lawrence Township). There are also, a few extremely small residential areas designated around the settlements of Newport, Fortescue, and Dividing Creek in Downe Township. In Commercial Township, there are residential expansion areas reserved near Mauricetown (part) and Port Norris, the two largest settlements in that municipal jurisdiction. In Maurice River Township, only a small zone of enlargement has been reserved to residential use around the existing residential areas of Delmont, Heislerville, Leesburg, Dorchester, and Port Elizabeth. Within the City of Millville, only a minor fraction of the small coastal area has been designated for residential purposes.

Small business and commercial districts are shown within the settlements of Fairton, Cedarville, Fortescue and Port Norris. Industrial areas were shown only in Bridgeton, Millville, Dorchester, Leesburg, and Bivalve. In accordance with the County Plan, all coastal municipalities were to be connected by a major county Bayshore Drive Route. It was planned that this route should extend the length of the county adjacent to the meadowlands abutting the Bay, crossing the Cohansey River at Greenwich and the Maurice River at Port Norris. This planned, intracounty route has not materialized and it is not included in the County Transportation Plan which is presently being prepared by the Cumberland County Planning Board.

The 1978 Cumberland County composite Future Land Use Map (based on existing and proposed municipal plans and zoning ordinances) shows that there has been little change, since the County has not undergone the growth predicted in the original plan.

The County Composite Future Land Use Map is based on the following documents:

- a) the Bridgeton City Master Plan and the newly adopted Greenwich Township Future Land Use Plan;
- b) proposed Commercial, Hopewell, Fairfield and Stow Creek (Townships) Future Land Use Plans; and
- c) old municipal land use plans and zoning ordinances (Lawrence, Downe, Maurice River Townships and the City of Millville Master Plan).

Though generally similar, a detailed comparison of the recent land use map with that of 1972 does show some changes. New industrial districts were created in Greenwich, Hopewell, Fairfield, and Lawrence Townships within the coastal zone. These industrial zones as yet have little industrial development, but these are the areas designated by municipalities for future industrial growth (with the exceptions of Fairfield and Lawrence Townships, where existing industrial zones were enlarged to accommodate future industrial

growth). As a result of these changes, there is a minor decrease in the area of agricultural land. Also noteworthy is the increase in residential land in selected portions of the County, in particular: Newport in Downe Township, around Route 553 in Lawrence Township, and in Maurice River Township around the settlements of Heislerville, Leesburg, Dorchester, and Port Elizabeth. Decreases in the area designated as residential are noted in the Port Norris and Greenwich areas. There is also evidence of an increase in both the number and size of commercial districts in the townships of Downe and Maurice River.

In some areas located upland of the Coastal Zone the changes can be said to be both acceptable and necessary, providing jobs to area residents, but in some instances (environmentally sensitive areas), these changes are in conflict with the State of New Jersey Coastal Management Program. This subject will be discussed in detail below.

Each coastal municipality's master plan and zoning ordinance will be reviewed briefly and compared with the County Master Plan and the State of New Jersey Coastal Management Program. (See Legal Inventory, Tables 5, 6).

#### b. Review of the Coastal Municipalities' Master Plans and Zoning Ordinances

City of Bridgeton. Almost one half of the area of Bridgeton is included in the coastal zone. The boundary essentially parallels route 49. This is the only portion of the City that has large tracts of vacant land. Indeed, vacant lands and sites are at a premium in crowded, densely developed Bridgeton, and these are the only tracts of vacant land which could be used for clustered housing (even mid-rise and high-rise) and for the localization of industrial development. Industrial development should be encouraged at selected locations in Bridgeton (those well served by roads and utilities) in order to provide additional employment in an area with a sagging economy. Industrial development would also strengthen the tax base of the City. In accordance with these city goals and objectives the Bridgeton Land Use Plan shows these areas as reserved for industrial development.

Existing industrial uses represent a relatively small amount of the total city area (5.8%). Most of these industrial lands are located in the vicinity of the river and/or along existing transportation arteries (highway routes and railroad rights-of-way). Most area plants would be characterized as light industry (for example, food processing and the clothing industry).

New areas designated for industrial development are located in the southeastern portion of the City, near to railroad rights-of-way. (Figure 8 ). (One of the most critical criteria in industrial location is transportation accessibility). In accordance with the Plan, roadways leading to industrial sites should be improved and upgraded so that they have adequate capacity to serve commuter traffic, as well as traffic generated by the transporting of raw materials and finished goods. Prospective industrial areas, according to the Plan, should be protected from encroachment by other land uses. Well designed and landscaped industrial buildings should be encouraged for the benefit of both industry and the community.

Floodplain areas along the Cohansey River and its tributaries are designated in the Plan as a conservation area. The Plan also contains a statement to the affect

Table 5

## CUMBERLAND COUNTY COASTAL MUNICIPALITIES LEGAL INVENTORY

<u>Municipalities</u>	Master Plan	Zoning Ordinance	Subdivision Ordinance	Site Plan Review	Flood Plain Regulations	Mobile Home Regulations	Mining Regulations	Industrial Performance Standards
City of Bridgeton	X	X	X	X	X <sup>1</sup>	-	X <sup>1</sup>	X <sup>1</sup>
Commercial Twp.	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>1</sup>	X	X <sup>1</sup>	X <sup>1</sup>
Downe Twp.	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>4</sup>	X <sup>1</sup>	-	-
Fairfield Twp.	X	X	X	X	Y	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
Greenwich Twp.	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>1</sup>	X <sup>3</sup>	X <sup>3</sup>	X <sup>1</sup>
Hopewell Twp.	X	X	X	X	-	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
Lawrence Twp.	Y	X <sup>2</sup>	X	-	X <sup>1</sup>	X	X <sup>4</sup>	-
Maurice River Twp.	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>1</sup>	X	X <sup>1</sup>	-
City of Millville	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>
Stow Creek Twp.	X	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>	X <sup>1</sup>	X <sup>1</sup>	X <sup>1</sup>	-

KEY

X - Existing or New Adopted

X<sup>1</sup> - Regulations Existing Within The Zoning OrdinanceX<sup>2</sup> - Existing, Currently Being Revised (proposed stage)X<sup>3</sup> - Use Prohibited by the Zoning Ordinance

Y - Currently Being Prepared

(-) - Not Existing

X<sup>4</sup> - Separate Ordinance

Table 6

**CUMBERLAND COUNTY COASTAL MUNICIPALITIES LEGAL INVENTORY**  
 Future Land Use Plans and Zoning Ordinance  
 January 20, 1979

Municipalities	Master Plan		Adopted	Proposed	Master Plan		Proposed	Consultant	Address
	Adopted	Proposed			Adopted	Proposed			
1. City of Bridgeton	Dec. 29, 1976		Sept. 20, 1977		X <sup>1</sup>		The Williamson Design Group	255 Kings Highway, E. Haddonfield, New Jersey 08033	
2. Commercial Twp.	Nov. 29, 1978				X		Michael D. Reeves	Cumberland Co. Planning Board, 800 E. Commerce St., Bridgeton, N.	
3. Downe Twp.	Oct. 23, 1978						Eileen Stewart	Downe Twp. Pl. Bd. (CETA Job), Newport Fire Hall, Newport, N.J.	
4. Fairfield Twp.	Nov. 1, 1978		Dec. 12, 1978				Judith E. Scott	Cumberland Co. Planning Board, 800 E. Commerce St., Bridgeton, N.	
5. Greenwich Twp.	June 13, 1978				X <sup>2</sup>		Richard Cramer	" " " "	
6. Hopewell Twp.	Oct. 18, 1978		Dec. 27, 1978		X		J.M. Kendree Assoc. Inc.	Fort Washington, Penna.	
7. Lawrence Twp.				X <sup>3</sup>			William Bowen	Bridgeton Housing Authority, 110 E. Commerce St., Bridgeton, N.	
8. Maurice River Township				X			Harry R. Dare, III	Upper Deerfield Twp., Municipal Bldg., Seabrook, N.J. 08302	
9. City of Millville	Nov. 1, 1978				X		Francine Wishnick	City of Millville Planning Board City Hall, S. High St., Millville, New Jersey 08332	
10. Stow Creek Twp.	Nov. 1, 1978				X <sup>4</sup>		Kenneth Wishnick	Cumberland Co. Planning Board, 800 E. Commerce St., Bridgeton	

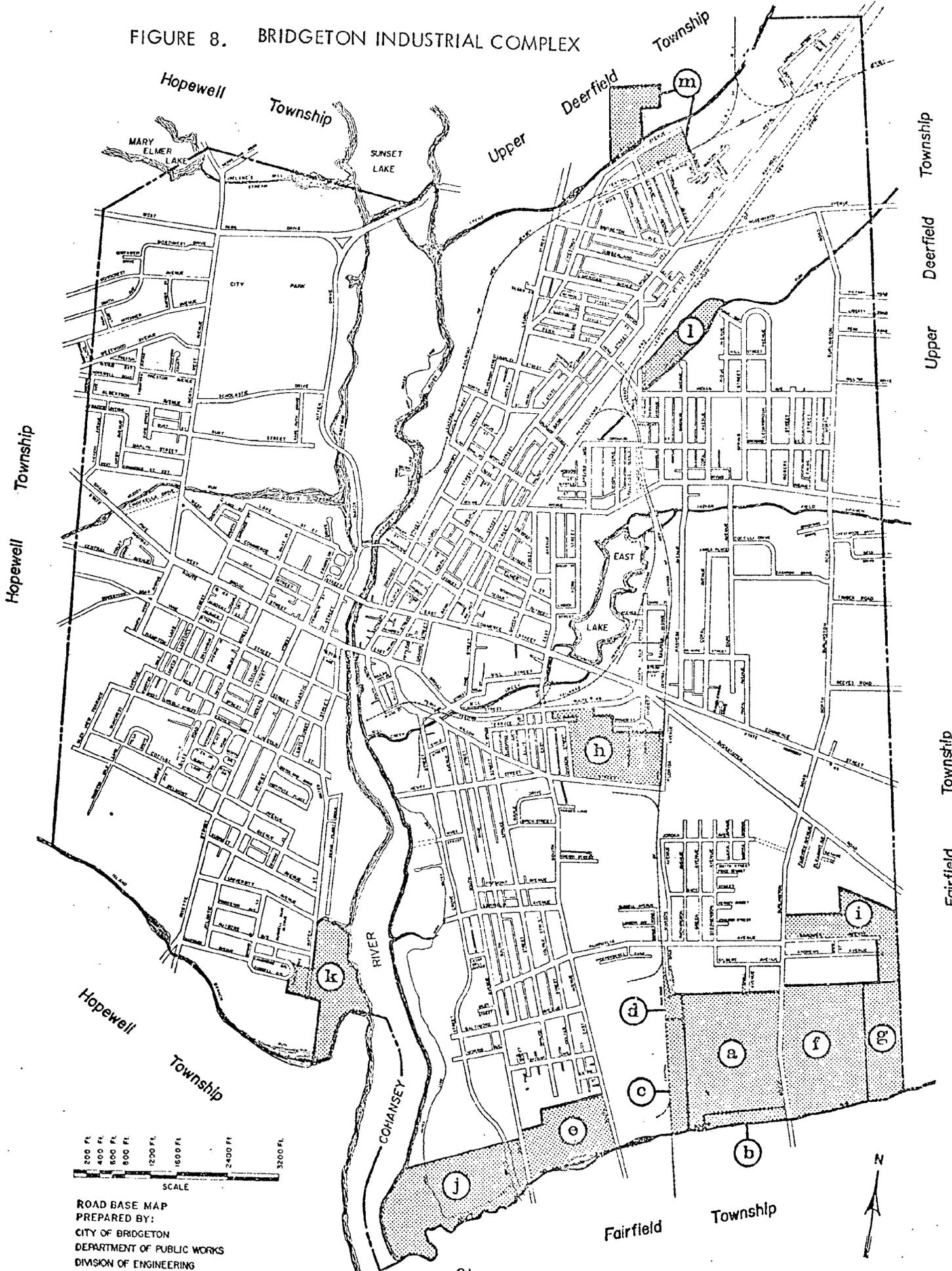
<sup>1</sup>Public hearing is planned at the end of January, 1979

<sup>2</sup>Public hearing is scheduled on January 23, 1979

<sup>3</sup>Lawrence Township Future Land Use Plan and Zoning Ordinance in preparation

<sup>4</sup>Public hearing is scheduled on January 30, 1979

FIGURE 8. BRIDGETON INDUSTRIAL COMPLEX



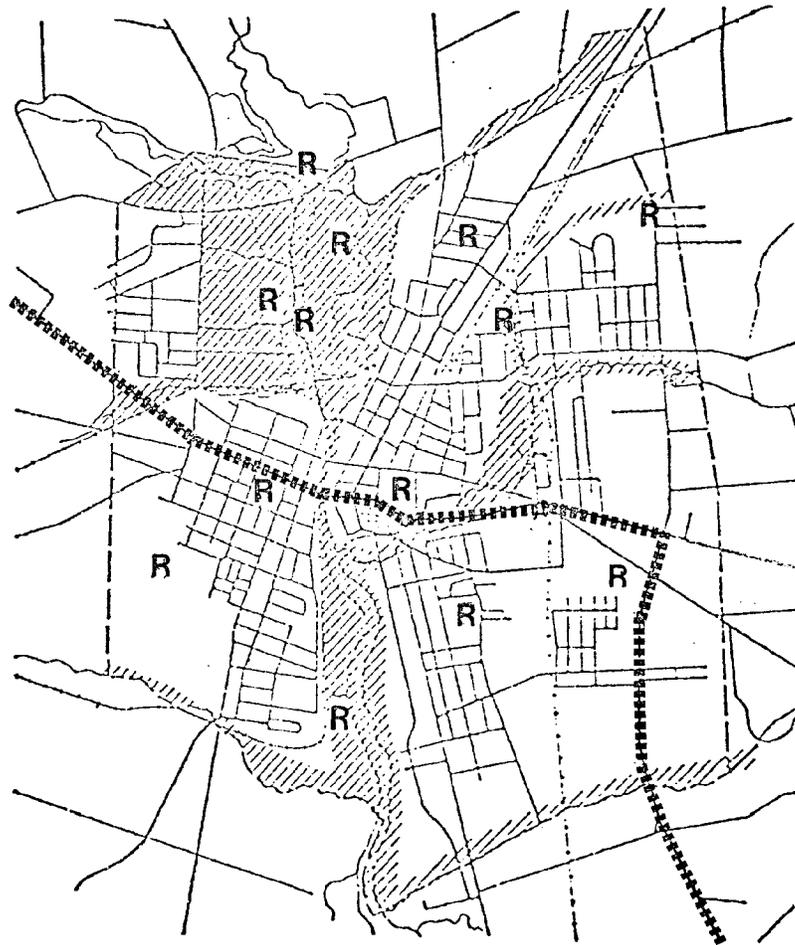
that: "There is a need to preserve areas along stream beds and other water bodies for conservation and environmental protection". The Recreation and Conservation Plan (Figure 9 ) shows open space conservation areas and neighborhood recreation areas. Over 200 acres (5% of the total area) in the City are devoted to waterways and lakes. Retention of open space uses remains a high priority.

The Bridgeton Master Plan is consistent with the County Plan and also with Coastal Management Program. The Bridgeton zoning map shows various commercial, industrial and conservation districts. These are listed below:

R-1 (Low Density Residential) -	Single Family Detached Dwellings
R-2 (Med. Density Residential) -	Single Family Detached Dwellings, Two Family Detached Dwellings, Two Family Semi-Detached Dwellings, Townhouses
R-3 (High Density Residential) -	All uses permitted in R-2, Single Family Semi-Detached Dwellings, Apartment Dwellings.
R-4 (Med. Density Townhouses) -	Single Family Detached Dwellings, Two Family Detached Dwellings, Townhouses
C-1 (Central Business) -	Retail Sales, Finance Institutions, Municipal Uses, Offices
C-2 (Apartment Commercial) -	Retail Sales & Service, Financial Institutions, Offices Commercial Recreation, Printing Establishments, Mortuaries, Community Service Facilities, Government Uses, Apartments
C-3 (Hospital Medical Center District) -	Hospitals, Convalescent Homes, Clinics, Medically Related Commercial Uses, Personal Services, Medical Schools
C-4 (Neighborhood Commercial) -	Retail Sales, Offices, Banking, Indoor Theaters
C-5 (Highway Commercial District) -	Gasoline Service Stations, Auto Repair Garages, Used Car Sales, Auto Parts Sales, Car Wash, Heavy Equipment Sales & Services, Drive-Inn Facilities, Commercial Recreation
I (Industry) -	Offices, Cleaning & Processing of Products, Building Material Sales Yards, Equipment Storage, Municipal Uses, Research Labs, Wholesale Activities, Warehouses, Utility Installations

FIGURE 9

BRIDGETON CONSERVATION PLAN



LEGEND



Conservation and Park Areas

R

Recreation Areas



CAFRA Boundary

FP (Flood Plain) -	Cultivation of Crops, Pasture, Orchards, Recreation, Harvesting of Wild Crops, Game Farm, Wildlife Sanctuary, Outlet for Sewerage Treatment Plants, Flood Retention Dams
OI (Park & Open Space)-	Parks, Playgrounds, Recreation Buildings, Commercial Retention Facilities, Golf Courses, Zoo, Public Schools, Cemetary, Municipal Buildings.

In addition to these uses, commercial excavation is permitted as a conditional use in Industrial (I) districts. Such operations must adhere to controls concerning: 1) mine location and 2) the rehabilitation of abandoned mine land. Mining operations, along with all other uses, must meet certain performance standards regarding noise, air pollution, water pollution, electromagnetic interference, radiation, glare and heat, fire and explosion, and vibration. These standards are listed in the zoning ordinance Section 704.

According to the zoning ordinance, the intent of the Flood Plain (FP) and Park and Open Space (OI) districts is "to permit and encourage the retention of open land use" (Article 500). This is consistent with the aims of the N.J. Coastal Management Program, one of which is "to encourage the preservation of open space" (pg. 11). In addition to the limited uses permitted in each district, the following uses are specifically prohibited in the Flood Plain districts: the transmission of petroleum products, junkyards, outdoor storage, filling of marshlands, removal of topsoil and the altering of watercourses.

One of the Housing Use Policies stated in the N.J. Coastal Management Program is the encouragement of "housing developments that provide for a mix of dwelling types" (pg. 33, Section 7.2.3). Bridgeton's Zoning Ordinance is consistent with this policy as exemplified by the existence of an R-4 district which allows for medium density townhouses. As stated in the zoning ordinance, the intent of the district is to "allow for a wider choice of housing types" (sec. 204). Bridgeton is attempting to diversify and improve its housing stock.

In general, the zoning ordinance complies with the City and County Master Plans and also with the Coastal Management Program.

Commercial Township. Commercial Township is located adjacent to the Bay-shore; virtually two-thirds of its territory is in the coastal zone. Generally one of Cumberland's less developed municipalities, it has a high rate of unemployment and the lowest per capita (and per household) income levels in the County. Sandmining and the oyster industry are the major employers. Growth rates have been relatively high despite economic difficulties. Most of the Township is poorly served with transportation facilities.

Future Land Use Plan policies include:

1. Conservation of natural resources, open space and farmland;
2. Providing low income housing projects;

3. prohibition of development on floodway areas and the discouragement of development in the flood fringe areas.
4. discouraging development on tidal marshes; and
5. encouraging the utilization of a regional sewage facility (City of Millville) or building its own.

The Commercial Township Future Land Use Plan recognizes that this Township has limited development potential as well. Among the constraints listed are poor soil conditions and the absence of centralized waste water treatment services. Moreover, the plan discourages development in flood hazard areas and on farmland, which together comprise a large portion of the Township. In the future, the Township should expect expansion of the sand and gravel industry and the location of one or more apartment complexes (low cost housing projects). Population projections show that Commercial Township is facing a moderate increase of population, particularly in the Laurel Lake area. Existing municipal services and facilities seem to be adequate to serve the people's needs. However, the Plan recommends additional recreation areas, and one small business area, to accommodate the needs of its many small communities.

The Commercial Township zoning map shows six districts which are listed below:

- R-A: Single Family Detached Units, Farming
- R-1: Single Family Detached Unit
- R-2: Townhouses, Garden Apartments, Duplexes
- I-G: Research, Manufacturing, Processing, Fabrication, Assembly & Storage, Single Family Dwellings, Farming
- CR: Marine Services & Accommodations
- FP: Open Land Uses, Recreation, Limited Storage

All but the southern and eastern sections of the Coastal area are zoned Residential-Agricultural (RA) and Industry-General (IG), each of which allows sand and gravel mining by special exception (conditional use). The planning board grants mining permits only when specific requirements are met. However, the proposed amendments to the zoning, site plan, and subdivision ordinances would restrict mining operations by limiting them to a new Resource Conservation and Development district (RCD) and the existing Industrial-General districts. This would reduce the mining area to the vicinity of ongoing activity, thereby meeting the policy of the N.J. Coastal Management Program which states that "mining is acceptable only in sites immediately adjacent to current mining operations . . ." (Sec. 7.6.2, pg. 148). In addition, the proposed amendment would require that an environmental impact statement be submitted for this use as specified in the site plan and subdivision ordinances. An environmental impact statement would also be required for development in Residential (R-2) and I-G districts, in accordance with the site plan and subdivision ordinances.

The 1976 Amendment to the zoning ordinances created two R-2 (multi-family dwelling) districts, one of which falls within the Coastal Zone Boundary. By

allowing for townhouses, garden apartments, and duplexes, this ordinance was a step in the direction of the policies stated in the N.J. Coastal Management Program. These policies state that a community should encourage development that "provides for a mix of dwelling types and for persons of different age and income groups," (Section 7.2.3. p. 133). Another ordinance which affects this housing distribution is the mobile home ordinance.

Mobile Home parks are permitted in Rural-Agricultural, Commercial-Recreation and Multi-Family Dwelling Districts as conditional uses. The ordinance specifies sewerage disposal, density, total acreage and location of the mobile home parks, as well as the acceptable dimensions of the homes themselves.

A flood plain zone exists in the community (U.S. Corp of Engineers Flood Plain Study) along the southern and eastern boundaries. The zoning ordinance specifically limits land use in flood plains. Any use permitted by this district must meet requirements concerning lot area, coverage, building structure, building anchorage, sewerage and vegetation removal. According to the zoning ordinance, this regulation will serve to "protect the water supplies, groundwater recharge areas and natural drainage systems and to "protect the water supplies, groundwater recharge areas and natural drainage systems and to promote the health, safety, and welfare of Commercial Township residents . . . ." (Zoning Ordinance Section 8.1) This is consistent with the N.J. Coastal Management Program's Resource Policy, which is to review proposals in terms of their "effects on the various resources of the built and natural environment of the coastal zone . . . ." (Sec. 8.1 pg. 151).

As an additional regulatory device, the current zoning ordinance (Article VI) specifies Industrial Performance Standards. To comply with these, each applicant must prove that he conforms to federal, state and county laws regarding noise, odor, glare or heat, radiation, vibration, toxic or noxious matter, dust or dirt, fire and explosion hazards, and liquid and solid wastes.

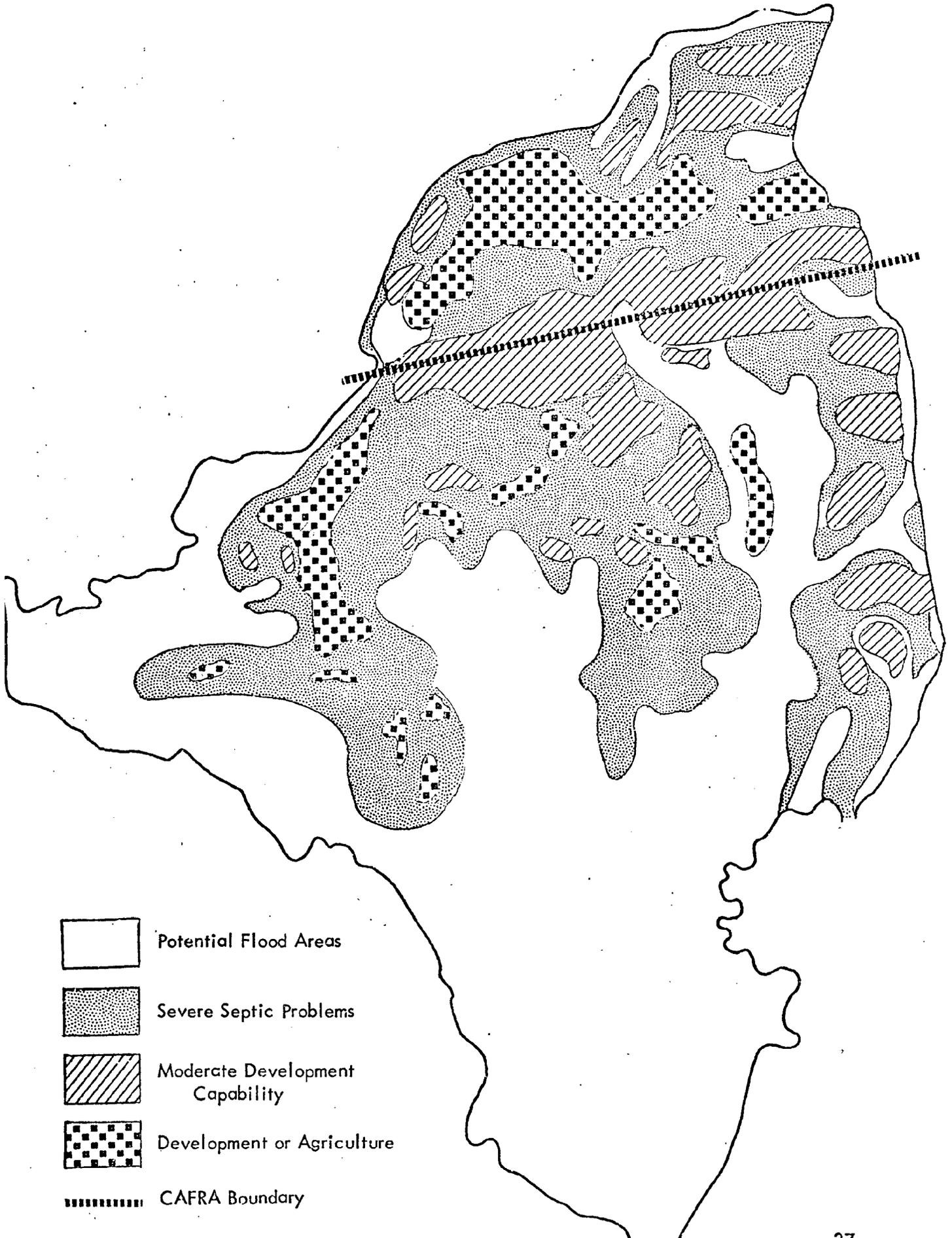
In general, Commercial Township Master Plan is consistent with its zoning ordinance and also with the County Master Plan and the State Coastal Management Program. The County Plan foresees the development of marinas and a revival of the oyster industry as providing the future employment base. Both these uses are consistent with the Coastal Management Program.

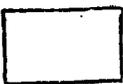
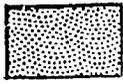
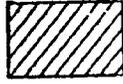
Downe Township. All but the extreme northern segment of Downe Township falls within the Coastal Zone. The Downe Comprehensive Master Plan takes into consideration the policies of the Coastal Management Program. In accordance with the Plan, Downe Township should preserve its rural character by maintaining farmland and discouraging any type of development on prime farmland (Soil Classes I, II and III). Almost one-half of Downe Township is covered by tidal marsh (Class VIII Soil). This type of soil is unsuitable for development, subject to flooding, and used only for salt hay farming. Typical meadow cordgrass (*Spartina Alterniflora*) is a common wetland species.

The Plan states that Downe Township has limited growth possibilities because: "The Department of Environmental Protection delegated specific restrictions under the CAFRA and Wetlands Act".

FIGURE 10

DOWNNE TOWNSHIP - DEVELOPMENT CAPABILITIES



-  Potential Flood Areas
-  Severe Septic Problems
-  Moderate Development Capability
-  Development or Agriculture
-  CAFRA Boundary

Among other listed disadvantages for development are:

1. the lack of a consolidated sewer and water treatment system, and along with it, extremely limited soil percolation; and
2. the discouraging of any development on prime farmland and/or on flood hazard areas.

Downe Township has inadequate community services to meet the needs of people. New recreational areas, convenience shops and social services should be located in the Township. However, there is no specification as to which areas are suitable for these or certain other types of development. The residential zones of the Township are located in woodlands and on agricultural areas. The predominant type of housing is the single family detached house, (low density residential development 20.3%; high density 2.8%). The woodland areas should be preserved for future conservation and park areas, and are currently earmarked for commercial forestry products as well as sand extractive industries.

For many years large areas of tidal marsh were diked and drained and used for farming. Tides continuously filled these dikes with sediment; presently tidal marsh is not used for farming. Now, salt tolerant grasses (Salt hay) have moved onto formerly intensively used farmlands. Salt hay is used mainly as mulch for strawberries.

Development on or near the flood hazard area should be carefully regulated by using large lots, minimum lot coverage, setting a minimum elevation above a stream, and preserving the natural ground cover of the area. However, the Plan does not mention the adoption of Federal Insurance Administration standards.

Along the Delaware Bay there are several small towns (Fortescue, Gandy's Beach and Money Island) which constitute a resort and recreation area open to the public. Hunting, fishing and bird watching are permitted on State property, but swimming and picnicking are prohibited.

Resort and recreation areas, as the Plan states, are "sufficient for the Township's needs". There is no assessment as to how these areas serve the needs of people from other metropolitan regions (Philadelphia and New York), and what role they should play with regard to the metropolitan regions in the future. There exists, perhaps, a possibility for expanding current facilities or the building of a new water-oriented recreational facility. This might be the greatest opportunity for future development in the Township. Pressures are such that it should be planned for. Such planning is encouraged by the State Coastal Program. The proposed sites for recreational facilities (picnic areas, tennis courts, baseball fields etc.) are located on the Future Land Use Plan, but due to poor reproduction of the Plan, the proposed sites are largely invisible.

The Downe Township Plan predicts growth of the sand and gravel industry located in Newport. All land that has been excavated must be rehabilitated in

accordance with local regulation. (This should also be consistent with the Federal Strip Mine Reclamation Law). The Plan states: "the Coastal Management Program is a tool for decision making; however, it is not a detailed rigid plan. It enables creativity for developers and recognizes the need for a strong role for local government".

On the zoning map, Downe Township is divided into five districts. These districts are listed below:

R-1 (Rural Residence Zone) -	Single Family Detached Dwellings, Farming, Municipal Facilities, Private Recreation Facilities
R-2 (Resort Residence Zone) -	Single Family Detached Dwellings, Farming, Trailers, Restaurants, Marine Facilities, Marine Equipment Manufacture, Sale & Rental
R-3 (Residence Zone) -	Single Family Detached Dwellings, Municipal Facilities, Neighborhood Business
B-1 (Highway Business Zone) -	All uses permitted in R-3 Municipal Facilities, Commercial uses devoted to auto servicing or transient activities.
C-1 (Conservation Zone) -	No use, activity or construction except by conditional use grant subject to the following conditions:

1. use must relate to the exploitation of natural resources in the area;
2. adequate provisions must be made to restore the area to natural conditions where disturbed; and
3. no use, activity or construction shall be permitted which will result in permanent disruption of the ecological balance of the zone.

The use of a Conservation District is consistent with the N.J. Coastal Management Program policies, which encourage "protection of the coastal ecosystem" (N.J. Coastal Management Program - pg. 11).

The township limits development in a special Flood Hazard area. A development permit must be obtained before construction can begin in that area. Permit is awarded when the applicant meets standards concerning: anchoring, construction methods and materials, utilities, subdivision proposals and encroachments.

This is consistent with the Coastal Management Program's policy which states that "development is discouraged in flood hazard areas". (Coastal Management Program, 6.4.4.2. pg. 59).

Downe Township is unique among the County's coastal municipalities. It does not have any existing industrial districts.

In summary, the Downe Master Plan corresponds with its zoning ordinance, the County Master Plan and the State Coastal Management Program as well.

Fairfield Township. The Fairfield Land Use Plan updates the nine-year old Fairfield Master Plan.

In past times Fairfield had a rural character. This situation has changed due to its geographical situation as a neighbor of Bridgeton and its proximity to eastward spread of the Megalopolitan Corridor in South Jersey (Philadelphia 42 miles and Wilmington 32 miles). Bridgeton, already filled to its borders with development, has created a demand for housing in locations along the Bridgeton-Millville Pike (Route 49) as well as in areas south and southeast of the corporate limits.

Fairfield's coastal areas presently remain in their natural state. The area located south of the Cohansey River and east to Back Creek (the boundary with Lawrence Township) and south to the Delaware Bay contain most of the wetlands, though the wetlands themselves are interspersed with pockets of farm and woodland area. In 1975, the wetlands area contained 8,497.3 acres (30% of the total township area). In comparison to 1969, the wetlands, area had decreased by 1144.7 acres. (Of that figure, however, 821 acres were included in the State Fish and Wildlife Management Area, reclassified from wetlands to public land. It remains, therefore, as wetlands in fact.) The rest (323.7 acres) was developed for other uses or otherwise lost. Some of the wetlands loss can be attributed to shoreline erosion. This part of the Delaware Bay is designated in the Coastal Management Program as a high risk erosion area. A classic example of a high risk erosion area in the developed portion of the Delaware Bay shore is the community of Sea Breeze. Today it is a quiet community mainly of seasonal homes, though historically it was developed as a hotel resort for Philadelphians. Field research documented the recent abandonment of several structures and the destruction of the road paralleling the settlement and the shore through erosion losses. State Fish and Wildlife Management Areas include 2,281.2 acres (8% of the total Township area); most of it is in wetlands.

The Fairfield Land Use Report states: "Some of the tidal marsh (Class VIII) and Evesboro Sands (Class VII) have been successfully reclaimed to provide productive farms. However, there is a constant battle with nature because of both tidal and muskrat damage to dikes which must consistently be rebuilt to protect the farmland reclaimed from the marsh." Tidal marsh is considered to be an undeveloped land use. All uses should be consistent with the Wetlands Act. The Fairfield Use Report recommended that all development should be avoided in critical areas unless a sound proposal is presented. Critical areas include:

- a. flood prone areas;
- b. severe conditions for septic tank filter fields;
- c. all terrain with slopes greater than 15%;
- d. swamp, marshes and lakes; and
- e. historical sites

The plan appears to be consistent with coastal policies in all its aspects, and with the County Plan as well.

Under the present Township zoning ordinance most of the Coastal Zone area is divided among either Agricultural (A) or Industrial (I) uses. There is also a large area of state owned property and four small areas zoned for marinas (MR) along the Cohansy River, Delaware Bay, and Back Creek. Some residential districts are located in the Village of Fairton along the railroad line. A brief schedule of district regulations is given below:

- (A) Agriculture - Farms, Camping Facilities, Wildlife Preserves, Single Family Dwellings, Golf Courses, Swim Clubs, Municipal Buildings, and Places of worship
- (S) State Owner Property
- (R-1) Residential - Single Family Dwellings, Residential PUD's, Farms, Municipal Buildings and Parks, and Places of Worship
- (R-2) Residential - Same as above with other specifications
- (R-3) Residential - Single Family Dwellings, Two Family Dwellings, Conversion of Detached Dwellings to Multi-Family Use, Municipal buildings and parks, places of worship
- (MR) Marine Resort - Marinas, Boat buildings and repair yards, Boatels and Motels, Restaurants, Sporting goods stores, Farms, and Municipal buildings and parks
- (VBI) Village Business - Retail Stores and Service Establishments, Municipal buildings and parks, places of worship
- (I) Industrial - Light Industry, Commercial Industrial Use, Municipal Buildings and Parks, Farms, Garden Apartments
- (FP) Flood Plain - Recreational uses, game farms, fish hatcheries, hunting and fishing reserves wildlife sanctuaries and open space.

The largest change in the new zoning ordinance\* is the creation of a Flood Plain District (FP). This would be the largest district in the Township Coastal Zone area. Uses in the floodways would be limited to pasture and grazing land, recreational uses, game farms, fish hatcheries, hunting and fishing reserves, wildlife sanctuaries, and open spaces. In the remaining flood plain areas, any use would be permitted as long as it meets the requirements of lot area, lot coverage, building structure and elevation, site plan review and vegetation removal (proposed amendment to zoning ordinance - Sec. 709). The remainder of the Coastal Zone area is state owned land or is to be zoned for agriculture (A) or marine (MR) uses. There would also be created

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\*Adopted, December 12, 1978.

some Industrial (I) and residential districts along the railroad line and near Fairton, where these uses already exist. This is consistent with the N.J. Coastal Management Program which states that "industrial or commercial development is encouraged at areas adjacent to existing sites". (N.J. Coastal Management Program Sec. 7.6.1 pg. 148).

Fairfield's zoning ordinances limit industrial development by means of performance standards. (Zoning Ordinance, Sec. 708). These standards concern:

- 1) smoke, dust, odor, fumes and other obnoxious gases
- 2) liquid waste and effluent treatment
- 3) protection against fire hazards, radiation, explosions, etc.
- 4) vibration and glare.

Sand and gravel mining is currently permitted as a conditional use in the agricultural districts (A) of Fairfield Township. The new Zoning Ordinance conditionally allows mining in both Agricultural (A) districts and Industrial (I) districts. However, this actually allows less land for mining than the previous ordinance because of the proposed ordinance's greatly reduced area of Agricultural districts. Among other provisions that must be met before the Board of Adjustment grants permission for mining, is the rehabilitation of abandoned mined land, (Zoning Ordinance Sec. 807).

As another regulatory device, certain uses are prohibited in all districts. (Zoning Ordinance section 601.11) These are:

- Billboards not related to the activity on the premises,
- Resident structures without permanent foundations,
- Trailers other than in Mobile Home Parks,
- Any use effecting health, morals, etc.
- Any trade, industry or purpose that is noxious or offensive by reason of emission of odor, dust, smoke, gas or noise. The standards of the Air Pollution Control Commission of N.J. shall be the enforcement standards for listed uses:
  - The manufacture of heavy chemicals,
  - The manufacture of basic or semi-finished chemicals,
  - The products of metals and alloys in ingot form,
  - Manufacture or production of paints, matches, oils, varnishes, lacquer, or rubber and
  - The keeping of animals other than domestic types. . . except on the permitted farms.

In general, Fairfield Township Master Plan complies with its zoning ordinance and also with the Coastal Management Program.

Greenwich Township. Greenwich Township is the only County municipality included totally within the coastal zone. It has a significant scenic and historic resource as well. As such, it is viewed as both prosperous and as a desirable place to live. Local officials are greatly concerned with the preservation of the area's character as well as its environment.

Greenwich Township's Future Land Use Plan (F.L.U.P.) was selected for a detailed study because it was the first of the County's coastal municipalities to adopt such a plan (June 13, 1978). This study contains a detailed analysis of the Greenwich Future Land Use Plan and zoning ordinance, analyzing its consistency or inconsistency with the N.J. Coastal Management Program.

The Greenwich Township Future Land Use Plan updated the Township's seven year old development plan in two stages. First, it reviewed the Township's natural features and existing land use types. Secondly, it used this information, together with current planning policies, to form an amended Land Use Plan.

The Greenwich Township Future Land Use Plan recommends:

- 1) the keeping of prime farmland in agricultural production;
- 2) that flood hazard areas should be left as agricultural open space, marsh or woodland;
- 3) that tidal marshes should be left in their natural state;
- 4) the preservation of existing stands of forest;
- 5) that historic districts should be protected from any development that could alter their character;
- 6) the encouragement of continued development of recreation and open space facilities;
- 7) the encouragement of commercial recreation development;
- 8) the encouragement of light industrial development;
- 9) the concentration of residential growth and commercial uses; and
- 10) the encouragement of housing development that clusters dwelling units.

The following paragraphs will examine each land use category described in the F.L.U.P. in the light of the Coastal Management Program's policies.

Agriculture - According to the F.L.U.P., agricultural uses presently occupy 40.7% of the township (pg. 40). There is very little Class I soil, however Class II and Class III soils are widely present in the Township (see Fig. 3, F.L.U.P.). Class II soils are excellent and Class III soils present only moderate limitations to agricultural use.

The F.L.U.P. recommends that "it is in Greenwich's best interest to keep this resource (prime farmland) in agricultural production". The areas designated for this use are, for the most part, already being cultivated (F.L.U.P. pg. 48). This is consistent with the N.J.C.M.P. policy which states: "Development of Prime Agricultural areas for non-farming purposes is discouraged. . ." (N.J.C.M.P. See 6.4.11 pg. 55), or conversely, farming is encouraged in Prime Agricultural areas.

Flood Plains - Figure 6 of the Greenwich Township F.L.U.P. shows the Flood Plain area as designated by the U.S. Corp of Army Engineers and the Cumberland County Soil Survey. These areas are along the Cohansey River, Stow Creek, the Delaware Bay, and extending along narrow streams into Head of Greenwich and the Sheppard's Mill Pond area. These areas are, for the most part, currently undeveloped.

The N.J.C.M.P. policy discourages development in flood hazard areas (N.J.-C.M.P., see 6.4.4.2, pg. 59). The F.L.U.P. policy is consistent with State policy. It states:

"The Township's flood hazard areas should be left as open space with limited development . . . consequently, the F.L.U.P. has designated flood hazard areas as either tidal marsh, woodland or agricultural open space, except where development, as in the historic Village of Greenwich and the Commercial-Recreation area, has already taken place." (F.L.U.P. pg. 49).

Tidal Marsh - Figure 2 of the F.L.U.P. displays an area of "tidal marsh" in the Township. This area is approximately consistent with the areas designated by the Department of Environmental Protection as "wetlands". It is also similar to the area described as Flood Plains.

"The Township's tidal marshes should be left in their natural state. They are among the more sensitive and ecologically valuable areas in Greenwich. It is clearly the intent of both C.A.F.R.A. and the Wetlands Act to preserve the Coastal marshes". (F.L.U.P., pg. 48). This is consistent with the coastal policy which discourages development in the wetlands (N.J.C.M.P. Sec. 6.5.1.2. pg. 69).

Woodland - The F.L.U.P. recommends that, "whenever residential development occurs in a wooded area, site planning techniques, such as clustering, should be utilized to save the woodland as open space" (F.L.U.P., pg. 48). This is consistent with coastal policy, which states "Coastal development should preserve, to the maximum extent practical, existing vegetation within a development site" (N.J.-C.M.P. See 8.8, pg. 155).

In addition to the aforementioned policy, the F.L.U.P. designates large tracts as "woodlands". These are "existing stands of forest which should be preserved." These areas include the Township's environmentally sensitive stream corridors and the watershed around Sheppard's Mill Pond.

**Historic Sites** - The Township contains numerous historic sites, concentrated in the villages of Greenwich and Head of Greenwich, and in scattered locations throughout the surrounding area. In 1972, the Greenwich Historic District was placed on the National Register of Historic Places. Much of its appeal is due to the fact that these structures exist in a relatively undisturbed setting (See F.L.U.P. Fig. 7).

In order to preserve the setting of both the historic areas in Greenwich and Head of Greenwich, the F.L.U.P. recommends that these areas be designated "historic districts" and thus "protected from land uses and development that could alter their character" (F.L.U.P. pg. 49). It further suggests that the historic structures lying outside of these districts should be protected, "Since these sites are scattered, rather than concentrated, the Township's approving authorities should review development proposals for their impacts on these sites . . ." (F.L.U.P. pg. 49). The F.L.U.P. is consistent with N.J.C.M.P. policy which states "development that detracts from, encroaches upon, damages, or destroys the value of historic resources is discouraged" (N.J.C.M.P. see 6.4.5., p. 60).

**Public Facilities & Recreation** - Currently, 1.2% of the land area of Greenwich is used for public and quasi public open space. This includes 1.0 acres of parks and playgrounds, 7.0 acres of marine use, 139.0 acres of game preserve and a state monument of 0.5 acres. (F.L.U.P. pg. 41). These areas can be found on Figure 10 of the F.L.U.P. The Future Land Use Plan proposes three new public facilities: a park (adjacent to Ye Greate Street); a playfield (at the intersection of Springtown Road and Roadstown Road) and a recreation area (at Sheppard's Mill Pond).

The coastal policy encourages new public open space (N.J.C.M.P. see 6.4.9.2. pg. 64). The Greenwich Township F.L.U.P. is, therefore, consistent with this phase of coastal policy.

**Commercial Recreation** - Coastal Management Program Policy states: "Resort recreation uses shall have priority in the Bay and Ocean Shore Segment over all other uses . . ." (N.J.C.M.P. Section 7.3.1., pg. 135). The F.L.U.P. retains the 1970 designation of Commercial Recreation areas in Greenwich. (See F.L.U.P., Figure 11) As stated in the plan, " . . . the commercial recreation areas take advantage of the Township's water front and access to the Bay and encourage activities that strengthen Greenwich's economic base." (F.L.U.P., p. 49).

**Industry** - The N.J.C.M.P. mandates a "restrictive" policy toward industrial development in the Coastal Area Bay and Ocean Shore segment. (Sec. 7.6, pg. 148). However, the F.L.U.P. does designate one industrial district within the township; outside both the floodplain and the wetlands areas. It is assumed that the location of this area, along with restrictions on the permitted types and densities of industrial development insures that negative environmental impacts associated with such a usage will be minimal. The F.L.U.P. explains its position as follows:

"The Township is aware of the State's proposals for directing industrial location within the C.A.F.R.A. zone. Greenwich agrees with the spirit of C.A.F.R.A. regulation. The Township does not seek extensive industrial development, nor does it desire oil refineries, petrochemical facilities, crude oil storage facilities, tanker terminals, base load electric generating stations, or industrial development which is incompatible with the coastal environment or which has secondary impacts that trigger premature urbanization within Greenwich. However, the Township does desire a diversified economic base which could include light industry and research activity. In setting aside an area for industrial location, the township hopes to attract uses which can benefit the community without adversely affecting the coast" (F.L.U.P. pg. 50).

Commercial Use - Because of the Township's small population, only one commercial site is proposed. (See F.L.U.P. Fig. 11). It is both near to existing population centers and to the site recommended for future residential development. The N.J.-C.M.P. restricts commercial activities to areas where such uses already exist (Sec.-7.7.1., pg. 148). Because no extensive commercial facilities presently exist in Greenwich Township, the current site does not conflict with Coastal Policy. It does provide for one business district and avoid scattered commercial development.

Residential - As can be seen in Figure 11 of the F.L.U.P., an area in the north-east corner of the township has been set aside for residential development. According to the F.L.U.P., this area was chosen because it: "would make use of what is largely poor or marginal farmland; has only slight limitations for septic systems; and has the greatest potential for development of a Township water supply." Also according to the plan, this district would "concentrate rather than scatter future residential growth". (F.L.U.P. pg. 45). This is consistent with the policy which is to "concentrate, rather than disperse, the patterns of coastal residential. . . development and encourage the preservation of open space" (N.J.C.M.P. pg. 11).

In summary the Greenwich Township Future Land Use Plan is consistent with the N.J.C.M.P. However, the proposed zoning ordinance is inconsistent with the F.L.U.P. and Coastal Policies in a few instances.

The Greenwich Township Zoning map of 1975 (which was adopted in 1976 and 1977), zoned all flood plain areas as General Industrial (G-1). The 1978 F.L.U.P. recognized this mistake and the need to protect these areas. There is a statement in the F.L.U.P. (p. 45): "Ecologically sensitive areas should be kept in their natural states or undergo only limited development". Consequently, the Plan designated nearly the entire floodplain area as tidal marsh. The proposed changes in the Zoning Ordinance of 1978 have greatly reduced the area designated as General-Industrial. Presently the G-1 district is located in the northwestern part of Greenwich Township. The industrial area now consists of woodland, cropland and cropland reverting to open fields. The industrial district is located in part in the flood plain area. Presently, there are no pressures for industrial development, so that the industrial district will be a resource for the future, in the event that the development climate changes.

Uses permitted in General-Industrial District: Uses permitted in R-A above; institutions of learning; industrial, commercial or public research; assembly or fabrication of products from previously prepared materials; manufacture of candy, cosmetics, drugs & perfumes, pharmaceuticals, toiletries & food products; marina and marine services and water recreation; warehousing and wholesale operations other than petroleum products, maintenance building and storage yards.

Conditional Use - The Township zoning ordinance permits as a conditional use in the G-I district, "solar and wind powered experimental demonstration generating plants". This policy is consistent with the N.J.C.M.P. which states: "The use of renewable resources for energy such as solar, wind and tidal power, including experimental and demonstration projects, will be encouraged to locate in the coastal zone" (N.J.C.M.P., Sec. 7.4.15, pg. 197).

The Township regulates industrial uses by applying detailed Industrial Performance Standards (Article 8.4). These specify the minimum requirements which must be met by any industry wishing to locate in the community. The standards covered by this ordinance are: noise, odor, glare or heat, radiation, vibration, smoke, toxic or noxious matter, dust or dirt, flame and explosion hazards, liquid or solid waste (including treatment plant effluent), electromagnetic interference and buffer zones.

Buffers - The Coastal Policy calls for buffers at site boundaries between incompatible, adjacent developments (N.J.C.M.P., Sec. 8.15, pg. 160). The proposed zoning ordinance also requires buffer zones in such circumstances. Any conditional use must adhere to a 200' buffer in the Commercial-Recreation district and a 50' buffer in the Local Business District.

As an additional regulatory device, the Zoning Ordinance specifies uses which are prohibited in all districts of the Township. These are listed below:

Electricity generating stations and bulk electricity transmitting lines; open air commercial amusements; piggeries; topsoil removal; airports; mobile homes or trailers on separate lots; dumping or disposal of waste scrap or material of any kind by any person; reduction or rendering of fish or animal products; smelting of ore; distillation of bones; above ground bulk storage of petroleum or other flammable products; rash or garbage incinerators; manufacturing or processing of acetylene, bauxite, asphalt, petrochemicals, alcoholic beverages, ammonia, bleaching powder, celluloid, fertilizer, fireworks, etc.; hotel or motel; and activities which involve danger of fire, explosion, emission of toxic and noxious matter, radiation, or other hazards; or which create vibrations, smoke, or other particulate matter, odorous matter, heat or humidity.

The Greenwich Township Proposed Zoning Ordinance has a special section (9.4) dedicated to the protection of historical sites. This regulation permits the owners of buildings erected prior to 1850 to apply for protection under the rules and regulations affecting Historic Conservation Districts even though they are not within the designated district. This is consistent with N.J.C.M.P. and helps in protecting the numerous valuable historical structures scattered throughout the Township.

The Township Proposed Zoning Ordinance is also consistent with N.J.C.M.P. policy which expressly advises municipalities "to concentrate, rather than disperse the pattern of coastal residential, commercial, industrial and resort development and encourage the protection of open space." The standards required for clustering of housing are specified in the Zoning Ordinance, Section 9.1. Housing development that clusters dwelling units is permitted as conditional use in Residence-Agriculture, Residence, Local Business and General-Industrial districts.

The Greenwich Township Flood Plain Regulation (part of the proposed Zoning Ordinance), controls lot size, lot coverage, building structure, building elevation and vegetation removal in the flood plain area. However, the Greenwich proposed Zoning Ordinance does not adopt flood hazard reduction standards as adopted by the Federal Insurance Administration in HUD (Federal Register, Vol. 41, No. 207, Part II, October 26, 1976) as amended.

This detailed study of the Greenwich proposed zoning ordinance indicates some areas of conflict with the Township F.L.U.P. and the N.J. Coastal Management Program policies. The first area of conflict involves the industrial district. The F.L.U.P. had restricted the industrial area to the northwest section of the Township, outside both the flood plain and wetlands areas (See F.L.U.P. Fig. 11). However, the proposed zoning ordinance extends the industrial district to the western boundary of the Township, including both flood plain and wetlands areas.

This is inconsistent with Coastal Policy which states that "development is discouraged in flood hazard areas" (N.J.C.M.P. Sec. 6.4.4.2, pg. 59). It also conflicts with Coastal Policy regarding wetlands, which states that, "development of all kinds is discouraged in wetlands, unless the D.E.P. can find that the proposed development:

- i) requires water access or is water dependent as a central purpose of the basic function of the activity,
- ii) has no prudent or feasible alternative on a non-wetlands site,
- iii) will result in minimum feasible alteration or impairment of natural tidal currents,
- iv) will result in minimum feasible alteration or impairment of the natural contour or the natural vegetation of the Wetlands". (N.J.C.M.P., Sec. 6.5.1.2, pg. 69).

Another inconsistency between the proposed Zoning Ordinance and the N.J.-C.M.P. policy concerns regulations regarding construction in the flood plains. Greenwich's construction standards are given in Section 8.3 of the zoning ordinance. The Coastal policy recommends that the stringent standards used by the Federal Insurance Administration in HUD. (Federal Register, Vol. 41, No. 207, Part II, October 26, 1976) as amended, be adopted.

In conclusion, the Future Land Use Plan, of Greenwich Township, is consistent with the policies set forth in the N.J. Coastal Management Program - Bay and Ocean Shore Segment. For the most part, the proposed zoning ordinance is also consistent with state coastal policy. However, these are some recommendations for changes on the proposed zoning ordinance:

- 1) Federal Insurance Standards for construction in flood plains should be adopted.
- 2) The General-Industry district should be restricted to the area outside of the flood plain and wetlands area.

The detailed analysis of Greenwich Township local regulations and its consistency with N.J.C.M.P. was forwarded for comments to the Greenwich Township Planning Board.

On September 19, 1978 a public meeting was held in Greenwich, devoted to the Coastal Management Program. The findings of the study related to Greenwich Township were presented at the meeting. As a result of that meeting, Greenwich Township adopted standards used by the Federal Insurance Administration in HUD (Federal Register, Vol. 41, No. 207, Part II, October 26, 1976) as amended. The Proposed Township Ordinance, as related to flood plain usage, was amended.

The General-Industry District remains the same as in its proposal stage. According to Mr. Roemer, Chairman of the Greenwich Planning Board, the Township is showing the area where industry can be permitted, where it has accessibility to the water routes (which industry and also commercial/recreational activities requires). The Township was advised to have some area for industry. As it is proposed (in the zoning ordinance), the Township has reduced the industrial area by almost 50% from the previous zoning ordinance. But, at the same time we realize that the Atlantic Electric Company and the Federal Government indicate that a nuclear power plant can be located in the lower part of the Township, which we have now excluded from the general industry district, because it is the wettest part of the wetlands. At least the area which we have now zoned for general industry is located higher (upland) and is not as prone to flooding as those portions in the lower area of the Township". (Recorded and transcribed by Czeslawa Zimolzak, Appendix A).

The Greenwich Township Planning Board understands that if they are in total compliance with the N.J. Coastal Management Program, then they will have no area at all in which to locate an industrial district.

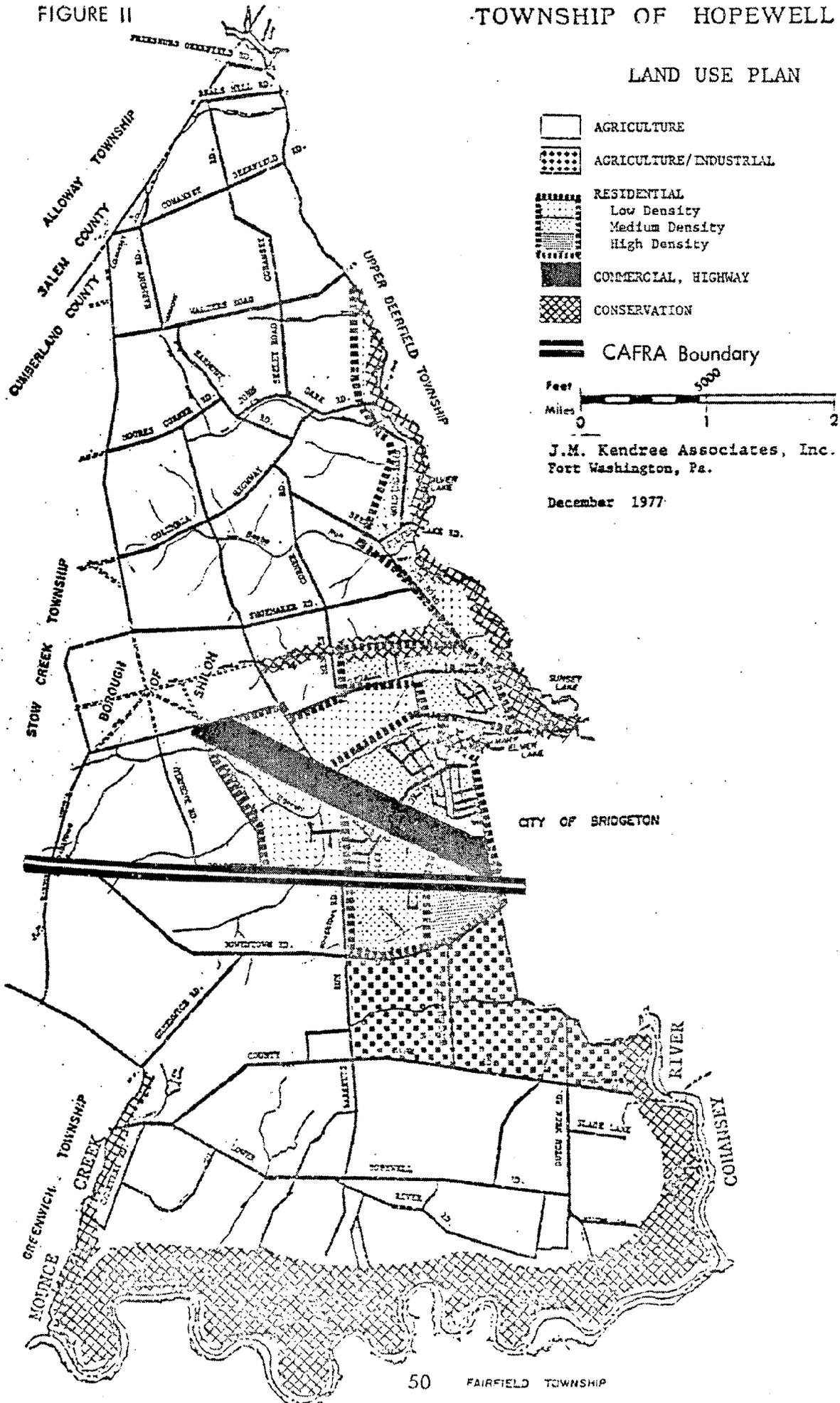
This is the only inconsistency with the C.M.P. and the County Master Plan.

Hopewell Township. The Hopewell Township Master Plan calls for preserving prime agricultural land and marshlands. In accordance with the plan, floodplains cannot be occupied; certain wooded areas should be preserved for windbreaks and ground cover. The Township will require mandatory open space for future residential development to protect the needs of all residents. The Township encourages

FIGURE II

# TOWNSHIP OF HOPEWELL

## LAND USE PLAN



cluster and planned residential development. The Plan also proposes a wider density range of residential uses and dwelling types (agricultural/residential, large lot residential, medium density residential and high density residential). The Plan states: "certain natural resource areas of the Township containing woodlands, floodplains, wetlands, and other fragile land areas are important to the environmental condition of the community; the Cohansey River and other water courses are recommended conversation areas." The Plan also encourages the preservation of areas of historical significance at Roadstown. "Limited development in such areas shall be encouraged only within the guidelines and requirements of applicable State law."

In the Plan there is another important Statement: "Hopewell Township is now and will continue to be a rural, agricultural community with predominantly single family dwellings in its developed areas. However, the Township has provided land areas for low income housing projects. The Township also provides community services, community facilities and utilities which will become necessary during the next decade. When the Township population reaches or exceeds 10,000 persons, public water and public sewer facilities will become necessary."

The Township conservation Plan states: "It is the intent of the Township to regulate development activity for the conservation of natural resources by the designation of flood plain areas consistent with the Department of H.U.D. Federal Insurance Administration program, the flood control regulations and standards of Cumberland County, and the land development regulations of the State of New Jersey Department of Environmental Protection. Two legislative acts setting the standards of regulations are the Wetlands Act and the Coastal Area Facility Review Act.

Hopewell Township is divided almost in half by the Coastal Area boundary. The zoning ordinance separates Hopewell into four districts: Agriculture-Industry (A-1), Agriculture (A), Residential (R-3) and Public (P). A schedule of permitted uses is listed below:

P (Public) -	Municipal or County buildings, State or Federal offices, public education institutions, public parks and recreation facilities, conservation areas, public or cultural uses
A (Agriculture) -	Farms, stables, single family dwellings, churches, public schools, cluster developments
R-1 (Residential) -	All uses permitted in A except stables
R-2 (Residential) -	All uses permitted in R-1 except farms
R-3 (Residential) -	All uses permitted in R-2 except cluster developments
HB (Highway Business) -	All uses permitted in R-2, Business & Miscellaneous uses
A-1 (Agriculture-Industry) -	Uses permitted in A, Commercial-Industrial Uses, Industrial uses under special exceptions.

Industry is allowed in the Commercial-Industrial zone; it is also allowed in the A-1 District, but only by special exception. Before this exception is given, certain standards must be met pertaining to: type of production; sewerage treatment; precautions against fire hazards, radiation and explosion; provision for the storage of materials; structural building design; provisions for safeguarding the health of workers; vibration and glare; and number of access driveways.

Sand extraction is allowed by special exception in both A and A-1 districts, which together comprise the majority of the Coastal Area. Standards and requirements for this use are given in the zoning ordinance (Sec. 8.2).

In addition to permitted uses, certain uses are prohibited in all districts of Hopewell Township. These are: acetylene gas manufacture; alcoholic beverage production; junk yards; ammonia bleaching powder or chlorine manufacture; celluloid manufacture; fat rendering; fertilizer manufacture; fireworks manufacture, match manufacture; slaughter houses; tanning, curing or storage of leather; chemical manufacture, cement manufacture; or any other use that will be injurious, hazardous, noxious, or offensive to an extent equal to or greater than those enumerated above.

The zoning ordinance contains special provisions for cluster developments. These developments are permitted in A, A-1, R-1, and R-2 districts, which constitute the greatest proportion of Hopewell's area. This is in accordance with the N.J. Coastal Management Program which encourages "housing development that clusters dwellings" (N.J. Coastal Management Program, Sec. 7.2.2 pg. 132). Article 3.1 of the Zoning Ordinance dictates that cluster developments must meet requirements of: minimum areas, maximum number of lots, building requirements, sanitary sewer systems, site plan data, and use of open space. Hopewell Township Master Plan complies with County Master Plan and the N.J. Coastal Management Program. Hopewell's Master Plan is a step towards the implementation of the Coastal Management Program.

Lawrence Township. The entire southern half of Lawrence Township is included in the Coastal Area.<sup>1</sup> Most of this area is zoned for agricultural use, although there are districts for industrial, public, and residential development uses. The industrial area is located along the railroad line, just near the CAFRA boundary. There are also some coastal areas which are zoned for commercial and business uses. These are located in the Cedarville area. A brief schedule of regulations is listed below:

R-1 (Residential) -	Single Family Dwellings, Schools, Community Buildings, Places of Worship
R-D (Residential Development) -	As above, but using different standards
B (Business) -	All uses allowed in R-1, Retail Stores

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<sup>1</sup>The Lawrence Township Future Land Use Plan is in preparation. According to consultant William Bowen, Lawrence Township will probably need an extension, because it is not able to meet the deadline of February 1, 1979.

C (Commercial) -	All uses allowed in B (Business), Wholesale Business Establishments
I (Industrial) -	Any uses allowed in B (Business) except those also allowed in R-1, Manufacturing, Assembly
A (Agricultural) -	Any use permitted in R-1 General Purpose Agriculture Associated Rural Activities Recreational Facilities
R (Resort) -	Any uses permitted in R-1 and RD Amusements, Eating Places, Lodging
P (Public) -	Any use is permitted, subject to Zoning Board of Adjustment approval

Sand and gravel mining is permitted as a conditional use in all districts. In 1971, a mining ordinance was enacted, making it mandatory that a permit be received from the Township Committee before mining can begin.<sup>1</sup> The committee must be assured that the mining operation will meet performance standards as specified in the ordinance (Article 8). This could be used as a tool to carry out the policies of the N.J. Coastal Management Program which states that mining should be restricted to areas adjacent to current mining operations (N.J. Coastal Management Program Bay & Ocean Shore Segment Sec. 7.6.2 pg. 148).

Article XXII of the zoning ordinance contains another law that could be used to protect the coastal environment. This ordinance states that approval must be obtained from the Zoning Board of Adjustment before any construction or demolition can occur "where water stands habitually, or after rain, or in locations subject to flooding by tides, including flood tides."

Maurice River Township.<sup>2</sup> The Coastal Zone covers the western edge of Maurice River Township (along the Maurice River), and the southern section of the Township, along the Delaware Bay. In the Township Coastal Area, the proposed Plan is consistent with the Coastal Management Program.

In accordance with the Plan, agricultural areas are designated as limited growth areas reserved for farming. The proposed Plan shows three categories of residential development (low density, high density and mobile homes); commercial areas (Leesburg, Dorchester, Port Elizabeth); and an industrial area (Dorchester).

The industrial area as designated in the F.L.U.P. has been enlarged over that of the current plan. If Dorchester is selected as a support industry site for the repair and maintenance of vessels and equipment for offshore drilling, this enlargement will prove to have been necessary. The newly planned industrial area is located near to an existing industrial zone; this is consistent with the Coastal Management Program. Areas along the rivers and streams are designated as conservation areas. These areas should be preserved in their natural state.

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<sup>1</sup>In Cumberland County, just Lawrence Township has a separate zoning ordinance (No. 102) which contains regulations for mining and removal of soil.

<sup>2</sup>On October 11, 1978, there was a meeting of the Maurice River Twp. Planning Board; its express purpose was a discussion of the Maurice River Township proposed Land Use Plan, prepared by consultant Harry Dare, III.

Wetlands areas are divided into two categories:

- a) Preservation areas - on which any types of development is prohibited. (An example of one such area is the land reserve located around East Point to preserve the historical site and edifice of the Light House).
- b) Developable wetlands - areas that can be developed in accordance with the Coastal Management Program (an example is the enlargement or building of new marinas, or the location of water-oriented industries).

The majority of the Township coastal area is zoned for residential uses. A Resource Development and Restoration District (M-2) is located along the Maurice River. An Industrial Zone (M-1) also occupies one section adjacent to the river. There are two Commercial-Business Districts in the Coastal Zone (C-1). One is adjacent to the river across from Port Norris; the other is located near to Route 47, in Leesburg. Along the bay are located two Mobile Home Districts (T). A brief schedule of permitted uses are listed below:

R-1 (Residential) -	Single Family Dwellings, Municipal Facilities, Farming, Golf Courses, Parks, Airfields
R-2 (Residential) -	Single Family Dwellings, Apartments, Schools, Municipal Facilities, Boarding Houses
R-3 (Residential) -	Single Family Dwellings, Apartments, Schools, Municipal Facilities
C-1 (Community Business)	Retail Stores, Offices, Banks, Passenger Terminals, Restaurants, Motels, etc.
C-2 (Neighborhood Business) -	Same as above
M-1 (Industry) -	Food processing, Laboratories, Offices, Public Utilities, Textile Industry, Glass Industry, Municipal Facilities, Trucking Facilities
M-2 (Resource Development & Restoration) -	Agriculture, Recreational Uses, Mining, Public Utilities, Uses allowed in M-1
T (Mobile Home) -	Mobile Homes, Uses permitted in R-2

Mining is permitted only in the Resource-Development and Restoration Districts (M-2), and only with a permit from the Township Committee. Before such a permit can be awarded, performance standards must be met, dealing with property, production and processing, and land rehabilitation. A Resource Development Review Board (made up of three Planning Board Members and two representatives of the mining industry) makes recommendations to the Township Committee concerning these uses.

A new mining ordinance has been proposed, but not yet adopted. It would require that a permit from the Planning Board be given before the Township Committee could issue a mining license.

The zoning ordinance specifies certain uses which are prohibited in all districts of the Township. These are uses which are noxious or offensive in or within 50' of a Residential District, and uses which are noxious, offensive, or hazardous in Commercial Districts, except by approval of the Board of Appeals.

City of Millville. Millville has a small segment of its total area included in the coastal zone. It is located along the Maurice River and its tributary Menantico Creek (on the west it is bounded by Mauricetown Road and on the east by Route 47). Among the purposes and the goals listed in the Millville Master Plan are the following:

To promote the conservation of open space and valuable natural resources, and to prevent urban sprawl and the degradation of the environment through improper use of land;

To encourage planned unit developments which incorporate the best features of design and relate the type design and layout of residential, commercial, industrial and recreational development to the particular site; and

To insure preservation of natural open space through the encouragement of agricultural activities, very low density rural residential development, preservation of natural features in areas of more intensive development, and public acquisition of open space for conservation and recreation purposes.

The Millville Plan also encourages preservation of the marshlands and discourages development in the flood plain areas and promotes a balanced system of recreational areas within the City.

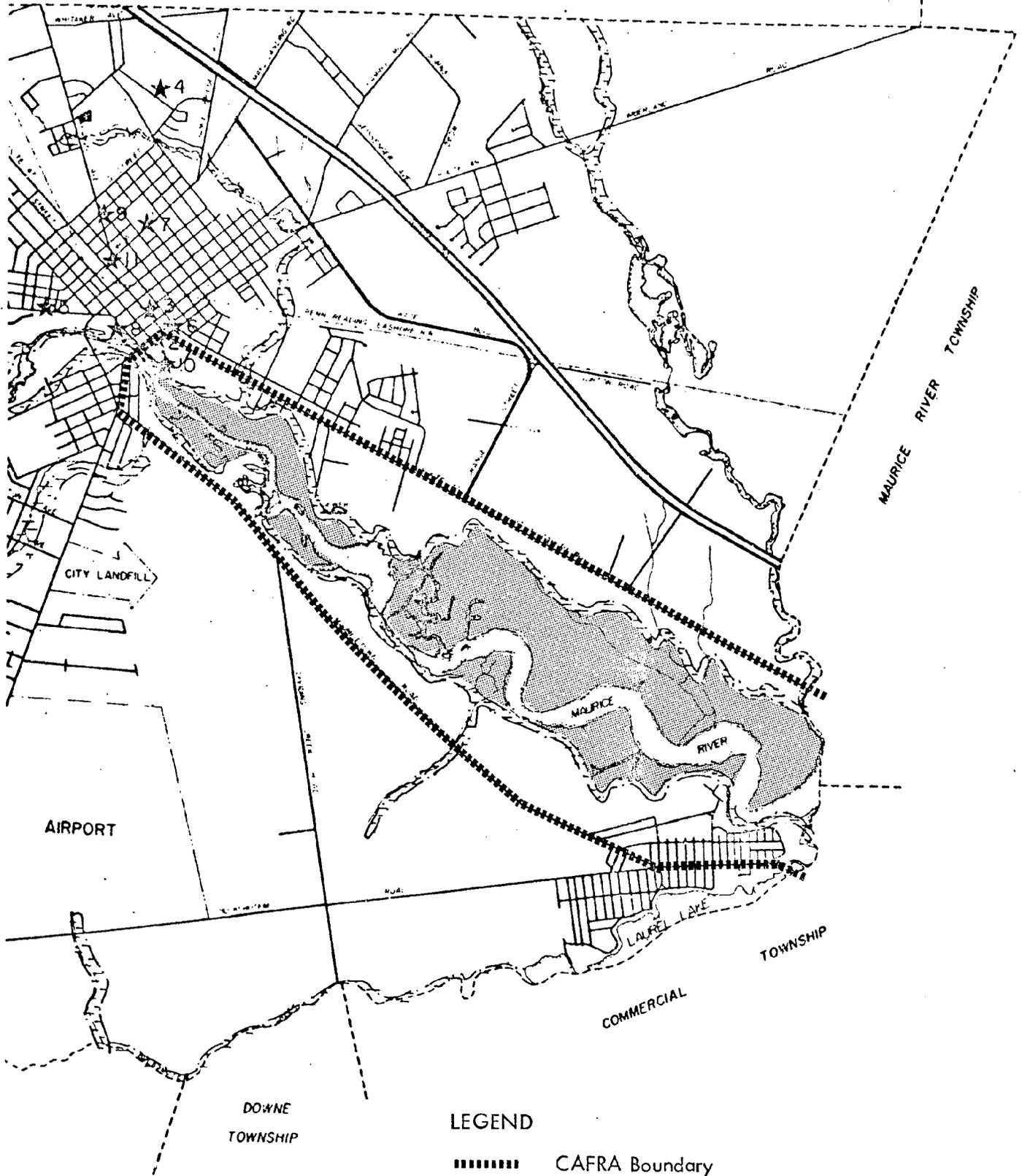
The City of Millville Plan emphasizes the preservation of both private and quasi-public open space areas. The preservation of private lands is necessary for the general welfare, where those funds significantly contribute to the environmental soundness of the area, or the recreational needs of city residents (picnicking, boating, hiking, riding, swimming, winter sports).

Among the most important policies of the Plan are the preservation of natural stream corridors, slopes, scenic areas, and historic structures and sites. Natural stream corridors should be protected by development clustering, easements, or property acquisition. The Plan recommends that the City actively support County acquisition and development plans for parks in Millville.

According to the Future Land Use map, the Millville coastal area shows as a conservation area (more than 50% of the total area), on which very low residential development is permitted. Outside of the conservation areas, along the Port Elizabeth Route (Route 47), medium density residential development is permitted, and some areas along Route 47 are devoted to commercial use. High density development is shown around the Laurel Lake area. The Plan also shows two trailer areas: the first extends from Route 47 to the banks of the Maurice River, and a second small trailer area is located in the northern part of Millville coastal area. The first area is almost

FIGURE 12

MILLVILLE COASTAL ZONE



LEGEND



CAFRA Boundary



Conservation Areas

totally located on wetlands, which is inconsistent with Coastal Management Program that discourages all types of development on wetlands.

An industrial zone is located in the northern part of the Millville coastal zone. The area is located partially on flood plain area. A small area, located south of the industrial area, is marked as a Flood Plain Area - this area is to be preserved in its natural state.

The Millville Master Plan indicates that within the city coastal area development is planned for:

- a. a public marina (northern part of the coastal zone), and
- b. Southeast Park along the Maurice River; with projected size is 56<sup>+</sup> acres.

According to the C.M.P. policies this type of use has priority over other types.

To acquire supplemental park sites, the Millville Plan recommends State and Federal Assistance Programs, such as Green Acres funding, especially in coordination with the State Comprehensive Outdoor Recreation Plan.

Currently, the Millville coastal area is divided into rural and urban areas. A Land-Conservation district (L-C) covers most of the area with the exception of the following uses; Industry (I-L, I-2, and I-R) and Residence (R-15). A complete list of use districts is given below:

L-C	Land Conservation
R-20	Residential
R-15	"
R-10	"
R-9	"
P.A.	Professional and Administration Offices
P.B.C.	Planned Business Center
B-1	Central Business
B-2	Neighborhood Business
B-3	Highway Business
F-P	Flood Plain
I-R	Research Industry
I-1	General Industry
I-2	Waterfront Industry
I-3	Air Park Industry

Certain uses are prohibited in all districts of the city. These are: billboards and signs not related to businesses on premises; keeping of swine; privately owned dumps; seasonal resort cottages; any use endangering health, safety, or welfare of the community; excessive amounts of dust, fumes, noise, odor, smoke, vibration, glare or waste products and slaughtering of fowl.

The Land Conservation (L-C) district which covers more than half of the Coastal Zone in Millville is limited to six permitted uses. These are: farming, single family detached dwellings, municipal uses, migrant labor housing, cemeteries, and planned communities. Mining is permitted as a conditional use in this district. It is fully permitted in I-1 and I-3 districts. In all cases, mining operations must comply with standards in the following areas: design requirements; dismantling after termination of operations; construction materials and methods; noise, vibration and dust and land rehabilitation.

Performance standards are also set forth for all uses in I-R, I-1, and I-2 districts. These are guided by N.J. State Dept. of Health and State Dept. of Labor and Industry standards.

The I-2 district "permits manufacturing, processing or industrial use. . . provided that the proposed use has characteristics requiring location near, or immediate access to, a body of water". (Zoning Ordinance: See 6:2-1602). This is consistent with the N.J. Coastal Management Program which attempts to reserve waterfront locations for uses which are dependent upon the utilization of that resource.

In summary, the Millville Master Plan is compatible with the County Plan of 1966, as amended, and with the C.M.P. as well.

Stow Creek Township. The western portion of the Township (along Stow Creek), as well as the southern portion, are included within the coastal zone, approximately one third of the Township area.

The Future Land Use of Stow Creek spells out important policies: the encouragement of farmland preservation; the discouraging of all development in areas not adequate for such use; the encouragement of housing rehabilitation programs and the construction of single family dwellings; the encouragement of the utilization of regional community facilities; the encouragement of the preservation of historic structures and sites; the preservation of space for recreation; and the conservation of natural resources.

In accordance with the Stow Creek F.L.U.P., township coastal areas are to be used for open space and recreational purposes, preservation (tidal marsh and woodland area), and agricultural use. In Roadstown, a Historic District has been created in order to preserve the historic structures; this is consistent with C.M.P. policy. The Plan states: "All lands contained in the composite flood hazard areas are considered to have severe limitations for development". If critical, environmentally sensitive areas are to be protected from development and prime farmland is to be preserved. Stow Creek Township offers limited potential for future growth and development".

The Stow Creek Future Land Use Plan is consistent with the Township's agricultural character. This municipality had developed a zoning ordinance in complete agreement with the F.L.U.P. It is important to note that under the previous zoning ordinance almost all of the western portion of the Township coastal area (along Stow Creek) was zoned for industrial development. This inconsistency has been corrected.

The Township of Stow Creek is divided into zoning districts which are listed below; including types of uses permitted:

- Residential (R) - Single family detached dwelling, two family detached dwelling (duplex), home occupations as a conditional use, and all uses permitted in the Agricultural Zone, with some exceptions.
- Historic Residential (HR) Single family detached dwelling, home occupation as conditional use, and all uses permitted in the Agricultural Zone with some exceptions.
- Agricultural (A) - Farm and agricultural activities, the sale of farm or dairy produce, single family detached dwellings for family engaged in agricultural production and as a conditional use for families not engaged in agricultural production, and home occupations as a conditional use.
- Commercial (C) - Retail sale of goods, drugs and pharmaceuticals, confectionery, dry goods and notions, feed, grain, farm machinery and supplies, stationary, books, tobacco, periodicals, newspapers, antiques, service activities, home occupations (as conditional use); structures devoted to combined residential and general commercial occupancy; and all farm and agricultural activities permitted in the Agricultural Zone (with some exceptions).
- Flood Plain (FP) - Only uses permitted in the Agricultural District. Construction of an enclosed building is allowed only in accordance with existing Federal Insurance Administration Standards.

All uses not expressly permitted by the Stow Creek Township Ordinance are prohibited. Some of them are listed below: mobile homes or trailers, trailer parks, multi-family housing containing three or more dwelling units, industrial uses and activities which involve danger of fire, explosion, emission of toxic and noxious matter, radiation or other hazards.

In general, Stow Creek Land Use Plan is consistent with the County Plan of 1966, as amended, with the County planning objectives and with the C.M.P. policies.

c. Land and Water Use Decision Making Authorities

A great many agencies share the authority and responsibility for the decision making process on both land and water use within the County Coastal Zone. A significant number of organizations, public action groups and citizen advisory committees (at the municipal and county level), also have influence. They express their opinions and comment on specific development proposals, as well as helping in the finalization of important decisions.

Cumberland County 208 Water Quality Planning. (Section 208 of the Federal Water Pollution Control Act, 1972, and its amendments). This areawide Water Quality Management Planning is conducted in the Lower Delaware Basin by the DEP. The Lower Delaware Study Area includes Salem and Cumberland Counties. This planning program considers wastewater and stormwater treatment. It is also concerned with the possible impact on water quality from land use, any types of development, transportation strategies, air quality and solid waste management. It deals specifically with non-point sources of water pollution. This planning program calls for a 20 year management plan which should be approved by November 1978.

The County Planning Board is responsible for informing all municipalities about this program. Meetings were held in several of the County's municipalities and a slide show was provided.

Soil Conservation Service. (U.S. Department of Agriculture Agency for Cumberland and Salem Counties). The Soil Conservation Service helps farmers in Cumberland with the rational use and management of the land. This agency provides to the farmers soil surveys, engineering and technical services. It also considers rationale drainage systems (waterways for drainage), soil erosion problems, ponds and other factors related to land use.

In Cumberland County this agency serves 500 farmers (cooperatives) of the County. Many of them do not belong to the cooperative. The Soil Conservation Service Agency also extends their services on to private homeowners.

d. County Land and Water Decision Making Authorities

Cumberland County agencies, which are responsible for land and water use decisions are listed below:

Road Department, Planning Board, Economic Development Commission, Public Health Department, Mosquito Extermination Commission, Recreation Commission, Cumberland Soil Conservation District, County Utility Authority, Industrial Pollution Control Financing Authority.

Description of the County Agencies.

Road Department. This is one of the largest County departments. The Road Department operates the maintenance garage. This department supervises maintenance,

repair and construction of all County roads. Proposals for construction of new roads in the Coastal Zone require a DEP permit. The County Engineer serves as a member of the County Planning Board and participates in the review of all of the County's site plans and subdivision applications. The County Engineer also assesses damages to County roads and bridges caused by traffic and/or storm water run off. He recommends, supervises and evaluates repairs (repair also requires a DEP permit in wetlands areas). He also consults with the County Mosquito Commission on drainage system maintenance and repair. He aids developers in adhering to proper land usage.

The County Road Supervisor reviews all road opening permits, driveway permits and all new streets and drainage permits in new developments, shopping and industrial areas.

Planning Board. This agency is responsible for the preparation and adaptation of a master plan for the County. The Board cooperates with municipalities by encouraging the development and use of sound planning objectives and policies as well as by helping them with the preparation of municipal master plans and zoning ordinances. In 1978, the County Planning Staff worked on preparation of the Master Plans and zoning ordinances for the municipalities of Fairfield, Stow Creek and Commercial Townships. The Planning Board is also responsible for the review of all site plans and subdivisions. It can withhold approval on subdivisions if decisions will affect county roads (eg. by discharging storm water) until such time as adequate facilities are provided.

Site plans for commercial, industrial and residential development must also meet specified standards in order to be approved. The County Planning Board meets with and cooperates with municipal planning boards. Recently, the County Planning Board met with municipal boards to discuss a State Development Guide Plan. This agency also acts in an advisory capacity to the Board of Freeholders and cooperates with all agencies at the Federal, State, Metropolitan and regional level. The County Planning Board was invited to cooperate in a project by the State (DEP/OCZM) in 1976 to study the onshore impact of offshore drilling for oil and gas on Cumberland County.

Again, in 1978, the staff was assigned to study the consistency of local legal regulations (Municipal, County) with State regulations. The Planning Board studies population composition and change, land use, zoning, park and recreation needs, historical features, business conditions, water and sewage, traffic and transportation and industry. A detailed bibliography of the Planning Board publications is attached to the report, Appendix C.

Economic Development Commission. This agency has an important role in the decision making process, including where industrial development should be located within the County, and its locational consistency with county-state land use and resource policies.

The Commission collects all information on industrial and commercially zoned areas. It also prepares County Capital improvement programs. Further the

Economic Development Commission is involved in preparation of informational materials and literature and its distribution to other County agencies and the public. This Commission is also involved in advertising the industrial, commercial and recreational advantages of the County; to this end it prepares materials for displays, gives lectures and conduct meetings.

In its various projects, the Economic Development Commission cooperates with County realtors, Utility Authority and various State agencies. It in effect brings government assistance to management. The Commission is constantly updating the County industrial directory and prepares an overall economic development program progress reports every year.

Public Health Department. This Department is responsible for the enforcement of State and local health codes. It has to plan and administer all phases of public health, including programs designed to meet the health needs of each community within its jurisdiction. The Health Department supplies water testing services, performs percolation tests, and assists in establishing municipal water and sewage systems. It inspects bathing places, controls public water supplies, and controls the storage, collection and disposal of solid refuse and liquid waste. It surveys streams for compliance with a variety of State and Federal Standards. (U.S.C.A. 33:1251 et. seq.; U.S.C.A. 42:300f et. seq.).

The Public Health Department also assists in the enforcement of air quality regulation in accordance with adopted standards listed in zoning ordinances; it checks complaints for air and water pollution.

This Department also makes recommendations for new health projects and services for the betterment of public health in the various municipalities. It urges the adaptation of local health codes where none exist. This multifunctional agency is responsible for public health education, the maintenance of a continuing program on water pollution control, the maintenance of a continuing water sampling program; answering public questions and investigating citizens complaints.

The Health Department should also provide the public with copies of State Laws, health pamphlets, and copies of County/State reports on local health conditions.

Mosquito Extermination Commission. This agency has a large area within Cumberland County to control for mosquito infestation. The Commission conducts long-range drainage programs for mosquito control; it also patrols and maintains drainage ditches. Among its other functions it reviews drainage plans with representatives from the County Road Department. In order to avoid conflict, it maps and charts mosquito breeding areas; it conducts inspection and spraying programs. The Commission is responsible for spraying street catch basins and fire reservoirs; it operates a surveillance program, checks traps and provides identification.

The Commission works very closely with municipalities and its officials work with the Road Department when installing cross-street drains and catch basins. The Agency performs (for the Health Dept.) inspection of all sewage and open drains.

The Mosquito Commission conducts public education programs and cooperates with land developers to eliminate mosquito problems. The Mosquito Commission should maintain liaison with local and State Departments of Health. All mosquito control projects on Wetlands are permitted by "The Wetlands Act of 1970". C.13L9A-7 Section 7. which was effective in Cumberland County on February 21, 1975.

Recreation Commission. This commission assists in the planning, development and maintenance of all County parks. The Commission is further responsible for the management of many recreational activities, and the administration of lands for public recreation. The Recreation Commission supervises the placing of park benches and picnic tables. The commission also inspects parks periodically. It cooperates closely with the Planning Board to which it provides detailed information on areas suitable for parks or conservation uses.

Cumberland Soil Conservation District. This agency is formed by the appointment of five farmers to the district council. Cumberland Soil Conservation officers are involved in the preparation of an operations plan which will benefit farmers. They have influence on scope of the services performed by the U.S. Department of Agriculture Agency (Soil Conservation Service).

County Utility Authority. The County Utility Authority is responsible for the preparation of a solid waste management plan. This Committee also plans new sanitary sewerage facilities, provides for their installation and works on improvements of existing sewerage installations. (Appendix D shows Cumberland County Utility Authority Expansion Plan).

Industrial Pollution Control Financing Authority. Created in 1973, the purpose of this authority is to help the county's industries to finance pollution control programs, including compliance with the State standards of the Clean Air Act. (U.S.C.A. 42:7401 et. seq.).

County Organizations and Public groups which help in the land and water use decision making process.

County Environmental Organization "Save Our River Environment". (SORE) This organization group has about 150 members. Within the organization there are several committees, each with a designated task or area of concern. Some of these committees and their functions are noted below. For example, the SORE Agricultural Committee is actively supporting the bill known as the Family Farm Development Act; it is now before Congress.

SORE has been actively involved in promoting the conservation of the natural resources of the Maurice River watershed. SORE also reviews all applications for permits under the CAFRA, Wetlands, Riparian and Stream Encroachment State Statutes as well as permits under the jurisdiction of the U.S. Army Corps of Engineers and the U.S. Coast Guard. It has cooperated with DEP-OCZM, other N.J. Counties environmental organizations and the Fairfield Township Environmental Commission.

League of Women Voters. The League is actively involved in studying Cumberland County natural resources. The organization's Environmental Quality Committee is presently studying: land use, energy problems, water and air pollution, solid waste and onshore impact from offshore drilling.

#### Municipal Land and Water Use Decision Making Authorities

Municipal agencies and commissions which are responsible for land and water use decisions are listed below: The Municipal Planning Board, the Zoning Board of Adjustment, the Municipal Engineer, Zoning Officer, Building Inspector, Housing Inspector, Shade Tree Commission and Environmental Commission. (See Table 7).

Municipal Planning Board. The Planning Board is responsible under the land use law of 1975 Ch. 291 (C. 40:55D-25) for the preparation of a master plan, the official map and the zoning ordinance. This agency reviews and controls subdivision and site plans. It is also involved in preparation of a capital improvements program, variances, and certain building permits (in conjunction with subdivision, site plan and conditional use approval).

Zoning Board of Adjustment. The Zoning Board of Adjustment has the power to grant a variance, to allow a structure or use in a district restricted against such structure or use in particular cases and for special reasons. Variances can only be accomplished by an affirmative vote of at least two thirds of the Board. This Board also has the power to direct the issuance of a permit for a building or structure in the bed of a mapped street, or public drainageway, flood control basin or public areas reserved to other uses. It has the power to approve subdivision or site plans as does the planning board.

Zoning Officer, Building Inspector, Housing Inspector. These officials have the responsibility of signing documents "zoning permit" which is required by ordinances as a condition precedent to the commencement of a use or the erection, construction, reconstruction, alteration, conversion or installation of a structure. They issue building permits and authorize repairs or capital improvements. The zoning permit acknowledges that such use, structure or building complies with the provisions of the municipal zoning ordinance.

Environmental Commission. This commission is generally appointed by the mayor. This Commission also works closely with the Planning Board. The Environmental Commission is invited by the Planning Board to comment on all applications for development after they have submitted, to the Planning Board, an index of the natural resources of the municipality.

Shade Tree Commission. There is only one municipal Shade Tree Commission within the County (Greenwich Township). It has many functions, including the pruning of trees along municipal roads, the removal of girding roots, the supply of trees for planting and the removal of dead and dangerous trees. The maintenance of municipal institutional grounds by mowing, fertilizing, re-seeding lawns, trimming and spraying of trees and shrubs, the planing and mowing of flowers, etc. It performs general landscaping work as well.

MUNICIPAL LAND AND WATER USE DECISION MAKING AUTHORITIES

Municipality	Planning Board	Zoning		Building Inspector	Zoning Officer	Housing Inspector	Road Super-visor	Health Officer	Resource Develop. Review Board	Environ-mental Comm.	Shade Tree Comm.	Township or City Planner
		Board of Adjustment	Inspector									
1. City of Bridgeton	X	X	X	X	X	X						
2. Commercial Twp.	X	X	X	X <sup>a</sup>	X <sup>a</sup>	X	X		X			X <sup>d</sup>
3. Downe Twp.	X	X	X	X	X		X					
4. Fairfield Twp.	X	X	X	X	X					X		
5. Greenwich Twp.	X	X	X	X	X							X
6. Hepewell Twp.	X	X	X	X	X			X				
7. Lawrence Twp.	X	X	X	X	X							
8. Maurice River Twp.	X	X	X	X <sup>b</sup>	X <sup>b</sup>	X <sup>b</sup>						
9. City of Millville	X	X	X	X <sup>c</sup>	X <sup>c</sup>	X						
10. Stow Creek Twp.	X	X	X	X	X							X <sup>d</sup>

5. a. - same person

b. - same person

c. - same person

d. - CETA position

Source: Directory of Local Officials

## B. Areas of Agreement, Conflict Confusion Among Land Use Plans and Policies

The Cumberland County Future Land Use Pattern recommended by the Plan is in general consistent with State coastal policies as was documented in the previous section. The newly adopted municipal Land Use Plans, as well as those which have been proposed but not yet adopted, were reviewed and found to be consistent with basic coastal policies. All these plans were prepared in accordance with the provisions of the Municipal Land Use Law of 1975. Among the listed goals of this law are: conservation of open space and valuable natural resources; prevention of urban sprawl and degradation of the environment through the improper use of land; and the preservation of the existing prime farmland. All Municipal Land Use Plans include a conservation plan for environmentally sensitive areas and valuable natural resources.

After the municipalities have completed the Land Use Plans, they will review and update existing zoning and subdivision ordinances. Greenwich Township has already prepared the basis for zoning changes to existing zoning ordinances and the zoning map. (These changes develop will be adopted in January, 1979). The zoning map shows the location of a General Industry Zone in the floodplain area. However, the ordinance specifies that all types of development should comply with the Federal Insurance Administration standards (HUD, Federal Register, Vol. 41 No. 207, Part II, October 26, 1976) as amended. Additionally a provision in Section 8.5 states: "No activity regulated under the Wetlands Act of 1970 shall be permitted in the coastal wetlands mapped pursuant to N.J.S.A. 13:9A-1 et. seq., unless a permit has been issued in accordance with said act. Regulated activities shall not include the continuance of commercial production of salt hay or other agriculture crops". (p. 4 of the proposed Greenwich Township Ordinance).

The Cumberland County coastal zone is the least developed part of the N.J. shore. The main consideration should be the protection of the fragile coastal ecosystem and in particular of the valuable wetlands. New construction and development (residential, commercial, industrial and resort development) should be concentrated in areas where such development already exists, in order to preserve prime farmland and open space. To follow these basic coastal management policies, it would be very helpful if the coastal municipalities were able to adopt a model wetlands ordinance. (Requests were made to DEP to supply such a model wetlands ordinance).

If the municipalities have flood plain regulation, then all development must conform to applicable standards. In Cumberland County, all coastal municipalities, with the exception of one (Hopewell Township), have flood plain regulations. Only one municipality, Downe Township, has a separate flood plain ordinance. Other municipalities have included flood plain regulation as a part of the existing zoning ordinance. Recently, Greenwich Township adopted flood hazard reduction standards as mentioned earlier. That change took place after a public meeting in Greenwich Township at the suggestion of the County representative.

It is recommended that coastal municipalities reserve floodplains and areas along streams for recreational purposes or conservation, as has been done in several municipalities in developing their Land Use Plans. Municipalities should discourage landfilling in floodplain areas; it can create serious flooding problems and do much damage to the property of downstream owners.

C. Recommendation for Administrative and Regulatory Changes

a. Recommendation for Change in the Permit Review Procedure

According to DEP information, minor waterfront construction such as repair of family docks and piers requires only an application that includes:

1. a sketch or drawing of the proposed work;
2. a copy of the property deed, and
3. an application fee (\$100), providing that the owner has a riparian right permit.

This work can be done locally.

The Cumberland County Planning Board recommends some changes in the permit review procedure under the Wetlands and Riparian statutes. The Planning Board proposed that:

1. All major development proposals for new structures will be reviewed by the State of N.J. DEP/OCZM as they are currently, and
2. All proposals for repairs or maintenance of existing structures and minor proposals for building new structures should be reviewed and approved or disapproved locally.

The proposal calls for the establishment of a county clearinghouse which will be responsible for the review of such proposals. This county agency would cooperate closely with municipalities by inviting them to review and to comment on the proposals if they so choose. Many Cumberland County coastal residents are unhappy with existing regulations (see Appendix B).

Local government agencies should be funded to implement the various proposed State procedures, since the Trenton and Atlantic City offices are too distant. Phone calls and trips to existing offices are quite costly.

Legislative reform should be undertaken to eliminate conflict and confusion over jurisdictions, to simplify procedures and to make the language of regulations and procedures understandable without the need for costly legal interpretation.

Riparian Permits. Recent practice shows that individuals who wish to build any waterfront structures (pier, dock or small boardwalk) must follow a complex procedure of application for the riparian permit, including:

1. Two notarized copies of the applications;
2. Two copies of an environmental questionnaire;

3. Fifteen copies of a survey conducted and stamped by a registered engineer and land surveyor (fee \$600);
4. An acetate copy of the survey; and
5. Sketches and drawings of the structure.

If the construction (such as dock or pier) were built and used by any owner, who did not have a legal riparian title, he must apply for a permit for that preexisting structure.

b. Recommendation for Change in the Procedure for Obtaining a Riparian Permit

The Cumberland County Planning Board recommends that:

1. The application forms and the environmental questionnaire should be simplified and written in language understandable by the average person and not just by a lawyer.
2. The current fee for processing applications in the case of small properties is too high; it should be reduced considerably.
3. Engineering work required should be the minimum necessary to clearly identify locations, and in the case of owners who are surrendering substantial amounts of land through tidal erosion and consequent change of riparian ownership, all survey and other costs should be paid by the State.

c. Recommendation for Tax Abatement For Wetlands Owners

The owners of all wetlands (as mapped by the State) should receive a tax abatement. Wetlands, as an environmentally sensitive area preserved by the State Coastal Management Program, have no development value. Owners of the wetlands who regularly paid taxes on them in the past should pay less. Townships with few ratables can hardly afford to reduce taxes without aid from the State, and should not be expected to in view of the fact that further utilization of these lands is being regulated away from their owners to preserve them as a State and Regional water-front, open-space resource.

IV. COUNTY PLANNING BOARD OFFICE AS COASTAL CLEARINGHOUSE

A. Contact with Coastal Municipalities: Providing Information on the DEP/OCZM Planning Program

During the State County Coastal Coordination Project the State and the Federal Government held a public hearing on the Draft Coastal Zone Management Program in Bridgeton. The hearing was well attended by more than 50 people. Seven persons from Cumberland testified at the hearing. (John Holland Statement, See Appendix E).

The Planning Board held two public meetings. The purpose of these meetings was to explain to coastal residents and municipal officials the DEP/OCZM coastal policies and planning program and to solicit comments and opinions on coastal management and State permit application procedure (under the Riparian, Wetlands Act and CAFRA statutes). One of the public meetings was held in Greenwich Township on September 19, 1978. The meeting was attended by all members of the Planning Board and representatives of the public. The second meeting was held in Lawrence Township on October 18, 1978. This meeting was very well attended, (some 86 people). All municipal officials attended the meeting, as did residents from the small coastal communities, especially Bay Point, and residents from other parts of the Township. The meeting was organized with the help of Alvin Griffith, Secretary of the Lawrence Township Planning Board.

Both public meetings showed that the coastal residents are not familiar with the laws, (Riparian, Wetlands Act and CAFRA) nor with the Coastal Management Program - BOSS (the Mayor and Planning Board received copies). Even those individuals who had read the Coastal Management Program felt that they couldn't understand it. There is a strong need for simple explanation of the professional terms. More contact with DEP officials, workshops and perhaps even short courses are necessary for those residents who have to live with these laws. The biggest areas of conflict are interpretation of riparian rights, the purpose of the Wetlands Act and the experience with the application for a permit (for details see Appendix B). The CAFRA regulations and review process were largely unknown to Lawrence Township coastal residents.

A Representative of the County Planning Board attended two meetings with Municipal Planning Board's, on October 11, 1978 in Leesburg, (Maurice River Township) and on October 23, 1978 in Newport, (Downe Township). The purpose of the meeting in Maurice River Township was an investigation of the Future Land Use Plan and its consistency with the State Coastal Management Program. At the meeting in Downe Township a Master Plan was adopted. In the opinion of the Mayor of Downe Township, the residents of the coastal areas of Downe Township had difficulty in obtaining permits for repair of waterfront structures as well as riparian permits.

The Commercial Township Planning Board did not wish to have public meetings dealing with the coastal management programs. They wished, instead, to have a meeting of the Township Planning Board with the representative (coastal coordinator) of the Cumberland County Planning Board. Unfortunately, the membership of the Township Planning Board wished to schedule that meeting for the same date and time as the above mentioned meeting in Downe Township. No alternative meeting date was possible within the time framework.

## B. Summary of Experience Commenting on DEP Coastal Permit Applications<sup>1</sup>

### a. CAFRA Permit Application

Cumberland County has had a limited number of applications under the CAFRA permit program. In the four years since the Act took effect, DEP has received five applications of which: two have been approved, one has been denied, and two are pending.

Approved permits: dwelling units (100 apartments), and sewerage.

Denied permits: dwelling units, (campsites, 122).<sup>2</sup> This permit was denied due to inadequate soils for proposed septic treatment of wastes, as well as its potential negative impacts on the wetlands.

### b. Wetlands Permit - Applications in Cumberland: 1970-1977

Approved projects: one utility, four piers and docks, and bridges and roads (1)

Denied projects: one - (no specification)

Withdrawn projects: one - bridges and roads; one recreation

The Cumberland County Coastal Zone is a relatively undeveloped area; this explains the limited number of wetlands permit applications.

Because of the limited number and scope of applications received for CAFRA and wetlands permits, a hypothetical study case was undertaken which calls for a small recreational boating facility located on the left bank of the Cohansy River in Fairfield Township. In this case the CLAM methodology was applied, (Appendix F). Such a facility is typical of the scope of project permits likely to be forthcoming, both in scale and type.

## C. Recommendations for Future State/County Relationships

The Cumberland County Planning Board recommends that the existing State-County relationship be continued. We would like to participate in the State-County coastal coordination project that will begin in November, 1978. We have proposed a study of the recreation potential of the Delaware Bay waterfront for 1979, (Appendix G).

The Cumberland County segment of shore along the Delaware Bay is relatively undeveloped, in particular when compared to the Atlantic Ocean shore with its tourist-oriented economy. However, a few studies have been done that indicate that Cumberland County, New Jersey's "Other Shore", does have some recreational development potential.

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<sup>1</sup>Coastal Management Strategy for New Jersey CAFRA area, September 1977, pg. 160-164.

<sup>2</sup>Later, the applicant built only 24 campsite units on the site and thus avoided CAFRA regulations.

The Cumberland County Planning Board suggests that such a study should be undertaken. It can be useful to both DEP/OCZM and the County. Recreational demands in the entire East, as well as in New Jersey, are very high. Locally, marinas cannot handle all requests for dockage or storage of boats. Recreational development is allowed, even encouraged, under the provisions of the coastal management program. The need for striking a balance between open space needs, commercial fishing, the natural ecosystem and habitat function, recreational facilities, and employment for the area's residents - in short between nature and man - in the Delaware Bay area is a pressing one. A unified, rational plan for the Bayshore area is an absolute necessity. There is pressure from the huge megalopolitan population concentrations for resort/recreation facilities, because existing facilities can't cover all needs. Intensive field research which includes a detailed inventory of resort/recreation facilities, sporting areas (birding, hunting, sailing, pleasure boating, sport fishing, crabbing), and swimming areas must be undertaken before rational planning can be accomplished. The detailed inventory can be used to fill in data gaps which will increase the specificity and predictability in the DEP/OCZM decision making process. (See Cumberland County Planning Board proposal for the 1979 State-County-Coastal Coordination Project, which was sent to DEP on July 14, 1978).

The County Planning Board also recommends that the County government be authorized to review applications permits for minor new construction and repair or maintenance of existing structures (as we specify in recommendation for changes). It further recommends simplification of the language and procedure for obtaining riparian, wetlands and other permits.

We recommend, also, the creation of county coastal offices (to be funded by the State and DEP/OCZM) in each of the coastal counties. These offices could act as data gathering centers, informational clearinghouses, liaison between DEP/OCZM and coastal municipalities (as well as between DEP/OCZM and the county government and citizenry), and a library of pertinent information and documents. Public relations might well become an important additional function.

A P P E N D I C E S

PUBLIC MEETING  
GREENWICH TOWNSHIP

On September 19, 1978, a public meeting was held at the Greenwich Township Fire House. Present at the meeting were Greenwich Township Planning Board members and residents of the Township. Twelve people attended the meeting.

Also present at the meeting were staff members from the Cumberland County Planning Board: Carl Holm, Principal Planner; Richard Cramer, Senior Planner, (author of the Greenwich Township Future Land Use Plan and Zoning Ordinance); and Czeslawa Zimolzak, Senior Planner - County Coastal Coordinator.

This was a joint meeting devoted to the Coastal Management Program and to "208" Water Quality Program. The latter was conducted by Carl Holm during the second half of the meeting.

Question (Q.)

What type of uses are permitted in the wetlands?

According to the opinion of Mr. Roemer, Chairman of the Greenwich Township Planning Board, if Greenwich Township complies with the Coastal Management Program, then no wetlands could be developed; that would leave the Township with no place for the location of any industry. "At least in this way, we are (the Township) showing an area where industry can be permitted, where it has accessibility to the water routes, which industry and also commercial/recreational activities requires".

The Township was advised to have some area for industry. As it is proposed (in the zoning ordinance), the Township has reduced the industrial area by almost 50% from the previous zoning ordinance. But, at the same time we realize that a nuclear power plant can be located in the lower part of the Township, which we have now excluded from the general industry district, because it is the wettest part of the wetlands. At least the area which we have now zoned for general industry is located higher (and is not as prone to flooding as those portions in the lower area of the Township)".

According to other members of the Greenwich Township Planning Board, it doesn't make any difference whether the Township has some wetlands zoned for industrial use or not. If the decision is made that a specific site for industrial development is located in wetlands and is the best site of any available alternative, this site will be developed despite the negative opinion of the Greenwich Townships' residents.

The Township position (according to the chairman of the Planning Board) is that the Township should have a zoned industrial district as an alternative site. In the case that the federal or State governments wish to locate "something" in the lower area of the Township, they can say "no" (because it is zoned for a different use), and offer an alternative site.

Richard Cramer - "Greenwich Township does not have adequate restriction in the zoning ordinance regarding wetlands and flood hazard areas. The proposed zoning ordinance restricts development in the floodway portion of flood hazard areas, but it does not have the same restrictions that would cover the remainder of the flood hazard areas (which in the case of Greenwich is mainly wetlands)." The area delineated for general industry in Greenwich Township means that we will permit industrial development in a wetlands area. It was assumed that the State has a permit policy, and all proposals for development will have to undergo permit procedure. This is inconsistent with the Coastal Management Program and should be changed. The Planning Board requested that Mr. Cramer should make suggestions for changes to be considered by the Planning Board.

Greenwich resident- "Wetlands policy forbids residential, commercial and industrial development, but whatever the P.U.C. wants to put there is all right. If that is true, we will be faced with possibly greater (negative) environmental changes from a nuclear power plant. No one knows what impact it has on fauna or what potential damage could occur from leaks or even slight accidents. Isn't this at least as much or more damaging as commercial or residential development to a wetlands area?"

Although the plan (C.M.P.) protects against individuals who would capitalize on the wetlands, it almost makes the environment ideal for the government to locate "something" in the wetlands. A restrictive growth policy will result in a low population, and the area will increasingly meet the locational criteria for a nuclear power plant".

Richard Cramer - "The Greenwich Township ordinance, as it is drafted, prohibits the location of the nuclear power plants in the Township".

PUBLIC MEETING LAWRENCE TOWNSHIP

On October 18, 1978, a public meeting and hearing were held at the Lawrence Township municipal building in Cedarville, N.J. The meeting was arranged with the help of the Lawrence Township Planning Board and was advertised in all local papers as well as on the air. Some 86 people attended the meeting; representatives of the local municipal government, area farmers, retired citizenry, local homeowners, owners of second homes in the Bayshore area and people who use the area for fishing and recreational purposes were all represented.

The tone of public response was universally one of dissatisfaction. All those in attendance were owners and/or operators of existing homes, businesses or facilities. All agreed to the need for conservation of wetlands and open space. Few wished to have any kind of further development. No industrial construction or "developer" elements were in evidence. About half the participants were retired individuals on fixed incomes and an overwhelming majority were lifetime or longtime permanent residents of the area.

The great disgruntlement voiced seemed to center on confusion, a lack of communication, conflicting advice and directives received from and among various agencies and offices, involved in DEP, Wetlands, Coastal Zone and CAFRA regulations, and the high costs of obtaining legal advice and/or redress of grievances.

Baypoint, an area of many permanent residences which suffers from serious shore erosion, was the home community of many of those in attendance. Most present either had received permits (repair and/or riparian rights) or were in the process of getting them. The average tenure of Baypoint homeowners present was 24.4 years.

A total of 39 people spoke at the meeting; every single individual mentioned a lack of communication and a lack of clarity in directives as a major problem. The complaints with regard to a communication's gap included the following points:

- a) The inability to understand the regulations, correspondence, procedures for obtaining permits, aim and purposes of the law without the aid of a lawyer, (22 statements of complaint).
- b) The lack of consultation with citizenry as to needs and problems of the area before the Wetlands Act was passed, (6 statements of complaint).
- c) The publication of dates and times of informational hearings prior to wetlands, CAFRA, and other coastal area legislation in the Atlantic City Press and the Vineland Times Journal only. Local citizenry read the Bridgeton and Millville newspapers almost exclusively and were not informed of these hearings in times past (4 complaints).
- d) Incorrect referrals to other offices not responsible for or involved with riparian rights or repair permits for coastal zone structures (31 complaints). For example, one citizen (a farmer) was counseled to contact the federal government Corps of Engineers for a permit to deepen an existing well by an employee of a State agency.
- e) Lack of a toll free number for public information and consultation (2 complaints).
- f) "Legalistic", unintelligible language in correspondence, communications and laws (31 complaints).
- g) No answer to correspondence (14 complaints).
- h) Abusive language and rude behavior on the part of DEP employees (2 complaints).
- i) Major versus minor repairs are not clearly distinguished in the law and/or in its interpretation by responsible offices and officials, (16 statements).
- j) Riparian rights, obligations, and deeds/titles were not made clear at the time of purchase or settlement (33 complaints). This was universally viewed as a failure of State and local officials, the legal establishment and shirking of duty. One citizen felt it was deliberate fraud. Each statement to the affect that "no one knew at the time of purchase" was greeted with applause.
- k) Absence of DEP officials from public meetings when invited to attend was cited by 8 people.

l) Conflicting directives and/or opinions as rendered specifically by the regional office (Atlantic City) and DEP in Trenton (eight cases).

m) Lack of a local field office (14 references).

n) No one received information concerning violations and procedures from 1975 until the current letters threatening legal action (19 statements).

Charges of discrimination against or by various groups were levelled by 21 people present.

Most charges were related to costs and economics, centering on the inability of those involved to pay necessary costs in obtaining a permit and/or riparian rights. The following cases in point were mentioned:

a) If changes in the mean high tide result in ownership changes (riparian rights), then the State, not the individual who owns the ripa, should be responsible for the removal of structures. (2 statements to this effect).

b) Reports of discrimination against owners of existing structures and a feeling that relevant portions of the laws/regulations violate the ex post facto provisions of the United States Constitution (18 statements).

c) Discrimination against the area's citizenry through designating the Cumberland Bayshore as a low-growth area, (4 statements).

d) Discrimination against the township through loss of existing rateables, (4 statements).

e) No economic help from the State in either stemming shore erosion or the repairing, dismantling or moving of structures (seven statements).

f) Favoritism toward big business interests, like water oriented industry in general, nuclear power plants in particular (seven statements).

g) Attempts to assess "back payments" on what was constructed or repaired years ago (14 statements).

h) The charging and collection of taxes on footage/acreage/yardage lost through erosion and not legally belonging to the individual in question under riparian law (11 statements).

i) Treatment as culprits and destroyers of the environment while untreated waste sewage.

discharge and nuclear power plant fishkills go unchallenged (3 statements).

j) Economic cost discrimination against senior citizens on fixed income (27 references).

k) Less harassment of Atlantic Coast home owners comparative to those of the Bayshore (9 statements).

l) Ducks unlimited was cited as a special interest group for whom the law had been changed (1 statement) during the hearing stage.

m) Removal of control from local zoning and planning boards, in effect concentrating decision making in Trenton, (11 statements).

n) Expression of the fact that all present at hearings in 1969 and 1972 were in opposition to the legislation as written, yet none of their protests were considered nor the law amended (29 statements). (Farmers present noted that one change they favored, with regard to floodgates, was made).

o) One person present, charged harassment of area homeowners, farmers, the Township Planning Board and municipal officials.

p) Atlantic City gambling interests and State development of the Hackensack Meadows were viewed as evidence of discrimination in favor of special interests by virtually all present. Six individuals specifically mentioned one or both in their statements.

q) Hit and miss enforcement of regulations, preventing pressures for the formation of community legal action groups. The result is great confusion and greater costs to individual owners (7 statements).

The following recommendations were made by the group assembled:

a) Repeal of the Wetlands Act and its replacement with a more satisfactory piece of legislation.

b) Amendment to the Wetlands Act to distinguish between major and minor repairs and improvements.

c) Incorporation of the group as a Bayshore Homeowners Association to defray legal costs

and to institute a class action against the State of New Jersey.

d) Rewriting of the legislation and the procedures in clear English (standing ovation, 3 minutes and 30 seconds).

e) The creation of a local office to handle permits and information.

f) Reassessment of taxes and institution of just compensation for loss of land and land values.

g) The setting of concrete legislation and/or constitutional limits on further expansion of the State with regard to regulation of personal ownership of property and the areas of State jurisdiction in coastal areas, the wetlands, shore areas.

h) Elimination of conflicting statements and procedures with regard to riparian rights, CAFRA regulations, local and county ordinances.

i) Exemption of minor repairs from the need for permit application and process.

j) Improvement of the inspection process.

k) Elimination of the need for expensive engineers reports and consultations, with that function being absorbed by the inspector.

l) Creation of a State plan for controlling shoreline erosion in areas with existing structures.

m) Investigation of the need for a comprehensive program of Bayshore stabilization.

n) More frequent and direct contact with officials of DEP;

o) Comprehensive environmental research and intensive field research in the Bayshore area.

The occasion was used to document and explain riparian law in simple English, to define and differentiate the zones known as "shore", wetlands, CAFRA area, and coastal zones, and to explain the origin, purpose, and functions of various laws and agencies to the public assembled.

Opinions recorded here are not necessarily espoused by this individual. They are simply a record of a lively and well attended public meeting in Lawrence Township.

APPENDIX C

LIST OF PUBLICATIONS:

Population Study, 152 pp. (December 1963-Out of print) (Revised & Reprinted)	October,	1967
Economic Base and Social Environment, 223 pp. (Reprinted 1972)	December,	1964
Traffic and Transportation, 183 pp.	June,	1965
Land Use - 1964, 150 pp.	October,	1965
County Government, 90 pp.	February,	1966
Long Range Financial Study: 1966-85, 97 pp. (Loan Only)	May,	1966
Open Space and Recreation, 130 pp.	June,	1966
Special Studies: Land Mining; Agriculture; Oyster Resources, 98 pp.	July,	1966
Official Map Report, 20 pp. (Loan Only)	August,	1966
Capital Improvements Report, 46 pp. (Loan Only)	August,	1966
The CUMBERLAND PLAN - 1966, A 20-yr. development plan, 212 pp. (out of print)	November,	1966
Rural Water Study, 101 pp.	July,	1969
Urban Water Study, 67 pp.	December,	1970
Housing - Initial Element, 51 pp.	January,	1970
Implementing the Cumberland Plan, An eight year Report of Action, 123 pp.	June,	1970
The Juvenile Criminal Justice System in C.C. (Phase I), 81 pp.	September,	1970
A Plan for the Administration of Criminal Justice in C.C. (Phase I), 72 pp.	November,	1970
Countywide Sewerage Feasibility Study, 220 pp. (Loan Only)	February,	1971
Urbanization, Devices to Control; Optimum City Size, 68 pp.	May,	1971
Housing Study and Program, (II) Problems: Objectives; Proposals, 55 pp.	November,	1971
Job Opportunities Study (Part I), Survey of programs & agencies, 40 pp.	February,	1972
Job Opportunities " (Part II), Employment & Efforts to Increase, 35 pp.	March,	1973
Amendments to the Cumberland Plan, 14 pp.	February,	1972
Surface Drainage Plan and Program, 101 pp. (Loan Only)	September,	1972
Housing III - Analysis of 1970 Census Data, 67 pp.	November,	1972
Housing IV - Cross-Tabs of Housing & Population Characteristic, 28 pp.	June,	1973
Housing V - Dev. & Test for Fair Share Allocation Model, 13 pp.	July,	1974
Population Data - 1970 - Analysis & Projections, 25 pp.	June,	1973
Open Space - A Guide to Preservation, Acquisition & Defense, 34 pp.	May,	1974
Soil Erosion Study - The Problem & How to Alleviate Damage, 45 pp.	July,	1974
Housing VI - Allocation Model	September,	1975
Historic Preservation of Register of Historic Structures & Sites	October,	1976

MISCELLANEOUS PRINTED MATTER AND PLANNING ASSISTANCE

Aerial Photographic Aids (white prints are inexpensive)

Scale 1" = 2,000'	1963 Cumberland County - Wall Mounted Mosaic
" 1" = 2,000'	1963 Entire County for stereo viewing & diazo prints
" 1" = 1,000'	1963 9" x 9" prints for tri-city area for viewing
" 1" = 200'	1963 for tri-city area - diazo prints
" 1" = 1,320'	- soils mapping - diazo prints
" 1" = 1,000'	1970 24" x 24" photos only - entire county - may be viewed at planning office.

LIST OF PUBLICATIONS, Cont'd.

Review of Principal Findings - a part of each basic study - available separately	Free
Subdivision Review Guide	Free
"    "    Resolution	Free
Site Plan Review Guide	Free
"    "    Resolution	Free
Brochure - An Introduction to the County Plan	Free
The Future Land Use Plan Map	Free
Flood Plain Study - tidal areas - Cohansey River 1968 - U.S. Army Corps of Engineers	Loan
"    "    "    "    "    Maurice River 1968    "    "    "    "    "	Loan
Pamphlets - separate tidal areas within flood plain 1968	Free
Selected Statistics - Population & Housing - 1970 - also gives sources, 25 pp.	
Newsletter - The Cumberland PLANNER - bimonthly	Free
Historic Site Inventory & Location Map (Newsletter #46)	Free
Planned Unit Development (PUD) Scale Model & Exhibit - 1973	Free
Land Use - Patterns & Characteristics - Upper Deerfield Township	
A local planning assistance activity for the UDT Planning Board	Loan
Seminars - In - Planning-Six "Packaged" Programs - 1975	Free
County Road Map - (first one free)	
Fairfield Township:	
1. Services and Facilities	
2. Future Land Use Plan	
Commercial Township:	
1. Services and Facilities	
2. Land Use - Existing Patterns and Environmental Characteristics	
Maurice River Township:	
1. Land Use - Existing Patterns and Environmental Characteristic	
A Pictorial Guide to Historic Greenwich, 25¢ - 1976	
A Pictorial Guide to the Historic Buildings of Mauricetown, 1977	
Onshore Development Alternatives - An Impact Analysis of Offshore Oil and Gas Drilling, pp. 136, 1977	

CUMBERLAND COUNTY UTILITIES AUTHORITY EXPANSION<sup>1</sup>

CUMBERLAND COUNTY SEWAGE AUTHORITY EXPANSION  
BRIDGETON & UPPER DEERFIELD

LOCATION: Bridgeton & Upper Deerfield Township.

ESTIMATED COST: \$26,400,000.00

APPLICANT: Cumberland County Utilities Authority

FUNDS: Federal EPA \$15,700,000.00  
State of New Jersey 1,300,000.00  
CCUA 9,400,000.00

INITIATION DATE: March 1976

COMPLETION DATE: December 1978

STATUS Plant is 85% finished now, will be 100% finished at end of 1978

NUMBER OF JOBS TO BE CREATED: 800 jobs

ENVIRONMENTAL IMPACT: Upgrading sewer plant will stop present pollution of Cohansy River, improve marine life, shell fisheries, and recreation.

GOAL TO BE ATTAINED BY THIS PROJECT  
Construction of sewer and water systems

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<sup>1</sup>Overall Economic Development Program Progress Report, 1977, pg. 76.

## APPENDIX E

### Statement of the Cumberland County Planning Board at the Department of Environmental Protection Public Hearing Held at the Cumberland County Court House June 13, 1978

As the Coastal Management Program is developed and refined, a major concern of the Cumberland County Planning Board has to do with the impact that this program will have on the people who own land; those who are seeking to provide their livelihood; and those who might be able to provide new job opportunities in our coastal areas. While the Planning Board recognizes the importance of protecting the natural environment of the coastal area it also feels strongly that the sometimes critical needs of peoples' living, working and business environments must also be recognized, and that a balance must be struck between the two that will not unnecessarily stultify agricultural, business or commercial recreational activities in the bay region. To this end we recommend that the Coastal Zone Boundary now included in the program, be reduced to follow the ten foot contour - a line that would have a direct and meaningful relationship to the tidal water areas which the program seeks to protect. We see no reason why the Coastal Zone Boundary must follow cultural features such as roads and railroads as was done by the legislature in establishing the CAFRA boundary. An upland boundary based on a selected elevation contour could be accurately mapped and interpreted in critical cases by municipal engineers just has been accomplished in the care of HUD Flood Insurance Rate Maps. If this were done, it would reduce the overall area included in the coastal zone; provide a more supportable rationale for the boundary line location; and constitute a first step toward securing legislative cooperation in revising the CAFRA boundary line, to match. The Planning Board feels that in reducing these zone boundary lines the department would be complying with the intent of Congress as described in the OCZM Threshold paper number 1, which states: "It is clear that the intent of Congress was that States delineate boundaries with a relatively conservative approach including only those "shorelands", the uses of which have a direct and significant impact on coastal waters". An ultimate reduction in the CAFRA boundary would relieve

a substantial number of upland property owners from the costly, time consuming and discouraging red tape involved in the CAFRA permit process.

Another way in which the program could take into account the needs of people living in the area is through a more sensitive approach to regulation administrations. Just as a good judge seeks to "make the punishment fit the crime" the coastal management program should find ways to simplify the program's impact on project applications having a relatively insignificant impact on natural resources. This might be done through the institution of a locally managed permit procedure for certain classes of minor developments in both the wetlands and CAFRA portions of the zone. Replacement of storm damaged dockage; the construction of minor new private or commercial boat docks; and the construction or repair of necessary agricultural drainage and tide protection structures are examples of projects that should be considered. The Planning Board feels this would be another means of avoiding unnecessary expensive application preparation and costly and possible fatal time delays. Such a procedure might be tied in with the issuance of local building permits through the municipal construction official's office and could be based on natural resource advice provided by the Soil Conservation District, which presently reviews many local development projects and is thoroughly familiar with many of the natural resource criteria included in the program's land acceptability tables.

Another of the Planning Board's concerns has to do with the regional growth potential map shown on page 98. This map delineates growth areas and limited growth areas. A general view of the map discloses the proponderant concentration of growth areas throughout the northern portions of the coastal zone and an almost complete absence of such areas in the southern portions with the exception of the area adjacent to Atlantic City. The implication here is that a development application originating practically anywhere in our area will be viewed more critically than one emanating from the almost continuous "growth area" occupying the northerly portion of the coastal zone. The basis for these delineations

probably has to do with the state of existing development. However, if we are truly concerned about the quality of our coastal resources it seems to us that at least as much and probably more concern should be exercised over developments occurring in the northerly, more-intensively, developed waterside areas than the southern low-density coastal and bayside sections. We feel that this classification, along with a similar approach in the State Guide Plan, will not only work to complicate local development proposals and other economic activities through the coastal regulatory process but will also be used to discourage grants and other aids for new infrastructure which will be needed if any more intensive development areas are to be created in our region.

In conclusion, the Planning Board urges that the department, while it seeks to protect and enhance the coastal environment, maintain a continuing awareness that the landowners and wage earners as well as existing and prospective business owners are an important and critical part of that environment; and as such, have a right to expect that their interests will be respected. The program should be limited in its approach; it should not be used as a tool to prevent or promote regional development; the selling of land or the conduct of legitimate commercial activities.

A map delineating our recommended coastal zone boundary and a more detailed statement including comments on the Coastal Location Acceptability Method will be submitted prior to July 5.

Thank you.

## APPENDIX F

Title of Project: HYPOTHETICAL PROPOSAL FOR A SMALL RECREATIONAL BOATING FACILITY

Purpose: CLAM Methodology application to the study case.

Location: Proposed site is located on the left bank of the Cohansey River in Fairfield Township, south of Bridgeton.

Site Description: This hypothetical study case calls for the proposal of a small recreational boating facility to be constructed on the bank of the Cohansey River (see enclosed N.J. State Official Map 1:250,000). The property is owned by the Cohanzick Country Club. It is assumed that patrons of the facility would use the basic services (parking, water, sewage) of the clubhouse located approximately 1000' from the proposed site.

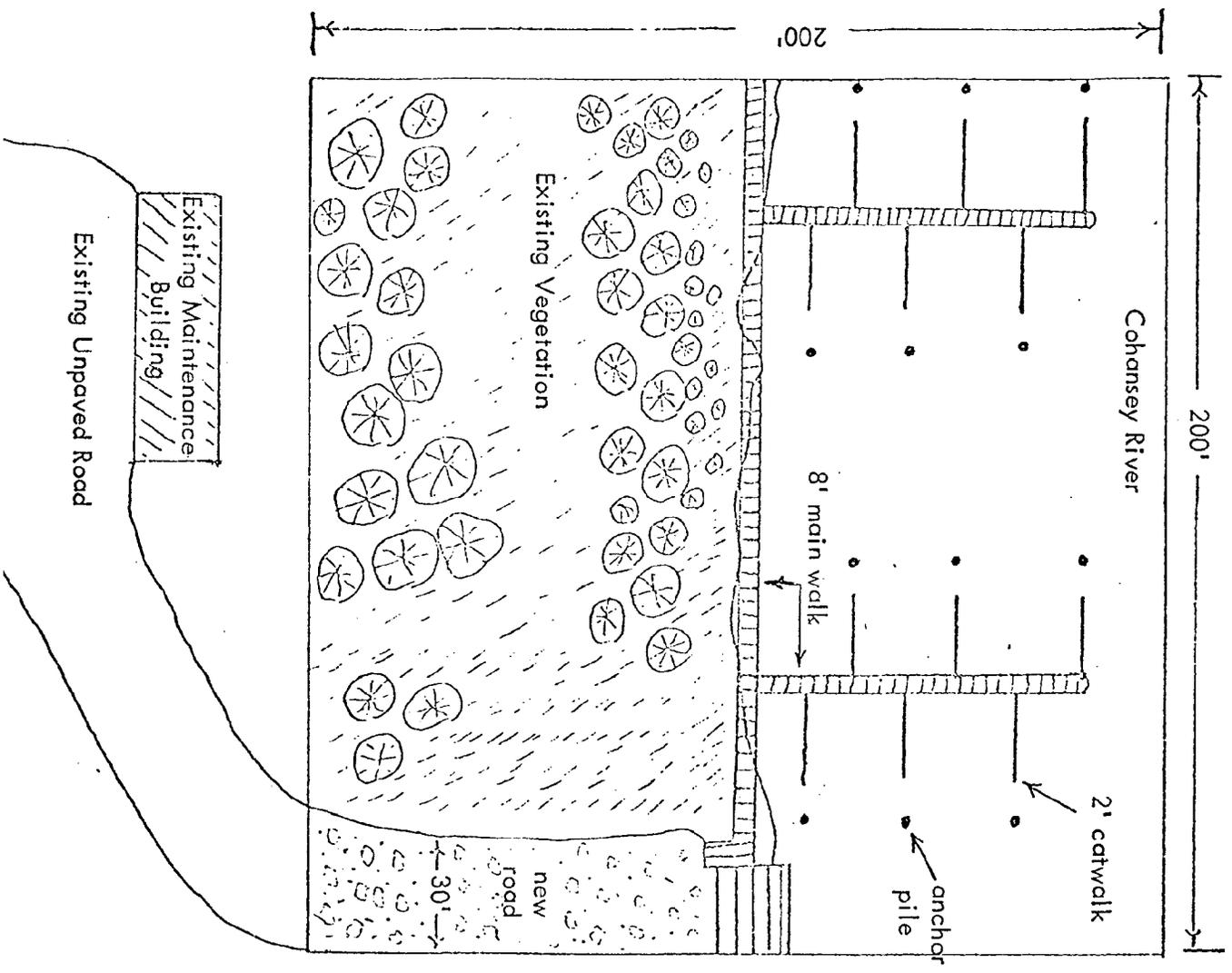
A survey of the Cohanzick Country Club area adjacent to the Cohansey River, helped locate the site for the hypothetical study case. It is interesting to note that along the entire length of the Cohansey River only one site (that located within the confines of the Cohanzick Country Club) was found which was suitable for a small recreational boating facility. There is no possibility for location of a commercial size marine (100-150 boats). The suitable site was inspected in details, and measurements were taken on which to base a diagram of the proposed small recreational boating facility (see diagram attached to the report).

It is planned, that the small recreational boating facility would hold 23 boats of up to 25' in length and include a boat ramp. An extension of the existing roadway would connect with the ramp. It is also assumed that the road would be constructed of porous materials. Some vegetation on the water's edge would be disturbed in erecting the dock and ramp, but it is assumed that this impact would be minimal.

It is assumed that the planned facility would be used by members of the Cohanzick Country Club and their families (120 members of the Club).

Figure 1.

PROPOSED SMALL RECREATIONAL BOATING FACILITY  
FAIRFIELD TOWNSHIP



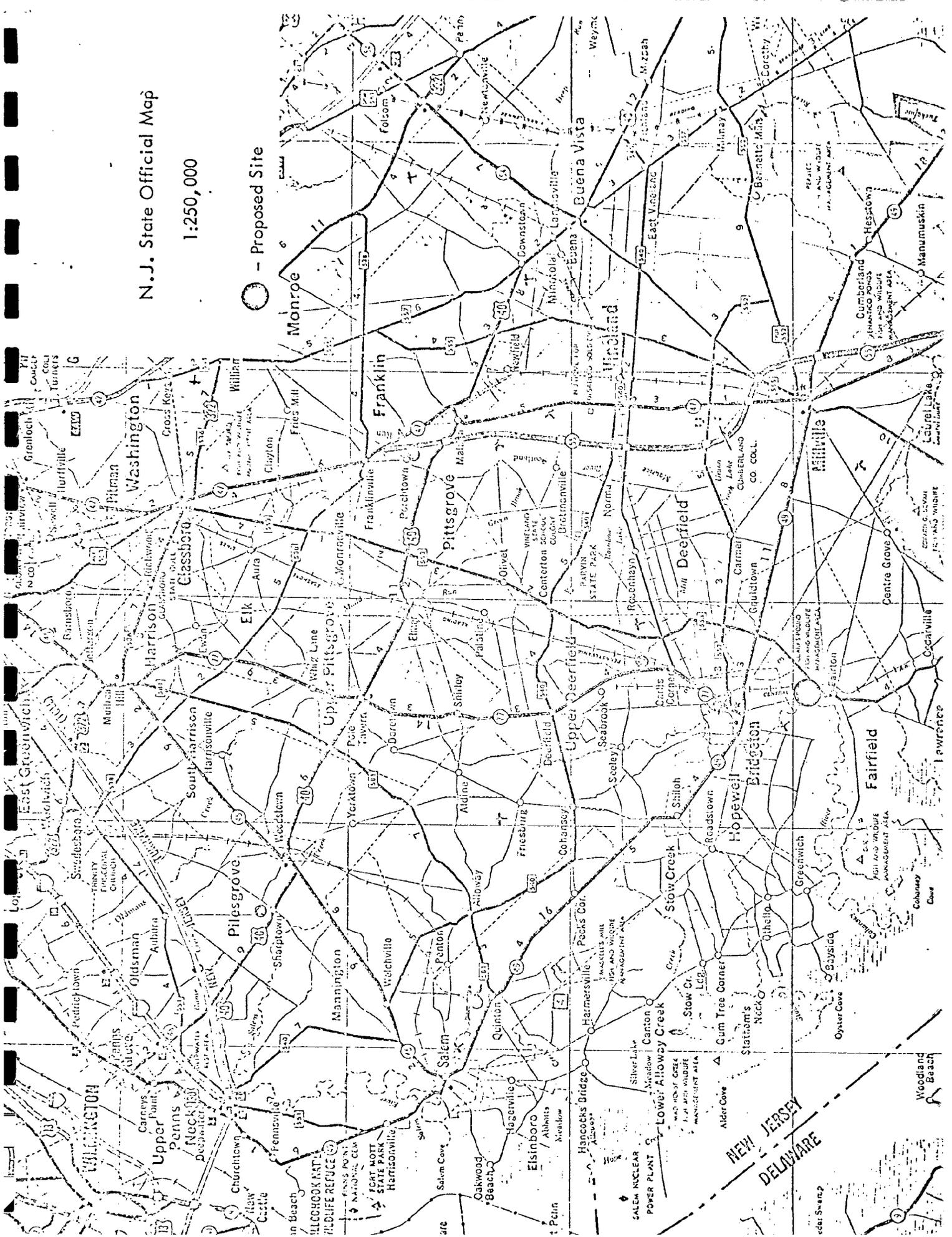
Source: Sternlieb, Leisure Market Studies  
DeChiana/Kappleman, Urban  
Planning and Design Criteria,  
New Brunswick, 1969.

1" = 40'

N.J. State Official Map

1:250,000

○ - Proposed Site



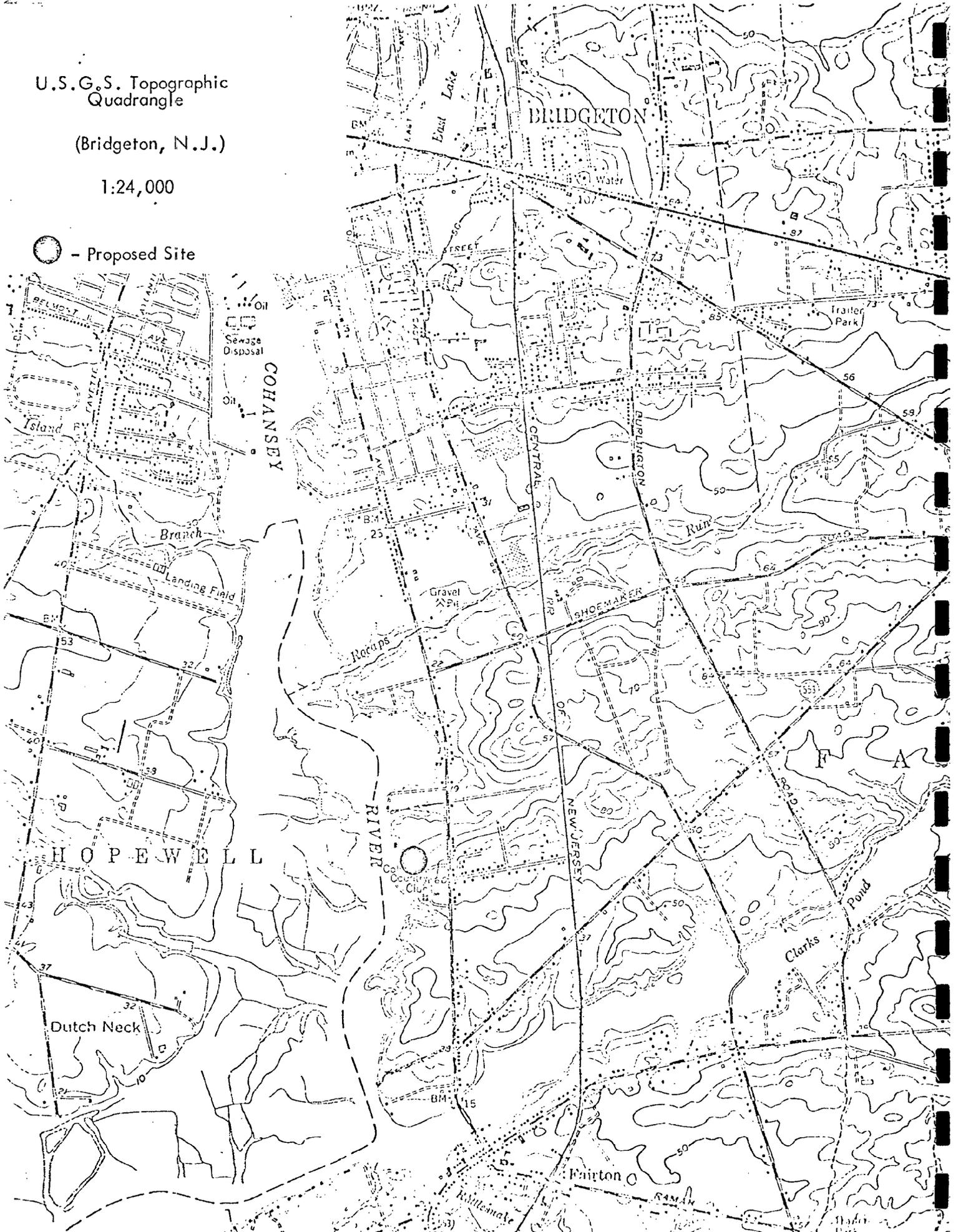
NEW JERSEY  
DELAWARE

U.S.G.S. Topographic  
Quadrangle

(Bridgeton, N.J.)

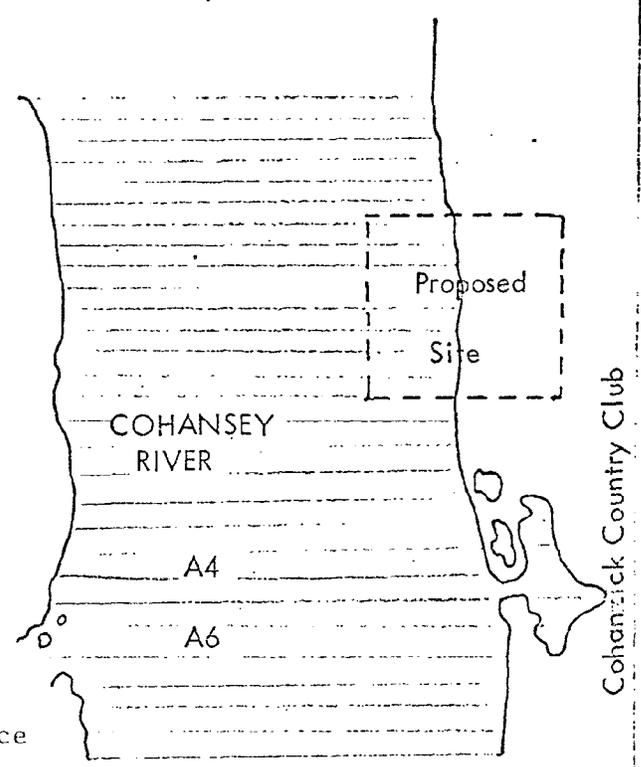
1:24,000

 - Proposed Site



	SOURCE	DATE	COMPL.	PREP.
A. SPECIAL WATER AREAS (pp. 31-38)				
1. SHELLFISH BEDS				
- NJDEP Shellfish Areas Charts 1-10/Haskins				
2. SURF CLAM AREAS				
- NJDEP condemned AREAS CHARTS 1-10				
3. PRIME FISHING AREAS				
- Freeman-Walford "Angler's Guide to U.S. Atlantic Coastfish", Section III & IV				
4. FINEFISH MIGRATORY PATHWAYS			X	
- Zich "New Jersey Anadromous Fish Inventory"				
- Consultation with owners of the commercial marinas along the Cohansey River			X	
5. SUBMERGED VEGETATION *				
- NJDEP "A Case of Little Egg Harbor of the Submerged Vegetation"				
In areas outside of Little Egg Harbor, a developer will be required to survey this resource until DEE completes additional surveys				
6. NAVIGATIONAL CHANNELS			X	
- NOAA National Ocean Survey navigation charts				
Water Depths-Cohansey River Condition Survey, U.S. Army Corps of Engineers, 1977. Cumberland County Planning Board property.			X	
7. SHIPWRECKS & ARTIFICIAL REEFS				
- ROMM/National Ocean Survey Navigation Charts "Shoreline Protection" "Shipwrecks off of Coast"				
8. MARINE SANCTUARIES				
- To be designated				

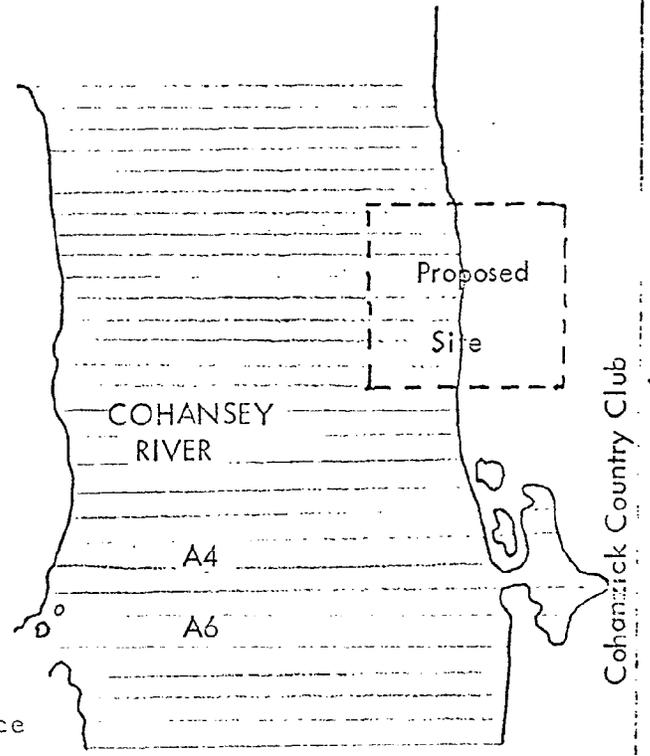
A. MAP OF SPECIAL WATER AREAS (1:2400)  
(use A1-A8 for legend)



\*This information is currently unavailable to the Cumberland County Planning Board.  
A4 - Zich, "New Jersey Anadromous Fish Inventory" - This source does not include inventory of the anadromous fish for the area on which is located analyzed site.

	PRESENT ON SITE	DATA SOURCES
A. SPECIAL WATER AREAS (pp. 31-38)		
1. SHELLFISH BEDS		
- NJDEP Shellfish Areas Charts 1-10/Haskins		
2. SURF CLAM AREAS		
- NJDEP condemned AREAS CHARTS 1-10		
3. PRIME FISHING AREAS		
- Freeman-Wallford "Angler's Guide to U.S. Atlantic Coastfish", Sec- tion III & IV		
4. FINFISH MIGRATORY PATHWAYS	X	
- Zich "New Jersey Anadromous Fish Inventory		
- Consultation with owners of the commercial marinas along the Cohansey River		X
5. SUBMERGED VEGETATION *		
- NJDEP "A Case of Little Egg Harbor of the Submerged Vegetation"		
In areas outside of Little Egg Harbor, a dev- eloper will be required to survey this resource until DEE completes additional surveys		
6. NAVIGATIONAL CHANNELS	X	
- NOAA National Ocean Survey navigation charts		
Water Depths-Cohansey River Condition Survey, U.S. Army Corps of Engineers, 1977. Cumberland County Planning Board property.		X
7. SHIPWRECKS & ARTIFICIAL REEFS		
- NOAA National Ocean Survey Navigation Charts Note "Shipwrecks off of Coast"		
8. MARINE SANCTUARIES		
- To be designated		

A. MAP OF SPECIAL WATER AREAS (1:2400)  
(use A1-A8 for legend)



\*This information is currently unavailable to the Cumberland County Planning Board.  
A4 - Zich, "New Jersey Anadromous Fish Inventory" - This source does not include inventory of  
the anadromous fish for the area on which is located analyzed site.

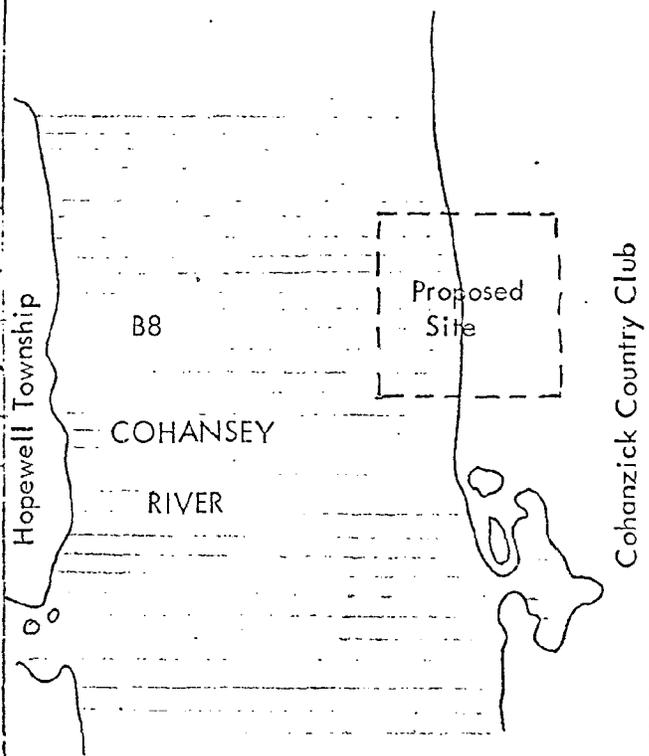
B. WATER AREAS (pp. 40-41)

- BASIN TYPES
1. OCEAN
  2. OPEN BAY
  3. SEMI-ENCLOSED BAY
  4. BACK BAY
  5. INLAND BASIN
  6. MAN MADE HARBOR
- CHANNEL TYPES
7. LARGE RIVER
  8. MEDIUM RIVERS + STREAMS
  9. SMALL CREEK + STREAMS

- DATA SOURCES (p. 272)
- NOAA/National Ocean Survey Survey Navigational Charts
  - USGS 7½ minute Quads
  - NCEP Photo Quads
  - NOAA/NOS Charts
  - SCS County Soil Survey

PRESENT ON SITE DATA SOURCES

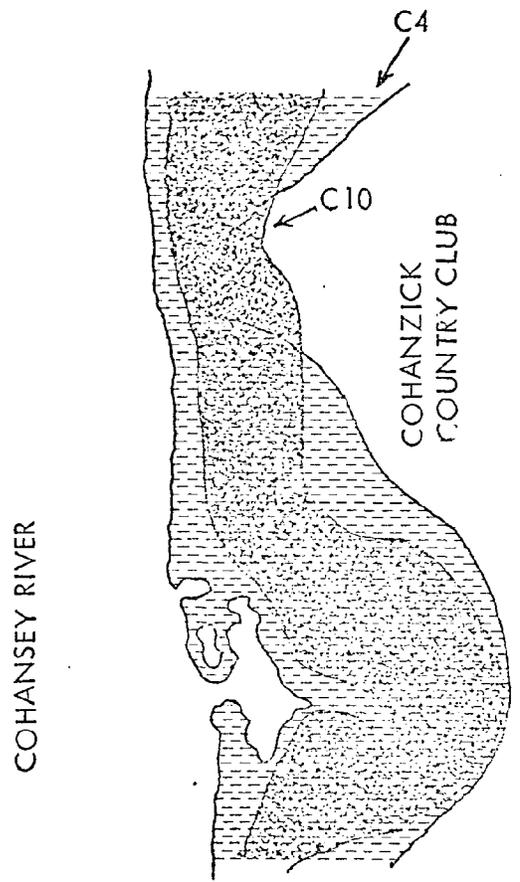
B. MAP OF WATER AREAS ( 1:2400 )  
(use B1-B9 for legend)





2.	SPECIAL WATER'S EDGE & LAND AREAS		
	HIGH RISK EROSION AREAS (pp. 50-68)		
	- Rutgers University "Coastal Geomorphology of NJ" Vol. I & II*		
	DUNES		
	- USGS 7½ Minute Quads (or)		
	- NJDEP Wetlands Maps		
	CENTRAL BARRIER ISLAND CORRIDOR		
	- USGS 7½ Minute Quads (or)		
	- NJDEP Wetlands Maps (or)		
	- NJDEP Photo Quads		
	FLOOD HAZARD AREAS	X	
	- DEP Flood Hazard Areas (or)		
	- COE Flood Hazard Areas (or)		
	- USGS Flood Prone Areas Supplemental with alluvial soils (or)		
	- in tidal areas, 100 year tidal elevations - COE defined		X
5.	HISTORIC RESOURCES		
	- NJ State Register of Historic Places		
	- National Register of Historic Preservation, Historic Sites Inventory		
	SPECIMEN TREES		
	- NJDEP Bureau of Forestry		
7.	PRIME FOREST AREAS		
	- McCormick, Jones, "The Pine Barrens Vegetation Geography" (or)		
	- NJDEP Bureau of Forestry Maps		
8.	PRIME WILDLIFE HABITAT		
	- site survey		
9.	PUBLIC OPEN SPACE		
	- REDI Tax Maps (or)		
	- NJDEP Major Public Open Space and Recreation Areas in NJ - Oct. 1977		

C. MAP OF SPECIAL WATER'S EDGE & LAND AREAS (1:2400)  
(use C1-C13 for legend)



 Flood Hazard Areas  
 Steep Slopes

\* (data source p. 22)

		PRESENT	DATA	SOURCE
	(cont.)			
C	SPECIAL WATER'S EDGE & LAND AREAS			
10	STEEP SLOPES	X		
	- NJDEP 7.5 minute Slope Maps			
	- SCS County Soil Survey		X	
	- Site Survey		X	
11	PRIME AGRICULTURAL AREAS			
	- SCS County Soil Survey			
12	BOGS			
	- SCS County Soil Survey (and/or)			
	- NJDEP Wetlands Map (or)			
	- NJDEP Photo Quads (or)			
	- site survey			
13	STREAM HEADS			
	- SCS County Soil Survey (or)			
	- site survey			

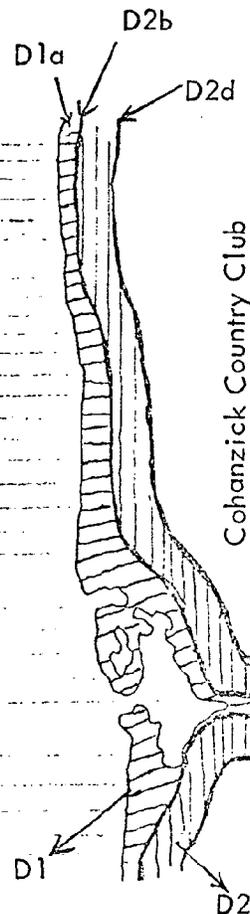
D1. LOWER WATER'S EDGE			
D1a. WETLANDS		X	X
- NJDEP Wetlands Maps*			
D1b. BEACHES (Lower Limit MHW)			
- USGS 7 1/2 minute Quads			
- NJDEP Riparian Maps			
- available maps			
D1c. BEACHES (UPPER LIMIT - Natural limit of vegetated sandy beach)			
- NJDEP Photoquads 1972			
- site survey			
- NJDEP Wetlands maps			
D1d. DEVELOPED FIRST CULTURAL FEATURE			
- NJDEP Photoquads 1972			
- more recent air photo			
- site survey			
D2. UPPER WATER'S EDGE			
D2a. LOWER LIMIT (MHW)			
- USGS 7 1/2 minute Quad			
- NJDEP Riparian Maps			
D2b. LOWER LIMIT (upper limit of lower water's edge)		X	X
- (same as 1a, 1b, 1c,)			
D2c. UPPER LIMIT (Inland limit of soils with water table at surface)			
- SCS County Soil Survey			
- site survey			
D2d. UPPER LIMIT (50' horizontally from MHW or Upper Limit of Lower Water's Edge)		X	X
- scaled from appropriate line established from above data sources for wetlands, MHW or Upper Limit Beach			
D3. RETAINED WATER'S EDGE			
D3a. LOWER LIMIT (retained structure line)			
- USGS 7 1/2 minute Quad			
- NJDEP Photoquad 1972			
- Move recent air photo			
- site survey			
D3b. UPPER LIMIT (first cultural feature)			
- USGS 7 1/2 minute Quad			
- NJDEP Photoquad 1972			
- More recent air photo			
- site survey			
D3c. UPPER LIMIT (100' from bulkhead)			
- scaled from bulkhead line			

(use D1a - D4d for legend)

Hopewell Township

COHANSEY RIVER

Cohanzyck Country Club



Wetlands Species:  
Spartina Alterniflora

Upper Water's Edge: Forested

\*(data sources pp.273)

	SCS	STATE	LOCAL	
E. LAND AREAS (pp. 81 - 99)				
E1. DEPTH TO SEASONAL HIGH WATER TABLE (pg. 82)				E1. MAP OF DSEWT
- SCS County Soil Survey*			X	See Land Factor Composite Map
- site survey				
E1a. WET TERRACES (SHWT > 3')				
E1b. UPLANDS (SHWT < 3')		X		
E2. SOIL PERMEABILITY (pg. 85)				E2. MAP OF SOIL PERMEABILITY
- SCS County Soil Survey			X	See Land Factor Composite Map
- site survey				
E2a. HIGH (2" + per hour)		X		
E2b. MEDIUM (0.2" - 2"/hour)				
E2c. LOW (0 - 0.2" per hour)				
E3. SOIL FERTILITY (pg. 86)				E3. MAP OF SOIL FERTILITY
- SCS County Soil Survey			X	See Land Factor Composite Map
- SCS test results of soil samples				
E3a. HIGH (SCS I & II)				
E3b. MODERATE (SCS III & WSC 2)				
E3c. LOW (ACC IV & WSC 3)		X		
E4. VEGETATION INDEX (pg. 87)				E4. MAP OF VEGETATION INDEX
- recent aerial photos			X	See Land Factor Composite Map
- site survey				
E4a. HIGH				
E4b. MEDIUM		X		
E4c. LOW				

\* (data sources p.275)

E5. RESIDENTIAL DEVELOPMENT POTENTIAL		E5. RANKING FOR RESIDENTIAL DEVELOPMENT POTENTIAL	
(p. 39)			
E5a. ROADS			
- USGS 7 1/2 minute Quads*			
- S113 survey			
- NJDOT capacity estimates			
- County/municipal survey			
- on site traffic count			
		Access is less than 1000' away	
E5b. WATER SUPPLY		N/A	
- NJDEP - DER - water supply & Flood Plain Management Bureau of Potable Water Policy & Supply Council			
- NJDEP Bureau of Geology			
- NJDEP-DWR Water Supply Samples			
- USGS - Trenton			
- EPA - New York			
E5c. SEWAGE		N/A	
- NJDEP Atlas of NJ sewer overlay			
- County/municipal survey			
- Utility Company survey			
- NJDEP - Div. of Water Resources			
E5d. TRFILL		N/A	
- NJDEP Photoquads			
- more recent air photo			
- site survey			
E5e. SHOPPING		N/A	
- Municipal Clerk			
E5f. SCHOOLS		N/A	
- Municipal Clerk			
E5g. Direct Access to Channel			
Cohansey River Condition Survey, U.S. Army Corps of Engineers 1977 Cumb. County Planning Board property.			

- HIGH
- MEDIUM
- LOW

With the exception of road and direct water access, these conditions do not apply to the small recreational boating facility under consideration. Boat water and sewage facilities are available at the Cohanzick Country Club's main building located approximately 1000' feet from the proposed site. A small (15' wide) unpaved road does reach the site. This road could be widened and paved without too much negative impact on the area. Because the site does offer direct access to the channel and is less than 1000' from the nearest paved public road, its development potential for recreational boating is medium.

\* (data sources p.275)

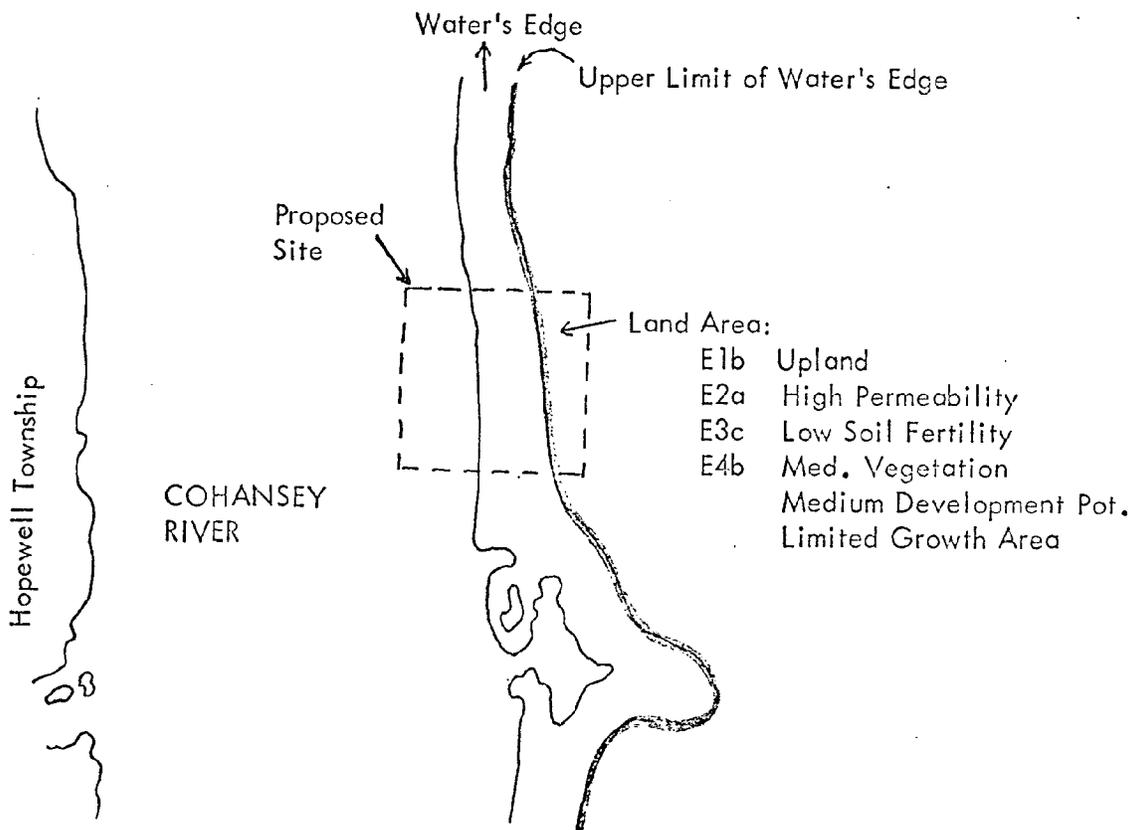
	LAND AREAS (cont.)	TIMES	ACCF	CAPF	QUAL	DA	SOUT
E6.	COMMERCIAL INDUSTRIAL DEVELOPMENT POTENTIAL (pg. 91) - data sources are the same as Residential Development Potential						E6. RANKING FOR COMERCIAL & INDUSTRIAL DEVELOPMENT POTENTIAL
E6a.	ROADS						<input type="checkbox"/> HIGH
E6b.	HIGH SPEED ROADS						<input type="checkbox"/> MEDIUM
E6c.	RAILROADS						<input type="checkbox"/> LOW
E6d.	WATER SUPPLY						
E6e.	SEWAGE						
E6f.	INFILL						
E7.	CAMPGROUND DEVELOPMENT POTENTIAL (pg. 93) - data sources are the same as Residential Development Potential						E7. RANKING FOR CAMPGROUND DEVELOPMENT POTENTIAL
E7a.	ROADS						<input type="checkbox"/> HIGH
E7b.	WATER SUPPLY						<input type="checkbox"/> MEDIUM
E7c.	SEWAGE						<input type="checkbox"/> LOW
E7d.	REGION						
E8.	ENERGY FACILITY DEVELOPMENT POTENTIAL - pending						E8. RANKING FOR ENERGY FACILITY DEVELOPMENT POTENTIAL
							<input type="checkbox"/> MODERATE
E9.	REGIONAL GROWTH POTENTIAL - NJDEP REGIONAL GROWTH type map						E9. RANKING FOR REGIONAL GROWTH POTENTIAL
E9a.	GROWTH AREAS						<input type="checkbox"/> GROWTH AREAS
E9b.	LIMITED GROWTH AREAS			X			<input checked="" type="checkbox"/> LIMITED GROWTH AREAS

F. LAND FACTOR COMPOSITE (pg. 99)

-- the data sources are the maps of DSWT, soil permeability, soil fertility, and vegetation in addition to the rankings for development potential, and regional growth potential.

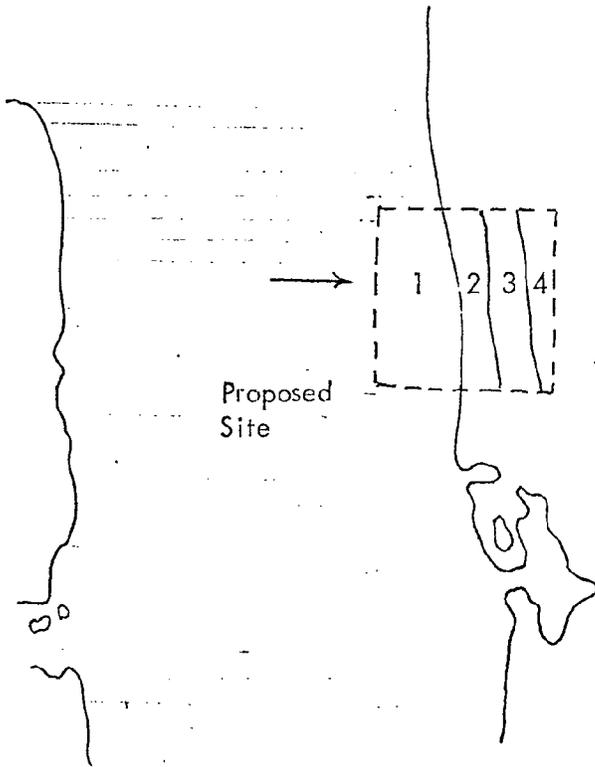
F. MAP & LEGEND FOR FACTOR COMPOSITE

(1:24,000 or alternate large scales  
i.e. 12, 8 if 24 is not large enough)  
(1:2400)



G. LAND AND WATER COMPOSITE

- the data sources are the maps of special water areas, water areas, Special Water's Edge and Land Areas, Water's Edge Areas, and Land Areas.



G. MAP & LEGEND FOR LAND & WATER COMPOSITE (24, 12, 8:000)

WATER AREAS

- 1 A4 Finfish Migratory Pathway
- A6 Navigation Channel
- B8 Medium River

WATER'S EDGE AREAS

- 2 C4 Flood Hazard Area
- D1 Lower Water's Edge
- 3 C4 Flood Hazard Area
- C10 Steep Slope Area
- D2 Upper Water's Edge

LAND AREAS

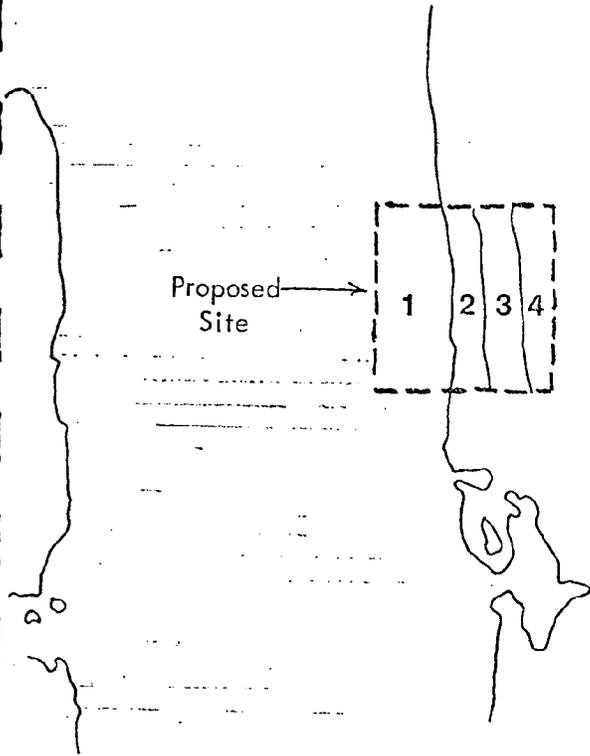
- 4 C4 Flood Hazard Area
- C10 Steep Slopes
- E1b Upland
- E2a High Permeability
- E3c Low Soil Fertility
- E4b Med. Vegetation
- E5 Med. Development Potential
- E9 Limited Growth Area

H. LOCATION ACCEPTABILITY

- the data sources are the location acceptability tables on following pages.

H. MAP AND LEGEND FOR LOCATION ACCEPTABILITY

For legend, see following page.



## WATER ACCEPTABILITY CONDITIONS

### Boat Ramps -

- a) they do not disturb intertidal flats or subaqueous vegetation (or they cause minimal practicable disturbance),
- b) there is a demonstrated need that cannot be satisfied by existing facilities,
- c) there is access to an existing navigation channel of adequate depth,
- d) the location policies for upper and lower water's edge are satisfied,
- e) they shall be constructed of environmentally acceptable materials such as concrete or oyster shell,
- f) public use ramps have priority over restricted use and private use ramps, and
- g) refuse barrels shall be provided as part of a boat ramp.

### Docks and Piers -

- a) there is a demonstrated need that cannot be satisfied by existing facilities,
- b) the adjacent shorefront is intensely used for coastal recreation,
- c) the location policies for upper and lower water's edge are satisfied,
- d) the projected construction minimizes environmental impact to the maximum extent feasible,
- e) there is minimum feasible interruption of natural water flow patterns,
- f) docks and piers on pilings shall be preferred to solid construction on fill, and
- g) applicants shall demonstrate why floating docks and piers cannot serve the required purpose.

### Pilings -

Dealt with above.

### Moorings -

The area shall be adequately marked and not be a hazard to navigation.

## LOCATION ACCEPTABILITY CRITERIA

### WATER AREAS

#### 1. A4 Finfish Migratory Pathway

The boat ramps, dock and piers, pilings, and moorings can be constructed in accordance with the existing policies and standards. The upstream movement of the anadromous species should not be blocked.

#### A6 Navigation Channel

By not disturbing the vegetation along the bank, erosion and consequent siltation of the channel would be kept to a minimal level. The proposed use is acceptable under these circumstances.

#### B8 Medium River

Boat ramps are acceptable because:

- a) they could be constructed which would not disturb subaqueous vegetation,
- b) there is a need for them according to both the local people opinions and literature (Sternlieb, Leisure Market Studies, Urban Studies Center, New Brunswick, 1969, pg. 25),
- c) direct access to the Cohansey channel exist (water depths: 12 feet at l.m.w.),
- d) location policies for upper and lower water's edge have been met,
- e) they could be constructed of oysters shells, which are available in Cumberland County,
- f) the members of the Cohanzick Country Club and their families could have access to the ramps and
- g) refuse barrels would be incorporated into the design,

Docks, piers and pilings are acceptable because:

- a) there is a need for these facilities in the County,
- b) the riverfront adjacent to the site is used by the Cohanzick Country Club for golf
- c) policies for upper and lower water's edge are satisfied,
- d) environmental impact can be minimized by proper construction techniques,

- e) natural water flow patterns won't be changed,
- f) docks and piers will be built upon pilings,
- g) floating docks will be utilized

Moorings are acceptable because:

- a) The area would be adequately marked.

## 2. C4 Flood Hazard Areas

The proposal calls for a hazard free recreational use which is acceptable

### D1 Lower Waters Edge (Wetlands)

The proposed facility is acceptable because:

- a) requires direct water access,
- b) can't be located on a non lower waters edge area and
- c) construction methods could minimize feasible negative effects on vegetation existing on the site.

## 3. C4 Flood Hazard Area

The proposal calls for a hazard free recreational use which is acceptable.

### C10 Steep Slope Area

The proposal is acceptable because inspected areas along the banks of the Cohansey River are characterized by steep slope, allowing no alternative site. Most of the existing vegetation will remain, thereby controlling erosion and sedimentation.

### D2 Upper Water's Edge

The facility is acceptable because:

- a) the proposed use requires direct water access,
- b) the proposed facility requires use of the upper water's edge,
- c) a Cohanzick Country Club is immediately adjacent and
- d) most of the vegetation would be undisturbed.

## LAND AREAS

## 4. C4 Flood Hazard Area

The proposal calls for a hazard free recreational use which is acceptable

C10 Steep Slope Area

The proposal is acceptable because all areas inspected along the banks of the Cohansey are characterized by steep slope, allowing no alternative site. Most of existing vegetation will remain, thereby controlling erosion and sedimentation

Final Statement

The hypothetical proposal for a small recreational boating facility meets all above listed locational criteria and therefore is acceptable.

## COMMENTS ON C.L.A.M.

The Coastal Location Acceptability Method (C.L.A.M.) is, in general, a valuable tool in determining the suitability of a site for various types of development proposals. However, a few problems do exist. These are basically in three areas; information accessibility, the definition of standards and the determination of development potential.

The study case shows, that some of the basic information required in the CLAM methodology were unavailable to the Cumberland County Planning Board. Section 6.2.1 (Shellfish Beds) required the use of Haskin's "Distribution of Shellfish Resources in Relation to New Jersey Intercoastal Waterways." The Cumberland County Planning Board couldn't obtain a copy of that book from both local areas and state libraries. A similar problem occurred with necessary documentation which is required for Section 6.2.3 (Prime Fishing Areas). Angler's Guide to the U.S. Atlantic Coast Fish, Fishing Grounds and Fishing Facilities by Freeman and Walford. This source was also not available to the Planning Board.

More information which is required is that concerning submerged vegetation (Section 6.2.5). There is no existing documentation of this subject and a survey was not possible.

A second problem area was the specification of standards. Section 6.3.8.4. (Docks and Piers) refers to a "minimum feasible alteration of natural water flow patterns and minimum standards should be set to avoid various interpretations of 'minimum feasible.'" This issue also arises in the wetlands policy (Section 6.5.1.2), which refers to "minimum feasible" alteration of tidal circulation, natural contours and natural vegetation.

The Determination of Development Potential raised two issues. The first is that a much wider range of proposed development categories should be defined for the Development Potential Factor (Section 6.6.7). Example: The "marina" category (Section 6.6.7.2.1) does not apply to the small recreational boating facility used in the study case. The proposed facility would not require water supply or sewage accessibility which are the determining factors for marina proposal acceptance.

Finally, the delineation of Growth Areas and Limited Growth Areas is rather arbitrary. For instance, the proposed site is located in Fairfield Township, designed by B.O.S. as a Limited Growth Area. However, it is located only 3000' from Bridgeton, designated as a Growth Area. Maybe around the growth areas a new zone should be created - Moderate Growth Areas?



SEP 23 1978

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION  
TRENTON

PLEASE ADDRESS REPLY TO:  
P. O. BOX 1889  
TRENTON, N. J. 08625

DIVISION OF MARINE SERVICES

September 25, 1978

Ms. Czeslawa Zimolzak  
Cumberland County Planning Board  
800 East Commerce Street  
Bridgeton, New Jersey 08302

Dear Czeslawa:

Ms. Andrea Topper has requested that I review the hypothetical case study you have done using the CLAM methodology. Upon examining the case study, it appears that you have followed all the steps correctly. Overall, you seem to have a firm understanding of this analysis technique.

As I am sure you are well aware of, in August 1978, the Department of Environmental Protection published the New Jersey Coastal Management Program - Bay and Ocean Shore Segment and Final Environmental Impact Statement (NJCMP-BOSS). There have been several changes in Part II, Chapter Four in reference to the classifications and policies regarding Special Areas, Water Areas, Water Acceptability Tables, Water's Edge Areas and Land Areas.

We are now in the process of completing a case study handbook using the CLAM technique of analysis. These case studies have two main purposes: first to illustrate the steps of the CLAM analysis as a model for applicants and second to illustrate the varying acceptability of different development proposals in different coastal zones. As soon as the handbook is completed and printed, I will be sure to send you a copy. If there are any questions please contact me or Mr. Saul Wiener at (609) 984-3447.

Sincerely yours,

Kathy McKenna

KM/bw

cc: Ms. Andrea Topper  
Mr. Saul S. Wiener

APPENDIX G

PROPOSAL FOR THE 1979 STATE-COUNTY  
COASTAL COORDINATION PROJECT

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TITLE OF THE PROJECT: The Recreational Potential of Cumberland County's  
Delaware Bay Shore Area

INTRODUCTION

A study of recreation potential of Cumberland County's Bay Shore region should be undertaken. The importance of such a study increases as the traditional recreation sites along the Atlantic Ocean become ever more crowded.

Birdwatching, hunting, sailing, pleasure boating, sport fishing, crabbing and swimming are traditional activities along the Bay. Recreational use of the Bayshore will obviously intensify in the future. There is great potential for the further development of any or all of these recreational possibilities. Several rivers and creeks provide excellent harborage. The particular shape of the lower Delaware Bay provides a large area which can be used by pleasure craft without interference to or from commercial shipping. Developing these and other possible recreational activities in an environmentally acceptable manner is an extremely important planning objective, particularly in the light of use pressures on the Atlantic Coast shore areas of New Jersey.

At the present time, an extensive (future) Bay development study is being instituted by the Delaware River and Bay Authority. We feel that the major existing potential for Bay shore areas is recreational, - primarily low density in nature. We propose a detailed study of future recreational potential and resource limitations affecting both intensive recreational use as well as other, possibly incompatible land use types, that might be proposed. The study should result in: a complete inventory of existing conditions, a set of policy guidelines for future growth management, and a start toward a detailed recreation and open space plan for the area. Ideally, this study might be undertaken on a three county basis (Salem, Cumberland and Cape May) and at a scale exceeding that proposed here. However, the limited approach we're proposing for Cumberland County would place us in a much stronger, more knowledgeable position to participate effectively in the development of proposals that will evolve from the Authority's study.

A. Name of Applicant: Cumberland County Planning Board

B. Location and Description of Project:

The area of investigation would include selected parts of the Cumberland County coastal zone, including portions of Stow Creek, Greenwich, Fairfield, Lawrence, Downe, Commercial and Maurice River Townships. A dozen or more settlements in the area have had (or currently have) some sort of recreational, seaside resort or fishing resort function, - seven directly on the Bayshore, others along tidal streams emptying into the Bay. There has already been development of recreational facilities in the area: boat docks and marinas, partyboat fishing, some tourist-oriented restaurants, and a dinner theater. These, together with the many existing structures used as second homes or permanent dwellings (mainly retired individuals), the myriad historical structures, sites and towns, five fish and wildlife areas (State) and several public access (boat ramp or other) areas, form the nucleus of a loosely developed tourist economy.

Provisions of the Coastal Management Program encourage the development of recreation facilities in shore and coastal areas where recreational demand exists. The Cumberland County Bayshore already has a considerable inventory of dwellings and existing recreational facilities. The area is certainly experiencing pressures for further recreational development. Boat owners must often be turned away; weekends, the Bayshore beaches are lined with fishermen, crabbers, hikers, birdwatchers and other occasional users. Unpatrolled and unregulated, many beach areas have suffered littering and destruction. There is a great need for a comprehensive plan which would reconcile recreational needs and maintenance and/or upgrading of existing facilities with environmental considerations and goals.

Left alone, the Bayshore is less likely to return to wilderness and more likely to become wantonly destroyed. With inlets and indentations,

there are some 50 miles of beach and coastal wetland fronting on the Bay. Much of the area is too shallow and muddy for bathing, but beaches northwest of Egg Island are used for that purpose. The current demand for dockage could only be satisfied by a doubling of current marina capacity. For nature lovers and fishermen, it is almost the last uncommercialized, uncrowded shore in New Jersey.

The proposed study would include three parts: inventory, analysis, and recommendations. The inventory would survey all existing structures, facilities and uses present in the area. It would survey people who make use of the region (questionnaires) as to their frequency and purpose of recreational use. Access roads would be analyzed and evaluated for quality and capacity; traffic counts, parking facilities and other measures of use/adequacy would be developed. A systematic survey of supply, repair and other service facilities outside, but adjacent to, the area will likely be a necessary part of the study. An assessment of structural soundness and condition would contribute to an overall evaluation of the viability of the area for tourist/recreation purposes.

Physical data are obtainable from maps and other sources. Fish and wildlife management areas can provide animal census data as well as statistics on the "take" of various species. The cultural features of the landscape, however, require field survey and site inventory.

The second phase of the program will deal with analysis of inventory data, adherence to and/or deviation from the recommended and permitted uses under existing coastal legislation, and public opinion/attitudes with reference to recreational use in the area. Public input and discussion of plans for the future of the area are a necessary part of the process. A survey of township officials, local residents, land owners, pressure groups and special interest groups would be undertaken to this end.

The third and final phase would be recommendations for an area land use

policy and the selection of sites for detailed study. Emphasis would be on those sites which seem to have great potential for tourist usage in the future.

C. Timetable for Completion:

The project is designed to be completed over a twelve month period, beginning January 1, 1979, and ending December 31 of that year. The research is intended to cover both off-season and summer usage, necessitating periodic return to the same field for certain types of investigation and data collection. The research is to be completed by September 30, 1979. The preliminary draft to be delivered October 31, 1979, and the final draft to be completed by December 1, 1979. Preparations of multiple copies, assembly, final additions or corrections, binding and mailing would be accomplished during the month of December, with all work completed by December 31, 1979.

D. Product to be Completed:

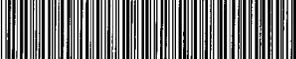
The results of the study will be:

1. a concrete contribution toward the ultimate development of a recreational/open space plan for the Bayshore area;
2. a comprehensive land use inventory to be used in developing rational future land use plans;
3. a meaningful data base for use in conjunction with the CLAM methodology;
4. a framework for the development of a modest tourist industry to help re-vitalize the ailing local economy, but one without any major negative impact on the area's environment; and
5. a valuable data base to be used in evaluating applications for land use and repair permits.

F. Implementation of the Goals and Policies of the NJCMP-BOSS:

The project will supply a badly needed data base for accurate assessment of the area's potential role in the future of New Jersey. It will aid in cross-checking area compliance with wetlands legislation in both practice and future land use plans. It will provide necessary data for implementing the NJCMP-BOSS land use goals, conservation aims and use prohibitions, insuring rational land use planning and the creation of a plan which would successfully reconcile recreational needs, environmental considerations and public desires into a wise and utilitarian use of the Bayshore.

NCAA COASTAL SERVICES CENTER LIBRARY



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