

First Draft

Oct. 1975

THE COASTAL ZONE OF NEW JERSEY

Patterns of Physical and Economic
Development and Issues for The
Interim Guidelines

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Development and Issues for The
Interim Guidelines

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Working Paper Prepared for the
Department of Environmental Protection
State of New Jersey

by Rivkin Associates, Inc.

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INTRODUCTION

The Coastal Area Facilities Review Act (CAFRA) charges the Department of Environmental Protection (DEP) with preparing comprehensive programs and policies to protect the environment of a coastal region of about 1,300 square miles reaching from Sandy Hook at the north, south to Cape May and then up the Delaware estuary to the Delaware Memorial Bridge. The Act requires that the Commissioner of Environmental Protection take certain planning and regulatory actions to preserve environmental values in the Coastal Zone, while providing also for development which meets the region's economic and social needs.

Major deadlines under the act are:

- September 1975, submission to the State Legislature of an Environmental Inventory of the Zone
- September 1976, formulation of alternative long-term "environmental management strategies"
- September 1977, selection by the Commissioner of an "environmental design for the coastal area" from the alternative strategies

On September 19, 1975, the required environmental inventory was submitted by the DEP and a report issued depicting the contents of the inventory.

From the time of CAFRA's enactment in June 1973, DEP was given final jurisdiction over proposals for certain major facilities and land uses which could have a significant impact on the region. These facilities and uses include most major residential (over 25 dwelling units), industrial, transportation, public services, and energy producing projects that are proposed within the Zone by both private developers and public agencies alike. On a day-to-day basis the Department must review applications and then issue or deny permits for facility development. By and large, most of these applications have been approved by local governmental bodies before reaching DEP for final decision. Each application is to contain detailed information about the proposed facility or use, along with an environmental impact statement assessing its implications on the immediate area, the community in question, and the region. The Department of Community Affairs (DCA) has provided staff resources to assist DEP in the permit reviews.

+60I

To date, DEP has received over 125 applications for projects in the Coastal Zone. Some 60 have been acted upon. Fifty-nine have been approved with or without conditions, and one has been denied. Sixteen were cancelled.

One of the first applications received, for a proposed ten-story condominium in downtown Toms River, was denied on the basis that it violated the area's existing environmental character. As an outgrowth of that action, an appeal was taken to the Coastal Area Review Board, also created under the CAFRA act, comprised of the Commissioners of Community Affairs, of Labor and Industries, and of Environmental Protection. In upholding denial of the application, the Board ^{REQUIRED?} urged DEP to prepare explicit criteria for physical development within the Zone in advance of the 1977 environmental design mandated by the legislature. These "interim land use and density guidelines" would have a two-fold function. They would give potential applicants and governmental reviewers alike a much firmer grasp on what kinds of land uses and densities could be considered acceptable by DEP within the CAFRA Zone, thereby removing much of the uncertainty inherent in a case by case permit review. They would also serve as an essential building block in the preparation of alternative strategies and the final environmental design.

This report is the first working paper in the task of interim guideline preparation. It examines the principal land use and economic conditions and issues in the Coastal Zone. Such a description is critical as a basis for establishing guidelines; for before guidelines can be structured, it is necessary to have some common understanding about the matters which the guidelines must address.

The interim guidelines are to serve until a final environmental management strategy is developed and adopted. They are to be short term in character. Therefore, the material addressed in this working paper deals with existing conditions, present issues and conflicts, and short term development pressures which must be accommodated within the next few years.

This working paper contains the following sections:

- I. An overview of the existing physical pattern, both natural and man-made and of population distribution in the Zone.
- II. An overview of principal economic pressures and prospects in the Zone.
- III. An examination of each sub-region within the Zone. The man-made and natural environment in each area is reviewed, along with the primary economic characteristics and trends which characterize each sub-region. Principal economic and land use issues are identified. Preliminary population estimates and other indicators of growth prospects to 1980 are submitted.
- IV. A synthesis and summary of growth prospects to 1980 in the CAFRA Zone along with the land use and development issues which warrant attention in the interim guidelines.
- V. An appendix depicting the basis for the population growth estimates.

Material upon which this report is based comes from reports of the Department of Environmental Protection, Department of Community Affairs, Department of Labor and Industries, other state and local governmental bodies and from both interviews and first-hand observation by the consultants of conditions in the Coastal Zone. The report is intended as a synthesis of the most important information, along with the identification of issues based on that information. It is not intended as an exhaustive treatise on the Zone or its segments. The consultants have been impressed by the large body of descriptive and analytic material, much of it recently prepared, that bears upon the CAFRA Zone and its component parts. In addition to the environmental material identified in the recently-submitted inventory, this body of literature includes extensive reports prepared at the state, county, and municipal level. While some gaps doubtless exist, and a considerable organizational task is required to establish an "information bank" for CAFRA, a wealth and breadth of data are available.

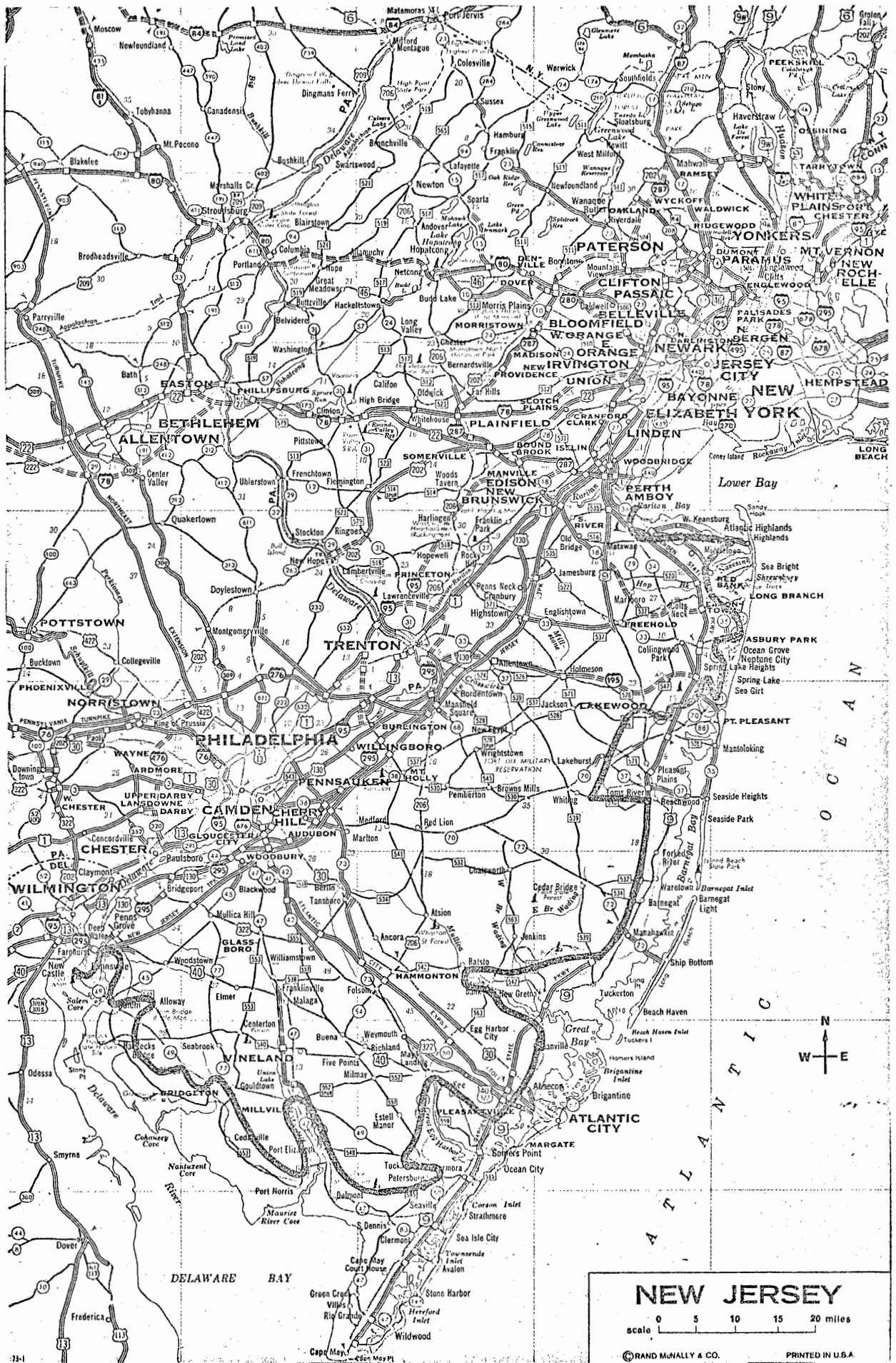
Also by way of introduction, the following points should be made:

- A. The land included in CAFRA is a "region" primarily by virtue of its designation by the State Legislature. The CAFRA line presently cuts

through counties and municipalities. It is an artificial line. While it encompasses shoreline uses and most associated wetlands, it also encompasses areas that are not dependent on the coast--and even within the designated counties does not include all of these. The area included within CAFRA *is it an environmental unit?* is not an economic or social unit removed from the area outside the boundaries.

Indeed, subsequent legislatures may expand or contract the line; and the present CAFRA area is considerably smaller than that designated under the Federal Coastal Zone Management Act of 1972 for study purposes. CAFRA today is a homogenous region in respect to only one characteristic: This is the region where DEP has final permit issuing power over land development requests. Thus, in examining patterns within the present Zone, this report must ^{necessitate} ~~perforce~~ give some attention to patterns and issues which extend beyond the zonal boundaries. There are critical interdependencies with areas outside the Zone. Moreover, rigorous exercise of the permit power within the artificial boundary may, for better or worse, serve to displace certain forms of growth to areas just outside the Zone, a situation which will also have implications for state and local policy. *whereas the line is drawn*

B. There are distinct sub-regions within CAFRA itself. These sub-regions may be characterized by economic as well as physical features, and in some respects they are tied as much to the hinterlands beyond the Zone as to adjoining sub-regions within the Zone. The distinctiveness of sub-regional character and trends must be identified, since effective formulation of interim guidelines will be sensitive to distinctions within the Zone as well as the overall CAFRA prospects. For this reason, much of the working paper will deal with the sub-regional analysis.



MAP #1: COASTAL ZONE -- HIGHWAYS AND URBAN PLACES

NEW JERSEY

scale 0 5 10 15 20 miles

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CHAPTER ONE

Overview of the Coastal Zone:
Patterns of Physical Development and Population Growth

The area designated as the CAFRA Zone extends from north of Sandy Hook and the Raritan Bay south to Cape May Point and up the Delaware estuary to near the Delaware Memorial Bridge. Covering about 1300 square miles, the CAFRA Zone's coastline is about 273 miles in length; with 126 miles on the Atlantic seaboard.

Eight of New Jersey's 21 counties are part of the Zone, including parts of Middlesex, Monmouth, Ocean, Burlington, Atlantic, Cape May, Cumberland and Salem. Areas of these counties covered by CAFRA vary considerably: for example, only 42 square miles of Monmouth is affected by CAFRA while over 320 square miles of Ocean is under CAFRA legislation. Total county land areas and the portions within CAFRA are depicted below.

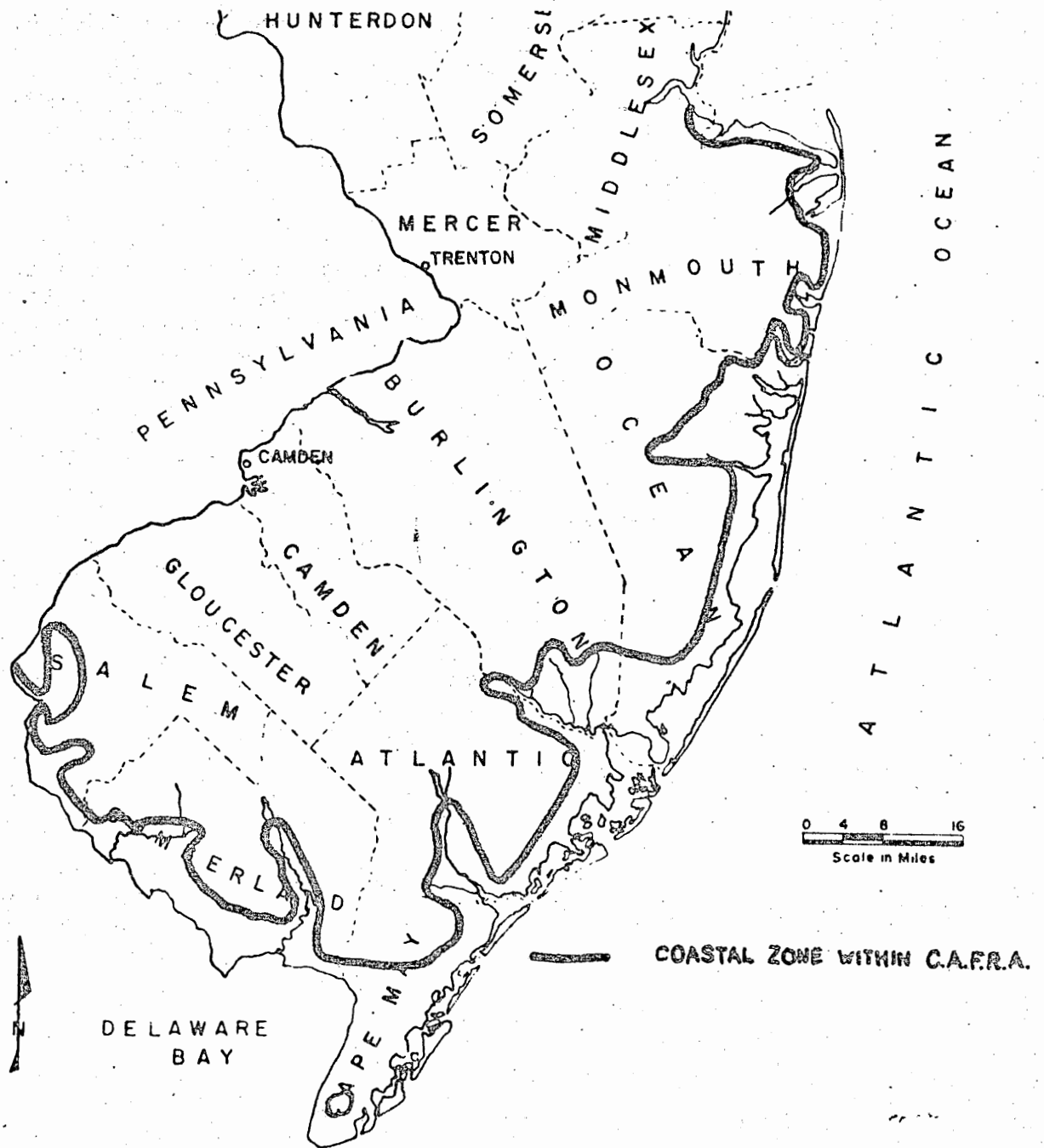
Estimated Land Area in CAFRA*

<u>County</u>	<u>Total Land Area (sq. Miles)</u>	<u>Estimated Land Area in CAFRA</u>	<u>% of County in CAFRA</u>
Monmouth	6471	645	9.5 (1)
Middlesex	5477	75	1.0 (2)
Atlantic	8567	3250	44.1 (4)
Cape May	3263	3230	87.5 (1)
Burlington	1818	585	10.4 (6)
Cumberland	4502	4225	44.8 (3)
Ocean	2637	1365	57.3 (2)
Salem	1347	585	24.5 (5)
		1300	

Source: Estimated by Rivkin Associates, based on "New Jersey Municipal Profiles Intensity of Urbanization," N. J. Department of Community Affairs, Jan. 1972

* At the present time definitive measurement of the county land areas located in CAFRA have not been made. The above is an approximation only.

It is obvious that the CAFRA legislation has different implications for different counties, simply by virtue of the amount of land covered. For example, over 87 percent of Cape May County is covered by CAFRA, and about



MAP #2: COASTAL ZONE WITHIN C.A.F.R.A.

10 percent of Monmouth and Burlington, with even less in Middlesex. Over half of Ocean is affected, and 45 percent of Cumberland. The boundary extends at some points to about 24 miles inland, but for the most part lies close to the seashore. The boundary does not follow any natural geographic division, and in many cases cuts across and through municipal jurisdictions.

Geologically, the land area covered by CAFRA is part of the Coastal Plains Province. A prominent physical feature of the province is the chain of natural barrier beaches that extends along the coast from the Raritan Bay to Cape May. Salt marshes or "wetlands" behind the coastal barrier beaches separate the shore from the "uplands" section of the plain. While the CAFRA boundary includes both the barrier beaches and the coastal wetlands, it also encompasses portions of the uplands as well.

The barrier beaches are the backbone of New Jersey's shore resort industry and include major recreational areas at Sandy Hook and Island Beach state parks, as well as resort complexes in Asbury Park, Atlantic City and in numerous communities along the coast to Cape May. Salt marshes and wetlands extend along the entire coast and are extremely important ecological features, also providing many opportunities for recreation.

The uplands are characterized by forests and agricultural lands. The Pinelands, New Jersey's most extensive forest, is an important aquifer recharge area that serves the coastal zone, and partially extends within the CAFRA boundaries.

In addition to the numerous inlets and bays created by the barrier beaches and wetlands, three major rivers -- the Raritan, the Manasquan and Mullica -- are found in the coastal zone. These rivers and their headwaters provide for excellent recreational opportunities--fishing, boating and canoeing.

Development in the land area covered by CAFRA is highly diversified. In the northern part, especially Middlesex, Monmouth and the northern parts of Ocean Counties, coastline urbanization has proceeded at a rapid rate

until there is limited vacant land remaining. Because of the reasonably close proximity of this area to the New York metropolitan region, there has traditionally been high pressures for expansion of recreational uses and, more recently, year-round residential and commercial activity. The most intensely developed shoreline for recreation in New Jersey is located in Monmouth and the northern part of Ocean Counties.

A different development pattern emerges from southern Ocean County to Cape May Point. Located outside the commutation sheds of both the New York and Philadelphia metropolitan areas, the area's economy is heavily centered around coastline tourism, with some limited agriculture. This portion of the zone has experienced a moderate though increasing growth rate in year-round population.

*- what about
The Wildwoods?*

The CAFRA development pattern extending along the Delaware Bay from Cape May Point to Memorial Bridge is again different. While some beach oriented development exists along the lower bay, most of this territory consists of marshes and wetlands which have played an important role in the region's fishing industry. The natural barriers have acted to prevent extensive waterfront development here. Because this area is relatively isolated from major population centers, its population is small and has experienced only moderate increases.

I. The Man-Made Environment

The man-made environment of the New Jersey coast is heavily oriented to the water. In addition to the 740,000 year-round residents who live near the coast (and within the CAFRA boundaries) the "Jersey Shore" attracts an estimated 30 to 50 million people annually. To serve this population, a widely varied urbanization pattern has been created. This includes extensive residential areas to house both the permanent and seasonal residents and highly developed resort and recreational areas. In addition, facilities such as a sophisticated road network, shopping centers, airports, power plants, and some industry provide support services.

SOURCE

this is a stretched use of the word!

With the exception of the tightly developed resort communities along the barrier beaches and major towns such as Toms River and Long Branch, urbanization in the CAFRA zone may generally be characterized as sprawl. Most of the residential pattern in the northern portions of the zone (Middlesex Monmouth and Ocean Counties) represents low density, non-contiguous subdivisions along the major transportation corridors and near the ocean. Strip commercial growth has accompanied this pattern throughout the zone.

interesting to know from where?

Urbanization is less intense and more concentrated in the southern part of the CAFRA zone, especially in Cape May, Salem and Cumberland Counties, but this is more a function of market demand than public policy. These counties lie outside the commutation sheds of both New York and Philadelphia, and land demand has been less than in the northern sections.

*Beachside?
- The Pine Barrens
is to the coast
and development
hasn't occurred
there for a
while variety
of reasons.*

As indicated above, the overall pattern of urbanization in the coastal zone has been heavily influenced by the transportation network. U.S. Route #9 and the Garden State Parkway both run north and south parallel to the seacoast. Development has generally occurred east of these transportation corridors, towards the sea. Almost all the barrier beaches not in public ownership have been completely built up, with most available parcels now largely "in-fill's" to existing development. Some scattered vacant areas exist, and a considerable amount of re-development--primarily to higher density condominiums has taken place in recent years.

Industries and commercial uses not oriented to the water have traditionally been less important to the coast.* Until recently, seasonal homes dominated the area, especially in Middlesex and Monmouth Counties, but more and more people are moving into this area on a year-round basis. Ocean County particularly has recently experienced an influx of retirement communities, *→ and year round, regular housing* balancing to some degree the highly resort oriented municipalities located along the barrier beaches and the influx of year-round family housing west of the bays.

*and in the
state in toto*

Single family detached housing predominates both on the barrier beaches and in the uplands section of the zone--the character varying from small shacks to well built beach houses and "suburban" subdivisions to the mansions of Rumson and Deal. Lagoon construction, with private boat slips for individual houses, may be seen in many areas of the bays and Intra-coastal Waterway--much of it representing wetlands transformation.

Some recent growth of townhouses and garden apartments has occurred, both along the beaches themselves and inland in scattered locations from Monmouth to Cape May.

Because land is limited and development interest high along the barrier beaches, pressure for high-rise construction has increased. No longer is Atlantic City the only locus of tall buildings along the shore. A

* It is interesting to note, however, that most of the specific land uses enumerated for DEP control under the CAFRA Act are industrial in nature.

high-rise condominium has been built on the tallest elevation within the zone, in Atlantic Highlands overlooking Sandy Hook. Others have been constructed in such locations as Long Branch in Monmouth County, Margate in Atlantic, and Sea Isle City in Cape May--invariably in sharp contrast to the low-rise pattern around them. Those oriented parallel with the shore cast shadows over large areas of the beach for much of the day--thereby destroying enjoyment of the beach resource for large numbers of people. Once created, this is a nuisance impossible to remove.

↑ NOT RELATED TO THIS REAL PROBLEM

*no - I'm
curious about
the inclusion
of this distance.
How does an
area change
its character?*

The Toms River condominium denied by CAFRA was one of the first attempts at high-rise inland of the beaches. Despite the down-turn in the market, the selling point of beach views and access to large numbers of people will probably continue to produce pressure for high-rise, and DEP is currently reviewing a proposal for two 16 story towers in Brigantine.

The sizeable tourist market in CAFRA has led to the establishment of numerous seaside resort communities varying from intensively used resorts such as Atlantic City, Ocean City and Asbury Park to more quiet, single family beach communities as Avalon and Stone Harbor. The resorts, located for the most part on barrier beach islands, are characterized by high density residential uses with numerous man-made recreational facilities. The most famous of these are the boardwalks lined with shops, restaurants, amusements, movie theatres, hotels, convention halls, and other types of commercial establishments. The larger resorts have hosted conventions on a year-round basis and many smaller resorts attempt to attract "off-season" conventions to boost the economy in off-season. Together, these many activities provide a colorful though often congested atmosphere for both permanent and seasonal living in the coastal area.

In addition to these seaside resort communities, there are numerous other types of recreational facilities along the seashore. These range from general amusement parks, exhibition halls, country clubs, summer playhouses, to boating marinas and campgrounds. These are scattered throughout the zone, with the most notable foci at Wildwood, Atlantic City, Ocean City and Asbury Park. Numerous camping facilities have been established, mainly in Cape May and Atlantic Counties, and the boating marinas are scattered

throughout the rivers and bays--with the largest concentration of boats at the Navesink and Shrewsbury Rivers in Monmouth and Jarvis Sound in Cape May Counties. Major state parks used for recreation are Sandy Hook in Monmouth and Island Beach in Ocean County. Cape May Point and Great Sound in Cape May County are also state owned recreational areas. Ocean County Park, located west of Brick, and Fishing Creek Conservation Recreation Area in Cape May County are also important county parks used for recreational purposes in CAFRA.

Demand for these public recreational facilities is high, along with attendant traffic congestion and shortage of parking facilities. On at least one occasion access to Island Beach State Park has been closed due to over-capacity use. At the same time, large sections of the barrier beaches are closed to vacationers because abutting communities and private owners have restricted or prevented public access. As the population of state and region grows, with more people seeking waterfront recreation, these restrictions on public access will become an increasingly important issue.

this has become an almost daily occurrence

i.e. access to the properties will become more valuable, i.e. the price society should be willing to pay to change deeds or get easements should rise.

In addition to the above mentioned man-made features that characterize the CAFRA zone, a number of other support-type facilities accommodate both the seasonal and permanent populations. These facilities include: a limited number of industrial areas; shopping complexes; power plants; several federal government land holdings; and a well-developed road network.

A. Support Facilities

Partly because of the terrain and partly because of the transportation network, non-water oriented industries have traditionally been less important to the CAFRA area than in the rest of New Jersey. New Jersey's major industrial concentrations are located outside the CAFRA zone--the area around New York in Union and Hudson Counties and the area along the Delaware River near Wilmington and Philadelphia. In the zone, the limited industrial facilities are scattered. Some chemical plants are located in Toms River in Ocean County, and some manufacturing and textile plants in Atlantic City. Other industrial areas are located just outside the CAFRA

there is little & price reasons to assume change here.

boundaries in both Salem (Dupont chemicals) and Monmouth Counties. A major ammunition depot is located in Sandy Hook Bay and small scattered food processing plants in the southern part of the zone in Cumberland and Salem Counties. However, taken together these industrial areas in CAFRA are small in size and have minor effect on the predominantly resort oriented coastline.

Refer ships the BMT complex and the glass industry concentration there

Much of the shopping and service uses in the CAFRA zone have traditionally located in the resorts and other coastal communities. Atlantic City, Long Branch and Asbury Park, with sizeable retail centers, ^{NO LONGER TRUE} have been major commercial centers in the zone. Strip commercial, along Route 9 and other arterials, especially in the northern counties (Monmouth, Middlesex and northern Ocean) is also prevalent.

The regional shopping center has recently come to the zone. One is in operation in Eatontown Borough in Monmouth County and another under construction outside Toms River in Ocean County.

The Eatontown Center has already had an impact on the area's older "downtown" shopping facilities, drawing off business and contributing to their decline. A similar impact may be expected from the Toms River center when it is in operation. A regional center normally requires a market shed of about 250,000 people. Monmouth County, with access to other shopping facilities to the west, is about 450,000 in population, and Ocean County is now at about 250,000. With potentially slower growth in both areas the market may be saturated. It is not expected that any new regional facilities will be planned or proposed in the near future.

Other major man-made features of the coastal zone include the nuclear power plant at Oyster Creek in ~~Atlantic~~ ^{Ocean} County and two now under construction at Artificial Island in Salem County. These are massive facilities, occupying large areas of land for the plants and surrounding buffers. Oyster Creek is near existing settlements, while the Artificial Island facilities are about five miles distant from the nearest populated area. A large fossil fuel power plant is located below Tuckahoe at Great Egg Harbor and is highly visible for many miles.

The federal government, through the Federal Aviation Administration, the Department of Defense, the Department of Transportation, and the Corps of Engineers has considerable land holdings in the CAFRA zone. The Coast Guard maintains major stations at Sandy Hook (Monmouth County) and at Wildwood Electrical Engineering Center (Cape May County). The Federal Aviation Administration, in addition to several small airports, maintains two large FAA facilities--Barnegat Facility Air Navigation (Burlington County) and the National Aviation Facilities Experimental Center (outside Atlantic City). Even though both these facilities are located outside the CAFRA zone they carry employment and housing impacts.

Located just outside CAFRA, but within a relatively short distance are McGuire Air Force Base, Lakehurst Naval Air Station and Fort Dix. These plus Fort Monmouth, located near Oceanport in Monmouth County, all add significantly to the coastal zone's economy and resident population.

B. Transportation

Demands for access to the shore region have been a significant influence in bringing about the present highway network that links the nearby metropolitan areas with the New Jersey shore. This network is expanding with the recent addition of the Atlantic City Expressway and a new interstate, I-195, which runs east from Trenton towards Monmouth and Ocean Counties.

But this is in the main, only private auto transportation

Over 80 percent of the out-of-state visitors to the shore use the automobile as their means of transportation. Visitors from the New York Metropolitan Area and points north, traverse the Garden State Parkway which runs the length of the shore region. This limited access highway connects with both the New Jersey Turnpike and the New York Thoroughway. U.S. #9 is an alternate road from the New York area, but since construction of the Parkway, the former is used primarily for local travel, and is the focus for the strip commercial development which abounds within CAFRA.

The Garden State Parkway acts as a backbone for the coast, serving as a commuter artery for industry and commerce, as well as a landscaped connection among shore resorts and recreation areas and between the coast

and northern New Jersey. An expressway spur from South Brunswick to Toms River proposed by the New Jersey Turnpike Authority would further increase the accessibility of the coast for private automobiles, trucks, and busses, although the Turnpike Authority is exploring the option of using the proposed right-of-way for a mass transit system. The Atlantic City Expressway and other parallel and radiating highways from the Philadelphia-Camden Metropolitan Area funnel automobile traffic to the Jersey Shore.

Visitors from the Philadelphia Metropolitan Area and points west reach the northern sector of the New Jersey shore by taking State Routes #70 or #71 or #33. Southern area resorts are served by U.S. Routes #30 and #322 and by State Route #47.

*what
about
1195*

Some limited public transportation serves the coastal area. Manhattan-oriented commuter rail service operates in Monmouth County. Extremely limited rail service, connecting with the PATCO Lindenwold Line to Philadelphia, reaches Atlantic City, Tuckahoe, Ocean City, and Cape May. Regular inter-city bus service links Monmouth, Ocean and Atlantic County communities with each other and with northern New Jersey and New York City. Similar bus service links the Philadelphia-Camden metropolitan area with selected Atlantic County shore communities. Limited regular inter-city bus service does exist within Cape May County. Ocean County is proposing a county bus system to serve that rapidly developing region. Finally, some seasonal bus service links Trenton and other cities with several coastal resort and beach communities.

With the exception of the military air bases, no major airports are located within CAFRA, although there are several small airports located throughout the zone. Both Atlantic City and Cape May are served by commuter airlines from Philadelphia; Asbury Park is served by an air taxi service from Kennedy Airport in New York. These scheduled flights are infrequent (usually once a day). The Cape May airport and its immediate vicinity is currently excluded from CAFRA. Efforts are being made by local governments and businesses interests to promote industrial growth in this unregulated "island" within the zone.

C. Density

One way of characterizing the man-made environment in a region such as CAFRA is by depicting the nature and location of population densities. In land use terms, density means the level or intensity of development.

this is a curious use of the concept

New Jersey's Department of Community Affairs has compiled a detailed listing of density levels for all communities in the State, including all municipalities in the CAFRA Zone. This information is compiled by the number of persons per square mile and gives a general indication of the range of densities throughout the Zone.

From this information base, it is clear that the most intensively developed communities are in the northern sections of CAFRA--in Monmouth and Middlesex Counties, and along the barrier beach islands. As one proceeds down the Coastal Zone and inland, the ratio of persons per square mile decreases significantly.

if you ask most N. Jerseyans they probably wouldn't include Monmouth as "shore" counties

To illustrate this point, the major characteristics of densities for each county are summarized below:*

Monmouth County: About one-third of the 27 communities in Monmouth County located within CAFRA have densities exceeding 5,000 persons per square mile. Asbury Park and Keansburg, with 11,022 and 10,231 persons per square mile respectively, are the most densely populated communities. No community in this zone has an overall density of less than 1,441 persons per square mile, indicative of the generally urbanized pattern.

Ocean County: Densities in Ocean County communities within CAFRA are considerably lower than in Monmouth, its northern neighbor. Only one community, Point Pleasant, is developed at what could be considered a high density--4,315 persons per square mile. Seaside Heights, Pt. Pleasant Beach and South Toms River have densities of between 3,000 and 4,000 persons per square mile, and the rest of the communities fall below 3,000. Inland townships, such as Lacey and Union have densities of around 50 persons per square mile or less, indicating

* Resort communities evidence much higher density during the season.

that there is considerable open land for development in those townships. The barrier beach communities in Ocean County (Seaside Heights, Seaside Park, Ship Bottom) are less dense than those in Atlantic County, but at about the same level of density as those in Cape May.

Atlantic County: Communities on the barrier beach island of Atlantic City are the most intensely developed in Atlantic County. These include: Margate City (7,554 persons per square mile); Ventnor City (4,945); Longport (4,083); and Atlantic City (4,042). The remaining 12 municipalities in Atlantic County are considerably less, with densities ranging from 31 persons per square mile (Corbin City) to 2,400 (Pleasantville). This follows the same pattern as Ocean and Cape May Counties, where inland development is much more rural and suburban in nature. - what is county density excluding farm average? Do these differ, very sig.?

Cape May County: Densities of the municipalities in Cape May County are still lower than any of the northern counties. The Wildwoods --Wildwood, Wildwood Crest and North Wildwood--are the most intensely developed areas, with density ranges between 2,302 persons per square mile to 3,669. Ocean City has a density of 1,813, and Cape May 1,729. Other inland municipalities are dramatically less--with the remaining 10 municipalities within CAFRA having densities of less than 1,000 persons per square mile.

Salem and Cumberland Counties: Following the same diminishing trend, only Bridgeton (Cumberland County) has a relatively high density--of 3,143 persons per square mile. All other communities within CAFRA are less than 500 persons per square mile in these two counties. This is significantly lower when compared to Monmouth County or the barrier beach communities, and implies there is considerable vacant land for development, as in Cape May County as well.

Although density level figures exist on a community wide basis, it is considerably more difficult to identify the actual density levels of residential development--as measured by dwelling units per acre in subdivisions--through-

As in the state
 out the region. A generalized pattern of sprawl, except in the resort areas, *this word has all kinds of meanings in this context and should be defined or avoided -*
 has been depicted above. In terms of recent development, as represented *it is a loaded word*
 by permit requests to CAFRA, single family detached housing continues to predominate. Density levels (based on a sample of CAFRA permit requests) range from under 1 unit per acre to as high as 8 units per acre, falling mostly under 4 units per acre. Townhouse projects appear to range between 5 and 8 units per acre; and apartments (including both garden and high-rise) from 8 to about 12 units per acre.

II. Some Notes on the Natural Environment

The natural environment of the coastal zone is the principal subject of the Environmental Inventory submitted to the State Legislature on September 19, 1975. Rather than recapitulate the extensive material contained therein, we highlight below those features of the natural environment which bear most directly on the physical development pattern depicted above-- features which represent the prime targets for conservation under CAFRA.

The New Jersey coast's natural environment is as diverse and flamboyant as its man-made environment. Major elements of this setting include: the barrier beaches and islands which stretch along the 126 mile Atlantic shore; the tidal marshes and wetlands which are prominent in the "south shore" and Delaware Bay area; the rivers and bays which are major features along the coast; and the "uplands" areas which are part of the stable earth, and are particularly noted for forest and vegetation.

These natural features of the New Jersey coastline have had a major influence on the overall development of the CAFRA zone. Other features that also influence the development pattern are the condition of the soil, slope of the land and areas that are subject to flooding.

From Raritan Bay past Sandy Hook to Point Pleasant at the Monmouth County line, that part of the Jersey coastline is characterized by "stable" earth extending down to the beach area, without estuarine areas in between.

From Point Pleasant south to Cape May the chain of barrier beaches extends out in the ocean, with large bodies of estuarine waters and tidal marshes separating the ocean from the mainland. From around Cape May Point up the Delaware Bay, the barrier beaches cease and wetlands separate the mainland from the bay.

The vast expanse of barrier beach is the single most important feature of the natural environment. These beaches which are deep and ideal for summer swimming are the prime attractions for the approximately 30 to 50 million visitors to the coastline annually. About 90 percent of New Jersey's shoreline is composed of these sandbar islands which lie at varying distances off the mainland. They range in width from several hundred yards to over a mile, and range in length from three to twenty-four miles. The beaches which extend from Point Pleasant south to Cape May are an easily recognized land form and environmentally unique eco-system. They may be of island or peninsula form. They are a constantly changing and completely natural phenomenon. While providing a prime recreational resource for New Jersey, they also protect the delicate bayside tidal marshlands and have served as a prime location for man-made resort-oriented developments.

The tidal marshes or wetlands which are found in the southern sector of the coastline are important primarily as a critical link in the food chain and other indispensable ecological systems. Estimates indicate that almost 250,000 acres of wetlands, located along the Atlantic Flyway are annual home of millions of migratory birds. Most of these tidal marshes are located in the Delaware Bay area and between the barrier beaches from Cape May north to Point Pleasant. The wetlands are used by over 50 varieties of waterfowl, and provide sport for both naturalists and hunters. In addition the coastal wetlands and shoal water provide spawning and nursery areas for fish and shellfish. Approximately 395,000 acres of estuary waters are suitable for shellfish harvesting. However, about one-fourth (100,000 acres) are either restricted or condemned because of high bacteriological counts.

Until recently, when the Wetlands Act of 1970 was passed by the State Legislature, there was a great danger that the wetlands would be destroyed through development. Although about one-quarter million acres of tidal wetlands exists today, 25 percent of the state's total marsh area was destroyed during the 1950's and 1960's. Most of the construction that took place in the wetlands were residential lagoon developments and other commercial ventures. (Since the 1970 Wetlands Act, however, further residential building on wetlands has practically ceased.)

Because of the low-lying ^{definition of coast?} nature of the New Jersey coast, and its close proximity to the ocean, development in the Coastal Zone is extremely vulnerable to natural disaster--especially flooding. In the past, little attention was given to the location of development vis-a-vis flooding conditions and, as a result, there are many developed areas along the coast which are extremely vulnerable to flood. As has repeatedly happened, storms can cause millions of dollars worth of losses to development along the seaboard. Projects and developments along the barrier beaches are especially vulnerable to flooding.

In recent years, certain actions have been taken to help correct some of these problems. The State of New Jersey, for example, passed the Floodplains Act of 1970. Under this Act and subsequent administrative regulation, DEP has prohibited new structures in the floodways and communities are required to establish regulations for flood fringe areas. To assist in this, the Department of Environmental Protection is in the process of delineating these flood prone areas and depicting existing developments subject to floods. These are being delineated for three types of areas: urban areas, rural areas and smaller drainage basin areas at the 100-year recurrence interval. Such mapping and community land use controls in flood areas are also now required as part of the national flood insurance program of the U.S. Department of Housing and Urban Development.

The other major feature of the coastal area is the "uplands" or the mainland where "stable" earth is the base. This area is geologically part of the Great Plains Province and generally characterized by forest and vegetative land cover. The forests have traditionally been among the most heavily used resources of the southern part of the coastal zone, and in some areas the forests have been harvested as many as six times since settlement.

Through the years much of the upland area has been cultivated. It is in use today either as agricultural lands or has been developed in sub-divisions, roads, industry, or other commercial uses. Approximately 40 percent of the coastal zone, however, still consists of forest land.

"Good" soils, suitable for agriculture, are found all along the coast--stretching from Sandy Hook to Toms River in Monmouth and Ocean County, throughout most of inland Cape May County, and along rivers in Cumberland and Atlantic Counties. "Prime" soils are just inland of CAFRA in Salem County, with extensive areas of "good" soils just inland of CAFRA in Cumberland and southwest Atlantic Counties.

New Jersey ranks second nationally in cultivated blueberry production and third in production of both tomatoes and cranberries. Each of these crops is a significant product of the coastal area, with the majority being produced in the southern part of the Zone. Processing crops--especially peas, vegetables, sweet potatoes, and some fruits--are major crops of Salem and western Cumberland Counties; eggs and poultry are found in Cumberland; and Burlington and Ocean Counties are noted for their cranberries and blueberries. Holly forests are found throughout the Zone--in Sandy Hook in Monmouth County to Cape May.

Fishing activities are important along the New Jersey coast. Commercial and pleasure deep water fishers take off from the Atlantic coastal counties, while the Delaware Bay counties concentrate on crabs, clams and oysters. The shellfish industry has been in a period of decline, partially because of pollution in harvesting grounds and a parasitic disease in oysters. The oyster industry may be making a comeback. Little quantitative data appears available on fishing.

Although the man-made environment has used and abused these natural resources, they are still the primary attractions for residence and recreation within the zone. Indeed, despite the rapid growth from World War II until today, the majority of land within the Zone especially in the southern part of the CAFRA is in its natural state. Whether this condition will remain, with additional increments of growth channeled to conserve these resources, will largely be up to the effectiveness of the CAFRA program.

III. Population Distribution and Change in the Coastal Zone

Growth of population is a key component in the land use and economic development process of an area. Much of the recent development action in the Coastal Zone can be understood by viewing population trends, and much of the pressure for further development can be foreseen by assessing the scale and location of future population demand.

Below we first examine recent population trends and characteristics in the New Jersey counties which have substantial segments of their land area and communities within the CAFRA Zone. These are termed "Coastal Counties," and population characteristics for each county as a whole are identified.

Only portions of each county are within the actual Zone, however. We then estimate the number of people residing within the Zone for each county and attempt to provide information on population trends and characteristics within the Zone itself.

The population analysis deals with year-round, "permanent" population only.

A. Coastal Counties

Eight of the twenty-one counties of New Jersey have portions of their area included in the CAFRA Zone:

Atlantic	Middlesex
Burlington	Monmouth
Cape May	Ocean
Cumberland	Salem

As stated earlier, two of these, Middlesex and Burlington, have very small land areas within the CAFRA boundaries. In addition, the population within the CAFRA portion of these counties is very small--both in absolute number and relative to the total population in these counties and in the Zone as a whole. In Middlesex, a portion of only one municipality was in CAFRA with an estimated population of less than 1,000 in 1974. In Burlington, two municipalities were included, with a 1974 population of about 1,500.

While the Land Use and Density Guidelines must apply to these communities as well as the others--from the standpoint of population analysis inclusion of the Burlington and Middlesex figures will hide some of the more important tendencies of the CAFRA area. Therefore, the following population examination will exclude Burlington and Middlesex from discussion as "Coastal Counties."*

The Coastal Counties are growing faster than the State of New Jersey as a whole (Table 1). The share of state population for these counties was:

<i>is this substantially different from all southern (northern) movement in the state</i>	1960 - 13.5%
	1970 - 15.1%
	1974 - 15.8%

again while it falls in "CAFRA" is it a "share" county

Coastal Counties' population has increased from 817,600 in 1960 to 1,084,200 in 1970 to 1,173,600 in 1974. Monmouth County is by far the most populous Coastal County, with 479,900 persons, 40.9 per cent of the Coastal County total and nearly twice that of the second largest county, Ocean.

While Monmouth and Ocean are increasing their share of state population, Atlantic County is declining. Cape May, Cumberland and Salem are growing at about the same rate as the State as a whole. The faster growth, then, is in the northern portion of the Coastal Counties.

* In terms of the overall population of the Zone itself, however, the estimates probably make allowance for Middlesex and Burlington. Since the zonal boundary cuts through numerous municipalities, entire totals for some communities with portions outside the Zone had to be included in arriving at overall totals. So the figures on population within the Zone are probably somewhat inflated, certainly enough to include allowance for people in Middlesex and Burlington.

From 1970 to 1974 the Coastal Counties added 89,400 to their population, an increase of 8.2 percent. This added population represented 36.4 percent of the state's growth during the four-year period (Table 2).

This coastal growth follows trends of the previous decades, but apparently the coastal share of State growth is increasing. - *so may be the Delaware Valley is in a southern movement in the state in toto*

Ocean County added 47,000 persons between 1970 and 1974, nearly 16,000 per year. This increase of 22 percent is four times that of the second county, Cape May, and five times that of the State of New Jersey. Monmouth County added 16,200 persons, with 18,000 added in the four other counties.

From 1970 to 1974, Ocean County had nearly 60 percent of the total growth of Coastal Counties. Monmouth had 20 percent, with the remaining scattered in the four Southern counties. The percentage increases are off substantially from the pace of previous decade, when Ocean nearly doubled and Monmouth increased by over one-third. Ocean's annual numerical growth, however, is slightly above the 1960-1970 rate.

The fastest growth both in numbers and in percentage, from 1970 to 1974 is in Ocean County. Monmouth County added the second highest number of people, while Cape May had the second highest growth rate (Table 3).

The four Southern Counties have added from three to seven thousand persons each in the 1970-1974 period. No growth rate exceeded six percent except Ocean's. But only one county, Atlantic, is growing slower than the State rate.

Population growth in any community comes from two sources:

- 1) Natural increase - excess of births over deaths
- 2) Net migration - excess of in-migration over out-migration

In Cape May County, there was a decline in natural increase from 1970 to 1974 which was more than made up for by in-migration. Ocean, Atlantic and Salem had a majority of growth from in-migration, while Monmouth and Cumberland grew mainly from natural increase.

The number of residential building permits in 1974 is consistent with recent population growth. Atlantic and Cape May are somewhat higher because of building for seasonal residents (a factor to be discussed in Chapter Two).

While the Coastal Counties have been growing faster than the State of New Jersey they still represent a relatively lightly populated region. Only Monmouth County (at 1020 persons per square mile) has a population density equivalent to the State as a whole. Ocean County (at 405) has a density only two-fifths as heavy as the State while the four Southern counties have densities one-third to one-sixth the State level.

Table 1
Coastal Counties Population

	(Population (in Thousands))				Share of State			
	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1974</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1974</u>
Atlantic	132.4	160.9	175.0	180.5	2.7	2.6	2.4	2.4
Cape May	37.1	48.6	59.6	63.4	0.8	0.8	0.8	0.9
Cumberland	88.6	106.8	121.4	128.4	1.8	1.8	1.7	1.7
Monmouth	225.3	334.4	459.4	479.9	4.7	5.5	6.4	6.5
Ocean	56.6	108.2	208.5	257.8	1.2	1.8	2.9	3.5
Salem	49.5	58.7	60.3	63.6	1.0	1.0	0.8	0.9
Total-Coastal Counties	589.5	817.6	1084.2	1173.6	12.2	13.5	15.1	15.8

Notes: Burlington and Middlesex Counties are not analyzed as "Coastal Counties."
1950, 1960 and 1970 are April 1 Census counts; 1974 is July 1 DLI estimate.

Source: Department of Labor and Industry
U.S. Bureau of the Census

Table 2

Additions to Coastal Counties Population

	Added Population (in Thousands)			Percentage Increase		
	<u>1950-60</u>	<u>1960-70</u>	<u>1970-74</u>	<u>1950-60</u>	<u>1960-70</u>	<u>1970-74</u>
Atlantic	28.5	14.1	5.5	21.5	8.8	3.1
Cape May	11.5	11.0	3.8	31.0	22.6	6.4
Cumberland	18.2	14.6	7.0	20.5	13.7	5.8
Monmouth	109.1	125.0	20.5	48.4	37.4	4.5
Ocean	51.6	100.3	49.3	91.2	92.7	23.6
Salem	9.2	1.6	3.3	18.6	2.7	5.5
Total--Coastal Counties	228.1	266.6	89.4	38.7	32.6	8.2
State of New Jersey	1,231.5	1,101.3	245.6	25.5	18.2	3.4
Coastal Counties as % of State	18.5%	24.2%	36.4%	-	-	-

Source: Department of Labor and Industry
U.S. Bureau of the Census

Table 3
Ranking of Coastal Counties
on Various Population Factors

<u>Population Added</u> <u>1970-74 (in 000's)</u>		<u>Percentage Increase</u> <u>1970-74</u>		<u>Net Migration as %</u> <u>of Added Population</u>		<u>Residential Building</u> <u>Permits 1974</u>		<u>Population Density</u> <u>1974 (persons/sq.mi.)</u>	
1 Ocean	49.3	Ocean	23.6%	Cape May	118.3%	Ocean	2,866	Monmouth	1,020
		COASTAL COUNTIES	8.2					State	990
2 Monmouth	20.5	Cape May	6.4	Ocean	91.9	Monmouth	1,277	Ocean	405
3 Cumberland	7.0	Cumberland	5.8	Atlantic	79.0	Atlantic	1,224	Atlantic	318
4 Atlantic	5.5	Salem	5.5	Salem	63.8	Cape May	1,217	Cumberland	256
5 Cape May	3.8	Monmouth	4.5	Monmouth	38.5	Cumberland	575	Cape May	241
		STATE	3.4	STATE	37.8				
6 Salem	3.3	Atlantic	3.1	Cumberland	37.2	Salem	245	Salem	183

Source: Department of Labor and Industry

B. Coastal Zone

To assess clearly the impacts of growth within CAFRA, we have to look at the portions of the Coastal Counties which actually fall within the CAFRA Zone. By county, the CAFRA Zone covers the following percentages of county population:

Cape May	95.7%
Ocean	89.0
Atlantic	80.9
Monmouth	54.1
Cumberland	34.8
Salem	4.1*

Due to the early resort character of most of the CAFRA counties, urbanization actually began at the coast. This accounts for the high proportion of the Coastal County population included in the CAFRA boundaries. Indeed much of the land west and north of the Zone in the CAFRA Atlantic Coast counties is still a rural, largely agricultural buffer zone between a developed coastline and the metropolitan regions of New York and Philadelphia.

The Delaware Bay counties--Cumberland and Salem, on the other hand, developed primarily inland. The economic activity and growth pressures here are outside the CAFRA Zone and not along the coast.

The population of the Coastal Zone grew from 688,000 in 1970 to 743,000 in 1974. This addition of about 55,000 persons was an increase of 8.1 percent in four years. (Table 4).

Growth in the Coastal Zone was about 60 percent of that in the six Coastal Counties, and the share of county population in the Zone remained nearly constant during the four-year period.

* It is interesting to note that CAFRA includes a large amount of Salem County's land area, but little population. This is because most of the CAFRA area within Salem is wetlands. ✓

Ocean County of course added the most people, 44,000 in its coastal zone. This was a 23.8 percent increase, slightly faster than the county as a whole. Cape May and Cumberland added to their coastal zones at about the same rate as the entire county. The coastal zone shares for Atlantic and Monmouth counties declined, however, as faster growth took place inland. Salem had no growth in its coastal zone. (Table 5).

Ocean County has fewer people in its coastal zone than Monmouth, but it added twelve times as many people during 1970-1974 as Monmouth did. Ocean's percentage increase of 23.8 far exceeded the 6.1 percent rate of Cape May.

During 1970 - 1974, Ocean County had nearly 80 percent of the population growth of the Coastal Zone. Monmouth and Cape May each had about seven percent of added population, with the remaining eight percent divided between Cumberland and Atlantic.

Ocean County has had over one-half the permit applications filed with CAFRA from September 1973 to September 1975. In residential units, Ocean had 2,816 out of 3,726 representing 75 percent of the total approved. Only in "industrial" and "other" categories did Ocean County have less than 50 percent of permit applications (20% in industrial and none in other).

The ranking of CAFRA permits indicates that Ocean and Cape May Counties are continuing their leadership in percentage increase. Cumberland, however, may be falling off while Atlantic gains. The Salem coastal zone shows negligible activity.

The growth rates in the Coastal Zone of New Jersey are falling off from the pace of the early '70's. For the State as a whole, the growth rate has declined steadily from 0.9 percent in 1970-1971 to 0.6 percent in 1973-1974 (Table 6).

The Coastal Zone, growing at rates slightly faster than Coastal Counties, } OK
has been substantially above state rates. Coastal Zone growth hit its peak in 1971-1972 at 2.8 percent, falling off to 1.4 percent - only one-half that rate - in 1973-1974.

Ocean County is the "high flyer" and "high diver" among Coastal Counties, with growth rate peaking at 8.2 percent in 1971-1972. This rate dropped faster than any other county, to 2.9 percent in 1973-1974, only 35 percent of the high two years earlier. Cumberland is down from the 1970-1972 pace while Cape May was rather stable for the past three years, and above the 1970-71 rate. Atlantic and Monmouth Counties have consistent growth rates for the past four years (Figure 1).

In summary, 1971-72 was the peak year of Coastal Zone growth, at 2.8 percent. The 1973-74 rate of 1.3 percent is the same as that of 1970-71, but now the trend is downward rather than upward.

The trend is likely to continue downward for a while. 1974 had the lowest number of residential building permits in New Jersey since at least 1960. Housing permits and starts are at an even lower rate for 1975. -

*Due to?
Economic Conditions
nationally?*

Table 4
Coastal Zone* Population
1970-74

	Population		Percent of County		Added Percent Increase	
	<u>1970</u>	<u>1974</u>	<u>1970</u>	<u>1974</u>	<u>1970-74</u>	<u>1970-74</u>
Atlantic	144.1	146.1	82.0%	80.9%	(⁰⁰⁶) 2.0	1.4%
Cape May	57.2	60.6	95.6	95.7	3.4	6.1
Cumberland	42.6	44.7	35.0	34.8	2.1	4.9
Monmouth	255.9	259.6	55.2	54.1	3.7	1.5
Ocean	185.2	229.3	87.9	89.0	44.1	23.8
Salem	<u>2.6</u>	<u>2.6</u>	<u>4.3</u>	<u>4.1</u>	<u>0.0</u>	<u>0.2</u>
TOTAL---						
COASTAL ZONE	687.6	742.9	63.4	63.3	55.3	8.0

* Coastal Zone estimate is larger than CAFRA as it includes all of the population of municipalities, more than 50% of whose land area is in CAFRA.

Source: Department of Labor and Industry
U.S. Bureau of the Census

Table 5

Ranking of Coastal Zone Segments
on Various Population Growth Factors

	<u>Population Added 1970-74</u>		<u>Percent Increase 1970-74</u>		<u>Share of Coastal Zone Increase 1970-74</u>		<u>CAFRA 1973-75 Permits/Units</u>
1 Ocean	44.1	Ocean	23.8%	Ocean	79.6	Ocean	64/2816
2 Monmouth	3.7	COASTAL ZONE	8.1	Monmouth	6.7	Cape May	24/546
3 Cape May	3.5	Cape May	6.1	Cape May	6.3	Atlantic	17/300
4 Cumberland	2.1	Cumberland	4.9	Cumberland	3.8	Monmouth	17/64
5 Atlantic	2.0	Monmouth	1.5	Atlantic	3.6	Cumberland	3/0
6 Salem	0.0	Atlantic	1.4	Salem	0.0	Salem	1/0
		Salem	0.0				

Sources: Department of Labor and Industry
Department of Environmental Protection

Table 6
Annual Growth Rates of
Coastal Zone Segments, 1970-74

	<u>1970-71</u>	<u>1971-72</u>	<u>1972-73</u>	<u>1973-74</u>
Atlantic	0.3	0.5	0.2	0.4
Cape May	0.5	1.8	2.0	1.7
Cumberland	1.5	1.7	0.9	0.7
Monmouth	0.4	0.4	0.3	0.4
Ocean	3.7	8.2	7.3	2.9
Salem	Represents less than 25 person change			
Total-Coastal Zone	1.3	2.8	2.5	1.3
Total-Coastal Counties	1.6	2.2	2.2	1.2
State of New Jersey	0.9	0.8	0.7	0.6
Coastal Zone as % of State Growth	13.2	31.2	36.1	22.6

Note: All figures as of July 1

Source: Dept. of Labor and Industry

Percentage Increase

Figure 1

Percentage Increases
(1970-74, by Year)
Coastal Zones of
New Jersey Counties
(Salem not plotted)

Source: Dept. of Labor
and Industry

9.0

8.0

7.0

6.0

5.0

4.0

3.0

2.0

1.0

OCEAN

COASTAL ZONE

COASTAL COUNTIES

MAY

CURBERLAND

CAPE

STATE OF NEW JERSEY

ATLANTIC

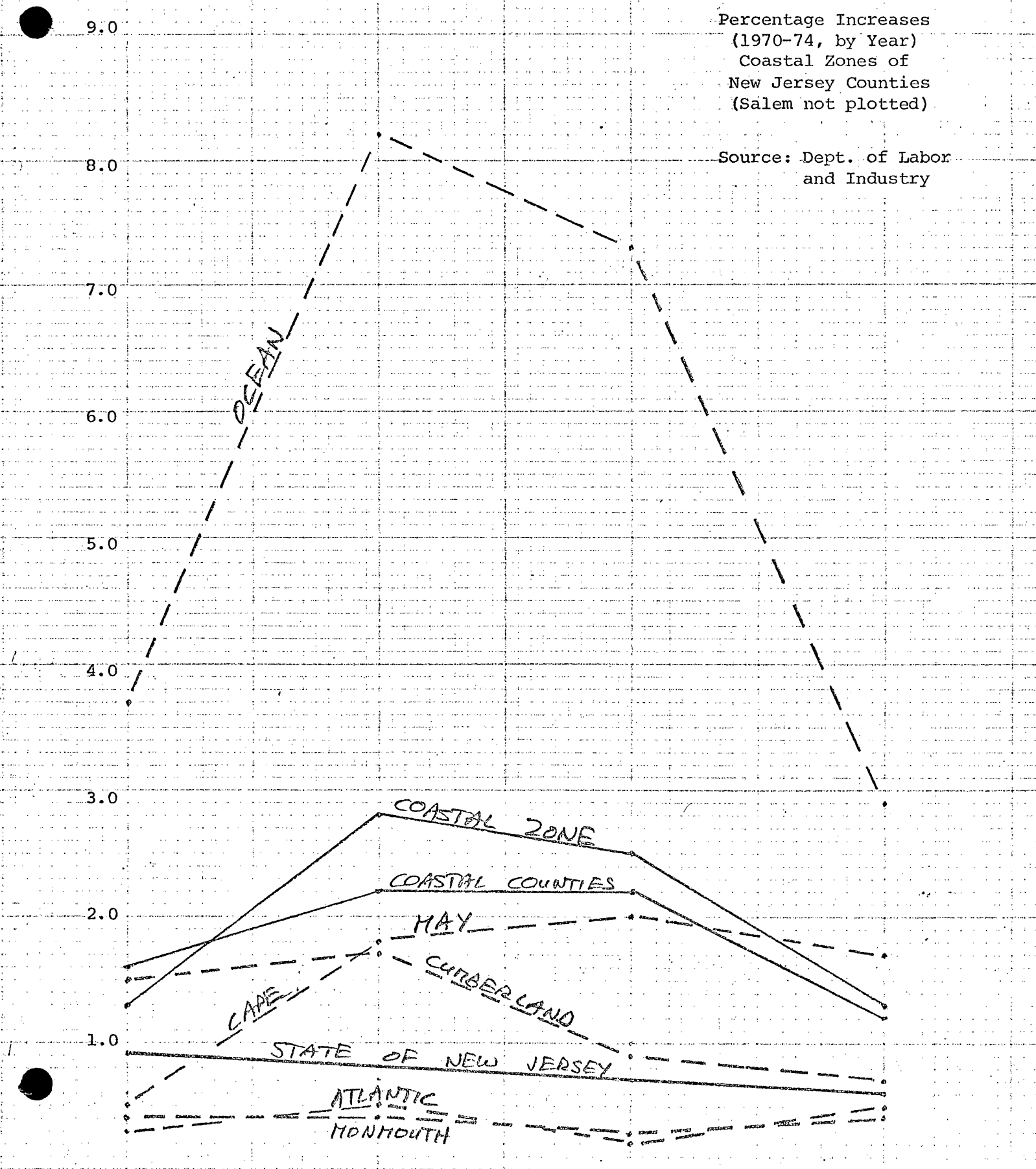
MONMOUTH

1970-71

1971-72

1972-73

1973-74



CHAPTER TWO

Economic Patterns and Development Pressures

The major economic force in the New Jersey coastal zone has traditionally been the resort/recreation industry. From Keansburg to Cape May the coast has been devoted to public and private beaches, resorts, hotels, boardwalks, fishing, boating, second homes and leisure time activities. Little of this coastline has seen the port-related industrial activity found further up Raritan Bay and along the Delaware River,

This traditional predominance is being challenged by a new economic force only secondarily related to the coast itself--housing for commuters in the Tri-State Metro Region. *RIGHT* The primary issue within the northern portion of the CAFRA zone--as detailed below--is the rate, scale and manner in which the traditional preponderance of resort/recreation is challenged by the growing pressure for permanent housing. As will be examined, the key impetus to development of both resort/recreation and permanent housing is transportation.

This chapter examines the economic patterns and pressures in the CAFRA zone. It is divided into three major sections. Section I examines economic pressures in the resort/recreation industry; key transportation matters; and trends in permanent (commuter) housing. In Section II we identify and describe retirement, energy projects, industrial activities, agriculture and military. The first two are of increasing importance within the Coastal Zone, while the latter three have small or declining influence. Finally, the last section translates these pressures into actual experience--the number and type of CAFRA applications in the first two years of operation.

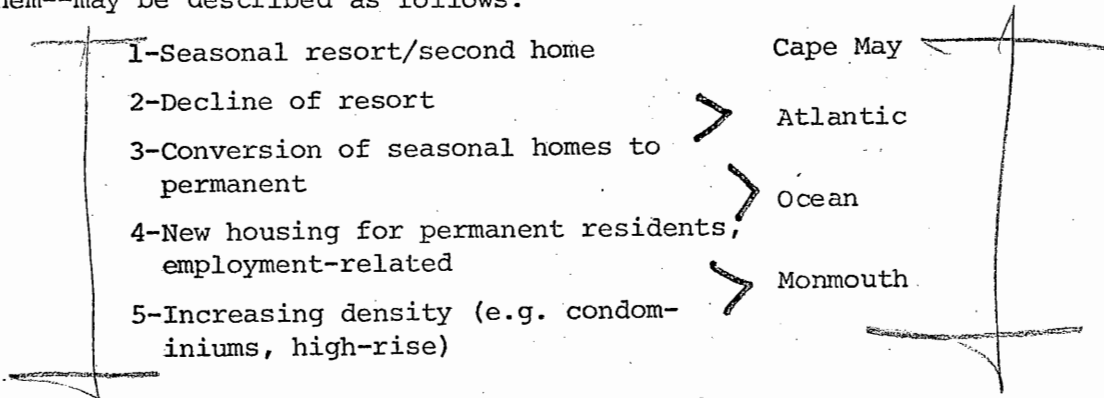
I. From Resorts to Commuter Housing

By far the most influential economic pressures *Why use of this word?* on the New Jersey Coast are resort/recreation and housing for commuters. Transportation, especially highways, is key to the relative importance of each of these.

A. Resort/Recreation

For over a century, the resort/recreation business has been paramount along the New Jersey Coast. Much of Monmouth County, from Keansburg through Long Branch to Manasquan, was developed before 1880 as seaside resorts for the New York metropolitan area. Other early developments were on the barrier islands, Atlantic City and Cape May.

The economic and development patterns along the Atlantic Coast of New Jersey have been changing. The history of this shore shows a pattern of change which consists of five stages. These stages blend into each other, and each part of the coast has some elements of each stage in it. The five stages-- and the approximate placement of the four Atlantic Coast Counties within them--may be described as follows:



The progression appears to be from north to south. Monmouth County has gone through the first four stages and is partially in the fifth stage. Ocean County is about one stage behind Monmouth, moving strongly into stage four--the provision of new housing for permanent, employment-related residents. Atlantic County is seeing the decline of its central core--Atlantic City.

because its the only thing there
but what people live there? how class the income level, employ compare

Only in Cape May County is resort/recreation the dominant and thriving economic generator. Even with its fine collection of Victorian homes, Cape May County is the "newest" of New Jersey resorts.

The importance of resort/recreation can be demonstrated by two measures: employment and seasonal housing. Stockton State College estimated the share of total employment in tourist related activities to be:

Atlantic County	39.8%
Cape May	27.7
Ocean	28.6
Monmouth	25.8

THIS IS CRAP
- have we given Emily
Webb's analysis of the
Stockton report

Since most tourism employment is considered basic, these employees are able to support additional employment in their own counties and state-wide. Overdependence on tourist employment, however, can have serious consequences. It can result in:

1) Seasonal unemployment. For example, in Cape May in 1974, unemployment rose from 6.7% in August to nearly 25% in December, and the number of unemployed persons doubled. For many the only period of employment is the 3-to-6 month tourist season, and

2) Lower wages. Tourist-related activities are heavily concentrated in service jobs which have income levels lower than manufacturing and other basic jobs.

The number of seasonal housing units within the four Atlantic Coast counties was estimated at 101,700 in both 1960 and 1970, as shown below:

	<u>Seasonal Housing Units</u>				Change <u>1960-1970</u>
	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	
Monmouth	19.8	18.4	19.5	14.7	-24.5%
Ocean	13.5	20.7	38.4	41.9	+ 9.1
Atlantic	8.6	7.3	12.4	13.1	+ 5.8
Cape May	<u>16.4</u>	<u>20.5</u>	<u>31.4</u>	<u>32.0</u>	<u>+ 1.7</u>
Total--Four Counties	58.3	67.0	101.7	101.7	0.0%

Source: Cape May Planning Board

About 85% of these units are within the CAFRA zone. While there is no change in the total number of units (a gain of exactly six in ten years), there are significant changes from county to county. Monmouth County lost 4,800 units, a drop of 24.5 percent in ten years. Ocean County gained 3,500 units, increasing 9.1 percent. The remaining gain of 1,300 units was split between Atlantic and Cape May Counties.

Of more value in assessing the importance of resort/recreation to each county is the percentage of seasonal housing of the total housing supply, shown below:

Percentage of Seasonal Housing, by County				
	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>
Monmouth	31.2%	22.3%	16.8%	9.8%
Ocean	55.2	53.8	53.7	38.0
Atlantic	19.9	15.0	19.2	17.8
Cape May	<u>65.6</u>	<u>63.6</u>	<u>66.3</u>	<u>60.1</u>
Total--Four Counties	37.3%	33.2%	34.0%	26.3%

There has been a continuing drop in Monmouth County, as the large number of new permanent units made seasonal housing of far less consequence. Ocean County's percentage of seasonal, above one half until the 1960's, has dropped sharply because of new permanent population growth.

Atlantic County's share of seasonal housing fluctuates between 15 and 20 percent of the total. In Cape May, the seasonal share is now about 3/5 of the total. Its drop in the 1960's may be due to the influx of permanent residents, largely retired people. - *lower income less employable*

The Delaware Bay coast is quite different from the Atlantic coast. Instead of sandy beaches, there are wetlands and marshes at the edge of the water. Recreation is fishing, boating and hunting. Camping is important but hotels and motels are virtually non-existent.

Urban development is inland behind the CAFRA area in Salem and Cumberland Counties. Coupled with the severe physical constraints on building along the coast, there has been little pressure for resort activity and second homes.

One of the strongest effects of the resort/recreation force is felt in the hotel/motel business. The CAFRA zone is noted for its many accommodations, from the grand old hotels of Atlantic City to the small motels along the southern beaches. Unfortunately we currently lack data on the total number of units involved. According to the CAFRA permit review personnel, however, permit requests have been submitted for approximately 600 rooms since 1973. This would indicate a moderate level of prospective construction. The permit requests come from Cape May, Atlantic, and Ocean Counties.

B. Transportation as an Economic Force

The key influences on access to, and the timing of development for, resorts have been first railroads, and then highways:

1. Railroad

- New York and Long Branch Shore resorts in Monmouth south to Bay Head (Ocean County)
- Atlantic City route from Philadelphia (now abandoned)

2. Expressway

- Garden State Parkway (GSP)
 - Shore resorts--allowed people to go farther south (Ocean to Cape May) than earlier
- Atlantic City Expressway
 - Replaced RR from Philadelphia
 - Mainly resort rather than commuting.

What was little considered at the time of their building is that railroads and highways built for resort access can also provide weekday access from employment to housing. In Monmouth County, the railroad now serves commuters to New York, who live in housing converted from seasonal to permanent and in new, higher-density housing.

Resort/recreation activities in Cumberland and Cape May Counties will be enhanced by the completion of Route 55 extending from Camden south to Cape May (about Exit 13 of GSP). A small portion has been completed around Millville/Vineland. With extension north and south, it will be much easier and faster to get to the southern resort communities.

C. Commuters in the Tri-State Metro Region

There is no doubt that in terms of current economic forces at work in the CAFRA zone, resort/recreation has been replaced by the demand for housing of employees commuting to work in New York and Northeast New Jersey. This pressure continues even though the metropolitan population is stable. The Regional Plan Association states the 31-county region (centered on New York and containing Middlesex, Monmouth and Ocean Counties), stopped growing in 1974 at a level of about 20 million persons.

Population growth may be over, but there will be continued increases in:

- employment (more persons of working age, more women employed)
- households (smaller household size) which will increase 26% by 1990.

Even with a stable population for the entire region, there will be major shifts in employment, population and housing. The urban core (New York City and Hudson County, New Jersey) will decline in employment and population. The inner ring (including Essex and Union Counties) will be relatively stable in totals, while growth will come in two areas:

- Slow: Intermediate Ring (including Middlesex, Mercer and Monmouth Counties)
- Fast: Outer Ring (including Ocean County).

Even the current economic conditions, which show significant decline in manufacturing in the New Jersey-New York-Pennsylvania Region, are having their greatest effect on the urban core. The effect of regional slowdown is to accelerate the decline of the urban core rather than impede the growth of the outer ring, e.g., Ocean County. Employment continues to grow in Middlesex County, especially along I-287 near New Brunswick. From that employment has come pressures for residential growth in both Middlesex and Monmouth Counties. The new push of employment farther south and east, along the New Jersey Turnpike and Garden State Parkway, has pushed residential demands into western Monmouth and northern Ocean Counties.

The major focus of new residential growth along the New Jersey Coast is Ocean County, which has three major attractions:

1. Cheap, available buildable land
2. Reasonably priced housing for working families
3. Access to new employment.

The first two have been factors for many years, but Ocean County only boomed with the third factor--a combination of employment closer to Ocean County and better highway access.

The commuting patterns of Coastal Counties show that Ocean County has the highest number of workers going outside the county for work:

Ocean	32.3%	- out to where -
Monmouth	26.7	data is available
Salem	25.8	
Cape May	15.8	
Atlantic	14.6	
Cumberland	12.2	

Still, this leadership role for Ocean is only relative. It ranks 14th out of 21 counties in the State in percentage of employees working outside their county of residence.

The Garden State Parkway opened up first Monmouth and then Ocean County to suburban commuting to employment further north. Through much of these counties, the GSP has marked a limit of development, with most growth coming between the Parkway and the coast. This allowed new housing to be close to existing development, use existing water, sewer and road systems, and have access to the beach.

Other highways have been important in providing commuter access to employment. Route 9, from Middlesex County straight south to Toms River, has helped open up western Monmouth and Ocean Counties. More recently, I-195 freeway has been built from Trenton east to Route 527 in northwestern Ocean County. This could lead to increasing commuting to Trenton, but the impacts will not be heavily felt until I-195 is complete. Money is now available to extend I-195 17 miles easterly to Route 34 near the Garden State Parkway in Wall Township of Monmouth County. This route may not only serve commuters but

may also support resort and redevelopment efforts in the Long Branch/Asbury Park coast communities.

Two additional routes into Monmouth and Ocean Counties will have major impacts on commuting patterns. Route 18 is partially completed as a dual highway extending southeasterly from New Brunswick to Brielle at the coastal tip of Monmouth County. With two sections complete and one under construction, this highway will be finished in several years.

The most controversial project is the proposed Toms River Expressway, designed to be a toll road, to be built by the New Jersey Highway Authority (which runs the GSP). Extending from above New Brunswick (I-287), it would parallel and connect to the Garden State Parkway at Route 9 in Toms River. The Governor's Capital Needs Commission has stated the Toms River Expressway would:

- provide better truck access to the shore area; but
- require higher tolls on the Garden State Parkway; and
- be in competition with the Route 18 freeway under construction.

Of more concern to CAFRA, this project may put increased pressures for growth on Ocean County. Right-of-way for this project has been acquired but it has been stopped, and it is unlikely funding will be available during the period of the interim guidelines.

II. Supporting Economic Pressures

Demand for retirement housing and energy projects are placing new demands on land within the Coastal Zone. Other economic forces are limited within the term of the interim guidelines.

A. Retirement

Unlike many other economic pressures, retirement is little affected by national or regional economic trends. It is certainly not related to employment or to employment related households. Retirees are attracted to the CAFRA area because of:

- reasonable cost housing
- low taxes (stability desired)
- less congestion, smaller towns
- planned communities
- health, shopping, cultural amenities
- beach areas.

These attributes have had significant impacts. Ocean County now has the largest concentration of retirement communities outside Florida. There are 16,000 units in use with another 14,500 planned for development. This economic force could have major impacts on certain municipalities in Ocean County, as described later in the sub-regional analysis.

Retirement in New Jersey, however, has typically been in separate units and smaller communities. The Coastal Counties have been traditional places to retire, particularly from Asbury Park south to Cape May. Cape May, Atlantic and Ocean Counties ranked 1, 2, 3 in the State in 1970 in percentage of residents 65 years of age or over. Cape May had nearly 20 percent of its population in this range, twice the State average of 9.7 percent. In fact, only Salem County of the Coastal Counties was below the State average, as shown below:

<u>County</u>	<u>Percent 65 or Over--1970</u>
Cape May	19.9%
Atlantic	16.2
Ocean	15.8
Cumberland	10.0
Monmouth	9.8
STATE	9.7
Salem	9.3

Certain communities become known as retirement areas, with a large number of them in the Coastal Zone. For communities of 2,500 persons or more, the 1970 ranking in the Coastal Zone was as follows:

<u>Place or Municipality</u>	<u>County</u>	<u>Percent 65 and Over--1970</u>
Manchester Twp.	Ocean	38.1%
Villas (U)	Cape May	31.0
Ocean City	Cape May	25.8
Ocean Twp.	Ocean	24.9
Atlantic City	Atlantic	24.8
Lakewood Twp.	Ocean	22.8
Lower Twp.	Cape May	22.3
North Wildwood City	Cape May	21.8
Ventnor City	Atlantic	21.5
North Cape May (U)	Cape May	21.4
Wildwood City	Cape May	21.1
Asbury Park City	Monmouth	19.9
Pt. Pleasant Beach Boro	Ocean	19.9
Lacey Twp.	Ocean	19.7
Red Bank Boro	Monmouth	19.3
Belmar Boro	Monmouth	19.1

Some smaller communities with over 20 percent elderly include Longport (Atlantic); Cape May Point Boro (47 percent), Stone Harbor Boro and West Wildwood Boro (Cape May); Avon-by-the-Sea, Sea Girt and South Balmar (Monmouth); Lavallette, Mastoloking, Seaside Park and Surf City (Ocean) and none in Salem or Cumberland Counties. For most communities of under 10,000 the attraction of retired persons has been a positive economic force. For the two largest communities listed, however--Asbury Park and Atlantic City--the large number of elderly seem to be related to population declines, low income and percentage of non-white populations.

	<u>Percent 65 and Over</u>	<u>Pop. Change 1960-1970</u>	<u>Median Income</u>	<u>Percentage Non-white</u>
Asbury Park	19.9%	- 4.8%	\$ 6,972	43.6%
Atlantic City	24.8	-19.6	6,395	45.4
STATE	9.7	+18.2	11,169	11.4

These median incomes are the two lowest for places of 10,000 or more in the State. Both cities have high percentages of non-whites, but they are not elderly, for example:

	<u>Asbury Park</u>	<u>Atlantic City</u>
Median Age - Total	35.8	43.9
White - Male	41.7	51.6
Female	52.8	58.1
Negro - Male	21.5	25.2
Female	26.5	31.4

In terms of economic hardship, Asbury Park and Atlantic City are fast becoming the two "disaster" areas in the coastal zone.

B. Energy

Two separate and independent types of energy projects are proposed or possible for the New Jersey Coast:

- OCS oil and gas
- Nuclear power plants

OCS (Outer Continental Shelf) development is proposed under leasing programs by the Department of the Interior of portions of the Baltimore Canyon Trough. Prospects of OCS exploration and development have been widely and loudly heralded, for both their beneficial and detrimental impacts. In actuality, OCS is likely to have only a minor effect on the New Jersey CAFRA area, for these reasons:

- The potential amount of oil and gas is probably lower than early projections, with no assurance that the oil or gas can be economically recovered. THIS IS CONTENTIOUS - WHAT IS THE BASIS FOR THIS STATEMENT
- The pace of development will be slow because of environment assessment processes, difficulties of financing the lack of a national energy policy. - I AM IN TOTAL DISAGREEMENT HERE
- OCS oil would most likely become a replacement for imported crude oil, rather than an addition. BULLSHIT This means existing refineries could be used rather than requiring the construction of new ones. Existing refineries are at both ends of, but outside of, the CAFRA zone.

COMPOSITE TO CED REPORT VOLUME IV

If new or expanded refineries are needed, they would likely be in the area of present development, up the Delaware River or near Perth Amboy.

Staging areas for OCS exploration will be required. Heliports and docking facilities with storage and support buildings, will be needed.

The Office of Technical Assessment (an arm of the U.S. Congress) is making a "Study of New Use Demands on the Coastal Zone and Offshore Areas of New Jersey and Delaware." Results are due later this year. Early assumptions of the study were that central staging areas for OCS oil and gas are possible at Philadelphia, Wilmington, and Newark. Other staging areas are possible at Cape Henlopen (Del.) and Cape May, Atlantic City and Sandy Hook--the latter three all within the coastal zone.

- also the latter three have been identified as good sites by the Nat. Pet. Council

The logical locations for the staging area are Atlantic City and Cape May. The advantages and disadvantages of each are considered in the discussion of Sub-region III. Staging areas could have some impacts on employment and population.

The potential number of rigs and employees required for the entire Baltimore Canyon Trough are estimated in Table 7. Exploratory and drilling rigs will require about 175 employees each with one-third to one-half on the rig at any one time. Exploration will take several years, with perhaps 150 exploratory wells. A maximum of ten would probably be in operation any one time.

At most, about 50 platforms would be in operation, with 5-6 erected each year. Each of these would have rigs for three years of drilling. About 75 employees are required for the operating platforms.

At the end of 15 years, with all platforms in operation, there would be about 3,900 employees in direct operation and maintenance, 80 employees servicing two staging areas, and 280 employees in administrative support jobs for the companies involved.

these can be located anywhere -

A staging area in the CAFRA zone might have one-fifth of the total employee impact from exploration, drilling and operations. This employment would amount to about 500 during the first five years of operation, building to a peak of 1,000 to 1,200. This level of direct employment would of course generate secondary jobs as well.

Logistic support implications for land use include: about 240 to 300 acres per site; 4,000 feet of wharves and piers, probably a heliport and barge, rail and road access.

DISAGREE - ENERGY IMPACTS IGNORED!
 More significant impacts than those of OCS could be felt through the development of nuclear power plants. Seven of these are under construction or proposed for New Jersey (one is operational). All of these are located in the CAFRA zone, south of central Ocean County. These plants are:

<u>Plant</u>	<u>Size (MW)</u>	<u>Completion Date</u>	<u>Status</u>
Salem #1 (Artificial Island)	1,090	December 1976	under const.
Salem #2 (Salem County)	1,110	May 1979	" "
Hope Creek #1 (Salem)	1,100	December 1981	permit issued
Forked River (Ocean)	1,120	May 1982	-
Hope Creek #2 (Salem)	1,100	May 1983	-
Atlantic #1 (Atlantic)	1,150	May 1985	CAFRA application
Atlantic #2 (Atlantic)	1,150	May 1987	-

Construction employment for these nuclear power plants could involve about 1,750 persons for five to eight years each. Given the construction schedule listed above, the total number of nuclear construction workers in the CAFRA area could be:

<u>Year:</u>	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
<u>Plants:</u>	3	4	4	4	5	4	5	4	3	2	2	1	1
<u>Const. Employees:</u>	6200	8000	9800	9600	9800	8400	8600	7200	5400	3600	2400	1200	600

Operational employment will be 100 to 150 persons per unit. Total permanent employment in CAFRA would be about 850 persons. Perhaps the most significant impact will be the substantial assessed valuation provided by each plant.

↳ This is barred as a consideration on CAFRA Permits - why bring it now - what, also, about the concept of energy availability

Table 7

POSSIBLE OCS EMPLOYMENT

Year	<u>Exploratory</u>		<u>Drilling</u>		<u>Operations</u>		<u>Total Employment</u>	
	<u>Rigs</u>	<u>Employment</u> ¹	<u>Rigs</u> ²	<u>Employment</u> ¹	<u>Platforms</u>	<u>Employment</u> ³	<u>Direct</u>	<u>With Support</u> ⁴
1	3	525	--	--	--	--	525	705
2	6	1050	--	--	--	--	1050	1270
3	10	1750	--	--	--	--	1750	2150
4	10	1750	6	1050	--	--	2800	3240
5	10	1750	12	2100	--	--	3850	4330
6	10	1750	18	3150	--	--	4800	5280
7	10	1750	18	3150	2	150	4950	5430
8	6	1050	18	3150	6	450	4650	5090
9	3	525	18	3150	12	900	4575	5015
10	--	--	18	3150	18	1350	4500	4900
11	--	--	18	3150	24	1800	4950	5350
12	--	--	18	3150	30	2250	5400	5800
13	--	--	12	2100	36	2700	4800	5160
14	--	--	--	--	42	3150	3150	3510
15	--	--	--	--	48	3600	3600	3960
16	--	--	--	--	52	3900	3900	4260

¹At 175 persons per rig²At 3 rigs per platform³At 75 persons per platform⁴At 40 persons per staging area and 140 persons per lease

Sources: Rivkin Associates based on material in Decisions for Delaware: Sea Grant Looks at OCS Development, University of Delaware, February 1975; Briefing Papers, "Study of New Use Demands on the Coastal Zone and Offshore Areas of New Jersey and Delaware," Office of Technical Assessment, 1975.

In addition to OCS and nuclear development, there are other energy projects. No fossil fueled power plants are proposed in CAFRA, but an LNG conversion facility is possible in Cumberland County along Delaware Bay.

Liquified natural gas is imported at extremely cold temperatures. At the conversion plant, it is transferred from ships to be heated and changed into its original gaseous state. Several hundred persons are employed in the construction phase over 2-3 years with less than one hundred persons required for permanent operation.

C. Industrial Activity and Services

The coastal zone has been out of the path of industrialization in New Jersey. Most manufacturing and warehousing has concentrated around the New York and Philadelphia metropolitan areas, especially along waterfronts and railroads--and now along interstate highways. Much new development has occurred on outer beltways and along the New York-Philadelphia corridor.

Manufacturing activity has been in a decline in New Jersey since 1973. In New Jersey, manufacturing declines faster than the nation as a whole, and recovers slower. This is part of an overall trend for the Northeast Region which is losing industry to other parts of the country. Most decline in the Northeast will come, however, in the urban core--the loss of older less efficient plants. Growth will still continue in the outer rings, especially along truck and employee access routes such as I-287.

Modeling State Growth: New Jersey 1980 is a major study of employment potentials prepared by Rutgers' Center for Urban Policy Research. It projects that employment in the state will grow by 531,900 from 1970 to 1980:

1970 - 2,792,900

1980 - 3,323,800

Increase of 19.0%

Manufacturing employment will grow at less than this overall rate:

HANNAH, WE SHOULD
LOOK AT THIS!

<u>Increases in:</u>	<u>Percent Increase</u>	<u>Number of Employees</u>
Manufacturing	12.9%	111,500
Services	31.8%	131,800
Federal Employment	24.4%	16,900

Services will contribute more, both in number of employees and rate of growth. Within manufacturing, the largest growth will be in chemicals, with the fastest growth rate in instruments.

Manufacturing Employment Increases, State of New Jersey
1970-1980

<u>Category</u>	<u>Percent Increase</u>	<u>Number of Employees</u>
Chemicals	18%	22,300
Fabricated Machinery	28%	18,500
Machinery	23%	17,000
Instruments	48%	15,700
Printing	31%	13,800

The fastest total employment increase in the Coastal Counties from 1970 to 1980 is projected to be in Ocean, while the largest number is allocated to Monmouth, as shown below.

Total Employment Increases
Coastal Counties, 1970-80

<u>County</u>	<u>Percent Increase</u> <u>1970-80</u>	<u>Number of Employees</u> <u>Added 1970-80</u>
Ocean	63.7%	28,100
Monmouth	44.5%	55,400
Cape May	23.3%	3,500
Cumberland	14.4%	7,600
Atlantic	8.6%	5,800
Salem	3.3%	700
	19.0%	

Three coastal counties will grow ahead of the state rate--Ocean and Monmouth substantially ahead; while three will add employment slower than the state rate--Atlantic and Salem Counties will each have a growth rate below one percent per year.

In manufacturing, the largest growth will come in Monmouth County followed by Ocean. Salem County is projected to lose manufacturing, as shown below.

Estimated Manufacturing Employment Increases
Coastal Counties, 1970-80

<u>County</u>	<u>Percent Increase</u>	<u># of Employees Added</u>
Monmouth	78.5%	16,700
Ocean	188.9%	8,600
Atlantic	29.3%	3,000
Cumberland	6.3%	1,500
Cape May	174.2%	1,300
Salem	-4.4%	-500

The role that manufacturing may play in economic growth of the coastal counties is indicated by calculating added manufacturing employment as a percentage of total added employment for the 1970-1980 decade. By this analysis manufacturing may be most important in Atlantic County.

Atlantic	52.7%
Cape May	38.3%
Ocean	30.7%
Monmouth	30.1%
Cumberland	20.0%
Salem	-68.7%

Dept I+I has somewhat different projections

The current economic conditions have slowed manufacturing employment in New Jersey and its coastal counties. Industries severely affected include:

Electronics - Monmouth County
Chemicals - Ocean
Garment - Atlantic
Glass - Cumberland
Chemicals - Salem

It may be, then, that these projections discussed above are too optimistic and that actual growth will be less.

Relatively little of the manufacturing industry discussed above is located in the coastal zone. In Monmouth and Cumberland Counties, manufacturing is inland away from the coast with little in CAFRA. In Salem, the extensive heavy industry is along the Delaware Bay (River) but just north of the CAFRA limits. The Cape May manufacturing is located in CAFRA, except that around the Cape May airport, but total employment here amounts to only 750 persons.

Most of the manufacturing in Atlantic County, centered on the garment industry, is located in CAFRA--primarily Atlantic City. The chemicals industries of Ocean County around Toms River are within CAFRA but not near the coast.

During the past two years applications have been filed with CAFRA for industrial parks in Egg Harbor (Atlantic) and Dover (Ocean), with an industrial use permit sought for Downe (Cumberland). This is not significant activity, and industry will not represent much of a development force within CAFRA itself.

D. Agriculture

The role of agriculture as an economic force is declining in New Jersey:

- From 15,800 farms in 1960 to 8,300 in 1974. Acreage is now 65% of the 1960 figure.
- Output for remaining farms has increased 61%, average size up from 85 to 118 acres.
- Major losses in livestock (-50%), less in plants (-15%).

Agriculture is a very important factor in the economics of Cumberland and Salem Counties. Only Salem County has increased its agricultural cash receipts (1960-1970), as shown below:

<u>County</u>	<u>Drop in Cash Receipts</u>	<u>Share of State 1970</u>
Ocean	-66.1%	1.8%
Atlantic	-37.5%	4.6%
Monmouth	-34.9%	8.3%
Cumberland	-34.9%	7.9%
Salem	+3.9%	8.7
Cape May	NA	NA

The reasons for the decline include:

- 1) A rise in land value, from
- 2) Demand for suburban housing, especially in Monmouth, Ocean and Cumberland Counties
- 3) The high property tax burden, which doubled from 1960 to 1970. New Jersey has the highest agricultural rates per acre in the nation. Property taxes averaged 37% of the net income in 1971.

The major crop areas of the CAFRA zone of the coastal counties include:

Salem and western Cumberland--processing crops, especially peas, vegetables, sweet potatoes, some fruits

Cumberland--eggs and poultry

Cape May--vegetables for processing

Burlington--berries

Ocean--Cranberries and blueberries

E. Military

There is little pressure for growth from military activities in the coastal counties, even though this was an important force previously. Major installations include Fort Monmouth (within CAFRA), Earle Naval Ammunition Depot, Fort Dix and the Cape May Coast Guard Station. All of these have declined in personnel in the past few years. The Lakehurst Naval Air Station has remained important as new aviation research and development/manufacturing units are brought in.

III. Existing Development Pressures and Characteristics

One indicator of both current and short range development pressure in the zone would be the projects submitted for final permit review under CAFRA. An examination of the projects and their volume would be in order. Fortunately, some base data are available.

These data underscore the prominence of both residential and resort oriented development as the principal generators of growth. From the perspective of the Zone's physical pattern, they point up Ocean County as the primary locus of new growth. The data indicate also the continued prominence of single family housing, with some emergence of interest in townhouses and multi-family units.

In a two-year period--from September 20, 1973 to September 4, 1975--127 permits were submitted to the Department of Environmental Protection for the review of project applications. Of the total permits submitted, 16 have been cancelled, one denied, 59 approved and the remaining 51 are now being processed and reviewed. A significant number of these applications were for housing developments of various sizes and types. Of the total permits received, 74 were for residential development; 10 for hotels, motels, campgrounds, etc.; 35 for utilities or expansion; and 8 for industrial or commercial.

A. Residential. The 74 applications received for residential development (58 percent of the total) represented a total of 10,869 dwelling units throughout the CAFRA Zone. Of these, 500 units were subsequently withdrawn or cancelled, leaving a total of 10,369 residential units which have been approved or are pending approval. Over 60 percent represent single family detached dwellings. A breakdown of these units by housing type follows:

	Units	Units	Total	
	<u>Approved</u>	<u>Pending</u>	<u>Units</u>	<u>Percent</u>
Single Family	2,337	4,421	6,758	65.0
Townhouses	768	1,322	2,090	20.0
Apartments	<u>621</u>	<u>900</u>	<u>1,521</u>	<u>15.0</u>
TOTAL	3,726	6,643	10,369	100.0

Ocean County is clearly the most dynamic market area for both single-family and townhouse development.

Of the total 127 requests submitted, about half (64) came from Ocean County; 25 from Cape May; and 17 from Atlantic and 16 from Monmouth County. The remaining 5 were scattered among Middlesex, Cumberland and Salem counties.

Over 82 percent of all single family residences approved (1,931 out of a total of 2,337 units) and 95 percent of all townhouse units (732 out of 768 approved units) were located in Ocean County. A summary of the residential approvals by geographic area is shown below:

Approved Residential Units in CAFRA, 1973-1975

	<u>Single Family</u>	<u>Townhouses</u>	<u>Apts.</u>	<u>Total</u>
Monmouth	64	0	0	64
Ocean	1,931	732	153	2,816
Atlantic	0	0	300	300
Cape May	<u>342</u>	<u>36</u>	<u>168</u>	<u>546</u>
TOTAL	2,337	768	621	3,726

(Note: There were no approvals for residential units in Middlesex, Burlington, Cumberland or Salem counties.)

It should be noted from above that while Ocean County accounted for the vast majority of approvals in single family and townhouse units, Atlantic County led the small apartment market with 48 percent (300 out of 621 units) approved, followed by Ocean and Cape May counties.

Applications for an additional 6,643 residential units have been submitted and are pending approval. The majority (78 percent) of these are located in Ocean County; with 11 percent in Cape May County. The remaining 11 percent are in Monmouth and Atlantic counties. Of the total units pending, 65 percent are in single-family; with the remainder in townhouse or apartments.

A breakdown of the pending units by geographic area and housing type is shown below:

Pending Residential Units in CAFRA

	<u>Single Family</u>	<u>Townhouse</u>	<u>Apartments</u>	<u>Total</u>
Monmouth	38	0	228	266
Ocean	3,649	1,248	432	5,260
Atlantic	79	0	208	287
Cape May	<u>655</u>	<u>74</u>	<u>32</u>	<u>761</u>
Total	372	1,322	900	6,643

(Note: There are no pending applications for residential units in Middlesex, Burlington or Cumberland Counties.)

While some of the submitted units are for seasonal dwellings, our presumption is that the majority represent year-round accommodations.

B. Resort/Residential. Applications for hotel/motel facilities, primarily oriented towards the beach areas, have been submitted for three projects. They include a Hilton Hotel in Atlantic City, and facilities in Cape May and Ocean Counties--totalling over 600 rooms.

C. Other Facilities. In addition to the 74 residential applications received, another 53 permit applications (of which 6 have been cancelled) were received by DEP during the two-year period in which CAFRA has been in effect. Of these, 23 have been approved and 24 are pending a decision.

Applications for sewer extensions accounted for more than half these requests. Altogether there were 27 such applications, of which 18 have been approved and 9 are pending. Seventeen of these sewer extension applications were from Ocean County; 6 from Monmouth; and 4 scattered among the other counties. There was also one application for a pumping station in Atlantic County and a 500,000 gallon water storage tank and wastewater treatment plant in Ocean County. Other utility related applications were a nuclear power plant, the recently approved Hope Creek facility in Salem County, and a generating station (Atlantic County).

In addition, applications have been received for three industrial projects (Atlantic, Cumberland and Ocean Counties) and for a shopping center (Atlantic County). There was one application for a marina (Monmouth County); one for a correctional center (Cape May); one for a public health center (Cape May); and three applications for campsites (two in Cape May and one in Atlantic County).

CHAPTER THREE

Sub-Regional Analysis

At a macro-level there are considerable physical and economic similarities throughout the coastal zone. When examining the area in more detail however, as a prelude to policy formation on the part of the state, it is clear that distinct sub-regions exist within the Zone--sub-regions distinct due to the character both of their natural environments and their physical and economic patterns. This chapter examines these distinctions and the four sub-regions themselves. We have delineated these regions according to County boundaries. They would be as follows:

Sub-Region I: The North Shore. This sub-region includes Middlesex and Monmouth County sections of the Zone. It is generally oriented to the ocean and oceanfront activities and is almost completely developed. Sub-Region I represents a small portion of the two counties. It is principally a commuter area for the New York metropolitan region.

Sub-Region II: Ocean County, the Central Shore. A large portion, over half, of Ocean County is included within CAFRA. This has been the fastest growing locus for new year-round housing in the Zone and is still a popular site of new recreation-oriented development. It has the two-fold pressure of permanent and seasonal use, and is faced with severe problems of balancing environmental quality with urban growth.

Sub-Region III: The South Shore. This includes the CAFRA sections of Burlington, Atlantic and Cape May Counties. The sub-region lies outside the main commutation sheds. It is more heavily dependent upon the tourist and resort industries and has not felt the pressure of urbanization as has the northern part of the Coastal Zone. Atlantic City, the "urban center" of the sub-region is experiencing severe economic problems, and conservation of wetlands and agricultural areas are important sub-regional issues.

Sub-Region IV: The Delaware Bay. This sub-region includes CAFRA segments of Salem and Cumberland counties. It is unique within CAFRA. Most of the land under CAFRA jurisdiction is made up of tidal marshes, wetlands, and agricultural uses. Development pressures here are minimal, except for energy-related facilities--for which the location is extremely favorable, but involves serious environmental questions.

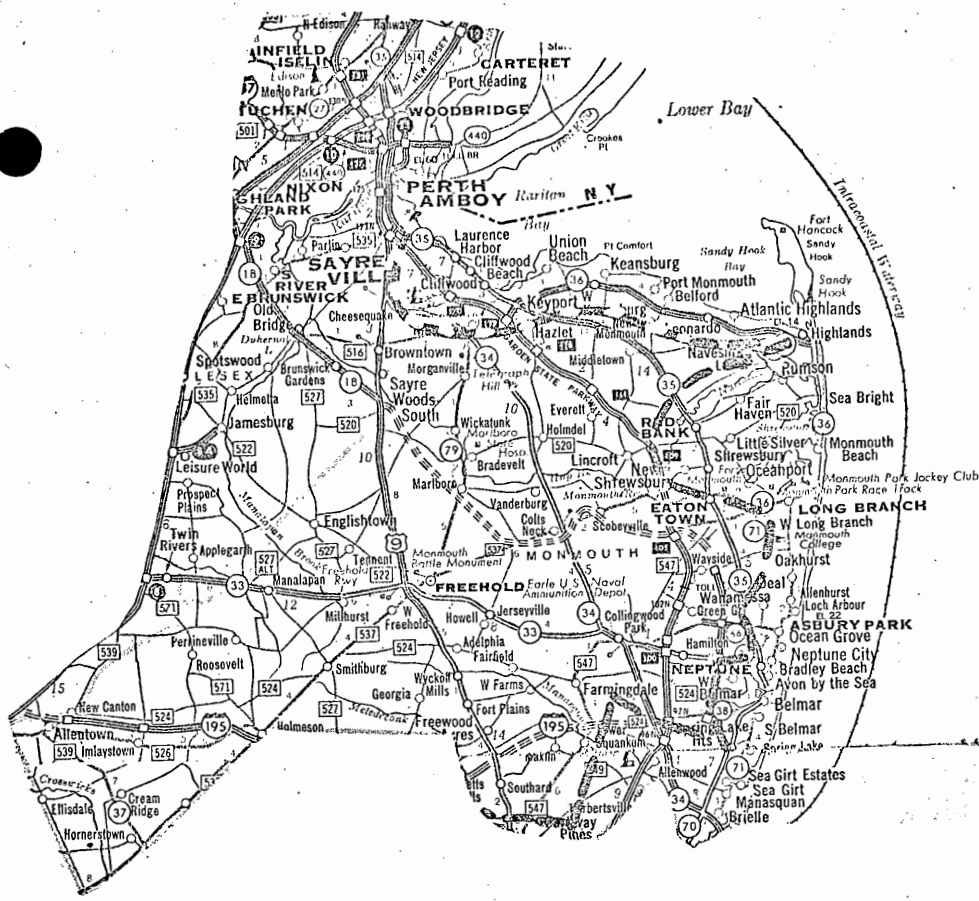
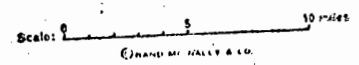
The following chapter assesses physical and economic characteristics and development issues as well as population growth within each of the sub-regions. Some redundancy with material in Chapter One and Two is inevitable as "Zonal" material is re-structured on an area level. In each sub-regional section we also provide estimates (for purposes of continuity) of short-term population growth, given development expectations to 1980. It is important to point out that the basis for these population estimates may be found in the Appendix. The estimates are presented in this chapter independent of the analytic methodology by which they have been derived. To examine that methodology, which involves the Zone as a whole and is complex in nature, the reader should refer to the Appendix which spells out the basis for growth estimates by County and that portion of the County which is within CAFRA.

Sub-Region I: The North Shore (Middlesex and Monmouth Counties)

Of the total land area in both Middlesex and Monmouth Counties (approximately 948 sq. miles), only about 5% (50 sq. miles) is affected by the CAFRA legislation. This includes, however, 27 different municipalities in Monmouth and one in Middlesex that are scattered along the seafront. Most of these communities are highly urbanized, with limited land available for new development.

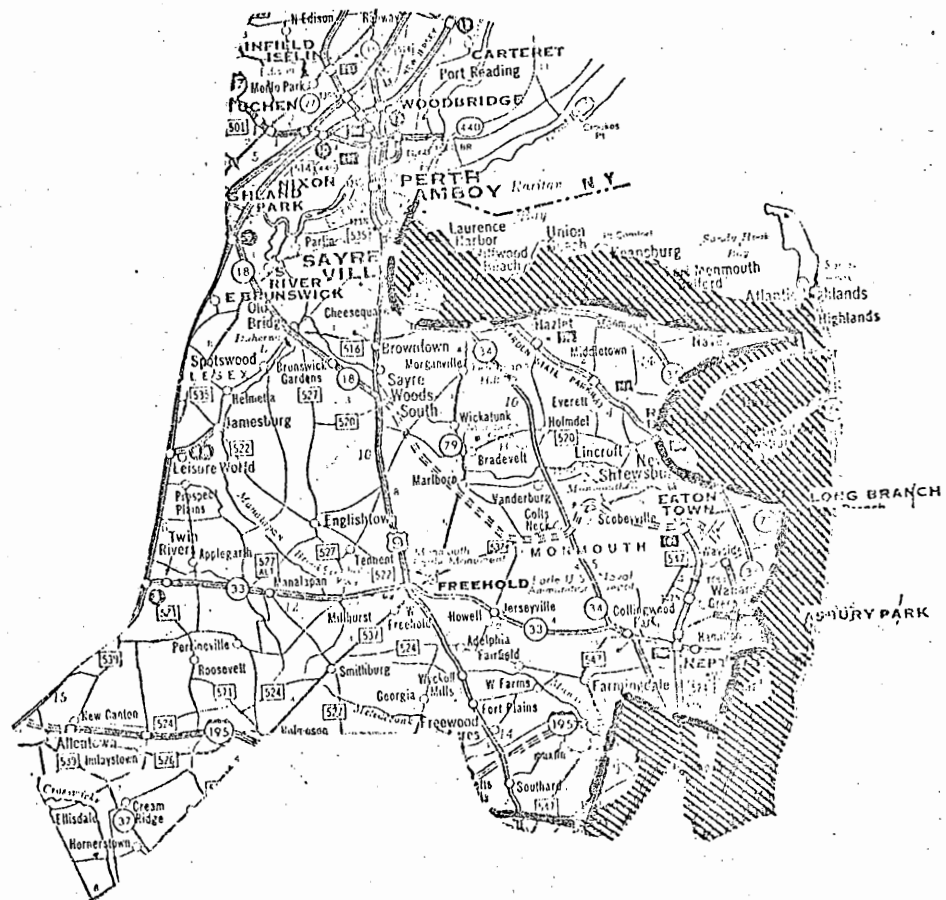
A. General Depiction




Of all the CAFRA regions, the North Shore is the oldest in development and the most heavily populated within CAFRA. Communities along the coast, with rail service from New York, were developed early as summer coastal resorts, with hotels, boardwalks and summer homes. With aging of the facilities and competition of newer resorts, this region has declined over the years as a primary resort area. The decline was matched, however, by the growing suburbanization of northern New Jersey, which created a demand for permanent



Map #3

SUB-REGION I
The North Shore
(Middlesex & Monmouth Counties)



-  CAFRA Boundary
-  Highly Urbanized Areas
-  Wetlands

housing with easy access to employment centers. The same railroad which served resorts now serves weekday commuters.

The greatest growth of this region came with the construction of the Garden State Parkway. Industries and other employers were able to move farther from New York City and Hudson/Essex Counties, New Jersey, while commuters were able to use the Parkway to take advantage of cheaper housing in Monmouth County.

In addition to the close proximity to the New York Region for commuters, the coastal area of Middlesex and Monmouth Counties continued to be popular for recreational areas. Sandy Hook State Park, the bay head of the Navesink and Shrewsbury Rivers in the northern part of Monmouth, along with the Manasquan River at the southern boundary of Monmouth County are major attractions. The appealing beaches all along this region attract millions of visitors and residents annually from the nearby New York metropolitan area as well as the urban centers of northeastern New Jersey.

Asbury Park may be considered the recreational focal point of the North Shore, with its extensive boardwalk, beach and amusement area. High-income communities are also scattered throughout the sub-region, making the area a highly diversified one.

Swimming, fishing and boating comprise the North Shore's major recreation attractions. The existing supply of swimming and fishing areas is extensive. However, as suburbanization, both within and adjacent to the coastal zone, increases so will the demand of the resident population increase on the recreational facilities. One problem that might arise from this type of social and economic change is already evidenced in the question of "beach access", which is becoming more and more of an issue in these urbanized communities. Substantial portions of the recreational areas are in private ownership and barred to the public.

A second problem facing the communities in the North Shore sub-region is the effect of growth on the natural resources. Pollution and flooding are serious issues in the bays and in the Navesink and Shrewsbury Rivers.

Over time, moreover, a considerable amount of physical deterioration has occurred in settlements along the Raritan-Sandy Hook bay.

The influx of suburban commuters from the Tri-State Region presents special problems. While the Garden State Parkway, the main commuter route, has opened up much of the Monmouth County (outside CAFRA) to single-family development, the older residential and commercial areas along the seacoast are experiencing development pressures for high density projects, especially for condominiums. The few remaining vacant areas are being developed with multi-family housing, garden apartments, or high-rise condominiums.

Housing cost is becoming an issue as well. In the coastal area, even older housing is now priced beyond the reach of low and moderate income families. Due to the high cost of land, especially in the CAFRA area, and other market factors, a tendency towards luxury apartments and condominiums might be expected.

Density for condominiums averages in the neighborhood of around 12.0 units/acre, and even though these densities are not excessive, the concept of high-rise has met with considerable opposition from many area residents. Pressure for condominiums is mainly around Atlantic Highlands, Asbury Park and Manalapan townships.

In addition to the commuters, who are mostly young and middle-aged families, retired persons are being attracted to the beach areas. Included in this group are people with seasonal housing who, at retirement, want to settle close to New York and are converting the seasonal units to year-round use.

The increase in density along the coast has raised land costs, helping encourage the lower density housing to go inland, to the West. The lower density housing will be served by the extensions of Interstate 195, coming east from Trenton, and Route 18 coming southeast from New Brunswick.

With the expansion of housing, extensive shopping center construction has also occurred in Monmouth County since the 1960's, especially along arterial

highways. These automobile-oriented facilities are effectively competing with the older established downtown shopping centers for the patronage of a limited support population. This accelerates deterioration in the older established retail centers. Eventually, there may be a heavy loss in municipal tax base and a reduction in the still important tourist trade, since deterioration in older urban centers (such as Asbury Park and Long Branch) reduces the tourist attractiveness of the entire area.

B. Population Trends. (Note Monmouth County only is examined since less than 2,000 people currently reside in the small Middlesex County portion of the zone.) The 1950's and 1960's were the boom years for Monmouth County. Population grew from 225,000 in 1950 to 334,000 in 1960 (48 per cent increase) and to 459,000 in 1970 (an increase of 37 per cent). The 125,000 persons added in 1960-70 exceeded the number added in Ocean County by 25 per cent. That growth rate has now slowed down to 4.5 per cent for the period 1970-74. Monmouth is no longer the fastest growing along the Coastal Counties.

Monmouth County Population 1970-74

	Population(000)		Added Percent		Percentage of State		
	<u>1970</u>	<u>1974</u>	<u>Population Increase</u>		<u>1970</u>	<u>1974</u>	<u>1970-74</u>
Monmouth	459.4	479.9	20.5	4.5%	6.4%	6.5%	8.4%
Coastal Counties	1,084.2	1,173.6	89.4	8.2	15.1	15.8	36.4

The major growth areas in Monmouth County during this four-year period were:

<u>Municipality</u>	<u>Added</u>	<u>Percent Increase</u>	<u>Status in CAFRA</u>
Middletown Twp	2,265	4.1%	Mostly out
Howell Twp	1,940	8.7	Outside
Freehold Twp	1,685	12.7	Outside
Ocean Twp	1,670	8.9	Outside
Manalapan	1,475	10.5	Outside

For the two cities within the CAFRA area, growth was slow:

	<u>1970</u>	<u>1974</u>	<u>Added</u>	<u>Percent Increase</u>
Asbury Park	16,550	16,790	240	1.4%
Long Branch	31,880	33,255	1,375	4.3

C. Population Projections (For basis see Appendix)

Monmouth County is likely to add from about 18 to 30 thousand persons in the period from 1974 to 1980. This represents an increase of 3.8 to 6.1 percent. The most reasonable expectation is for an increase of about 22,000 persons, or 4.6 percent. Only a third of this growth would be in the Coastal Zone, with perhaps 4-10,000 persons added.

The primary areas of growth will be:

- Wall Township (partly in CAFRA)
- Neptune Township (partly in CAFRA)
- Matawan Township (partly in CAFRA)
- Long Branch (entirely in CAFRA)

The first two represent new low density subdivisions, while the latter two will have increases in density and new multi-family development.

D. Issues

The primary development issues in Sub-Region I, the Northern Shore are:

Short-term: (over the period to be covered by the Interim Guidelines)

1) The extent to which high-rise development should be allowed along the coast. New projects in Atlantic Highlands and further south have greatly increased density, affected the visual quality of the environment and the value of development around them. How will future high-rise be controlled?

2) The extent to which new growth will occur in the most southerly townships e.g., Howell and Wall, because of the new Ocean County Sewage System which will serve them. The sewage capacity comes at the same time as the extension of I-195. How will growth here be diverted and controlled?

3) The OCS issue--some discussion has focused on the northern coast, in Raritan Bay as a site for staging and related facilities. Is this an appropriate area for OCS support?--particularly as compared to other options within CAFRA?

Long range:

4) Rehabilitation of older centers--How to turn around the economic decline of older resort/commercial centers along the Atlantic Coast, e.g., Long Branch and Asbury Park?

Sub-Region II: Ocean County, The Central Shore

Of the eight counties with segments in the CAFRA Zone, Ocean County is one of the largest areas over which CAFRA has jurisdiction. Ocean County's total land area is approximately 408,000 acres, of which about half (205,000 acres) is located within the CAFRA Zone. The County has been the fastest growing in New Jersey over the past decade. In 1960, its population was 108,000, and has grown to an estimated 257,000 year-round residents--an increase of almost 149,000 persons (10,600 annually) over the past 14 years, more than doubling its population.

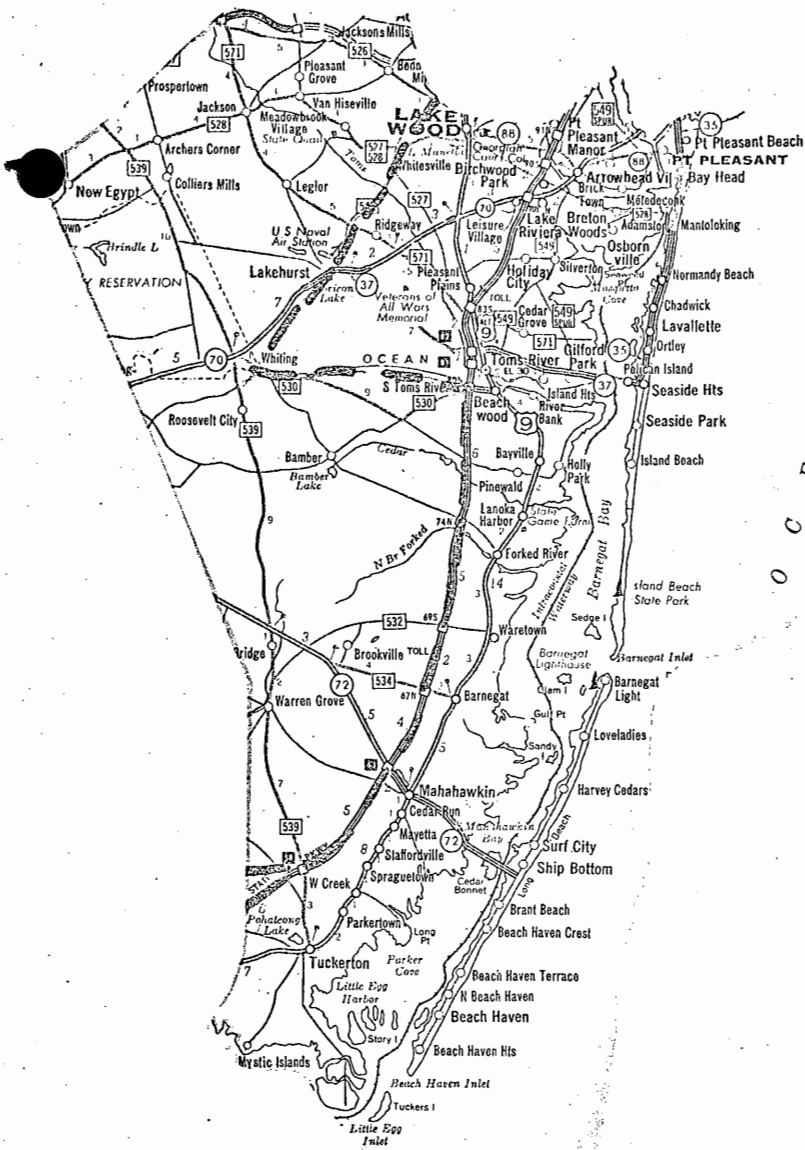
A. General Depiction

Growth in Ocean County has been affected by nearly the same factors as Monmouth, but one or two decades behind in timing. Ocean developed its seaside resorts along barrier beach islands. Being farther from New York, it attracted fewer day or weekly visitors and more families who owned their second beach homes. Many of these homes are now being converted from seasonal to permanent use. This beach area is largely developed.

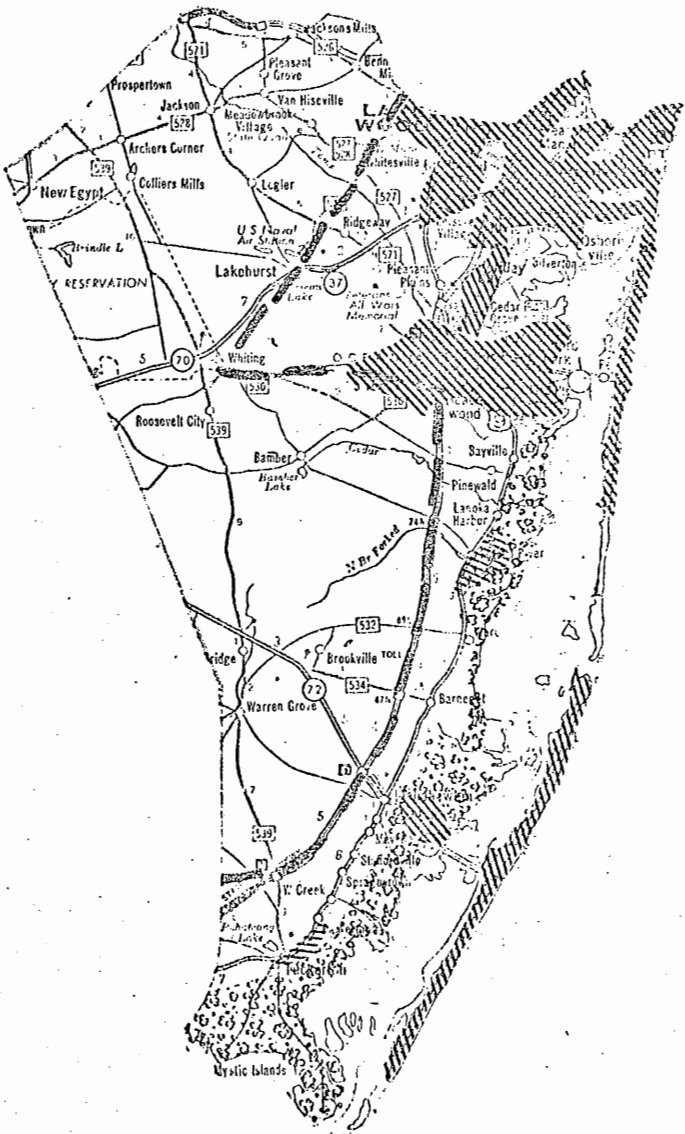
Most of Ocean County's population (about 89 percent) is located--along with the recent population increases--in the CAFRA Zone. It is significant to note that the remaining Ocean County population is distributed throughout 200,000 acres located outside the CAFRA Zone indicating the scale of large landholdings which may come under development pressures in the future.

There are 34 municipalities or townships located in Ocean County. Of these, all but two are located, either fully or in part, in CAFRA. Eleven of these are located on the barrier beaches, which have a total year-round population of about 15,000 and consist of almost 6,800 acres of land.

Ocean County's overall land use pattern is strongly influenced by its transportation system, which basically results in corridor growth. Until recently, development tended to locate east of and along U.S. Route #9 and the Garden State Parkway, mainly around Toms River, and along the barrier beaches. Lakewood, located to the west of the Garden State Parkway, and Brick township, in the northern part of the county, have been major



O C E A N



Map #4
SUB-REGION II
The Central Shore
(Ocean County)

CAFRA Boundary

Highly Urbanized Areas

Wetlands

NEW
60
E
11

commercial centers. Recent development has occurred throughout the northern portion of the County and west of the Garden State Parkway and is pushing down the coast and inland. New sub-divisions and especially new retirement communities have begun to proliferate inland, particularly in Manchester and Lakewood Townships.

Most new housing being constructed in Ocean County is year-round rather than seasonal. Housing tends to be less expensive than closer to the metropolis, and improved roads to job centers have considerably expanded the housing market. Depending to a large extent on national economic conditions, Ocean County's growth is expected to continue, but at a slower rate, for some time. The pace of development will impact on all levels of services, including roads, sewer and water supply, schools and health facilities.

Geographically, Ocean County is made up of barrier beaches, wetlands and tidal marshes and an "uplands" section. Part of the County, outside CAFRA, is included within the "Pinelands" District, a major natural resource in the State. Island Beach State Park, a primary public recreation area, is located along the barrier beach in Ocean County, along with Barnegat and Double Trouble State Parks, and Barnegat National Wildlife Refuge. In the southern portion of the County, next to the Burlington County boundary, lies Little Egg Harbor. These, coupled with the resort beaches of Seaside Park, and Ship Bottom, attract millions of visitors annually to the County.

Barnegat Bay and Little Egg Harbor separate the barrier islands from the main coast. These bays along with the tidal marshes and wetlands, have traditionally been fish and wildlife habitats, but are now being endangered because of development on the main coast. Fishing in Barnegat Bay has declined significantly over the years, dropping from a \$15 million industry to about \$1 million per year. Residential, "lagoon," development, along with some commercial encroachment, has significantly reduced the amount of wetlands in the County over the past 15 years.

As population has increased, growing water demands of County residents have caused water levels to drop so that there is a possibility that salt

* See Master Plan Reports prepared for the County of Ocean by E. Eugene Cross Associates, 1973.

water may encroach into the aquifers. The percolation rates for the sandy soil in the County are very high, so it is vulnerable. The vast underground aquifers, particularly in the Pinelands, are threatened with pollution from inadequately treated sewage.

The ocean and bays bordering the County are also endangered. The raw and poorly treated sewage contaminating the water resources is increasing, and other sources of pollution--runoff or storm drainage from roads, parking lots, and other impervious surfaces, as well as pollution by litter and chemicals--is likely to increase without protective action.

In order to accommodate development, many of the wetlands, bogs, and marshes, which are so important to the ecological balance in the County, have been filled and drained. These areas have a "sponge-like" effect because of their tremendous water-absorbing capacity. In times of heavy rains, they act as a buffer to prevent disastrous floods. When these areas are filled not only is the buffer effect lost, but also the rate of stream flow is accelerated, which increases the possibility of flooding. There is a tendency for water to erode the filled area and cause siltation downstream. Eventually, the silt may pollute the stream to a point where it is no longer viable for plants, fish, and other aquatic organisms. The stream may also have to be dredged to remove buildup of silt.

Since many of these marshes are used as cranberry bogs, any loss or pollution of these areas has a direct impact on one of Ocean County's most valuable resources, the cranberry and blueberry industry.

B. Population Trends

In both the 1950's and the 1960's, County population nearly doubled:

<u>Year</u>	<u>Population</u>	<u>Added</u>	<u>Percentage Increase</u>
1950	56,600	--	--
1960	108,200	51,600	91.2%
1970	208,500	100,300	92.7

In the first part of the 1970's, Ocean County continues to lead the State. The Department of Labor and Industry estimates that nearly 50,000 persons

were added to the County between 1970 and 1974, representing a 24 percent increase, compared to 3.4 percent for the State as a whole.

	Population (000)		Added Population	Percent Increase	Percentage of State		
	1970	1974			1970	1974	1970-1974
Ocean Coastal Counties	208.5	257.8	49.3	23.6%	2.9%	3.5%	20.1%
	1,084.2	1,173.6	89.4	8.2%	15.1%	15.8%	36.4%

The major growth areas within Ocean County for the first four years of this decade were:

<u>Numerical Growth</u>		<u>Percentage Change</u>	
Brick Township	9,300	Union Township	170%
Lakewood Township	7,200	Manchester Township	70
Dover Township	6,000	Lacey Township	57
Manchester	5,300	Little Egg Harbor	56
Berkeley Township	4,200	Berkeley Township	52

Many reports have indicated that Dover Township is the growth center for Ocean County. For the period of 1970-1974, however, it ranked third in numerical growth, and had a percentage increase of only 14 percent, slower than the County as a whole.

In addition to commuters, recent population growth has represented a large increase in retirement communities. The County has 80 percent of the retirement communities in New Jersey, and it has one of the largest concentrations in the United States. As of the end of 1974, there were at least 19 retirement communities, with 15,900 units built and a total of 30,400 units planned. For existing communities, plans have been made for 14,500 additional units. And even more communities are planned. The primary planned retirement communities are as follows:

OCEAN COUNTY RETIREMENT COMMUNITIES

(Dwelling Units)

<u>Township</u>	<u>Existing</u>	<u>Planned</u>	<u>Total</u>
Manchester	6,400	9,800	16,100
Lakewood	6,000	200	6,200
Berkeley	2,400	2,500	4,900
Brick	900	700	1,600
Little Egg Harbor	--	1,400	1,400
Jackson	<u>100</u>	<u>--</u>	<u>100</u>
TOTAL	15,800	14,500	30,300

Ocean County has attracted its suburban commuter and retirement population for three major reasons:

1) The Garden State Parkway provides easy access to employment centers in Monmouth and Middlesex Counties.

2) The northern and central portions of Ocean County have large landholdings which were available at reasonable prices to developers and builders. The land is easy to build on, allowing houses to be sold at perhaps the most reasonable price within commuting distance of Northern New Jersey employment.

3) Ocean County has access to the beaches and inland bays, with comfortable ocean climate; a little more of a resort feeling than other suburban areas.

C. Density and Sprawl

Residential development in Ocean County has consisted of single-family, townhouse and apartment developments, most of which have recently occurred west of the Garden State Parkway in Dover Township. Generally, they are noncontiguous, and at lower densities than older developments in the County, especially development along the barrier beaches. Densities for single-family residential subdivisions recently approved under CAFRA range from 0.78/acre (one-and-one-quarter acre lots) to cluster developments with a density of 8.0. Townhouse and apartment developments range from about 5.5 to 8.0 units/acre. Some examples of densities as represented by use permits granted under CAFRA are as follows:

Sample of Densities for Developments in Ocean County

<u>Type of Dev. &</u>			<u>Avg. Density</u>
<u>CAFRA permit no.</u>	<u>Number of Units</u>	<u>Acres</u>	<u>Units/Acre</u>
<u>Single Family:</u>			
74-10-065	313	402.2	0.78
73-012	144	78.0	1.85
73-002	147	47.5	3.09
74-028	110	27.2	4.04
74-11-069	276	46.0	6.0
74-037	184	23.1	7.96
<u>Townhouse</u>			
<u>& Apts.:</u>			
74-9057	62	10.4	5.54
75-1081	560	84.9	6.6
75-3-092	53	28.0	1.9
74-826	38	4.7	8.1
73-005	72	9.0	8.0
74-12-078	348	43.8	7.9

The scattered, low-density nature of much recent subdivision in Ocean County contributes to sprawl, which tends to increase the cost of services (fire, health, schools, etc.), renders mass transit nonfeasible and eliminates valuable open space. Since there has been little growth in new employment opportunities in the County, most of the new residents who are not retired will have to commute outside the County for their work. Thus, the County is in the process of slowly changing from its previous position of a resort-oriented and agricultural economy to a suburban bedroom community.

Land availability for future development does not appear to be a significant problem in Ocean County. According to the Ocean County Planning Board, there are about 160,000 acres of remaining vacant or agricultural lands in the County which could theoretically be open for land development or speculation. Between 1962 and 1973, 94,500 acres of land were developed in Ocean County-- a land absorption rate of some 8,600 acres per year.

Altogether, there are about 408,000 acres of land in Ocean County. Of this, about 39.7 percent (162,000 acres) are vacant or in agricultural use; 19 percent (79,400 acres) in residential; and 22 percent (90,000 acres) in quasi-public lands. This contrasts quite dramatically with 1962, when only 8.4 percent (34,400 acres) were in residential use; and 62.8 percent (256,000 acres) were either vacant or agricultural. Significantly to note, also, is that the wetlands or marine tidal marshes were reduced from 32,000 acres in 1962 to 23,800 in 1973--a loss of some 8,500 acres in tidal marshes.

One solution to the rapidity of land absorption, which is being proposed by the Ocean County Planning Board, is to set aside large tracts of land for permanent open space. This is likely to occur in the southern part of the County, which is located near the Pinelands. Development would then be channeled in existing developed areas. However, in order to accomplish any level of managed growth strategy, the 34 municipalities and townships (who have control over development through individual zoning ordinances) will have to coordinate their activities and growth strategies to avoid the mistakes of the past. This may be a particularly important role for DEP pressure under CAFRA.

During Ocean County's period of rapid development, many of its townships and boroughs did not have the benefit of basic land planning tools such as current Master Plans, zoning, subdivision or building code ordinances. This has contributed greatly to present difficulties.

D. Growth Potential

Additional transportation incentives for growth are likely to maintain Ocean County's top rank for growth in the State. I-195 will eventually be completed from its present terminus at Route 527 to Route 34 near the Garden State Parkway. This should fully open up Ocean County to commuters working in the Trenton/Princeton area. The Toms River Expressway has been proposed by the New Jersey Highway Authority to extend from near New Brunswick to Toms River in central Ocean County. The project has been stopped for now, and it is unlikely that any construction will begin soon.

Activity along the coast will include the continued conversion of seasonal housing to permanent, and proposals for high-rise condominiums. A nuclear power plant is proposed for the Forked River area. It is unlikely that OCS will affect Ocean County. *oh-Really?*

*Recent studies have shown a 66
level impact*

E. Population Projections

Even with slowdowns in economic activity and the housing industry, Ocean County is likely to grow. We project an increase in 1974-1980 between 20 and 29 percent. This growth rate would add from 50 to 75 thousand persons to the county during this six-year period. The bulk of this increase would come within the CAFRA Zone. 1980 County population then would be in the range of 309,000 to 332,000. This range is substantially below the 444,000 used by the Ocean County Sewage Authority in their planning for the new regional sewage treatment system.

The major areas of growth for Ocean County are likely to be:

- Brick Twp (all within CAFRA)
- Dover Twp (all within CAFRA)
- Lakewood (majority within CAFRA)
- Manchester (partially within CAFRA)
- Berkeley (partially within CAFRA).

Growth will mainly be in the northeast corner expanding west and south from existing developed areas.

F. Issues

Some significant issues are presented by the continued growth of Ocean County:

Short Term:

1) Recent growth has caused serious problems of environmental degradation. At the same time, housing in the county has been less costly than elsewhere in suburbanizing New Jersey. The County has acted as a resource both for moderate income families and for retired people, who also have housing difficulties closer to the metropolitan core. The needs for such housing will not slacken. In establishing control mechanisms to guide growth more effectively within the county, will it be possible to foster both the objectives of environmental quality and expansion of the moderately priced housing supply?

2) Should the Ocean County sewage system be built and expanded to allow and encourage extensive growth within the County? The system may have been planned with little regard for where growth should occur and at what pace. Is the system so far along that it must be accepted as planned?

3) What position should be taken regarding the proposed Toms River Expressway? During the next few years, it may be possible to either encourage its construction or to make a permanent decision to abandon the idea. Continued suburban housing development in the County will make some improvement of commuter access necessary in the future. The alternatives would be to reduce suburban growth, provide mass transit access for commuters, or increase opportunities for local employment.

Long Range:

4) What are the effects on the County of allowing or encouraging an extensive number of retirement communities? What happens to the need for public facilities--schools, recreation, health services? What is the long-range fiscal impact on municipalities and the County? What are the social and political effects of having a large number of elderly in the community?

5) What are the potentials for creating new employment in the County? What impact would new employment centers have on rates, and the property tax burden of residents? Where should employment be encouraged--along the coast in communities which might decline without it, or inland where land and labor force is available?

6) Should the current trend toward conversion of seasonal to permanent housing be encouraged, or discouraged? What happens to the demand for public services, especially schools and roads, when this conversion occurs?

7) Will the population pressures on Ocean County, now concentrated in the northern and central sections, eventually lead to development of the southern section as well? Is this desirable? What are the impacts on the provision of public services to this area, such as water and sewer?

8) How can the remaining wetlands, especially in the vicinity of Little Egg Harbor be permanently preserved from development pressure?

Sub-Region III: The South Shore (Burlington, Atlantic, Cape May Counties)

The South Shore consists of parts of Burlington, Atlantic and Cape May counties. Cape May and Atlantic Counties together account for about 480 square miles (307,200 acres) that is under the CAFRA jurisdiction while the land area in Burlington under CAFRA is considerably less--about 85 square miles (54,400 acres). Altogether, about 87% of Cape May is within the CAFRA boundaries; 44% of Atlantic and 10% of Burlington.

A. General Depiction

About one-quarter of a million people live in this sub-region, with the largest concentration (about 100,000 people) in the Atlantic City area. Other major population centers include the Cape May-Wildwood area, with about 25,000 people and Ocean City with about 10,000 people.

Less than 2,000 people live in the Burlington County section of CAFRA. Of the six counties located along the Atlantic Seaboard under CAFRA jurisdiction, Burlington is the only one that does not have ocean frontage. Instead, its boundary is the Mullica River which flows into Great Bay. For this reason, Burlington County is considered separately in this analysis.

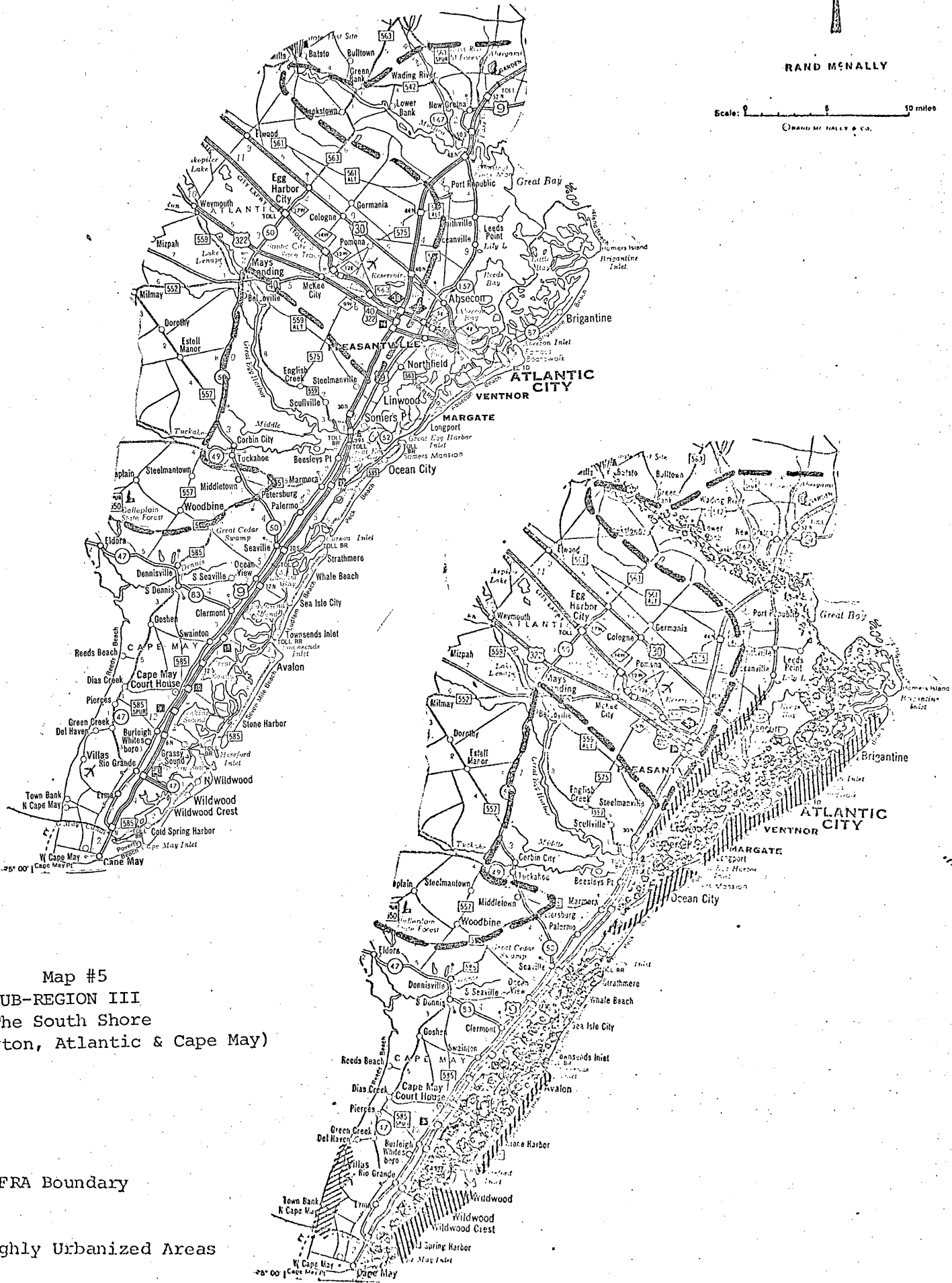
Burlington County. Of the land area under CAFRA legislation located in Burlington County, a large proportion is in state forest or tidal marsh. Wharton State Forest, Bass River State Forest and the Swan Bay and Wildlife Area have been set aside for public use, leaving little land available for private development. Wading River, a popular canoeing area, traverses the CAFRA boundaries.

The sparse population is mostly in scattered towns and villages. Development pressure has, in the past, been at a minimum, and is unlikely to increase in the future except perhaps for campsites and hunting lodges.




Cape May and Atlantic Counties. There are 31 different municipalities and townships located in these two counties within CAFRA. Atlantic and Cape May Counties are the premier coastal resort areas of New Jersey today, with a variety varying from the Boardwalk of Atlantic City to the preserved Victorian houses of Cape May. There are luxurious second homes, seasonal cottages,

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Scale: 0 5 10 miles
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Map #5
 SUB-REGION III
 The South Shore
 (Burlington, Atlantic & Cape May)

-  CAFRA Boundary
-  Highly Urbanized Areas
-  Wetlands

carnival boardwalks and vast beaches. Economic activity other than resort/recreation has been sparse. A small garment industry in Atlantic City, Stockton State College at Pomona, and the Coast Guard facility in Cape May represent this more permanent and limited employment.

Almost all of the South Shore's entire coastline, measuring more than 71 miles, is open for public recreation, although nearly 14 miles of this is privately owned. The most popular vacation resorts in the East Coast--Atlantic City, Ocean City, Wildwood--are located on sandbars at sea, and offer both man-made amusements and natural beach areas. Atlantic City's amusement piers extend nearly one-half mile into the ocean and its famous boardwalk is spread over a million square feet. Wildwood's natural beach, which is perhaps the finest in New Jersey, draws many visitors from the Philadelphia region.

In addition to the South Shore's coastal beaches, the sub-region has numerous campsites and wildlife refuges. Beaver Swamp Fish and Wildlife Management Area--Dennis Creek Fish and Wildlife Management Area; Tuckahoe Corbin City Fish and Wildlife Management Area and numerous natural areas (wetlands) which are in public ownership.

B. Economic Pressures

The major economic activity in these counties has been, and continues to be, resort and recreation. A recent study by Cape May County indicates that roughly 60% of the land value in the County is directly invested in the resort economy. Indirect investment is estimated to add another 30%, leaving only 10% of the land value not affected by resort activity. The resort activity in Cape May County is increasing. Officials report that 1975 was the best season ever in numbers of visitors and dollars spent. Apparently the national economic conditions have encouraged many residents of the Northeastern States to vacation closer to home than they did in previous years.

The tourist business in Atlantic City, on the other hand, is in serious difficulty. Atlantic City has been losing population for decades, with middle class whites moving out to the suburbs, either on the island or inland. The aging of its hotels and the decline in its image have made it less attractive

than in the past. New competition has arisen on the lower coast, in Bermuda and the Bahamas, and in the Caribbean. The grand old hotels are still grand, but they cater almost exclusively to the elderly. The family-oriented motels have been losing business and closing. Recently, one old hotel closed, only to reopen a month later as a condominium.

With the heavy dependence upon the tourist business, employment in Atlantic and Cape May Counties is highly seasonal. In Cape May County, for example, the number of persons employed in 1974 rose from 21,200 in January to 43,100 in August, an increase of more than 100%. Ten thousand jobs disappear from August to September, as the tourist season ends. Unemployment, which was at its low of 6.7% in August increased to nearly 25% in December. (Some caution is warranted in reviewing these figures. While the unemployment rate quadrupled, the number of unemployed only doubled.) Another important fact is that unemployment only drops 3,000 during the summer, even as employment grows by 20,000. Even at the height of the season, there are still 3,000 persons unemployed in the County. This unemployment is due to factors other than lack of job opportunity.

Furthermore, a good percentage of the winter unemployment is voluntary, by those who only want to work during the summer or those who make enough during the summer to live comfortably through the winter.

While both Atlantic and Cape May Counties are dependent on resort/tourism, their modes of activity are different. Atlantic has attracted the tourist visitor who stays in hotels/motels and visits the sights of the "Queen of the Atlantic", Cape May is much stronger in the number of persons with seasonal second homes to which they repair for the summer. In Cape May, over 60% of housing is seasonal, while in Atlantic the seasonal share is less than 18 per cent.

C. Population Trends

The sub-region as a whole has grown slower than the State of New Jersey for the past 25 years. Atlantic County has shown a steady decrease in share of the State population (see Table 1) from 2.7% in 1950 to 2.4% in 1974. The numerical growth of the County has been from 132,000 in 1950 to 180,000 in 1974.

Cape May County has been increasing its population at a rate only slightly faster than the State of New Jersey, having 0.8% of the State from 1950 to 1970, and rising to 0.9% in 1974. The population of Cape May County grew from 60,000 in 1970 to over 63,000 in 1974, an increase of 6.4%, nearly double the State rate of 3.4%. Atlantic County during that same period grew even slower than the reduced State rate. Population trends of this sector are shown below:

<u>County</u>	<u>Population (000)</u>		<u>Added Population</u>	<u>Percent Increase</u>	<u>Percentage of State 1970-74 Growth</u>		
	<u>1970</u>	<u>1974</u>			<u>1970</u>	<u>1974</u>	<u>Growth</u>
Atlantic	175.0	180.5	5.5	3.1	2.4	2.4	2.2
Cape May	59.6	63.4	3.8	6.4	0.8	0.9	1.6
SECTOR	236.6	243.9	9.3	9.5	3.2	3.3	3.8
Coastal Counties	1,084.2	1,173.6	89.4	8.2	15.1	15.8	

Cape May County was the second fastest growing among the Coastal Counties in 1970-74, behind only Ocean, while Atlantic was the slowest growing of the six, and the only one below the State growth rate. Both Atlantic and Cape May Counties have most of their population within the CAFRA area. In Atlantic County, the CAFRA share is about 81%, declining slightly from the 1970 share. In Cape May County, the share remains constant at almost 96% of total population.

Atlantic County has grown despite the fact that the population of Atlantic City itself has declined from 62,000 persons to 44,500 persons in 24 years. The 1970-74 period showed a decline of 7.1%, with 3,400 persons leaving the city.

<u>County</u>	<u>1950</u>	<u>Pct of County</u>	<u>1974</u>	<u>Pct of County</u>	<u>Pct Change 1950-74</u>
Atlantic City	61.7	46.6	44.5	24.6	-27.9
Remainder of County	70.7	53.4	136.0	75.4	92.4
ATLANTIC COUNTY	132.4	100.0	180.5	100.0	36.3

The largest decrease occurred in the 1960's when the City lost 11,164 residents. This decline is a result of outmigration to the surrounding suburban areas on the mainland--specifically, Absecon, Linwood, Northfield, and

Somers Point and the adjoining island communities such as Brigantine. Other facts about Atlantic City include:

- the decline in residents in Atlantic City was mainly within the white population--for example, in 1960 out of a total of 59,544 persons, 63.5% were white; by 1970, the population had declined to 47,880 of which 54.6% were white.
- median income for the City is \$6,396 compared to \$8,775 for the County and \$11,407 for the State as a whole.
- the city has a disproportionate share of the 65 and over age group.

Actual declines in population were not limited to Atlantic City. In Atlantic County, Longport Boro and Margate City had small losses. In Cape May County, Cape May City dropped nearly 12% from 1970 to 1974, while Wildwood City dropped 20%.

The highest growth areas for 1970-74 were:

<u>Municipality/ Township</u>	<u>County</u>	<u>Added</u>	<u>Percentage Increase</u>	<u>CAFRA Status</u>
Egg Harbor	Atlantic	2,215	22.1	Partially in
Hamilton	Atlantic	1,165	18.1	Outside
Lower	Cape May	965	9.5	All in
Sea Isle	Cape May	830	48.1	All in
Somers Point	Atlantic	780	9.7	All in

D. Population Projections

Atlantic County will continue to grow slowly, with much of inland growth offset by continued declines in Atlantic City. Some efforts are being made to develop small manufacturing operations there, but these have generally been attracted by the low-wage labor supply. They do not improve income much, and turn out to be very cyclical in employment, hardly better than the tourism employment they are intended to supplement.

Cape May will continue to be the second fastest growing county on the coast, with strong pressures for additional second homes, for retirement housing, and tourist facilities. Tourism will remain the dominant--virtually only--economic force in this county. Agriculture, fishing and military will continue but provide no new incentives for growth.

By 1980, Atlantic County will grow about 3.6% from the 1974 figures. This growth rate will be the slowest in the Coastal Counties, but does mean an additional 10 to 15 thousand persons. Much of this growth will be inland, outside the CAFRA area. About 3,000 persons will be added within the Coastal Zone, only one-fourth of the total county growth. The major growth areas are expected to be Egg Harbor and Galloway Township. In Cape May, on the other hand, virtually all growth will come within the CAFRA area. Lower Township, with a new sewer system, is growing with single-family subdivisions. The island cities, such as Ocean City, will see additional growth at higher densities, with demands for apartments and high-rise condominiums. The growth rate in Cape May is projected to be about 10.4% from 1974 to 1980, adding from 7 to 10 thousand permanent residents.

Projections for Cape May should also be sensitive to the seasonal population. The County estimates that there are eight times as many summer residents/visitors as permanent residents. The County's estimated 1975 summer population was in excess of 580,000 persons, and over 4 million persons visited Cape May County during 1975. At the present time, however, we have no basis for projecting short-term growth in seasonal population.

E. Issues

The issues in Atlantic and Cape May Counties are heavily oriented to employment--its lack and potentials:

Short-term:

1) OCS Staging Area--More than likely, oil and gas leases will be granted by the Department of the Interior for the Baltimore Canyon Trough in the Atlantic Ocean off the coasts of New Jersey and Delaware. Whether oil or gas is there or not cannot be determined without exploratory drilling. The staging areas for that drilling will have to be located onshore, probably within the next few years. Two of the best locations for these staging areas are in Region III, at Cape May and Atlantic City. The major needs are for heliport and docking facilities, which both have. No major construction of new facilities is required until, and unless, oil and gas are found. Both communities suffer from unemployment, with Cape May's being seasonal and Atlantic City's resulting from a long-range decline. The OCS staging area

could alleviate some unemployment, probably having more impact in Atlantic City. Both locations are convenient to the exploration areas, with Atlantic City being more easily accessible by expressway and air to supply and support centers. The issue is whether an OCS staging area ought to go in Cape May or Atlantic City, and what impact it may have on the resort and recreation activities of its areas.

2) Nuclear power plants--Two are proposed in the Sector, at the same site in Atlantic County, with completion dates projected for 1985 and 1987. The issues here are the same as for all other nuclear plants--location and impact upon the community. What are the effects of nuclear plants on the community's employment, tax base and existing activities? Would nuclear plants negatively affect the tourism base of the community? Or are they so physically isolated, or so well accepted, that they have little effect?

Long-range:

3) Renewal of Atlantic City--What are the prospects for renewal or stemming the decline of this central city? Can a revival of tourism turn population and employment declines around? Or are new efforts required to attract employment unrelated to tourism? Can "counter-seasonal" employment be found to provide jobs to the tourist employees during the off-season? What can CAFRA do to encourage renewal, or at least not impede it unnecessarily?

4) Economic Base in Cape May--Should Cape May, which is doing well with tourism now, attempt to attract new "permanent" employment in order to reduce its dependence on seasonal tourism, and provide jobs during the off-season?

Sub Region IV: The Delaware Bay (Salem and Cumberland Counties)

Unlike the other sub-regions of the CAFRA zone, the Delaware Bay region has almost no development oriented to the shore. Instead, the shore line of the Delaware Bay is largely tidal marsh, with development inland and outside CAFRA.

A. General Depiction

Altogether 15 different municipalities or townships are located in this region--10 in Cumberland County and 5 in Salem. Less than 50,000 people live within CAFRA, with most of these in two major centers: Bridgeton and Millville. (It should be noted that the CAFRA boundary cuts through both of these towns.) Of the total land area in Cumberland County, 502 square miles, about 45% (225 square miles or 144,000 acres) is located in the CAFRA zone; in Salem County, about 25% (85 square miles or 54,000 acres) is located in CAFRA.

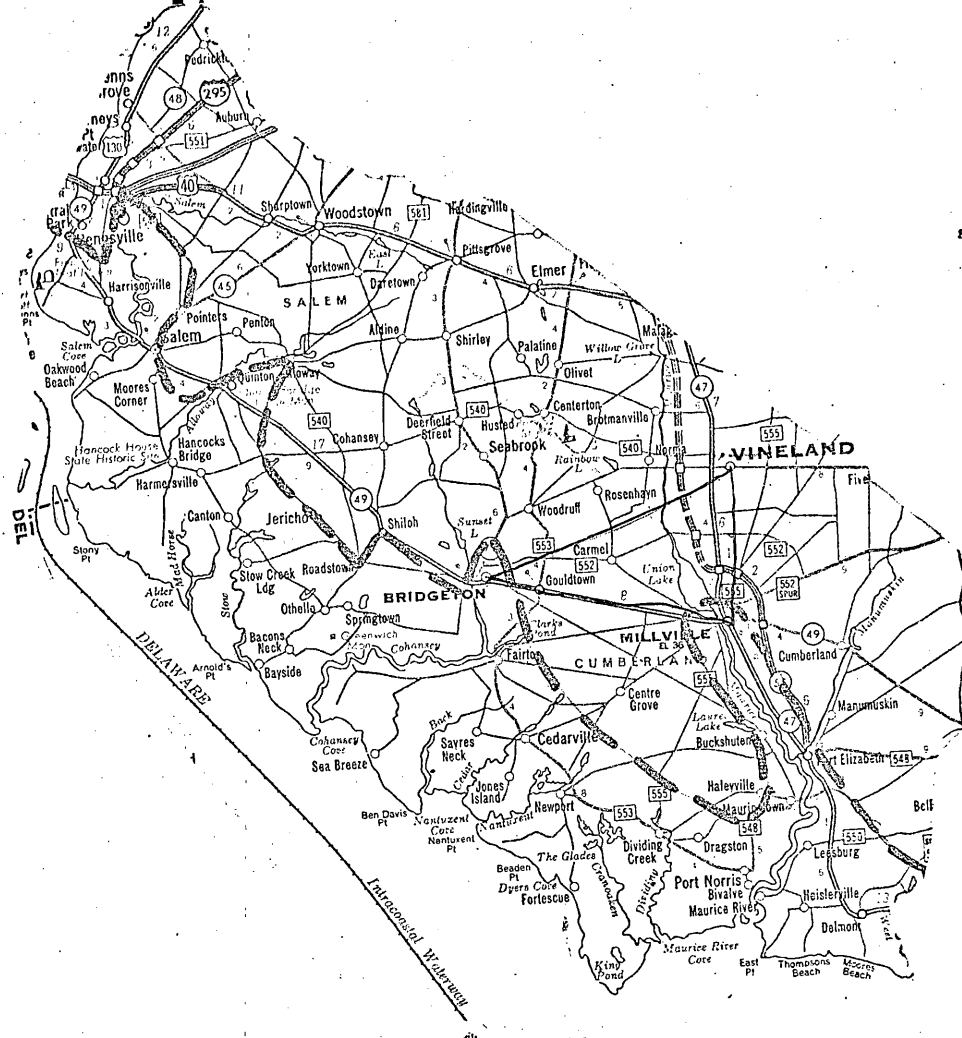
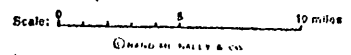
The majority of the land located within CAFRA is in tidal marshes or "wetlands", and is generally unsuitable for development. Much of this has been placed in public ownership, mostly in Fish and Wildlife Management Areas. The most significant of these include: Man Horse Creek, Dix, Nantuxent, Fortescue, Egg Island and Heislerville. These natural preserves, along with Stowe Creek, Cohansey River, Cedar and Back Creek, and the Maurice River provide opportunities for fishing and boating.

The scattered population in the region is sparse, and development is rural in character. Agriculture is a dominant mainstay of the regional economy, but prime agricultural lands are found further to the north, outside CAFRA.

The region is generally considered to be under-utilized as a recreation resource. At present, access to this vast recreational potential is limited by the lack of developed facilities, including an adequate road network. However, in many respects, this area is not so desirable for many recreational pursuits, particularly swimming, as the beaches and water are generally inferior to those found on the Atlantic. Since the State owns much of the marsh land, decision on development is primarily the State's responsibility.

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Map #6
SUB-REGION IV
Delaware Bay
(Cumberland & Salem)



CAFRA Boundary

Highly Urbanized Areas

Wetlands

Neither Cumberland or Salem County has experienced intensive pressure for growth and development. In fact, during the 1960-70 decade, Salem County experienced an out-migration of population, mainly in the "active labor force" group. Urbanization tends to concentrate around the cities of Bridgeton, Millville and Vineland where 73% of Cumberland County's population is found, and in Salem County's northwest section, related to the port activities of the Delaware River and the large industrial complexes in the Wilmington Metropolitan area. Most of the areas where population growth is expected to occur are located outside CAFRA.

B. Population Trends

Cumberland and Salem Counties have grown slower than the Coastal Counties as a region, but have been increasing at a rate higher than the State as a whole. Cumberland has added twice as many people in the 1970-74 period with a growth rate slightly ahead of Salem, as shown below:

County	Population (000)		Added Population	Percent Increase	Percentage of State		
	1970	1974			1970	1974	1970-74 Growth
Cumberland	121.4	121.4	7.0	5.8	1.7	1.7	2.8
Salem	60.3	63.6	3.6	5.5	0.8	0.9	1.3
SECTOR	181.7	192.0	10.6	11.3	2.5	2.6	4.1
Coastal Counties	1,084.2	1,173.6	89.4	8.2	15.1	15.8	36.4

Cumberland has only about one-third of its population within the CAFRA area, while Salem has less than 5%. With slow growth in the counties as a whole, there is very little activity within the CAFRA zone. Cumberland added a little over 2,000 persons to the CAFRA area from 1970 to 1974, while Salem recorded no change in population in CAFRA.

C. Growth Prospects

The only significant pressures for activity within the CAFRA zone in the short-term are for nuclear power plants along the Delaware River in Salem County. Four plants are under construction or proposed for Artificial Island, located within the Delaware River west of Salem. The status of these plants is as follows:

<u>Unit</u>	<u>Net Capacity (in megawatts)</u>	<u>Status</u>	<u>Completion</u>
Salem #1	1090	Under const.	1976
Salem #2	1115	Under const.	1979
Hope Creek #1	1100	CAFRA permit	1981
Hope Creek #2	1100	Proposed	1983

The decisions have already been made on three out of the four plants. The phasing of the construction means that the construction force should remain about constant for the next eight years. Operating employment will start to increase starting in 1976, building to about 600 persons in 1983.

Route 55 is proposed to be extended from its presently built section around Millville south to Cape May. This could improve the access for visitors to Cape May from the Philadelphia area. This should impact primarily on resort activities, not on commuter or permanent population. The route, when extended north to Philadelphia, should make the Tri-City area of Cumberland County more attractive for industrial development. In the short-run, however, a substantial improvement in existing industries will be needed to take up the slack in employment before new employees are needed to move into the County.

The Council on Environmental Quality's study of the impacts of OCS oil and gas in 1973 projected a hypothetical situation of adding refining capacity of 840,000 barrels per day (four to five refineries), one billion cubic feet per day of gas processing (two plants) and two petrochemical complexes. This would be needed in the region by 1985 to support high OCS development assumptions. "Much of this development is likely to take place in Cumberland and Cape May Counties," according to CEQ. In actual fact, these assumptions are not valid. First of all, the amount of oil and gas expected from Atlantic OCS development is lower than had been originally projected. The national policy of attempting to reduce dependence on imported oil means that the OCS oil, if found, would be a replacement for current production rather than an addition to it. Finally, it is likely that any major new facilities, such as refineries would go into existing industrial complexes, such as those up the Delaware River in New Jersey and Pennsylvania, and on Raritan Bay near

New York. These areas already have refineries which could handle much of the OCS oil, or which could be enlarged to do so. Refineries do not need to be located at the closest point to their offshore supply. It may be possible, then, that OCS activity would have very little impact on Cumberland and Cape May Counties.

D. Population Projections

Cumberland County is projected to add from 13 to 16 thousand persons during the six years from 1974 to 1980. This 5 to 6 per cent increase would rank fourth highest among the Coastal Counties, ahead of only Monmouth and Atlantic. Increases in the Coastal Zone, however, would range only from 2 to 3 thousand persons. This growth is large compared to Salem County.

Out of the 5 to 8 thousand persons to be added to the County by 1980, effectively, none would be in the Coastal Zone. The change, if any, would be less than 50 persons, and could even be a reduction in existing population. The growth which is projected for the Cumberland County Coastal Zone will come primarily around Bridgeton, as part of the Tri-City urban development.

E. Issues

The primary issues in this sector will concern energy facilities:

Short-term:

1) What should be the decision on a permit for Hope Creek #2 nuclear power plant? Should the grouping of many plants in one location be discouraged because of cumulative impacts, and potential safety problems? On the other hand, perhaps it is better to locate all these plants together so that the impacts are not spread throughout the State and region. There is no doubt that the CAFRA zone, especially in Salem County, is the most desirable location for nuclear plants from the utilities point of view--with ample water, an isolated location, yet close to the metropolitan service areas.

2) Should any discussion of potential OCS related developments be discouraged for Cumberland and Salem Counties, especially within the CAFRA zone? Shouldn't the State encourage this development in other areas of the State more suitable for heavy industry, which have needs for new employment and tax base?

Long range:

3) Can the agricultural lands within the CAFRA zone be retained for that purpose, and should they? For some crops, these areas are the best available. Losing them would mean elimination of the activity rather than its transfer to another location.

4) What about the restoration of the oyster and clam activities along Delaware Bay? What effects will the new nuclear power plants have on these activities? Is the assessment of these effects and their mitigation a role for DEP under CAFRA?

CHAPTER FOUR

Synthesis and Summary
Anticipated Short Term Demands for Growth in CAFRA
Ten Issues for the Interim Guidelines

I. Population Growth in the Zone

It is clear that the principal source of demand for new development in the CAFRA region will come--during the period to be covered by the interim guidelines--from the housing requirements of new permanent residential population. Our population estimates (see Appendix) indicate that between 1974 and 1980 communities within the CAFRA boundary may be faced with absorption of between 60,000 and 90,000 additional people, exclusive of any increase in seasonal visitors and the accommodations to serve them. This range compares with approximately 55,000 permanent residents added in the boom years of 1970-1974. The low (and we believe, more realistic) end of the range indicates that the Coastal Zone might absorb about the same number of people in the last six years of the decade as in the first four. It reflects the drop-off in expansion since 1973 due to market conditions, sewer moratoria and other growth controls on the coastal communities, including the CAFRA permit-issuing process. The higher figure implies about the same level of annual growth as occurred between 1970-74, a rate unlikely to be achieved.

This pressure will fall disproportionately on Ocean County--the prime growth area. About 75 percent of population increase will be directed toward Ocean County. Monmouth (whose available vacant land within the Zone is extremely limited) and Cape May will absorb about 17 percent of the new growth. Atlantic and Cumberland may each take about 4 percent. Since the CAFRA area within Salem County is primarily wetlands, any population increase in the Salem portion of the Zone will be negligible.*

While there will undoubtedly be some increase in seasonal dwellings along the shore (both residences and transient accommodations) it has not been

* Growth in the CAFRA portions of Burlington and Middlesex Counties is not specifically projected, but is expected to be minor.

possible to estimate any order of magnitude from the data at our disposal. Second homes have been the hardest hit sector of the housing industry. Their recovery as a development force within the period to 1980 will probably not be substantial--and indeed the recent pattern of conversion of seasonal houses to year-round use, evidenced most strongly in Ocean and Monmouth counties, will probably continue. Some new pressure for seasonal accommodations along the barrier beaches of Ocean, Atlantic, and Cape May will undoubtedly occur, but at magnitudes which cannot be estimated at this time. In any event, however, the seasonal unit demand will be considerably less than that of permanent residential population.

II. Demands on the Land

The population growth estimates can be converted to some rough indicators of dwelling units and land demands. More calibrated estimates should be produced in the course of preparing the alternative environmental strategies for the Zone.

A. Dwelling Units. Given the recent demographic prominence of small families plus the attractiveness of the Zone for retirement communities, we believe an average figure of 3 persons per dwelling unit will be a generous indicator of housing requirements.* Applied to the population growth range above, this gives a demand of 20,000-30,000 dwelling units required during the 1974-1980 period.**

B. Land Absorption. Density is the key to estimating land absorption requirements, and indeed density is both one of the principal issues in the Coastal Zone and one of the main factors over which CAFRA's permit-issuing process can have influence. Numerous studies have examined prevailing zoning patterns in New Jersey, and County Planning programs have depicted both the allowable and existing density patterns within the Zone. By and large--with the exception of high-rise condominiums along the barrier beaches--recent developments have been low-density, single family in character at lot sizes from 1/5 of an acre up. Cluster development, townhouses and garden

*The average family size in the U.S. recently dropped to about 2.9. Since much of the CAFRA demand comes from elderly retirees, they would evidence a family size of 2 or below. However, continued availability of moderately priced housing in the Zone would likely also attract large families with children. An average size index of 3 may be high but not unreasonable given the components of demand.

**Applications for over 10,000 units have been approved or are pending at DEP.

apartments are becoming more popular--particularly in Planned Unit projects stimulated by state enabling legislation and the growing cost of serviced land. However, the prevailing pattern and the prevailing municipal zoning allowances emphasize the low density single-family detached unit.

What for the future?

Two average levels of density are postulated below as a base for estimating residential land demand to 1980. One, at 4 dwelling units per acre, implies the continuation of the existing low-density trend. The second, at 8 dwelling units per acre, implies a much greater emphasis on single-family clusters, townhouses, and apartments.

<u>Alternative</u>	<u>Density</u>	<u>Dwelling Units</u>	<u>Acres</u>	<u>Sq. Mi.</u>
A.	4/acre	20-30,000	5,000-7,500	7.8-11.7
B.	8/acre	20-30,000	2,500-3,750	3.9-5.9

C. Support Facilities. Clearly, the land use requirements of new population growth extend considerably beyond the dwelling unit site. Commercial and recreational facilities are required, along with schools, hospitals, libraries, and other community support services. Many areas of the Zone today lack sufficient support facilities for existing population. Others have surplus capacity produced during the recent high growth period. (Examples of the latter are regional shopping complexes in Monmouth and--now under construction--in Ocean counties.) Except on an area by area basis, where present capacities are clearly assessed, no reasonable estimate of such requirements can be made. Nor is such an estimate appropriate in this present study. Nevertheless, some indicators of support requirements in relation to population demand can be given. We have selected shopping facilities and outdoor recreation space as representative. While the density of residential development has some bearing on need, by and large standards for these uses are related to population volumes rather than residential form.

i. Shopping facilities to serve the anticipated growth (neighborhood, community, and regional) could require between 90 and 130 acres.*

* These are figures based on composite, generalized indicators derived from: Chiara, Joseph and Koppelman, Lee, Planning and Design Criteria, Van Nostrand Reinhold, N.Y., 1969.

2. Outdoor recreation space (playgrounds, parks, regional open space) could amount to 1,500-2,250 acres.* These would be the most land extensive service requirements.

D. Density and Location-Dependent Support Facilities. Other forms of support facilities are directly dependent on density and represent among the most costly of public services. Most particularly these are roads and utilities (water, sewer). It is fair to say that the lower the density of anticipated development in the Zone, the more extensive and more expensive the roads and utilities systems will be to serve the same level of population.** The more scattered the development (regardless of density) the more new areas of the Zone are opened up with growth leapfrogging vacant land contiguous to existing facilities and services, the more extensive and costly also these services will become.

If new development areas are remote from communication with existing commercial and community service facilities, moreover, the lack of access increases demand for additional capital expenditures--regardless of excess capacity elsewhere.

E. Implications of the Land Demand. Conclusions important to the formulation of interim guidelines can be drawn from the above presentation.

1. Growth pressures from new population demand in CAFRA to the end of the decade will be manageable. From the standpoint of land availability there should be an ample supply of building sites without necessarily endangering wetlands, flood-prone property, aquifer recharge areas and other environmentally sensitive areas because of any inevitable pressures for residential development. The range of land needs for housing is broad--from 2,500 acres to over 7,500, depending on densities. Certainly this is a lot of land. In terms of available and vacant land within the Zone, however, these are relatively small figures. In Ocean County, for example, in 1973 there were over

* These are figures based on composite, generalized indicators derived from: Chiara, Joseph and Koppelman, Lee, Planning and Design Criteria, Van Nostrand Reinhold, N.Y., 1969.

**See analyses of comparative public costs for various residential densities and density mixes in Council for Environmental Quality, The Costs of Sprawl, Washington, D.C., 1974. Also see cost studies in:

State of New Jersey, County and Municipal Government Study Commission, Housing and Suburbs, Fiscal and Social Impact of Multi-Family Development, October 1974.

Clawson, Marion, Suburban Land Conversion in the United States, Resources for the Future, Washington, D.C., 1972.

160,000 acres of vacant or agricultural land exclusive of wetlands. Even if the bulk of this land were proscribed from development for one reason or another, and even if the support requirements for housing equalled the housing land itself, it is our opinion that many options for accommodating short-term demand would exist.

Present committed sewer expansions in Ocean County will result in a theoretical expansion of capacity by over 150,000 people beyond 1974 totals. Elsewhere in the Zone (with the possible exception of Monmouth County whose building sites are dwindling but will not attract more than a few thousand new residents) the twin features of vacant land availability and expanded sewerage capacity will come into play. Thus, in our opinion, there is no absolute shortage of urban land to be confronted in the short run within the prime growth areas. Local communities and DEP, as the final decision-maker, should have a wide range of options for channeling new residential development and its allied services.

2. It is the location and density of this development that will produce the primary problems. We must first assume that CAFRA policy will proscribe new building from most environmentally sensitive land areas during the period. The Zone still has comparatively vast areas of vacant buildable land, much of it to be sewered in the immediate future. The traditional pattern of sprawl, very low density, and leapfrogging can easily continue. This will produce higher service demands and costs for roads and municipal utilities than more tightly clustered patterns. It will expose increasing amounts of agricultural land to the prospects of future urbanization, by virtue of proximity to leapfrog subdivision, and will fuel speculation. It is impossible to say with any certainty what effects might be engendered by air and water quality (except insofar as extended road travel increases pollutants and contributes nothing to energy conservation). But certainly the aesthetic character of the Zone would not improve.

On the other hand new growth could occur at higher densities (in 1970 Ocean County had approximately 11,000 acres vacant and zoned for multi-family use).^{*} Even single-family development could be channeled into a predominance of cluster and planned unit subdivisions--if public policy in the form of the

^{*}See New Jersey Dept. of Community Affairs, "Land Use Regulation, The Residential Land Supply," 1972, p. 10a.

CAFRA power established such an objective through its planning and permit process. We are certainly aware of the market, political, and administrative difficulties that might be inherent in this approach. However, the state legislature did single out the entire coastal zone for special regulatory treatment in the name of environmental protection, and mandated that DEP consider the economic circumstances of the Zone and its communities in the exercise of its powers. Surely the continued drain on public resources and on environmental quality to service sprawl patterns of development in the region could justify a vigorous effort to consolidate urbanization.

As our rough estimates above indicate, even a preponderance of moderate density growth (e.g., the average of 8 du's/acre) could reduce residential land needs alone by as much as one half for the rest of the decade.

III. Other Major Land Requirements during the Decade

Permanent residential development, the private and community support facilities to service it, and whatever might transpire in the way of demand for seasonal accommodations will be the primary generators of land demand within CAFRA to 1980. Other important generators will be energy-related facilities and perhaps one prospective OCS staging area. The energy projects, if approved, would involve as many as three new nuclear plants and one liquid natural gas deliquification depot. Locations along Delaware Bay in Salem and Cumberland Counties are the most highly considered for these, although nuclear facilities have been proposed for Ocean and Atlantic Counties as well. Conservatively, each facility would require as much as 1,000 acres of land, including both expansion room and buffer area. Beyond the plant sites, corridors perhaps of considerable magnitude must be set aside for transmission lines and pipelines to the metropolitan centers with the need for some support facilities either within the Zone or along the transmission corridors. Both CAFRA and the area communities will have to weigh the environmental and economic significance of the uses prior to decisions on sites.

Any OCS staging facility is still not in project form, although sites in both Atlantic and Cape May counties have been considered. Such a facility would be more labor intensive than power plants and LNG operations, whose primary employment would come during the construction period, with associated needs for housing and municipal support services. A location may need to be

selected before DEP prepares the final CAFRA environmental design. Site size cannot be estimated at this time (although a figure of 240-300 acres would not be unlikely) and factors of port and airport accessibility as well as housing and community impact will have to be carefully assessed before a decision.

Each of the above facilities represents a discrete project, with whose implications the CAFRA process should be able to deal if criteria for selection and impact are established in the guidelines.

The CAFRA region is not an industrial area. While some small industrial demands might be felt over the next few years (only three of the CAFRA permit requests to date have been for an industrial project), we do not consider this to be a significant force during the interim guideline period. There is also no indication that the large military facilities (e.g. Monmouth, Ft. Dix, McGuire, Lakehurst) abutting the Zone will expand in a manner to affect land disposition in the Zone.

Further private recreation development of hotels, campsites and boating and fishing facilities is clearly possible, but presently no basis is available for projecting short-term demand. Expanded public acquisition of recreation areas and sensitive lands may also transpire during the next few years, both under Green Acres and federal programs--with any such expansion a positive step toward protecting the coast.

Taken all together, however, it is our opinion that permanent residential population and energy-related facilities will produce the primary land demands to be considered by CAFRA over the next two "planning" years and for the rest of the decade.

IV. The Issues Synthesized and Summarized

The interim guidelines will be a DEP strategy to resolve certain key land use and development issues within the Coastal Zone. On the one hand the guidelines will provide criteria by which the permit program may screen projects for their basic acceptability within the Zone or in its sub-regions. On the other, the guidelines will serve as a framework within which numerous state agency actions beyond the permit process can be coordinated. These include the community assistance efforts of the Department of Community Affairs, the promotional and economic assistance activities of DLI and other actions of DEP from open space acquisition to water and sewer policy and wetlands preservation. Hopefully, the guidelines will also serve as a framework for coordination of local and federal government activity within the Zone, although conflicting objectives--particularly as regards the local property tax base--may be inevitable.

Directly at DEP's disposal is the ability to provide information, to establish standards, to approve or deny permits, and to expedite or delay development in the Zone and its parts. Implementation of the guidelines can channel and shape growth that will occur in the Zone.

The guidelines themselves, and the direct permit-issuing authority associated with CAFRA, cannot "create" new forms of development, however. They will have to work with the forces engendered by the market place and the regulatory instruments at the local level. The measure of effectiveness will be how the market forces and the local communities respond to DEP's directives.

Below is our distillation of ten key land use and development issues to be addressed by the interim guidelines. These are short-term issues, although most will be with the state and the Zone well beyond the next few years. Practically all contain economic and social components as well as fundamental questions of land use.

1. Location of Residential Growth. Growth estimates indicate that Ocean County will experience most of the moderate growth pressures to be felt over the next few years, although each of the other counties except

Salem will evidence modest expansion between now and 1980. The key question will be where that growth is to be located. Is a sprawl pattern to be encouraged, encroaching into large areas of still agricultural lands, or is the residential development pattern--plus the commercial and other support facilities to service it--to be shaped contiguous and adjacent to already-existing settlements in the Zone?

2. Preservation of the Atlantic Coastal Wetlands, Flood-Prone, and Other Environmentally Sensitive Areas. There is no absolute shortage of land in the Coastal Zone for new residential growth at the magnitude projected to 1980. Certainly during the interim guideline period, there is no compelling reason to lose more of these areas to urbanization--or indeed endanger the future safety and stability of new construction by exposure to potential natural disasters. Can the guidelines serve to freeze these areas from growth pressure, while the state gains time to determine equitable means for permanently removing them as potential development sites--or to establish standards for allowable uses?

3. Densities of Residential Growth. Continuation of residential development at the same form and density that has predominated in the recent past will serve to reinforce the sprawl patterns in the coastal counties. It will lead to higher cost public services for roads and utilities, and will do little for energy conservation. Zoning for low density single family development is prevalent among the coastal municipalities. Some tendencies toward planned unit approaches, cluster, and multi-family projects exist. Can CAFRA, through its planning guidelines and permit process, reinforce these tendencies toward more efficient, land conserving densities--and further reduce the amount of land required for urbanization during the remainder of this decade?

4. Standards for High-rise Location and Configuration. One of the most efficient, land conserving forms of construction can be the high-rise residential project. High-rise development has become increasingly popular along the barrier beaches. At the same time high-rise buildings can have devastatingly negative impacts on the surrounding environment. Improperly located and oriented they can heavily shade beaches, produce severe traffic problems, and--whether along the beach or inland--ruin the character of adjoining neighborhoods. At least two high-rise projects have represented serious problems of decision for CAFRA's permit program. These problems point up

the difficulties of establishing criteria for each project on a case by case basis. Can the guidelines provide some generalized criteria and standards for high-rise location and orientation; standards whereby both developers and public agencies alike may know well in advance where tall buildings will be acceptable within the Zone and in what form? Can the guidelines produce an equitable method for incorporating tall buildings into the fabric of the Zone, without destroying the environment that attracts them?

5. Moderate Income and Retirement Housing. The Coastal Zone has helped considerably to alleviate New Jersey's shortage of moderately-priced family housing and housing for the elderly. Although people of all income levels have migrated to the Zone, by and large most of the recently produced housing for permanent residents--in Ocean County, particularly--has been priced well below comparable units closer to metropolitan employment for similar accommodations. Relatively low land prices west of the beaches have contributed to this differential. Many people are prepared to endure long commutes in return for the housing values.

At the same time, a large component of the new migrants have been elderly and retired people. Both Ocean and Cape May have welcomed new retirement-oriented developments, projects which have provided compatible surroundings and people and at least some measure of support services.

New Jersey has a severe lack of moderately priced housing. Indeed few suburban communities closer to the metropolitan core have been able to offer such accommodations--or have been willing to alter their land use control regulations to allow construction of moderately priced units. The Mt. Laurel decision, mandating that communities take their "fair share" of regional housing needs, is the most recent example of numerous court cases and studies by both government and private agencies on the problem. State policy is heavily in favor of increasing housing supply for moderate income families and for the elderly, but so far few results have materialized from this policy.

Much of the development within CAFRA has produced serious problems; problems of environmental quality and lack of services--particularly health services for the elderly.

Clearly these problems should be alleviated. The danger is, however, that in the name of environmental protection, land development controls may close out the prospects of increased reasonably-priced family housing and housing for the elderly. If so, it will be a case of "throwing the baby out with the bath water." For other New Jersey communities, given their history, cannot readily be expected to make up the difference.

Conceivably, however, CAFRA could become a priority area for the application of state and federal funds to:

- a. Alleviate the environmental difficulties (e.g., open space provision and water supply protection);
- b. Provide support services and facilities, such as medical centers and health personnel and public transportation.

In this manner, the housing resource of the area can continue to grow, along with the necessary support institutions and installations.

Can the guidelines contribute to a situation where the twin objectives of moderately priced housing and environmental quality will be maintained?

6. Recreation and Open Space. The following must be addressed:

1. Public Access to the Beaches. Demands for ocean recreation, especially from new permanent residents, will increase. Yet the public is barred from access to much privately-owned coastline. Can the guidelines mandate that new ocean-front development in presently restricted areas provide easements or dedication for beach access to the general public?

2. Open Space Provision. Public open space in the developing residential areas inland of the beaches is in short supply. By and large the conventional single family subdivisions do not contribute to the provision of open space and recreation areas, even while they contribute to the demand. While some of the Coastal Zone communities have land dedication requirements which developers must meet, this is not a common practice. Nor are there sufficiently well-staffed and funded local agencies to maintain new park and recreation areas. Can the guidelines encourage the dedication to the public or to homes associations of open space in new subdivisions? Can complementary priorities be set to assist the funding of acquisition and open space maintenance?

3. Camp Sites. Overnight camping has become an increasingly popular form of outdoor recreation in the United States, and there are a substantial number of facilities in the Zone--particularly in Cape May and Atlantic Counties. Demands for camping will grow. This is a good means for providing nearby accommodations for beach visitors, without major investments in permanent structures. With proper sanitation and traffic control, camp grounds are also good uses of vacant, formerly agricultural land--which abounds within the Zone. Can the guidelines serve to encourage camp sites as acceptable land uses within the CAFRA area?

7. Shaping the Commercial Environment. Two land use/economic issues dealing with commercial area development are prevalent in the Zone. One is the deterioration--both physical and economic--of older core commercial areas. The second is commercial sprawl along the arterial highways.

Can the guidelines support the concentration of commercial development by:

- a. Encouraging redevelopment and extension of older centers;
- b. Discouraging new shopping facilities that extend existing highway strip patterns?

8. Highway Extensions. Among its enumerated powers under CAFRA, DEP has final permit-issuing authority over new roads within the region. As past events have proved, transportation connections to the metropolitan areas have been the principal impetus to new residential growth within the Zone and to the sprawl pattern of commercial development. Some key additional highways are on the drawing boards, facilities which will make metropolitan connections easier and faster and will open up even more land within the region to development access. Three of these are the Toms River Expressway, the extension of I-195 all the way to the Garden State, and the widening and dualization of State Route 55. To our knowledge no analysis has yet been made of the prospective impacts of these roads on land development within CAFRA. While the facilities may be "needed," at the same time "need" must be assessed in terms of impacts. Can the guidelines spell out criteria bearing on the desirability and timing of such major transportation facilities and encourage extensive impact assessment prior to extensions?

9. Industrial and Allied Economic Growth. Industry is not a major factor in the economic base of the area within the CAFRA boundaries. Any efforts to encourage industrial growth within the region could serve--if successful--to drain existing plants from more established and logical industrial concentrations. It is seriously questionable whether increased industrialization would be compatible with the primary recreation and residential character of the Zone.

These comments are, of course, exclusive of fishing and other water-dependent activity (such as boat-building) whose continued presence in the Zone should be strengthened.

So long as CAFRA residents are willing to commute out of the Zone to employment centers elsewhere or to find work in recreation and service activities within the region, industrialization of the Zone should not be a high public priority.

There are, however, communities within CAFRA which have severe economic difficulties, especially as regards absorbing existing racial minorities in meaningful employment. Conditions in Atlantic City and Asbury Park, developed urban centers with considerable amounts of infrastructure, contrast sharply with those of recreational communities further to the South where a "gentle" form of winter seasonal unemployment is considered part of the way of life. In Atlantic City and Asbury Park, unemployment along with tax base erosion are endemic long-term problems. Economic development, as represented by industry and construction as well as services, has taken on a desperation character. These two communities are unique within the Zone. Conceivably their unique problems could merit a priority status for economic development under the CAFRA guidelines. Can the guidelines serve to encourage various forms of intensive economic growth in these two communities? Can the guidelines simultaneously discourage such development in other areas of the Zone where preservation of the resort and residential environment merits priority?

10. Energy Facility Location and Impact. It is clear that future energy demands in both New Jersey and the Northeast Metropolitan Region will require construction of additional nuclear facilities. Within New Jersey, the most favorable locations--from the standpoint of water availability, physical

isolation from settled areas, and transmission corridors--appear to be along Delaware Bay.

Delaware Bay within the Zone may also be a favorable location for Liquid Natural Gas deliquification and pipeline construction.

These are major facilities of statewide import. But location on Delaware Bay implies some loss of wetlands and perhaps will seriously impact existing fishing and related industries. Moreover, these facilities will have economic and social as well as environmental impacts on the region in addition to the surrounding areas.

The Atlantic City area has been mentioned as a possible location for staging facilities to serve Outer Continental Shelf oil exploration and production. Sites in Cape May County have also been considered, although their potential economic benefits may not be as productive as an Atlantic City location where unemployment is high. Perhaps even more than the nuclear plants and the LNG operation, the staging facilities will generate demands for employee housing and services in addition to providing jobs.

From this vantage point all of the above facilities would appear to hold positive advantages to New Jersey and the Zone, advantages which could outweigh potentially detrimental environmental effects and could be heightened if their economic and social impacts are planned for in advance of construction.

Can the CAFRA guidelines serve to establish a rational basis for energy facility location and impact accommodation? Can they require the utilities and private companies involved to spell out the social and economic as well as environmental trade-offs prior to favorable public agency decisions on sites? Can they lead to a committed and coordinated mitigation of adverse impacts by public agencies and private corporations alike?

APPENDIXPopulation Estimates for the Coastal Zone to 1980

One measure of short-term land development pressure in CAFRA is the anticipated growth of population within the Zone and its parts over the next few years. We have taken 1980 as the target point for estimation. The estimates below are derived from examination of several studies which have made population projections for the state and its counties. Based on our assessment of this material, the consultants have derived what we consider to be a reasonable range of permanent population increments by county segment within the Zone.

A. The Sources

Three major sources of projective data were reviewed.

1. Modeling State Growth, 1973 (MSG) by the Center for Urban Policy Research at Rutgers University (sponsored by the Department of Community Affairs).

MSG contains employment projections to 1980 by County, industry, and occupation as well as employment-related households. The study does not contain aggregate population projections as such.

In extrapolating this material Rivkin Associates established two population estimates for 1980.

- a. The high estimate assumes the same percentage of population increase per county as was the MSG-estimated increase in employment.

- b. The low estimate assumes the same percentage of population increase as increase in "employment-related" households.

Of the two estimates, the "low" is probably more reliable since it assumes the same ratio in 1980 as in 1970 of employment related households to population in each county.

The MSG projections were made in 1973 prior to the energy crisis and the economic recession. Because of these events, the projections made for the state as a whole and its urban areas are likely to be too high, while those involving the Coastal Counties (that had been growing at faster rates than the state as a whole) are perhaps still valid.

2. The Department of Labor and Industry Projections, (1975) DLI, Office of Business Economics

DLI's estimates for 1980 are based on cohort survival (natural growth), and net migration patterns for each of the 21 counties in New Jersey and are aggregated for the state as a whole. In 1975, DLI made four sets of projections for 1980.

Series I - cohort survival (1970-74 trends), zero net migration;
baseline estimate of population

Series II - continuation of current trend of population growth
shown in period 1970-74

Series III - long-term trend based on experience of 1900-1970, for
both cohort-survival and net migration

Series IV - averaging method with adjustments to reflect specific
known conditions and development patterns.

If the changed economic conditions of the past two years are indicators of a major shift in economic and population trends, then Series II is probably most valid.

3. County Plans. Each of the Coastal Counties has made population projections for 1980 as part of the comprehensive planning process. They were made anywhere from one to ten years ago, with the most recent reflecting slow downs in growth compared to the endless boom philosophy of the 1960's and early 70's.

Ocean County has had two recent (1973) population projections done for the Sewage Authority's Master Plan. The EAC (Environment Assessment Council) report was done independently and appears more reliable than the FRW report done by consulting engineers.

In addition, in 1968, the State Department of Conservation and Economic Development (predecessor to DLI and DEP) made a 1980 projection by county. This is shown for comparative purposes. Its projections for Atlantic, Monmouth and Salem appear quite high, but it greatly underestimated Ocean where the CEO projection for 1980 was exceeded by 1971.

B. Projections of State Population 1980

Projections for 1980 are presented for each source, compared to 1970 Census and 1974 DLI estimates.

1980 Projections for the State of New Jersey are ranked below:

<u>Source</u>	<u>Population</u>	<u>% Increase From 1970</u>
1970 Census	7,168.2	
1974 DLI Estimate	7,413.7	3.4
	<u>1980</u>	
1975 DLI Series I	7,487.7	4.5
1975 DLI Series II	7,780.2	8.5
1975 DLI Series III	7,958.6	11.0
1975 DLI Series IV	8,095.0	12.9
MSG - Households	8,272.1	15.4
MSG - Employment	8,530.2	19.0
State CED	8,710.0	21.5

For state population to reach any of these projections beyond DLI II by 1980 however, would require an acceleration of the growth rate of the early 1970's. In fact, in the last two years, that rate has declined steadily. If the trends of 1970-74 are applied to future growth, we could project State population to be:

1) Average Number of Persons Per Year

$$1970-74 = 245,500 = 61,400/\text{year}$$

$$\begin{array}{r} 7,168.2 - 1970 \\ + 614.0 - 1970 \text{ to } 1980 \\ \hline 7,782.2 - 1980 \end{array}$$

(Very close to DLI Series II)

2) Stabilize Growth Rate Increase at 0.6% Per Year

$$\begin{array}{r}
 7,413.7 \text{ - 1974} \\
 \times \quad 3.6\% \text{ - 1974 to 1980} \\
 \hline
 270.9 \\
 +7,413.7 \\
 \hline
 7,684.6
 \end{array}$$

3) Continued Deline in Growth Rate

The actual rate of growth for the State has been declining—from 0.9% in 1970-71 to 0.6% in 1973-74. It is likely to continue that decline. If it is at a drop of 0.1% per year, as it has been for the last four years, the population growth would be:

1974		7,413.7
1975	0.5	7,450.8
1976	0.4	7,480.6
1977	0.3	7,503.0
1978	0.2	7,518.0
1979	0.1	7,525.5
1980	0.0	7,525.5

It is unlikely that New Jersey population will stabilize, but that is a possibility if net-migration drops to zero (as assumed in DLI Series I).

The high growth rate of the late 1960's and early '70's has now dropped off. Projections for future growth have to assume one of two trends:

- 1) The current reduction in natural growth and migration (and the low birth rate and energy problem/recession causing it) is temporary and economic growth will soon get back to "normal," or
- 2) The current reduction is a portent of things to come. The slow economic activity, scarcity of resources and lower birth rate is "normal" and therefore slow population growth for New Jersey and many other areas will be the trend of the future.

We believe the second to be a more valid assumption for purposes of projecting population in New Jersey and its Coastal Counties, certainly through 1980.

We conclude that State growth will be lower than any of the official projections (except DLI Series I). In fact, the numbers of persons added to the State in the six-year period from 1974 to 1980 will likely be no higher than the number previously added in the four-year period from 1970 to 1974. The percentage growth rate will actually decline through 1980.

The actual population of New Jersey in 1980 is very likely to fall between the Series I and Series II projections of the Department of Labor and Industry, with population growing between 230,000 and 260,000 from 1974 to 1980.* The relation of these estimates to others is shown in Table A-1.

*These projections we label "Rivkin low," (our estimate of the lowest State population in 1980) and "Rivkin moderate," our best estimate of likely State population. The high projection we take to be DLI Series II. Any projection above DLI Series II, "Average Number of Persons" (See Table A-1), would require virtually unachievable increases in growth rates over current trends.

Table A-1

STATE POPULATION PROJECTIONS TO 1980
(in Thousands)

1970 Census - 7,168.2
1974 Estimate - 7,413.7

<u>Projection</u>	<u>1980 Population</u>	<u>% Increase 1970-80</u>	<u>Needed to Achieve Projection</u>	
			<u>Added Population 1974-80</u>	<u>Percentage Increase 1974-80</u>
DLI Series I	7,488	4.5	74	1.0
Declining Growth Rate (3)	7,525	5.0	111	1.5
Rivkin - Low	7,644	6.6	230	3.1
Rivkin - Moderate	7,674	7.1	260	3.5
Stabilize Growth Rate (2)	7,685	7.2	271	3.7
DLI Series II	7,780	8.5	366	4.9
Average Number of Persons (1)	7,782	8.6	368	5.0
DLI Series III	7,959	11.5	545	7.4
DLI Series IV	8,095	12.9	681	9.2
MSG - Households	8,272	15.4	858	11.6
MSG - Employment	8,530	19.0	1,116	15.1
State CED	8,710	21.5	1,296	17.5
COMPARISON: 1970-74 Increase			246	3.4

Sources: As shown
Rivkin Associates

C. Coastal Counties Projections

Projections for the Coastal County Region

Range as Shown Below:

And Detailed in Table A-2

<u>Source</u>	<u>Population</u>	<u>% Increase From 1970</u>
1970 Census	1,084.2	
1974 DLI	1,173.6	8.2
	<u>1980</u>	
DLI Series I	1,122.7	3.6
DLI Series II	1,300.8	20.0
DLI Series III	1,298.5	19.8
DLI Series IV	1,302.8	20.2
State CED	1,413.7	30.4
MSG - Households	1,423.4	31.3
MSG - Employment	1,469.8	35.6

The estimated increase for the Zone from 1970 to 1974 was 89,400 persons, or 8.2%. The DLI Series I projection has already been exceeded, because there has been net-immigration in the Coastal Counties since 1970.

Table A-2
 COUNTY POPULATION PROJECTIONS
 New Jersey Coastal Counties

County	1970	1974	1980							
	U.S. Census	State Estimate	State CED-1968	Dept. of Labor & Industry (7/75)				Modeling State Growth*		
				I	II	III	IV	1)-HH	2)-Emp	
Atlantic	175.0	180.5	225.6	177.9	187.9	192.8	193.5	182.9	190.0	204.0 County Plan ('69)
Cape May	59.6	63.4	70.5	57.7	69.1	65.8	68.1	71.3	73.5	80.0 County Plan ('75)
Cumberland	121.4	128.4	150.7	130.6	138.4	131.3	139.1	135.0	138.9	168.8 County Plan ('65)
Monmouth	459.4	479.9	668.1	478.5	503.3	509.6	544.0	643.6	663.8	635.0 Pop. Study ('74)
Ocean	208.5	257.8	214.3	214.1	333.8	333.8	289.9	330.1	341.3	338.8 EAC ('73) 443.6 FRW ('73)
Salem	60.3	63.6	84.5	63.9	68.3	65.2	68.2	60.5	62.3	91.5 County Plan ('70)
Region	1,084.2	1,173.6	1,413.7	1,122.7	1,300.8	1,298.5	1,302.8	1,423.4	1,469.8	
STATE	7,168.2	7,413.7	8,710.0	7,487.7	7,780.2	7,958.6	8,095.0	8,272.1	8,530.2	
% of State	15.1	15.8	16.2	15.0	16.7	16.3	16.1	17.2	17.2	

*By Rivkin Asso. - 1) 1970 Census x Percentage Increase of Job Related Households Projected by MSG, and
 2) Percentage Increase of Employment

Sources: U. S. Census
 Department of Labor and Industry, State of New Jersey
 Department of Conservation and Economic Development, State of New Jersey
Modeling State Growth, Rivkin Associates

Coastal Counties' growth has been substantially higher than the State as a whole. This should continue, for even if the State slows down or levels off, these counties are the newer growth areas with strong economic pressures for continued increases. Still, the pattern of declining growth rates will be similar to the State. The 1970-74 growth, then, most likely represents about one-half the growth for the 1970-1980 decade.

Conclusion: The Coastal Counties will likely grow between 16 and 20 per cent from 1970 to 1980. The "Low" projection is Rivkin Associates estimate of the lowest growth possible; the "Moderate" projection is that considered most likely; while the "High" represents the consensus of DLI Series II, III and IV which are within 5,000 persons of each other for Coastal Counties in 1980.

	Population			Percent
	<u>1970</u>	<u>1974</u>	<u>1980</u>	<u>1970-1980</u>
Low	1,084.2	1,173.6	1,260.0	16.2
Moderate	1,084.2	1,173.6	1,280.0	18.1
High	1,084.2	1,173.6	1,300.0	19.9

	Population Added		
	<u>1970-74</u>	<u>1974-80</u>	<u>1970-80</u>
Low	89.4	86.4	175.8
Moderate	89.4	106.4	195.8
High	89.4	126.4	205.8

	Percent Increase	
	<u>1970-74</u>	<u>1974-80</u>
Low	8.2	7.4
Moderate	8.2	9.1
High	8.2	10.8

D. Projections by County

The 1980 populations previously projected for each of the coastal counties and the entire region are presented in Table A-2. Counties are expected under all projections to retain the same ranking as currently held. Monmouth would continue to be the largest county, while Ocean would remain the fastest growing.

The share of State population that each coastal county will have in 1980 is projected in Table A-3. There is remarkable consistency about Atlantic, Cape May, Cumberland and Salem--the four Southern counties, ranging from 5.4% to 6.0% of the State total. The 1974 share was 5.9, indicating these counties will grow at about the State pace.

The share projected for Ocean County ranges from 2.5% to 4.3%, compared to the 3.5% in 1974. Most recent projections assume Ocean will grow faster than the State as a whole. Monmouth's share is projected between 6.4% and 7.8%, compared to 6.5% in 1974, showing an increase faster than the State. The DLI Series are quite similar on Monmouth (6.4 to 6.7%), but wide ranging on Ocean (2.9 to 4.3%). All projections except DLI Series I assume that Monmouth and Ocean combined will grow faster than the State and faster than the four Southern counties.

Table A-3
 COUNTY POPULATION PROJECTIONS
 Share of State

County	1970 U.S. Census	1974 State Estimate	1980 Projections							
			State Dept. of Labor & Industry (7/75)					Modeling State Growth		
			CED	I	II	III	IV	1	2	
Atlantic	2.4	2.4	2.6	2.4	2.4	2.4	2.4	2.4	2.2	2.2
Cape May	0.8	0.9	0.8	0.8	0.9	0.8	0.8	0.8	0.9	0.9
Cumberland	1.7	1.7	1.7	1.7	1.8	1.6	1.7	1.7	1.6	1.6
Monmouth	6.4	6.5	7.7	6.4	6.5	6.4	6.7	6.7	7.8	7.8
Ocean	2.9	3.5	2.5	2.9	4.3	4.2	3.6	3.6	4.0	4.0
Salem	0.8	0.9	1.0	0.9	0.9	0.8	0.8	0.8	0.7	0.7
Region	15.1	15.8	16.2	15.0	16.7	16.3	16.1	16.1	17.2	17.2
North—Monmouth, Ocean	9.3	10.0	10.2	9.3	10.8	10.6	10.3	10.3	11.8	11.8
South—Atlantic, Cape May, Salem, Cumberland	5.8	5.9	6.0	5.8	6.0	5.6	5.7	5.7	5.4	5.4

Sources: Same as Table A-1

Our projections by County are shown in Table A-4. The basis for projections is the Coastal Counties' total.

Low	1,260,000
Moderate	1,280,000
High	1,300,000

The percentage increase from 1974 to 1980 is projected to be:

Low	7.4%
Moderate	9.1%
High	10.8%

Compared to 8.2% from 1970 to 1974.

For individual counties, the low and moderate projections are those of Rivkin Associates. The high projection is a consensus of the three DLI Series (II, III, and IV) which average about 1,300,000. Since these series show such a high projection for Ocean County, the projection for Cape May County is below the Rivkin moderate projection.

Ranking the rate of growth from 1974 to 1980, by Rivkin moderate projections, the fastest growing county continues to be Ocean, with Cape May second. Atlantic is the slowest growing.

<u>Percentage Increase</u>	
Ocean	22.6%
Cape May	10.4
Cumberland	6.7
Salem	5.4
Monmouth	4.6
Atlantic	3.6

The Region's projected 9.1% increase for six years is only slightly ahead of the 8.2% recorded in the first four years of the decade.

Table A-4
 1980 COASTAL COUNTIES POPULATION
 RIVKIN ASSOCIATES PROJECTIONS

County	1970	1974	1980 Projections			% Increase	Percentage Increase 1974-80			Percentage Increase 1970-80		
	Census	Estimate	Low	Mod	LI Series	1970-74	RA Low	RA Mod	LI Series	RA Low	RA Mod	LI Series
Atlantic	175.0	180.5	185	187	190	3.1	2.5	3.6	5.3	5.7	6.9	8.6
Cape May	59.6	63.4	67	70	67	6.4	5.7	10.4	5.7	12.4	17.4	12.4
Cumberland	121.4	128.4	135	137	135	5.8	5.1	6.7	5.1	11.2	12.8	11.2
Monmouth	459.4	479.9	498	502	509	4.5	3.8	4.6	6.1	8.4	9.3	10.8
Ocean	208.5	257.8	309	317	332	23.6	19.9	23.0	28.8	48.2	52.0	59.2
Salem	60.3	63.6	66	67	67	5.5	3.8	5.4	5.4	9.4	11.1	11.1
<hr/>												
COASTAL COUNTIES	1,084.2	1,173.6	1,260	1,280	1,300	8.2	7.4	9.1	10.8	16.2	18.1	19.9

Sources: U.S. Census
 Department of Labor and Industry, State of New Jersey
 Rivkin Associates

E. Coastal Zone Growth

Most important to the CAFRA process is the projection of growth in the Coastal Zone of New Jersey. In Table A-5, we project that from 1974 to 1980, between 60,400 and 91,000 persons will be added. Total Coastal Zone population will be between 803,300 and 834,000 persons.

By 1980, Ocean County will have surpassed Monmouth in Coastal Zone population (but not county totals). This is because Ocean will be adding at a rate far exceeding Monmouth and all other Coastal Counties

Ranking for Coastal Zone Growth, 1974-80

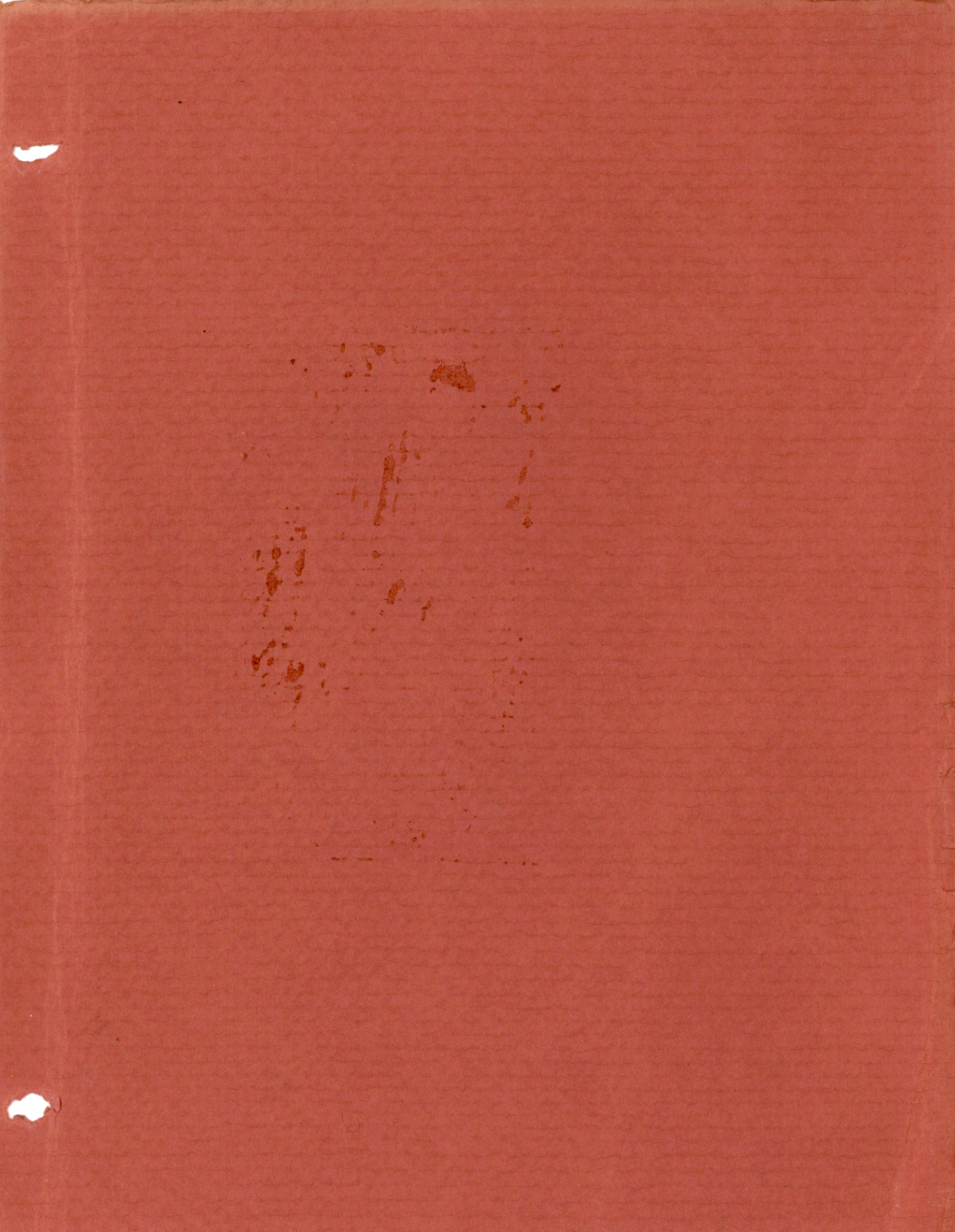
(Moderate Projection)

	<u>Population Added</u>	<u>% of Added</u>
Ocean	56.3	74.9
Cape May	6.5	8.6
Monmouth	6.5	8.6
Atlantic	3.1	4.1
Cumberland	2.8	3.7
Salem	0.0	0.0
	<hr/> 75.2	<hr/> 100.0

Table A-5
 1980 COASTAL ZONE POPULATION
 (In Thousands)
 RIVKIN ASSOCIATES PROJECTIONS

<u>Counties</u>	<u>Population Added to County</u>			<u>Added to Zone 1974-80</u>			<u>1980 Zone Population</u>		
	<u>1970-74</u>	<u>1974-80</u>	<u>1970-80</u>	<u>RA Low</u>	<u>RA Mod</u>	<u>LI Series</u>	<u>RA Low</u>	<u>RA Mod</u>	<u>LI Series</u>
Atlantic	5.5	4.5 - 6.5 - 9.5	10.0 - 12.0 - 15.0	1.5	3.1	5.5	147.6	149.2	151.6
Cape May	3.8	3.6 - 6.6 - 3.6	7.4 - 10.4 - 7.4	3.6	6.5	3.6	64.2	67.1	64.2
Cumberland	7.0	6.6 - 8.6 - 6.6	13.6 - 15.6 - 13.6	2.0	2.8	2.0	46.7	47.4	46.7
Monmouth	20.5	18.1 - 22.1 - 29.1	38.6 - 42.6 - 49.6	4.3	6.5	10.2	263.9	266.1	269.8
Ocean	49.3	51.2 - 59.2 - 74.2	100.5 - 108.5 - 123.5	49.1	56.3	69.8	278.4	285.6	299.1
Salem	3.3	2.4 - 3.4 - 3.4	5.7 - 6.7 - 6.7	-0.1	0.0	0.0	2.5	2.6	2.6
COASTAL ZONE	89.4	86.4 - 106.4 - 126.4	175.8 - 195.8 - 215.8	60.4	75.2	91.0	803.3	818.0	834.0

Source: U.S. Census
 Department of Labor and Industry, State of New Jersey
 Rivkin Associates



Irwin Newman

"A Civil Tongue"

"Strictly Speaking"

