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COASTAL AREA MANAGEMENT ACT

LAND USE PLAN

TOWN OF TOPSAIL BEACH, NORTH CAROLINA

HD268.T67L36 1976 c.2.

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1976

N.C. COASTAL RESOURCES COMMISSION

 FINAL

A
LAND USE PLAN
FOR THE
TOWN OF TOPSAIL BEACH, NORTH CAROLINA

Prepared in accord with
State Guidelines for Local Planning in the Coastal Area
Under the Coastal Area Management Act of 1974.

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Submitted to
North Carolina Coastal Resources Commission

May 21, 1976

The preparation of this report was financially assisted by grants from the State of North Carolina, the National Oceanic and Atmospheric Administration, and the Coastal Plains Regional Commission.

NOTICE TO USERS

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INTRODUCTION

PURPOSE OF A LAND USE PLAN IN NORTH CAROLINA COASTAL AREA MANAGEMENT

The North Carolina Coastal Area Management Act of 1974 [Chapter 1284 1973 Session Laws (G. S. 113A)] (CAMA) established "....a cooperative program of coastal area management between local and State governments" whereby "Local government shall have the initiative for planning."

Enactment of CAMA was based upon findings by the General Assembly that

- . "Among North Carolina's most valuable resources are its coastal lands and waters."
- . "the estuaries are among the most biologically productive regions of this State and of the nation"
- . "an immediate and pressing need exists to establish a comprehensive plan for the protection, preservation, orderly development, and management of the coastal area of North Carolina."

The CAMA established the following goals for the coastal area management system.

- "(1) To provide a management system capable of preserving and managing the natural ecological conditions of the estuarine system, the barrier dune system, and the beaches, so as to safeguard and perpetuate their natural productivity and their biological, economic and esthetic values;
- "(2) To insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations;
- "(3) To insure the orderly and balanced use and preservation of our coastal resources on behalf of the people of North Carolina and the nation;

"(4) To establish policies, guidelines and standards for:

- (i) Protection, preservation, and conservation of natural resources including but not limited to water use, scenic vistas, and fish and wildlife; and management of transitional or intensely developed areas and areas especially suited to intensive use or development, as well as areas of significant natural value;
- (ii) The economic development of the coastal area, including but not limited to construction, location and design of industries, port facilities, commercial establishments and other developments;
- (iii) Recreation and tourist facilities and parklands;
- (iv) Transportation and circulation patterns for the coastal area including major thoroughfares, transportation routes, navigation channels and harbors, and other public utilities and facilities;
- (v) Preservation and enhancement of the historic, cultural, and scientific aspects of the coastal area;
- (vi) Protection of present common law and statutory public rights in the lands and waters of the coastal area."

The planning process established by the CAMA include:

- (a) State guidelines setting the objectives, policies and standards to be followed in public and private use of land and water within the coastal area; and (b) a land use plan for each county within the coastal area.

Following the procedures contained in the CAMA, the Mayor and Board of Town Commissioners of Topsail Beach declared the intent of the Town to prepare a land use plan in accordance with State Guidelines for Local Planning in the Coastal Area under the Coastal Area Management Act of 1974 (Guidelines) adopted by the North Carolina Coastal Resources on January 27, 1975, as subsequently amended.

The Guidelines mandate that each land use plan contain:

- 1) A statement of Local Land Use Objectives, Policies and Standards;
- 2) A Summary of Data Collection and Analysis;
- 3) An Existing Land Use Map;
- 4) A Land Classification Map;
- 5) Written text describing and indicating appropriate development for Interim Areas of Environmental Concern.

A land use plan is one of many elements that constitute a comprehensive plan for Topsail Beach. The land use plan expresses the way the democratically elected representatives of the people think the finite land area should be allocated to best meet the hopes and aspirations of the people who live and pay taxes in a specific jurisdiction. A land use plan can only be thorough when health care, education, transportation, economic development, leisure time, and other components of a comprehensive plan are tested against the people's goals and objectives so they can be integrated into the land use element.

Topsail Beach's land use plan relies upon those data most readily available and focuses upon the major emphases of the CAMA: development within the capability of the natural resources. Other topics, such as water and sewer, roads and streets, and employment are consistent with issues raised by the public, but are peripheral to establishing a basis for decision-making with respect to land.

It is Topsail Beach's intention to utilize the plan as a keystone for all future town activity. The land use plan is a major step in comprehensive planning for Topsail Beach. Matters such as zoning, building codes, Town

appearance, and beach maintenance can be based upon the plan; policy issues, such as annexation, taxes, maintenance of water quality, health care and employment are preliminarily identified for later study and decision-making as elements of the Town's comprehensive planning process.

METHOD OF PREPARING THE PLAN

The Topsail Beach land use plan was developed as an iterative process among elected and appointed public officials, the public, and professional resource specialists.

The iterative process: 1) Sampled public recognition of problems and opportunities in general terms; 2) defined the known physical, social, and institutional setting; 3) invited the public to participate in matching problem solutions with the setting by defining objectives and standards for the Town; 4) projected factors consistent with the selected Town goals and the physical restraints; 5) allocated land according to the projected magnitude of demand and the physical characteristics of the Town; and 6) used the inventory data developed in step 2 to delineate areas recommended as areas of environmental concern with a list of suggested uses.

Coastal Resources Commission Guidelines emphasize the need to map three sets of data: existing land use, land classified according to projected use in 1985, and areas that will be recommended as interim areas of environmental concern. These Topsail Beach data were mapped at a scale of 1 inch = 400 ft. The basic map medium was an aerial photograph mosaic prepared by Coastal Zone Resources Corporation from N. C. Department of Transportation 1 inch = 1,000 ft photography taken in December 1974.

The air-photograph maps are easily reproducible and will serve as a useful public information tool. Additionally, the reproducible mosaic is available for use as a base map to support other planning activities and for implementation of the plan.

Data describing current conditions in the Town were assembled from numerous federal, state and local government sources, as listed in References Cited (p. VI-1). Where more current or detailed information than was available in publications was needed, personal communications with representatives of the publishing agencies and knowledgeable Town residents were used to complete the data collection and analysis.

Existing land use was determined by air photo interpretation and visual inspection of structures, vegetation and water. This method of defining existing conditions permitted rapid identification of hazardous, fragile, and unique areas which, in turn, constitute a major portion of the areas that should be of environmental concern.

Details of Topsail Beach's public participation program are contained in Appendix A.

Land use planning in Topsail Beach was complemented by a concurrent sewage study for Topsail Island^a conducted under the terms of a Section 201 of the Water Pollution Control Amendments of 1972 (201 Plan). Existing land use, dwelling unit density, and population estimates were jointly derived. The CAMA sponsored planning in the Town was closely coordinated with comparable activities conducted by the Pender County Planning Board. No major conflicts between the county and municipal plan have surfaced. If in the future, conflicts should arise, provisions of the county plan shall govern, except in cases where the municipal plan imposes greater restrictions upon land use or greater demands for new development.

^a Topsail Island has three political entities: Town of Surf City and Town of Topsail Beach in Pender County and an unincorporated segment in Onslow County.

SECTION I
CURRENT CONDITIONS

POPULATION AND ECONOMY

Population

The population of Topsail Beach was reported to be 41 in the 1970 U. S. Census of Population (U. S. Department of Commerce 1973). Earlier Topsail Beach population information is not available because Census data for the Town were not separated from Topsail Township prior to 1970. The Census population figure of 41 reflects only the year-round residents of the Town. The Corps of Engineers estimated seasonal residency in 1963 to be 1500 (U. S. Army Corps of Engineers 1965).

Mr. Alva Ward, who located his real-estate business on Topsail Island in 1949, inventoried all structures on Topsail Island in 1970 and again in May 1975. The counts of dwelling units were recorded according to single family, multi-family and motel unit categories, by political jurisdiction.

As part of the 201 Plan preparation, the contractor, Henry von Oesen and Associates, recorded and mapped the total number of structures on Topsail Island, including mobile homes and trailers. The number of units in multifamily residential and transient accommodation structures and the use of commercial structures, e.g., restaurant, bank, were noted.

In late June and early July 1975, a survey of dwelling unit occupancy was conducted cooperatively by Coastal Zone Resources Corporation, Henry von Oesen and Associates, and the Cape Fear Council of Governments.^a Approximately 10 percent of all dwelling units in the Town were surveyed. The primary purpose of the survey was to determine the average number of persons occupying the different kinds of dwelling units

^a See Appendix B for details of survey.

on a year-round and seasonal basis. The number of dwelling units reported for Topsail Beach in 1975 was multiplied by these average occupancy rates by category to yield the average seasonal and year-round population of the town for 1975. Results of the survey show that, on the average, 24 percent of residential housing units in Topsail Beach were vacant during the summer of 1975. Peak summer population, or the maximum number of people that could be accommodated in the existing units, was derived by assuming all dwelling units were occupied by the appropriate occupancy rates.

The results of the survey show that the average Topsail Beach summer population in 1975 was 2974. The year-round population was 347 (up from 1970, a 746 percent increase overall and 149 percent increase per year)^a, seasonal population was 2627 (up 1474 from 1963, a 98 percent increase overall and 8 percent increase per year); on those days when all dwelling units were occupied the peak population was 4131. Nineteen percent of the summer population was residing in motel units at the time of the survey, and 81 percent in non-motel units (single-family cottages, duplexes or apartments). The data do not account for day use visitors or overnight visitors occupying space in parking lots associated with fishing piers. Thus, on some days the total number of persons in Topsail Beach could be greater than 4131.

^aThe year-round population may not equate with the census definition of permanent resident because some family units are transient; that is, they are regularly transferred military personnel who may reside one or two years in Topsail Beach but maintain a permanent residence elsewhere.

According to Mr. Ward's inventory, there were in 1970, 666 dwelling units in Topsail Beach, 111 (20 percent) motel and 555 non-motel (80 percent); in 1975 there were 914 dwelling units, 184 (20 percent) motel and 730 (80 percent) non-motel.

The Town of Topsail Beach records the number of building permits it issues each year submitting yearly an "Annual Report of Building Permits Issued for New Residential Buildings" to the U. S. Department of Commerce Social and Economic Statistics Administration, Bureau of Census. The Annual Reports show the following number of new building permits to have been issued between January 1970 and September 1975: 1970, 21; 1971, 36; 1972, 15; 1973, 52; 1974, 19; and 1975, 14. All of the permits issued were for single family dwellings except 1, in 1971, issued for a new motel. The sharp decline in the number of building permits after 1973 reflects the slowdown in the construction industry due to the current recession, and suggests that most of the 1970-1975 population growth took place between 1970 and 1973.

The 1975 survey shows that average occupancy of vacationers was 3.2 persons per unit in motels and 4.6 persons per unit in non-motel residences; year-round population occupancy was lower, 3.1 persons per unit. At the time of the survey, 28 percent of the non-motel units were occupied by their owners, 48 percent were occupied by renters, and 24 percent were vacant.

Municipal Service Finance

The Topsail Beach Town Budget for fiscal year (FY) 1975-1976 is based on a total property valuation of \$12,830,935 and a tax rate of \$.72

per \$100 valuation. The property valuation in FY 1971-1972 was \$3,474,846 and the tax rate was \$1.50. The 269 percent increase in valuation in the last four years is offset somewhat by the 52 percent decrease in the tax rate; ad valorem taxes (including back taxes and penalties) produced a revenue of \$52,122 in 1971 and \$92,469 in 1975.

Ad valorem taxes accounted for 76 percent of the General Fund revenues in the 1971 Budget, but only 49 percent in 1975. Table 1-1 lists the sources of revenue in the General Fund Town Budgets for the two years, and the percent of total revenue produced by each source.

The recent increases in residential construction and commercial activity have resulted in a large increase in the property and inter-governmental tax bases, creating substantial increases in municipal revenue and in the balance of funds remaining after expenditures. Assessed property valuation increases with the addition of structures on lots, and inter-government taxes such as beer and wine, utilities franchise, Powell Bill allocations and local option sales taxes increase with increased population and commerce.

Increased population and commercial activity increase the ability to supply municipal service facilities, the need and demand for which increase as well. Topsail Beach supports its own police, water distribution and building inspection departments and contracts for garbage collection and street maintenance work; the rescue squad and fire department, on the other hand, are volunteer organizations to which the Town makes contributions. The budgetary allocations to these various activities, therefore, do not completely reflect the relative costs of operation.

Table 1-1. Topsail Beach General Fund Revenues.^a

Source of Revenue	Fiscal Year 1971-1972	% Total	Fiscal Year 1975-1976	% Total
Ad Valorem Taxes (including back taxes and penalties)	52,122	76	92,469	49
Intergovernmental Taxes (including franchise, ABC, Powell Bill, sales, etc.)	3,000	4	29,597	16
Other (including privilege licenses, building permit fees)	7,200	10	7,925	4
Fund Balance	6,732	10	54,000	29
Revenue Sharing	0	0	3,300	2
Total Revenue	69,054	100	187,291	100

^aSource: Town of Topsail Beach (Adopted) Budgets; 1971, 1975.

Table 1-2 lists the General Fund expenditures to service facilities and general government as adopted in the 1971 and 1975 budgets.

General government expenditures have increased dramatically since 1971, but it must be noted that 47 percent of this expenditure is allocated as a contribution to the Town's Capital Reserve Fund. In 1971, 42 percent of general government expense was for salaries (office clerk); in 1975 salaries and professional service expenses were only 18 percent.

In 1971, Police Department expenses were 41 percent salary; \$2500 (14 percent) was allocated as reserve for a new police car. In 1975, 64 percent of Police Department expenditures were for salaries with no specific allocation for new equipment. In 1971, 100 percent of street expenses went towards lighting; 1975 street expenses were for maintenance. In 1971, 100 percent of Fire Department expenditures were for equipment; in 1975, 53 percent went towards salaries and group insurance.

Overall, the comparison of the two Budgets indicates that the major equipment required by existing Town services has been purchased and current expenses are predominantly for maintenance and the upgrading of salaries and employment benefits.

The 1975 Town Budget lists separate funds for the Water Department and Capital Projects. The 1975 Water Funds Budget is \$95,950; 42 percent of the revenue is from interest earned on investments, charges for water used, and taps and connection fees, and 55 percent is Fund balance from previous years. Water Fund expenditures are 47 percent operating expenses and contribution to Debt Service; 53 percent are contributions to Contingency and Capital Reserve Funds.

Table 1-2. Topsail Beach General Fund Expenditures.^a

Cause of Expenditure	Fiscal Year 1971-1972	% Total	Fiscal Year 1975-1976	% Total
General Government ^b	9,004	13	113,736	61
Police Department	18,150	26	39,805	21
Inspection Department ^c	NA		2,400	1
Streets and Highways	2,500	4	5,000	3
Garbage Collection	11,000	16	17,400	9
Fire Department	6,000	9	8,950	5
Water Department ^d	22,400	32	NA	
Total Expenditures ^e	69,054	100	187,291	100

^aSource: Town of Topsail Beach (Adopted) Budgets; 1971, 1975.

^bFor the purpose of analyzing service expenditures, General Government includes all General Fund expenditures other than those listed above.

^cNot specifically cited in 1971 Budget.

^dIn 1975 Budget, a Water Fund is separate from General Fund.

^eNo contribution to the Rescue Squad was cited in either 1971 or 1975 Budget.

The Capital Projects Fund is for the establishment of sewage treatment facilities, planning for which is currently being conducted. Capital Projects Fund revenue is 47 percent Federal 201 Facilities Grant and 53 percent contribution from the Topsail Beach General Fund. Capital Projects expenditures are 75 percent professional services and 25 percent contracted services.

Economy

The economy of Topsail Beach is dependent on its land and water resources. The ocean, inlet and sound waters constitute the major attractions for the swimming, fishing and boating enthusiasts who visit the Town in summer. The principal occupation of residents of the Town is sport fishing, with an estimated 30 people employed in the operation of fishing piers and tackle shops; there are an additional 50 jobs in the construction industry, as a rule, filled by both resident and non-resident workers; only about 6 residents are known to commute to work off of Topsail Island.^a There is a small retirement segment of the population, and little or no employment in commercial fishing. Employment opportunities in the town increase by as much as 50 percent during the summer vacation season, with job openings in piers, motels, restaurants, and shops.

In summer, Topsail Beach commerce can supply the day to day needs of vacationers, with grocery stores, tackle shops, and gift shops, lodging, dining, and commercial recreational facilities. Most year-round residents, however, find it necessary to do much of their shopping off the island.

^aPersonal communication, Mr. Lewis Orr, Mayor, May 20, 1975.

The nearest professional services such as doctors, lawyers, and dentists are found in Wilmington and Jacksonville, as are specialty shops, prescription drugstores, bookstores and the like.

As noted, property tax collections account for 49 percent of income to the town government. It has been estimated that approximately 75 percent of this amount comes from absentee owners.^a

Serious problems have already been encountered as a result of the great demand placed on the land and its adjacent waters. A tremendous growth in tourism has occurred in Topsail Beach in the last 20 years. The increase in disposable income, mobility, leisure time and access, in the two decades between 1950 and 1970, has resulted in an increase in outdoor recreation and vacation second-home building in the town. An increased life-span coupled with affluence has resulted in an increased number of retirees seeking retirement in resort areas. As a result, the market value of waterfront acreage has increased tremendously, leading to higher housing densities. As vacation homes have increased in number, so have commercial support facilities such as restaurants, motels and shopping areas. Real estate services are major year-round employers. Unfortunately no measure is available for sales, and service employment associated with home sales and rentals in Topsail Beach because the sector is made up of many small enterprises that operate in all jurisdictions of Topsail Island and on the mainland.

^a Personal communication, interview with Robert Wallace, Chairman, Topsail Beach Planning Board, October 30, 1975.

EXISTING LAND USE

The Town of Topsail Beach is located at the southern end of Topsail Island on the east coast of Pender County. Topsail is a barrier island stretching for approximately 25 miles in a NE-SW direction between New Topsail Inlet in Pender County and New River Inlet in Onslow County. It is bounded on the northwest by the Intracoastal Waterway and on the southeast by the Atlantic Ocean. The island is bisected by the Onslow-Pender County line, the Pender County portion being comprised of two municipalities, Surf City and Topsail Beach. Topsail Beach forms the southern 4.8 miles of the island between the inlet and Surf City.

Until 1940, Topsail Island was deserted, undeveloped, and inaccessible by automobile. In 1941, the U. S. Government established Camp Davis as a temporary military reservation in the Holly Ridge area, and leased Topsail Island for use as a missile testing range. In order to facilitate military activities, a pontoon bridge was constructed across the Intracoastal Waterway, barracks and observation towers were built, and a road extending the full length of the island was developed. In 1948, military activities ceased, Topsail Island facilities were abandoned, and land that had been leased was returned to its owners, complete with roads, buildings, and most importantly, a bridge. Prompted by its newly established accessibility, development of the island was begun immediately; Topsail Beach was incorporated in 1963.

Topsail Beach is situated 27 road miles northeast of Wilmington and 31 road miles southeast of Jacksonville, the two population centers closest to the town. Access to the island from Wilmington is provided by

US 17 to NC 50 with a drawbridge connection to the mainland. Access from Jacksonville to the island is provided by US 17 to NC 210 with a fixed span bridge across the waterway.

Ownership prior to 1941 of the majority of the island (including claims to some submerged land extending to the mainland) by a relatively few individuals, development by the Army of the major paved road close to the frontal dune system, and rapid subdivision of land and sale of lots have and will continue to be the major determinants of land use in the developable parts of Topsail Beach. The military road, now NC 50, served as the backbone for the division of land; the subdivisions with or without deed restrictions have been officially platted and recorded. Most present subdivisions consist of rectangular lots measuring from 25 ft to 50 ft across and 60 ft to 100 ft deep. Thus, some platted lots of 2,500 square feet (ft²) (1/16 of a commercial acre) have been sold and built upon. Many people may have purchased more than one lot; but the number of additional lots that were acquired to afford protection for a large house, as opposed to the number acquired to accommodate one structure on each lot, is not known.

Only a few large parcels of maritime forestland have not yet been subdivided but have remained open and natural through the will of owners or the condition of the money markets.

Topsail Beach is made up of beaches, dunelands, maritime forest and salt marshes, the distribution and extent of which vary throughout the town. The southwestern 1/2 mile of the town, near the inlet, has only

scant grass cover and virtually no natural dune formation. In the vicinity of Trout Avenue the grass cover begins to thicken progressively north-eastward, the vegetation remaining herbaceous up to the Davis Avenue area where some woody vegetation begins. A mixture of shrubs, beach grasses, and high marsh grasses constitutes the dominant vegetation from Davis Avenue to about 1/2 mile northeast of Dolphin Pier, at which point, maritime forest begins and continues to be the dominant vegetation to the Surf City town line.

For the length of the town, Banks Channel separates the higher dune and forest land from the major marsh area; coastal marshes cover a large area of the town whose jurisdiction extends westward to the center-line of the Intracoastal Waterway. Banks Channel is used extensively for water transportation and is the route most often taken between the Intracoastal Waterway and New Topsail Inlet. The channel was dredged only once, in 1967, by the U. S. Army, Corps of Engineers and currently contains numerous sandbars and shoal areas.

The developed or improved land in Topsail Beach is located entirely to the southeast of Banks Channel. The development in this area extends for the full length of town and its breadth between the ocean and channel. Within this area there are approximately 436 acres of developable land, of which 83 acres are zoned for commercial uses and 354 for residential.

In general, approximately 81 percent of the developable land area of Topsail Beach is zoned Residential, with the Residential Districts

spread throughout the town. There are several sections of town, however, in which residential use of the land is presently most intense. Of the section between New Topsail Inlet and Trout Avenue, only the northernmost part is developed, zoned for canal front dwellings, with all housing oriented along the streets and canals running east-west. This system of "finger canals" gives each house water frontage for boat docking and provides access to Banks Cannel.

Between Trout Avenue and Davis Avenue a highly developed grid street system runs NE-SW and NW-SE, providing for a minimum of 4 rows of buildings between Hines and Crews Avenues, and up to 9 rows between Crews and Davis Streets. Between Davis and Rocky Mount Avenues, road development is much sparser and follows the shorelines rather than a grid pattern; most buildings in this area are located on either shore rather than inland. From Rocky Mount Avenue to the town line, South Anderson Blvd. (NC 50) is the only street running north-south, with roads and driveways infrequently cut from it into the woods and dunelands; building density in this area is very low.

On the whole, along Banks Channel, land use is predominantly residential, and oriented toward water recreation. There are more than 100 relatively small piers and docks extending into the channel, including the larger commercial Topsail Sound Fishing Pier. In addition, 10 large (providing access to more than one lot) boat canals are cut into the land mass. Along the ocean beach most of the land is in private residential use in the form of single family cottages. The highest density of buildings occurs along the waterfronts, with less extensive development inside.

Commercial land use in Topsail Beach is scattered throughout the Town, but is heaviest in two areas. The only area of town zoned B-1 is the central business district, located between Crews and Davis Avenues. On the ocean front of this district there is a fishing pier, motel, and restaurant; inland are the public and institutional buildings of the town, the Town Hall, Rescue Squad, and Volunteer Fire Department. Real estate offices, a roller skating rink, gas and groceries, and more restaurants and motel facilities are also located in this district.

The second major commercial area of town is located at the southern end, extending from Channel to Ocean along Florida Avenue; a pier on the channel, motels, restaurants, and a marina are located here.

In general, land uses now present in Topsail Beach have not resulted in problems of compatibility; residential/recreational land use is supported by commercial and institutional facilities. There are no agricultural, industrial or forestry activities in conflict with the above uses, nor are any foreseen in the near future. Rather, land use problems beginning to surface in the town and likely to be augmented in the future involve more the intensity of various uses and the accommodation of future growth on the limited amount of developable land in the town.

CURRENT PLANS AND REGULATIONS

Current Plans Concerning Land Use in Topsail Beach

Water and Sewer

1. Comprehensive Water and Sewer Program, Pender County, North Carolina, F. T. Green and Associates, 1968.

Recommendations

- a. Expand existing source of water supply and distribution system to serve new customers.
- b. By mid-1980, Topsail Beach expects to have a population meriting a system of sanitary sewage collection and disposal.
2. Henry von Oesen and Associates is currently developing a sewer and water plan for Topsail Beach.
3. Town of Topsail Beach, Capital Improvement Program 1974-1979, Town of Topsail Beach and Cape Fear Council of Governments, June 1974. Describes proposed Topsail Beach capital improvements expenditures necessary in the succeeding 5-year period in order to implement:
 - a. The Topsail Beach part of the Topsail Island sewage collection system designed to serve all areas within the town limits.
 - b. Water main extensions to serve areas of the Town of Topsail Beach that are presently drawing their water supply from individual wells.
 - c. The Topsail Island Sewage Treatment Plant - a proposed common facility with an estimated capacity of 1 million gallons per day.

Transportation

1. Regional Development Guide Year 2000 - Region "O", Cape Fear Council of Governments, June 1972.

Recommendations

- a. Improvement and extension of the Coastal Corridor Highway (US 17) through Region "O".
 - b. Development of a new highway from Hampstead to Topsail Beach.
 - c. Improvement (four-laning) of US 74 from US 17 to the Intra-coastal Waterway.
2. Transportation Needs Study - Region "O", Cape Fear Council of Governments, Traffic Planning Associates, Inc., 1971.

Recommendations

- a. Provide a limited access facility, generally parallel to the coast, serving the recreation and population centers.
 - b. From the above facility, provide additional connections to the major beaches and inland recreation areas with high type secondary roads.
3. Town of Topsail Beach, Capital Improvements Program 1974 - 1979, Town of Topsail Beach and Cape Fear Council of Governments, June 1974.

Recommendations

- a. Topsail Beach, with revenue from Powell Bill allocations, should continue to finance new pavings of their streets to be part of the municipal thoroughfare system.
- b. The cost of paving dead end streets should be shared 50-50 by the Town of Topsail Beach and property owners whose land adjoins the unpaved streets.

- c. Capital improvements should include both the paving of Carolina Boulevard and Drum Avenue and the extension of a drainage along Anderson Boulevard to Ocean Boulevard between Flake and Davis Avenue. This drainage would relieve periodic flooding of the area.

There are currently no utilities extension or open space and recreation policies in effect in Topsail Beach.

Existing Local Regulations Affecting Land Use in Topsail Beach

1. Subdivision Regulations of the Town of Topsail Beach, North Carolina

Effective Date: July 11, 1973

Application: All development of parcels of land 2 acres or larger in size to be subdivided into 3 or more lots where a street or access to beaches right-of-way dedication is involved within the corporate limits and extraterritorial jurisdiction of the Town of Topsail Beach.

Summary of Provisions

- a. Plats to be submitted for approval of Planning Board must conform to specific requirements as stated.
- b. Planning Board to review and take action on the preliminary plat within 45 days of its submission.
- Before acting on preliminary plat, Planning Board shall request a report from any person or agency directly concerned with the proposed development.
- c. Prior to approval of final plat, subdividers shall have installed permanent reference points and required improvements according to the design standards specified by the Town.
- d. If the Planning Board fails to act on plats within specified time, subdivider may seek approval of the Board of Town Commissioners.

- e. Final plats are reviewed by Planning Board. Town Commissioners then review plats on recommendations of the Planning Board.
- f. No construction permits shall be issued nor Town services extended to subdivision until final plat is approved.
- g. Within six months after approval, final plat must be recorded with the Register of Deeds in Pender County.

2. Zoning Ordinance - No. 21, Topsail Beach, North Carolina

Effective Date: June 28, 1972

Application: Within the corporate limits of Topsail Beach.

Summary of Provisions

- a. It is the purpose of this ordinance to regulate the real-estate subdivision, building and land uses, lot, yard and building sizes, parking and loading, and signs in Topsail Beach.

Towards these purposes, the Town is divided into the following classes of districts:

- 1. R-1 Residential-Oceanfront
- 2. R-2 Residential-Soundfront
- 3. R-3 Residential-Canalfront
- 4. R-4 Residential-Inside Lots
- 5. B-1 Business-Central Business
- 6. B-2 Business-Limited Business

The Zoning Ordinance of Topsail Beach defines the following four categories of Residential land: Oceanfront, Soundfront, Canal, and Inside. For each of these Zoning Districts, the uses permitted to be made of the land are stipulated. Within the Oceanfront District, only single

family dwellings and duplexes are allowed; in the remaining three Districts, multi-unit dwellings are permitted as well. In the Inside District, in addition to residential buildings, the zoning ordinance permits churches, public recreation areas, home occupations, libraries, professional offices, studios and tourist homes. In all four Residential Districts, a minimum of 5000 ft² is required for each lot, 2500 ft² for each dwelling unit; the required minimum width of each lot is 50 ft.

The Zoning Ordinance defines two categories of commercial land, called B-1 and B-2, and lists the land uses permitted in each. In both of these Districts, all residential uses are permitted in addition to general shops and stores. The B-1 district, however, allows for pet stores, public utilities, dry cleaning, commercial laundry, and eating and drinking facilities (including drive-ins), none of which is permitted in B-2. There is no minimum lot size or width requirement for commercial land uses within these districts.

- b. Boundaries of each district are located on the "Zoning Map" of the Town of Topsail Beach.
- c. The Building Inspector is charged with the duties of enforcing the provisions of this ordinance. A Zoning Certificate and Certificate of Occupancy must be received from the Building Inspector before land shall be used or occupied or buildings structurally altered or erected.
- d. A Board of Adjustment is established for the purpose of hearing appeals over decisions of the Building Inspector and authorizing variances. This Board is also charged with the duty of granting Special Use Permits where such are warranted.

- e. The Town Board of Commissioners may, from time to time, amend, supplement, change, modify, or repeal the boundaries or regulations herein or subsequently amended.

Local land use regulations are limited to those listed above.

There are currently no nuisance regulations, floodway, historic district or environmental impact statement ordinances in effect in Topsail Beach.

CONSTRAINTS

There are certain areas of Topsail Beach where development would be either especially costly or likely to cause undesirable consequences because of the inherent characteristics of the land and water. The permeability of soils, their susceptibility to flooding, and their biological productivity can and have exerted influence upon the choice of land areas that can most economically, and with the least risk and uncertainty, be put to various uses.

Physical

Flooding

The U. S. Geological Survey (USGS) is mapping Flood Prone Areas of Topsail Beach. The purpose of these maps, as stated on each map, is to "show administrators, planners, and engineers concerned with future land developments, those areas that are subject to flooding". The Flood Prone Areas shown on these maps have a 1 in 100 chance on the average of being inundated during any year.

Flood Prone Area maps have been completed by USGS to date at 1"=2000' scale for only parts of Topsail Beach; flood areas mapped to date indicate a flood elevation of between 10 and 15 ft msl. Virtually all of the land surface of Topsail Beach, with the exception of some high fore-dunes, would fall within the Flood Prone Area.

Soils

According to the U. S. Soil Conservation Service (SCS) "General Soil Map for Pender County", the only soil association present in Topsail Beach is the Capers-Newhan Association. This association is made up of only the Capers and Newhan soils, each with different physical characteristics and suitabilities for various purposes. The Capers soils are found mainly in the marsh areas of the town, where the dominant vegetation is salt marsh grasses such as *Spartina* and rushes (SCS 1972). This soil is characteristically very poorly drained and subject to frequent storm and tidal overflow. It was formed by both the deposition of silts, sands, and clays in the slowly moving waters of the estuary, and by the build-up of organic debris that is entrapped by vegetation growing in it. It is the wetness and regular flooding of the Capers soils that render them generally unsuitable for septic tank fields. The Capers soils also tend to have low traffic supporting capacity and are poorly suited to supporting buildings, roads, and streets.

The Newhan soils are found on the dune and beach areas along the coast. Deposited by both existing and past wind and water action, this soil is often found forming inland sand dunes and ridges as well as foredunes. It is a fine to coarse sand, excessively drained, with varying amounts of marine life deposits. The sands of the Newhan soils, characteristically excessively drained, are classed as having moderate to severe limitations for septic tanks because of their inability to filter wastewater in large

quantities, as required in areas of high population density. Further limitations of these soils are usually associated with their proximity to the ocean and susceptibility to flooding.

Between the foredune and marsh, underlying both dunelands and woods, are soils that have a combination of the characteristics of Newhan and Capers soils. The principal factor limiting the use of the soils in this area is depth to the water table, which on Topsail Island tends to be rather shallow, but can vary substantially locally. The action of trees growing on these soils, by their transpiration of large amounts of moisture, can keep the water table at lower levels than would be found were the trees removed. The water table may change seasonally as well, being highest in the cooler, wetter, winter months.

A factor sometimes limiting the use of the soil underlying sparse herbaceous or shrub vegetation is its stability. Close to the ocean, the vegetation type is often dictated by a tolerance for both salt and wind; a lack of vegetative cover here may be indicative of moving sands.

The suitability of all three of these soils for developments in which septic tanks are used as the sewage disposal method, is dependent primarily on population density.

Sources of Water Supply - Recharge Areas

Ground water comprises the sole source of water supply for both public and private systems on Topsail Island. Pender County is underlain by a vast aquifer system, two strata of which are important in the Topsail Beach area as sources of ground water.

Pleistocene and Recent surficial sands cover the beach areas of the county and constitute the principal water source for most private wells. In the surficial sands, water usually occurs under water table conditions within 15 ft of the land surface, but may be partially confined by clay in the lower part of the aquifer (Laymon 1965). The productivity of this aquifer is limited primarily by its thickness; it is recharged directly by rainfall and easily subject to contamination.

The Castle Hayne limestone is not extensively used for water supply in the beach area, but is potentially valuable as a large, long term supply. The formation begins at 35 ft below msl where its waters occur under artesian conditions. Recharge to the Castle Hayne would, therefore, not be expected to occur in the immediate beach area and its waters would not be as vulnerable to contamination as those of the surficial sands.

The quality and quantity of water from the Castle Hayne vary locally. In the Topsail Beach area, it is generally high in iron, low in chlorides, with a pH of 7-8; at Holly Ridge, indications are that a specific capacity of 50-70 gpm per ft drawdown can be obtained (Laymon 1965). Most attempts to obtain good water from the Castle Hayne in the immediate beach area have proved unsuccessful thus far, and the source of the existing municipal supply is in the mainland.

Fragile

Coastal Wetlands

Estuarine tidal marshes and mud flats are found covering all but the high sand ridges, dunelands and maritime forests of Topsail Beach along the entire length of the town's sounds, creeks and bays. The dominant

soil found in the marsh areas is the very poorly drained Capers soil, subject to daily and frequent tidal flooding; the dominant vegetation is salt marsh grass.

For the purpose of better defining their significance, tidal marshes can be divided into two categories: low tidal and high tidal marshes. Low tidal marshland is defined as that consisting primarily of Spartina alterniflora and usually subject to inundation by the normal rise and fall of lunar tides (N. C. Coastal Resources Commission 1975). The particular significance of the low marsh is based on its high yield to the estuarine waters of organic detritus, which serves as a primary food source for various species of fish and shellfish, such as menhaden, shrimp, flounder, oysters, and crabs. The roots and rhizomes of the Spartina alterniflora serve as waterfowl food, and the stems as wildlife nesting material. Low tidal marshes also help to retard shoreline erosion.

High tidal marshland is subject to occasional flooding by tides, including wind tides, and is characterized by a variety of marsh grasses, including Juncus roemarianus and various species of Spartina. The high marshes also contribute to the detritus supply of the estuarine system and support a diversity of wildlife types; they function as effective sediment traps and as a further deterrent to shoreline erosion.

Some private development has already occurred along the tidal marshes of Topsail Beach, particularly in places adjacent to the higher land along Banks Channel. The channel is used extensively for water transportation, fishing, and related water sports; the adjacent marshland has been used as sites for homes, piers and recreational facilities supporting the Waterway activities.

The practice of channel dredging and marsh filling has recently come under closer scrutiny of state and federal authorities; as a result, there is currently little development of the marshland in Topsail Beach.

Estuarine Waters

The estuarine waters that surround the coastal wetlands in Topsail Beach are probably one of the most productive natural environments in the county, supporting many fish and shellfish species for part of all of their life cycles. According to the statutory definition /G.S. 113-229(n) (2)/ estuarine waters in North Carolina include all of the waters of the Atlantic Ocean within its boundaries, and all the waters of the bays, sound, rivers and tributaries thereto seaward of the dividing line between Commercial Fishing Waters and Inland Fishing Waters; the dividing line between these waters has been established for each body of water by agreement between the N. C. Department of Conservation and Development (now DNER) and the N. C. Wildlife Resources Commission. All of the surface waters within the jurisdictional boundaries of Topsail Beach are classified Commercial Fishing Waters and, as such, are designated Estuarine Waters of North Carolina.

Public Trust Areas

The State of North Carolina supports the traditional public rights of access to and use of lands and waters designated Public Trust Areas for purposes including navigation, fishing and recreation. Public Trust Areas include estuarine waters, navigable water bodies to their ordinary high water marks, and all lands beneath these waters. The state allows appropriate private development within Public Trust Areas, provided that the development not be detrimental to public trust rights.

Ocean Beaches and Sand Dunes

Topsail Beach has approximately 4.8 miles of barrier island ocean shoreline characterized by wide and sandy beaches with moderately high fore-dunes. The ocean beaches consist of unconsolidated soil material without vegetative covering; they are characteristically of a larger soil particle size and lower slope than the adjacent sand dunes into which they grade. The character of the sand deposits on ocean beaches is dynamic in nature, responding to fluctuations in the forces which cause their deposition and erosion. Tidal action, littoral currents, and storms cause a continual movement of sand both along the beach and between the dunes and deeper ocean waters. The resultant changes in beach morphology cause the shoreline, theoretically demarking the confluence of land and water, to shift to the point of being virtually undefineable.

The beach on the north side of New Topsail Inlet has been accreting at least since 1938 (Langfelder et al. 1974), causing an increase in land area laterally, but little build-up vertically; this southwestern 1/2 mile of town has only scant grass cover and virtually no natural dune formation. In 1974 with the financial assistance of the N. C. Department of Water and Air Resources, a system of seven sand bag groins was built along the beach, between the Sea Vista Motel and the last developed lot at the inlet, in order to help retard erosion. In addition, local property owners in this area have put up sand fences along the beach in order to promote dune formation. According to 1970 USGS 15 min quadrangles, however, all of this area remains below 10 ft in elevation msl.

The ocean beaches are the most valuable natural recreational resource in Topsail Beach, and are extensively utilized as such. Their dynamic nature, however, precludes safe and cost effective structural development on them without the use of sound engineering practices established for coastal hazard areas.

The foredunes along most of Topsail Island have been described as relatively large, 12-20 ft in height, with no rear dune and very little movement of the sands inland (Boyce 1953). Where undisturbed by development activities, most foredunes in the Topsail Beach portion of the island are relatively well stabilized by vegetation, with herbaceous and shrub zones on the lee side beginning just over the crest of the dune. On the beach front between the Sea Vista Motel and the Surf City town line the foredune averages about 20 ft in height. Only in isolated spots has the dune line been broken or obliterated by development activities or natural forces.

Sand dunes are valuable both for their aesthetic appeal and for the protection they afford the land behind them. Where stabilized by vegetation, a foredune can act as a temporary buffer to the erosive effects of storm wave action. For the most part, however, dunes are relatively unstable land features over time and as such, are hazardous areas for the location of permanent structures.

Excessive Erosion Areas

"Storm erosion of beaches and dunes of the North Carolina coast has always occurred, but it has not been a serious economic problem until

recently when increased development of beach front property has taken place" (Knowles et al. 1973). Knowledge of the patterns of coastal erosion is essential to the safe and productive development of a coastal region.

The continual erosion and accretion occurring along a beach result in a gradual change in the location of both the high water and dune lines over time; excessive erosion and accretion, as accompany large storms, can affect a change in the location of these lines very rapidly. In the course of a large storm, great quantities of beach and dune sand can be eroded from a site and replaced by subsequent accretion, with no net erosion resulting. Structures situated on these sands, however, once removed, are seldom replaced intact. Planning for safe development of beach front property must take into account both long term erosion trends, established from historical records, and the probability of extensive shorter term erosion losses predictable by scientific study.

A comparison of mean annual erosion and accretion rates occurring in Topsail Beach between 1938 and 1972 reports relatively minor changes taking place annually in the dune and high water lines of the town. Over the 34 year period, the high water line in Topsail Beach has been accreting at the rate of .1 ft per year and the dune line has been eroded at the rate of 1.2 ft per year (Wahls 1973).

The amount of dune erosion that will take place during a storm of a given frequency depends on several factors, primarily the storm surge

level, the height and massiveness of the dune, and the distance of the dune from the mean water line (Knowles et al. 1973). Along Pender County beaches, the calculated recession from the toe of the dune during a storm with an expected frequency of once in 25 years is approximately 112 ft (Knowles et al. 1973).

Erosion and accretion occur normally along the watercourses of estuarine marshland in Topsail Beach, but generally to a much lesser degree than along its beaches. Erosion in the sound and along the intracoastal waterway is often accelerated by the wake of motor boats; accretion in these waters is accelerated when sands and silts, carried by streams from the mainland, settle out in the calmer waters of the sounds. Costly bulkheading of soundfront property and maintenance of navigation channels is often required for developments in these areas.

Resource Potential

Archeologic

Two types of archeological resources have been recognized on the North Carolina sea coast: remnants of earlier dwellers and sunken vessels offshore.

Remains of prior cultures may be on dry land; the most common are the shell mounds marking the scene of major fishing expeditions. There is always the possibility that people of the area during the Pleistocene period occupied areas now beneath the sea. There has been no systematic inventory of such sites nor indication of areas with a high probability of evidence of ancient settlement.

The second resource is the wrecks of vessels sunk naturally or by acts of war. Recent sub-surface exploratory work located a blockade runner, the Phantom, off New Topsail Inlet.^a

Historic

Topsail Island was the scene of early rocket test facilities. The test range was constructed and operated by the military establishments. Work conducted from Camp Davis and the missile range on Topsail Island was the forerunner of National Aeronautics and Space Administration's widely acclaimed achievements at Cape Kennedy.

Many of the key facilities were located in what is now Topsail Beach. The remaining evidence of the missile test range are an historic resource of state and national importance.

Community Services

Community services in Pender County are operated some on a county-wide basis, and some by individual communities and municipalities. Many of the facilities and services that are offered on a county-wide basis are operated out of the town of Burgaw, located centrally in Pender County. Road networks in the part of the county west of the Northeast Cape Fear River are integrated and distributed in such a manner as to make the delivery of services out of Burgaw efficient for that area. A "rule-of-thumb" is that all of this part of Pender County is within a 30 minute drive from Burgaw. Topsail Beach, however, located on the east coast of Pender County, is well beyond a 30 minute drive from Burgaw, being isolated

^aMr. George Feehney, Personal Interview, October 28, 1975.

from the bulk of the county by the vast Holly Shelter swamplands with their complete lack of throughroads. As a result, some of those services offered by the county, including the rescue squad and solid waste collection, do not serve the Town of Topsail Beach. Other county services, such as the health clinics, hospital, and library, while available to Topsail Beach, are little used by town residents. By virtue of U.S. 17's N-S orientation many services can be obtained more readily by Topsail Beach's residents in Wilmington or Jacksonville.

Health Service

Health services in Pender County are maintained primarily by the Pender County Health Department, with headquarters in Burgaw. Health Services include Pender Memorial Hospital and Pender County Health Clinics. However, most residents of Topsail Beach, when in need of medical facilities, use those facilities in New Hanover or Onslow County. There are no doctors or dentists operating medical practices in Topsail Beach.

Under the direction of a non-profit organization, the Penslow Foundation, a new health center complex is being planned for the coastal area of the county. The plans call for construction beginning in late 1975 of a health clinic in Holly Ridge to house three doctors offices, one dentist office, a pharmacy, waiting room, six treatment rooms, an X-ray room, and a laboratory. The clinic would be operated on a 24-hour basis to serve residents of the area from the ocean west to Maple Hill and from Hampstead north to Verona in Onslow County.

The Town of Topsail Beach operates its own rescue squad equipped with an ambulance and all volunteer personnel. Rescue squad vehicles presently take emergency patients to hospitals in either Wilmington or Jacksonville, but will in the future use emergency facilities of the Penslow Clinic.

Fire Protection

Topsail Beach has a 24 member volunteer fire department equipped with a 1972 750 gpm pumper (Hardman and Mack 1973). Fire calls from Topsail Beach and throughout the county go in a central dispatcher in Burgaw who activates an alarm button to alert that fire department closest to the endangered area.

The Topsail Beach Volunteer Fire Department has been given a fire protection insurance rating of 8 by the North Carolina Fire Insurance Rating Bureau. A rating of 8 indicates that the department equipment is in excellent condition, personnel are adequately trained, and the water supply and fire hydrant systems are reliable.

Education

Pender County has a consolidated school system with 12 schools located throughout the County. Topsail Beach resident school children attend grades K-3 at Topsail High School in Hampstead, 4-7 at Topsail Middle School in Annandale, and 8-12 at Topsail High School. Both of these schools are located on U.S. 17 and require 16 to 18 mile trips each way from Topsail Beach. A county school bus system is available for all students grades 1-12.

Solid Waste Disposal

There are at present two solid waste collection and disposal systems in operation in Pender County. The whole inland area of the county is provided with garbage pickup and disposal by a county system begun in February, 1973. There is one landfill for the area, located on SR 1640, 4 miles west of Burgaw. Garbage collection trucks, operated by the county, make collections at designated locations, with subsequent deliveries to the landfill.

The Topsail Township Landfill opened on July 7, 1975 to provide a waste disposal site for the beach areas of the county. Garbage collection in Topsail Beach is contracted for by the municipality; the landfill is operated by the county. In the winter months when the population is low, few trips to the site west of the Surf City Bridge on NC 50 are needed each collection day. In summer, however, with the greatly increased tourist population, facilities and man power are required to work long hours in order to keep up with the increased loads.

Water and Sewer

The Town of Topsail Beach buys water from adjacent Surf City, but operates its own distribution system and maintains separate storage facilities. A preliminary engineering study was conducted in 1968 to determine the possibilities of establishing a water supply in the town (Henry von Oesen and Associates 1968). Failure to locate a suitable source of good quality water on the island, and the high cost of installing a pipeline from the mainland led the town to contract with Surf City to buy water from its supply.

The Surf City water system was established in May, 1968 with the financial assistance of the Federal Housing Administration. There are presently two wells in the system located on NC 50-210 just west (one, about 1/2 mile, the other, about 1 mile) of the Intracoastal Waterway; the wells have a combined rated capacity, based on State Board of Health criteria, of 516,000 gallons per 12 hour pumping day.^a The water system was designed to have an ultimate capacity of 2.5 million gallons per day by the addition of up to four more wells.

According to Mr. Benson, there are approximately 500 customers connected to the system in each of the two towns, with a combined peak use of about 375,000 gallons per day in summer; peak use averages 140,000 gallons per day in Topsail Beach and 235,000 gallons per day in Surf City. (The greater amount of commercial activity in Surf City, including trailer parks, motels, and restaurants probably accounts for the town's larger water consumption per customer.)

Waterlines in Topsail Beach are located along the N-S streets, with additional lines on major E-W streets. Anywhere in the developed part of town, connection to the water system is economically feasible, and few private wells remain in use. In the northern maritime forest area of town, where there are no major E-W streets, a single N-S waterline runs along NC 50. Future development in the maritime forest may require more extensive line installation, which should be planned so as to destroy as little of the forest resource as possible.

^aRobbie Benson, Henry von Oesen and Associates, Personal communication.

In 1973, approximately 93 percent of the population of Pender County was served by private wastewater disposal systems, most of which serve individual single-family residences and rely on subsurface disposal methods. The few current problems with wastewater disposal in Topsail Beach are scattered locally, and relate to three major characteristics of the area: a high water table, poor soil conditions in some areas, and a population density which without financial assistance cannot support public wastewater collection and disposal systems.

The continued development on small lots in Topsail Beach will create over-crowded conditions for the septic tanks in use. The Town of Topsail Beach, in cooperation with Surf City and Onslow County, is presently studying the feasibility of development of a regional wastewater treatment facility to cover the whole of Topsail Island.

Because of limited data, no other types of area with resource potential, fragile or hazard areas or other physical constraints on development have been identified at this time.

Addendum

Subsequent to the publication of 1970 U. S. Census data which cited the permanent resident population of the Town of Topsail Beach as 41, the Town received notice that an error was made in the tabulation of its Census data. The U. S. Bureau of the Census now reports the 1970 permanent resident population of Topsail Beach to be 108.

SECTION II

ISSUES, OBJECTIVES, AND STANDARDS

MAJOR ISSUES AND GENERAL ALTERNATIVES

Since the Town's incorporation in 1963, the Topsail Beach summer population has increased by 98 percent; the year-round population increased by 746 percent between 1970 and 1975. Land prices have escalated accordingly. Ocean front lots that in the early 1950's sold for \$1,500 are now asking \$15,000.^a

As vacation homes have increased in number, so have commercial support facilities such as restaurants, motels and shopping areas. Throughout the town and the adjacent jurisdiction, single-family detached dwellings abound, each utilizing sub-surface sewage disposal methods in soils with moderate to severe limitations for septic tanks. The closing of nearby shellfish waters to harvesting, traffic congestion, and more crowded living conditions have already resulted, threatening the quality of those resources on which the town is based. Yet the demand for living space, water, and services continues to rise.

Responses to a questionnaire sent to all property owners (see Appendix A) indicate that the open space and abundant natural recreation resources of Topsail Beach, providing a variety of outdoor activities, are the primary attractions of the Town for both permanent and vacationing populations. Existing employment opportunities, public services, indoor entertainment, and cultural and shopping facilities of the area do not offer sufficient incentive for either permanent location or vacationing in the town. The high cost of beach area land would be prohibitive to most people were there

^aMr. Alva Ward, Realtor, Personal Interview, October 21, 1975.

not such a high value placed on the pleasures derived from the use of beaches and waterways.

Both the resident and non-resident taxpayers of the town have stated a strong desire for slow growth in the future, with low density development and limited commercial activity. There is concern on the part of the taxpayers that the visual quality of the town remain high and that future development and the use of resources be carefully planned. But plans must be implemented, just as codes and ordinances must be enforced, and the town currently lacks the professionally trained personnel required to do either job well.

Both the year-round and vacation property owners stated that beach erosion is the major problem in the town at present. Many townspeople recognize the role that natural features, such as sand dunes, play in the control of erosion, and the town has adopted the North Carolina Sand Dune Protection Ordinance. But there is not adequate personnel to enforce the ordinance and violations continue to occur.

Poor access to the beaches was listed as one of the four major problems in the town, being most significantly a problem to owners of inland lots. The Town of Topsail Beach Subdivision Regulations require that all cross island street rights-of-way extend, full width, to the sound and/or ocean mean high water mark. In subdivision areas where approved streets do not provide ready access to the ocean and/or sound, an access area of not less than 20 ft in width is required at a maximum of 400 ft intervals. But the subdivision regulations became effective in July 1973, and their requirements apply only to new subdivisions. In the southern end of town, dedicated streets and rights-of-way occur at irregular intervals, from 400 to 1200 ft.

But in the northern 2 miles of the town, no streets currently extend east of NC 50 and public access to beaches entails trespassing on private property, usually on foot paths cut through dunes.

The slow growth in the future and limited commercial activity will preclude a substantial increase in the tax base. The scope of services that the town will be able to offer in the future will by necessity be limited; priorities for these services must be set according to goals set by the taxpayers.

Past Development Activities

The demand for land, particularly ocean and sound waterfront land, continues to increase in beach areas, but the supply of that land remains constant. The development industry of Topsail Beach has responded to the increases in demand over the years by increasing the intensity to which the existing land is used. Most land use problems that have occurred in Topsail Beach, such as loss of property to erosion, the obstruction of navigation channels by siltation, and extensive hurricane damages, are the direct result of attempts to develop the existing land surface beyond its inherent capacity for that development. Development does not cause hurricanes, erosion or siltation; but inappropriate development activities can accelerate the damage caused by these natural phenomena and create new problems such as overcrowding, contamination of water supplies, and the general degradation of the natural resources on which the town is based.

The highest demand in beach areas, therefore the highest dollar value, has long been placed on the oceanfront acreage. The post WWII increase in affluence, mobility and second home building in this country had already begun when private development of Topsail Island was initiated; as a result,

developed oceanfront acreage in Topsail Beach was never inexpensive. In order to make ownership of a limited amount of land feasible to the general public, oceanfront lots were developed narrow (generally 25' to 50' wide) and numerous.

The military-built road extending the length of the island was included in the North Carolina road system by N. C. Department of Transportation (NC DOT) as NC 50, and became the town's main thoroughfare. The proximity of NC 50 to the duneline in most cases dictates the depth of lots and, to a certain extent, the location of houses on those lots. The esthetic and protective nature of the foredune was often disregarded. In some cases the dunes were considered an obstacle to land use; a few areas of dunes were obliterated to make way for a building while other dunes were simply stripped of natural vegetation to accommodate construction. In most cases, however, the foredunes were left intact by the elevation of structures over the dune and above the level of storm wave attacks.

As the supply of ocean front lots diminished, their cost increased, creating more demand for less costly inland and channel lots. In order to improve its navigability, Banks Channel was dredged in 1967; in order to improve their marketability, many sound front lots were developed with small boat canals connected to Banks Channel. Boat canal development usually involved the dredging of a channel and subsequent deposition of dredge spoil on adjacent land as fill. The land most cost effectively dredged and filled was marshland.

Coastal inlet lands have long been viewed as the beach area with the highest hazards for development; the tendency of inlets to migrate, their generally low elevation and lack of substantial vegetation and dune

development usually discouraged development when safer land was available. The north shore of New Topsail Inlet has been accreting over the last 25 years, however, and as more land surface has been created, more land surface has been developed. Finger canals were cut from Banks Channel into the inlet sands, spoil from the canals was deposited on the adjacent land in order to raise its elevation, and houses and roads were built between the canals.

The path of inlet migration during a large storm is unpredictable, but can be expected to follow the course of least resistance. The cutting of canals into inlet lands reduces the land's resistance to the erosive currents generated by storms.

Storm and Erosion Protection

In October 1954, Hurricane Hazel hit Topsail Beach destroying 65 percent (210) of the existing buildings. Hazel produced a high tide of 9.6 ft msl, inundating virtually the whole island, whose average elevation is 8 ft msl; the storm removed 850,000 cubic yards of sand from the beaches of Topsail Beach and Surf City, depositing much of it in the central part of the island (U. S. Army Corps of Engineers 1965). Many of the demolished buildings were rebuilt after the storm and emergency crews returned much of the deposited sand to the beach; but the net elevation of the beach was lowered by two ft, causing future storm waves to break even closer to the remaining and new structures. The Topsail Beach area has not received severe hurricane damage since "Donna" in 1960; historical records of hurricane occurrence, however, indicate a high probability of recurrence of a severe hurricane in the near future.

There are risks inherent in the ownership of beach property due to weather patterns and the changeable nature of the environment. Some degree of shoreline erosion must be expected to occur over time, new inlets open where once there was solid land, and the high winds and waves of hurricanes cannot be avoided. But to a certain extent, damages from these forces can be reduced by the proper design and location of roads and structures and by care taken to avoid the destruction of natural protective features.

To be successful, storm and erosion protection measures must be practiced throughout a hazard area, as one man's efforts to protect his property can be thwarted by the negligence of neighbors. The elevation of buildings on pilings to a level above the level of breaking waves can prevent storm wave damage; but the erosion of sands on which the building is situated can cause the collapse of a structurally sound building that is located too close to the moving water. Homes can be situated sufficiently far inland to be safe from actual wave and erosion damage, but may remain susceptible to the battering ram action of flying debris from the breaking up of other structures not so well situated. A gap in the duneline on one lot can initiate flood and erosion damage on adjacent lots. The risk of an inlet's opening through boat canals dug from the channel side of the island is borne equally by public and private facilities located on the oceanfront.

The health and safety of human life, the protection of property, and the preservation of those natural resources which make beach areas both attractive and economically productive must be primary matters of local public policy. To be appropriate development of beach areas must consider not only the immediate return on the private investment dollar, but also the long range impact on community resources, values, and welfare.

Visual Quality of Development

Former military activities left Topsail Beach with an assortment of buildings in a variety of sizes and shapes, all designed to meet military specifications of visual quality; many of these structures have since been adapted for private commercial or residential use.

Over the last 25 years, a variety of real estate firms has been involved with the subdivision of land and the platting of lots in Topsail Beach; only rarely did the development process include the design of structures. Individual buildings were erected to meet individual tastes and needs with little regard for uniformity of style. The extreme variation in building density is accentuated in areas that have a grid road pattern, with squared-off empty blocks adjacent to full ones.

The northern end of Topsail Beach is graced with a narrow but lush band of maritime forest beginning just west of NC 50. The forest canopy begins at ground level as a shrub zone, and curves gently upward assuming the form of a large dune. Most of the forestland is developed only on its eastern periphery as a single row of houses along NC 50. The few dwellings located deeper in the woods are secluded single family detached homes, placed on large lots with only minimal damage done to the forest. In isolated instances, bulldozers were used to scalp lots prior to construction; but for the most part, the integrity of the forest has so far been maintained and large parcels with tremendous potential for high quality development remain.

There are presently many undeveloped single lots in the woods for sale; the risk of forests being carved into individual homesites, with grid patterns of driveways and streets, is high. The special scenic value of

the maritime forest calls for an alternative approach that minimizes clearing and leaves a maximum amount of solid forest stands. The clustering of housing in the area, with common driveways and parking facilities, could result in a sufficiently high gross density of families to be profitable to the developer, while retaining the integrity of the land for the mutual benefit of property owners and townspeople.

Providing Community Facilities and Service

Topsail Beach has been developed as an ocean resort. Resort communities have the particularly troublesome problem of trying to meet with a small permanent population the needs of a population that is seasonally four or five times as large. Much of the year-round population relies upon the spending of the seasonal (vacation) population for its livelihood; conversely, the seasonal population relies upon the year-round population to provide the commercial services it demands, such as shopping, dining, and lodging, and to operate public services, such as police and fire protection. The unevenness of the population throughout the year limits expansion of commercial facilities and causes most shopping areas in the town to close during the off-season; it is a major problem to the public sector for providing community facilities and services. Facilities and personnel sized to meet the demand of seasonal residents and visitors exceed by far what is necessary to meet off-season demand. Specific issues are:

(1) Central Water Supply. Topsail Beach buys water from Surf City. The Surf City water system was designed to be expandable in order to meet increasing demand. It is presently cost effective for Surf City to sell water to Topsail Beach, as the combined peak loads on the system are well below the capacity of existing wells. As the populations of the two towns

grow in the future, Surf City may find itself in the position of needing additional wells to supply water to the two towns, when the existing two wells would be adequate for its own needs. Topsail Beach, on the other hand, may in the future desire its own water supply, independent from the rest of Topsail Island.

The assurance of an adequate water supply in the future is critical both for domestic and commercial needs and for fire fighting. Decisions need to be made on the following: (1) whether Topsail Beach should continue to rely on the Surf City water supply, (2) whether there is an adequate source of groundwater nearby for development of a new public system, and (3) if requirements should be made for connection to the public system.

(2) Sewage Collection and Treatment. Septic tanks are currently the only method of sewage disposal in the town, despite the severe limitations for septic tanks of the Capers-Newhan soils. Year-round population density is presently low and peak seasonal use of the area is short. There has been no indication yet that sewage effluent from Topsail Beach is causing pollution problems in either the adjacent class SA estuarine waters or the few shallow water table wells still in use. But pollution of estuaries and shallow aquifers, from incomplete nitrification of wastewater, would likely result if population density were to continue to increase at its present rate.

The new N. C. Department of Human Resources regulations governing septic systems would preclude any new construction in parts of Topsail Beach, and the erection of higher density buildings anywhere in the town. The basic issue is the choice between continued reliance upon individual systems

and the installation of a municipal sewer system. Connection to sewer lines would not only allow for higher density population in the future, but would relieve problems caused by any presently malfunctioning sewage systems. The natural biological activities and filtration capacity of the soils and estuarine waters can be expected to eliminate any existing pollution in surface and ground waters over a period of years if the sources of those pollutants are eliminated or reduced to tolerable levels.

(3) Police Requirements. The cost of the Topsail Beach Police Department accounted for 21 percent of the 1975-76 Town Budget. Yet the size of the force is not commensurate with the summer population, traffic flow, and the special attitudes and mores of people when they are away from home. Vacant houses and closed-up businesses must be patrolled even during the off-season. The issues are determining (a) the level of protection required, (b) the level of year-round/seasonal population that will dictate a major expansion in police service demand, and (c) whether Topsail Beach should maintain an independent department, or rely upon county provided service.

(4) Fire Protection. Fire equipment is now housed in a single, central fire station. Equipment, personnel, and water supply are adequate for present conditions, but increased population and visitation may impose stresses on the system. The issues are (a) finding ways to maintain personnel in the station to accelerate responses to alarms, (b) determining the need for specialized equipment if structures suitable for accommodating higher population densities are constructed, and (c) assuring adequate water supply.

(5) Solid Waste Requirements. Pender County government recognized the need for more intensive solid waste disposal service by opening and operating a sanitary landfill to serve the area of the County between the ocean and

US 17. Two issues are emerging: (a) land that will meet specifications for a sanitary landfill anywhere in the strip between US 17 and the AIWW is scarce and in high demand for development. Disposal of solid wastes will become a serious problem if the existing landfill should prove to be inadequate for future needs and (b) equipment to collect wastes from urban density summer populations is too expensive to remain idle for the majority of the year.

(6) Beach and Dune Maintenance. The issue of beach maintenance is closely related to the issue of access to Public Trust Areas. Problems are: (a) provision of lifeguard service and the relationship of such service to the Topsail Beach Rescue Squad; (b) control of motor vehicles on the strand (the town now prohibits vehicular use of the Atlantic beach); and (c) construction and maintenance of structural access across the dunes, enforcement of state dune protection ordinances and prohibitions against the removal of natural vegetation, and elimination of gaps in the dune line.

(7) Recreation Facilities and Programs. There are presently no public recreation facilities or programs in Topsail Beach. The increase in seasonal population and day visitors, consisting largely of family units with children, will require increasingly diverse recreation activities. Open water for motorboating, sailing, and water skiing and land for tennis courts will be desired as year-round and seasonal populations increase and become more sophisticated. Diverse year-round recreation services may also become necessary as the number of retired people increases. The issues involved are (a) determining priorities for recreation facilities to be developed, (b) acquiring suitable land for recreation areas and (c) scaling the size of facilities for year-round or seasonal populations.

(8) Traffic. NC 50 (Anderson Blvd.) is the main thoroughfare in Topsail Beach and the only entry into the town from Surf City and the mainland. Pedestrian traffic moving from inland and channel front lots to the beach must cross NC 50; most commercial recreation facilities are located on this road. Property owners, in questionnaires and public meetings, have stated a desire for bicycle use in the town; but the existing traffic and speed limits, and the narrowness of all paved roads, preclude the safe utilization of bicycles at present. Three issues present themselves: (a) separation of local traffic from through traffic; (b) increasing the capacity of the through roads; and (c) facilitating the use of bicycles and other off-road vehicles.

(9) Utilities. Electric service is provided by the Jones-Onslow Electric Membership Corporation and telephone service is provided by Carolina Telephone and Telegraph Company. The lines are aerial. As structures are added, the number of poles, all very visible on a barrier island, will increase apace, and detract from the present visual amenities of Topsail Beach.

Financing Service Facilities

The major issue in financing the services enumerated is determining an equitable distribution of the costs between developers and commercial interests in the town, visitors to the town, and taxpayers of Topsail Beach, Pender County, North Carolina and the Nation. It is a principle of equity that beneficiaries should pay a proportion of costs equal to the proportion of benefits received. But unswerving application of that principle in a resort community poses problems. For instance:

(1) In resort communities such as Topsail Beach, the vacationing population comes from various parts of the state and country and enjoys the

use of beaches and waterways with no "admission fee" charged by the town. The commercial activity created by vacationers directly benefits the town financially, but does not provide adequate revenue to support major service facilities such as sewage treatment plants and public water supplies. The local estuarine waters and marshes are a valuable resource of the town, supporting sport fishing and boating activities; but they are also of value to the nation, contributing to commercial fishing activities and resultant food supplies. The responsibility for the health of vacationing populations (as well as year-round residents) and for the preservation of the productivity of estuaries must be shared by local, state, and federal governments.

(2) The State of North Carolina's Public Trust policy supports the public's right to use the State's beaches and waterways, and requires the provision of public access to Public Trust Areas. It is the responsibility of developers to provide access for the residents of subdivisions, and the responsibility of the town to assure access for the townspeople; but the state must assume some degree of responsibility for the provision of access to the general public, since the state requires the provision of that access.

Public use of beaches and waterways necessitates public sanitation facilities and parking areas. For vacationers using the lodging and dining facilities of the town, sanitation facilities and parking areas can be required of the commercial establishments. But the responsibility for "day-visitors," with the right to use the town's resources, is again a public responsibility, to be shared by state and town government.

(3) Analysis of the Topsail Beach town budget in relation to service facilities indicates that existing municipal service equipment is relatively

new, in excellent condition, and that there is a Capital Reserve Fund available for future capital outlays. There is concern on the part of resident and non-resident property owners that future land use be planned, that the physical amenities of the town be preserved, and that land use ordinances be enforced. But in 1975 the Building Inspection Department was allocated only \$2400, and only \$1000 of the general government expenditures went toward planning. The establishment of a municipal body charged with coordination and implementation of future planning, permit issuance, and ordinance provision would help to insure adherence to the standards for future development that have been set by the taxpayers.

But the benefits of such action extend far beyond the limits of the town.

The list of examples could cover each of the public facility issues.

The fundamental issue is: Who pays?

GOALS AND STANDARDS

The Coastal Area Management Act of 1974 requires local jurisdictions who choose to formulate land use plans under the Act to base those plans on publicly derived goals for future development. The Act further requires the Coastal Resources Commission (CRC) to designate Areas of Environmental Concern within the coastal area of North Carolina. The CRC has authorized the local jurisdictions to recommend those land uses deemed appropriate for each AEC.

The Town of Topsail Beach mailed questionnaires to all taxpayers of the Town to ascertain their views on future development goals and standards. On July 29, a public meeting, sponsored jointly by Onslow County and the Towns of Topsail Beach and Surf City, was held on Topsail Island. In this meeting, development alternatives for each jurisdiction, with the projected population expected to accompany each alternative, were submitted to the people in attendance. In a Planning Board-Public Participation meeting held in Topsail Beach on August 12, the tabulated results of the returned questionnaires were discussed in conjunction with the development alternatives. In its meeting on August 24, the Topsail Beach Planning Board reviewed the citizen questionnaire responses, comments received from the floor in public meetings, and the CRC Guidelines for determining appropriate land uses in AEC's. These activities have resulted in the following statement of Goals and Standards for Topsail Beach including recommended appropriate land uses in Areas of Environmental Concern.

Goal: It is to be the policy of the Town of Topsail Beach to promote continued gradual development of the town as a family beach.

Standards:

1. Municipal services, including facilities for water supply and sewage treatment and road construction and maintenance, will be planned for an ultimate peak summer population of 10,500 and a year round population of 800.
2. Efforts will be made in road construction and the establishments of easements to promote the safe and enjoyable utilization of transportation corridors by bicycles and pedestrians as well as motor vehicles.
3. The coastal inlet land will be designated as a conservation and recreation area to be used for public recreation purposes.

Goal: It is to be the policy of the Town of Topsail Beach to promote that quality of development that will utilize and enhance the natural resources of the town for the enjoyment of all residents and vacationers.

Standards:

1. Development in Topsail Beach will be permitted only on that land east of Banks Channel.
2. Land use regulations for that part of Topsail Beach covered by maritime forest will be enacted to encourage Planned Unit Development in order

to maximize the value of the forest as a resource of the town.

Goal: It will be the policy of the Town of Topsail Beach to promote that quality of development that will offer the maximum reasonable protection for human life and property in a coastal area.

Standard:

Development and construction activities will adhere to the requirements of the North Carolina Sand Dune Protection Ordinance, the North Carolina State Building Code, the Federal Insurance Administration Criteria for Land Management and Use, and other relevant state and federal regulations.

Goal: It will be the policy of the Town of Topsail Beach to permit only those kinds of development appropriate for the various Areas of Environmental Concern located within its jurisdictional boundaries.

Standards:

1. Coastal wetlands will be designated Conservation areas, any development of which will be by permit only.
2. The development of piers, docks, or other water-related structures will be limited to the east of the center line of Banks Channel.
3. In order for development to avoid as nearly as possible the potential for degradation of the water table aquifer, provisions for a public sewage system will be made. All sanitary facilities will be required to be connected to the sewage system within five years of the beginning of the system's operation. Provisions will also be made for the expansion of the municipal water system to serve all sanitary facilities.

All sanitary facilities will be required to be connected to the water system by July 1, 1978. (Connection to the water system, however, will not preclude the use of private water supplies for irrigation purposes provided they are not interconnected with the public system.)

4. In those areas to be designated by the Coastal Resources Commission as Natural Hazard Areas, any development undertaken will conform with the standards of the Federal Insurance Administration for Coastal High-Hazard areas.
5. In order to limit excessive erosion along Banks Channel, a "no wake" ordinance will be considered by the Town.

SECTION III
AREAS OF ENVIRONMENTAL CONCERN

INTRODUCTION

Section I of the Land Use Plan describes physical characteristics of the land and water in Topsail Beach and specific areas of the Town in which many kinds of development would be either especially costly or likely to cause undesirable consequences. Some of these characteristics, such as the soils' high water table, susceptibility to flooding and low bearing strength, constrain development primarily because of the high costs involved in adapting the land for use. In some parts of the Town, intensive development, as for urban, transportation or recreational use, would not necessarily endanger the inherent value of the resource, but would require excessive public or private expenditures for construction, maintaining access, disposing of waste products, or assuring adequate drainage.

In other parts of the Town, however, the undesirable consequences that could result from uncontrolled or inappropriate development are not limited to monetary costs. In particularly valuable or fragile areas, misuse of the land or water can cause degradation of a site's biological, visual, or economic resource value. In particularly hazardous areas, poorly located, designed or constructed development can increase the risk of property loss or endanger the health and safety of people using it and neighboring properties.

In these areas, designated Areas of Environmental Concern, the Town is establishing specific standards for use and development of each area category in order to ensure that development proceeds in a manner consistent with the capability of the land and water to sustain it.

Ultimately, as required by the 1974 N. C. Coastal Area Management Act, the N. C. Coastal Resources Commission (CRC) will designate Areas of Environmental Concern throughout the coastal counties and will establish permit letting authorities to regulate land use within these areas. The following categories and standards are to serve both as guidelines for Town Plan implementation and as recommendations to the CRC for consideration as State Areas of Environmental Concern.

The Estuarine System

The estuarine waters, marshes and mudflats, as defined by G. S. 113-229 and G. S. 113-230, are of primary importance to the Town and the North Carolina coastal area because of their economic, scenic and recreational resource value. The tidal marshes and surrounding estuarine waters cover extensive areas of the municipal jurisdiction; serving as a primary food source for numerous fish and shellfish species, they contribute tremendously to the biological productivity of the area. As a scenic resource, the marshes are unsurpassed, supporting a diversity of waterfowl and subtle vegetation patterns characteristic of the coastal area. The waterways function as transportation corridors for commercial and sport boating activities and provide for hunting and fishing of a variety of wildlife.

The authority for regulating the use and modification of the estuarine resources has for a number of years rested with State and federal permit letting agencies. But until recently, the degree of regulation exercised was slight and the criteria for permit letting

did not include consideration of the ecological balance of the estuarine system. Approvals for marshland dredging and filling were often as not a mere formality and sometimes granted after the fact. The increasing awareness of the damage caused by these activities, however, has resulted in much stricter review now of permit applications.

The people of Pender County recognize the importance of the estuarine system and accept the regulation of its use and development as a necessity. Many in the immediate coastal area, however, are now being denied permits to maintain existing access canals. Because of siltation in both natural and artificial channels, access from the island to the AIWW is limited; thus, the use of some of the recreational resources people moved to the area to enjoy are impaired. For this reason, the Town will work with state and federal authorities in managing and, where necessary, preserving the natural state of the estuarine system, but will seek to allow maintenance of sufficient public navigational channels to allow reasonable use and enjoyment of its water resources.

The only kinds of new development that can be justified in the estuary are those that require water access and cannot function anywhere else. Piers, docks and marinas, east of the centerline of Banks Channel, for instance, connecting water-oriented with upland activities, may be considered appropriate if their need in the area can be demonstrated and their specific location and design can be shown to be the most suitable alternative. The

Town recognizes, however, that while a pier or dock itself does not necessarily cause degradation of the value of the estuary, the activities involved in constructing it may. For that reason, the highest reasonable standards of construction will be required for any construction in the area.

The Beach-Foredune System

The Atlantic shoreline of Topsail Beach is characterized by wide and sandy beaches, backed by a moderately high foredune. The beaches are the primary attraction of the outer banks for the residents and thousands of vacationers who visit in the summer. The foredunes are a valuable scenic attraction and a buffer to the erosive effects of storm induced wind and waves. The dynamic nature of the beach-foredune complex, however, precludes safe structural development on it since that development, and the construction activities involved, endanger both the scenic and protective value of the resource and the roads and buildings situated inland.

Because, however, of the recreational use of the beaches and the necessity for adequate access to them, allowances will be made for the provision of structural accessways across the dune provided that utmost care is exercised in their location and construction to prevent damage to the dune and the vegetation growing on it. Allowances will also be made for the erection of safety facilities such as lifeguard chairs, and for necessarily water-oriented recreational structures such as fishing piers.

Hazard Areas

The estuarine system, ocean beaches and sand dunes, though inseparable from the rest of the Town, have been addressed separately because of their particularly fragile nature and high resource value. But the municipal jurisdiction as a whole is an Area of Environmental Concern because of the contour and nature of the land and water and the importance of protecting the health, safety and rights of the people who live, visit and own property there.

The North Carolina outer banks, as a marketable piece of real estate, is the most valuable area of the coast, sought after for second homes, residences and vacation sites, and for business enterprises to support these uses. But the outer banks as a geologic feature is a dynamic, perhaps transient, land form. The same forces of wind, water and time which caused the creation of the banks' various features constantly modify these features both in location and extent. Problems are encountered when the man-made structures developed to accommodate their use and enjoyment are built to be static and permanent despite their location in an ever changing environment.

Inlet Lands and Excessive Erosion Areas

The only realistic compromise between expensive, fruitless combat with the forces of nature and complete surrender to their supremacy is development of only the more stable parts of the whole in a manner which those parts can accommodate. For that reason, any new development in the particularly hazardous areas of the Town will be strongly discouraged and, unless demonstrated to be directly in the public interest, will not be supported by public funds. In particular,

coastal inlet lands and oceanfront property with a high probability of incurring excessive erosion (especially during storms) are unsuitable locations for the placement of structures used for housing, institutional purposes, transportation or commerce, and are considered of too high a risk to warrant public investments into roads, sewer and water lines and other such facilities.

Because of limited data and some inconsistencies in available data, the inland extent of oceanfront property subject to excessive erosion in Topsail Beach is unknown. For that reason, only a dynamic zone (referred to on AEC map as Ocean Erodible) can be established at this time to warn prospective buyers of oceanfront property of its hazardous location. All construction in this dynamic zone will be required to meet at least the minimum standards of the North Carolina Building Code and conform to the standards of the Federal Insurance Administration for coastal high hazard areas.

Coastal Flood Plains

Virtually the whole municipal jurisdiction is within a U.S.G.S. designated Flood Prone Area, susceptible to inundation during severe storms. In order to reduce both flood damage and the cost of flood insurance, all construction in coastal flood prone areas will be required to meet the Federal Insurance Administration standards for coastal high hazard areas.

Public Trust Areas

Topsail Beach supports the traditional public rights of access to and use of lands and waters designated Public Trust Areas for purposes including navigation, fishing and recreation. The Town both supports and encourages the development of commercial recreation facilities, especially those that promote the use and enjoyment of its waterways. But to the degree authorized by statute, the Town will require some provision for public access in new subdivisions in Public Trust Areas and will prohibit any development which unduly restricts public access to and use of these areas.

It is obvious from the outset that protection of Areas of Environmental Concern in the Town cannot be accomplished without some consideration of land uses in areas immediately adjacent. The estuarine system along the Topsail Beach coast, for instance, is only part of the system extending northward into Onslow County and southward into New Hanover County. Topsail Beach's regulatory authority to prevent pollution and siltation can be extended only throughout its political jurisdiction. Circulation patterns in the water that transports silt and pollution, however, function without regard to political boundaries.

Plate 2 delineates the approximate location of various categories of municipally designated Areas of Environmental Concern. It must be emphasized, however, that these delineations are not sufficient for most regulatory purposes because of the necessarily small map scale and because, in most cases, on-site evaluations will be

necessary in order to determine the precise boundary of a particular category of land or water.^a But the Town encourages anyone involved in or contemplating a change in land use in the Town to use this map as a guideline for interpreting municipal and state policy and for predicting the possible effect of public policy on particular parcels of land.

^aSome other categories of land and water have been proposed by the CRC for consideration as AEC's. Because of inadequate data, these other areas are not discussed here at this time.

SECTION IV

FUTURE LAND USE

THE DEMAND FOR LAND

The 1975 Topsail Beach peak seasonal population was estimated to be 4131; the year-round population was 347. The growth goal for the future calls for a peak population of 10,500 in 1995 with 800 permanent residents. Assuming the population will increase at a constant rate over the next twenty years, the peak and permanent populations expected in 1985 are 7300 and 600, respectively.

Factors Influencing Growth

Projections for continued growth in Topsail Beach over the next 20 years are based heavily on the rate of growth the town has incurred over the last 20 years. That growth resulted at least partially from nationwide affluence and increased disposable income. The long-term effects the current economic recession and the rising price of gasoline will have on the town's future development cannot be predicted at this time. An island-wide Chamber of Commerce has been established to attract tourists to the area; but it can be assumed that the general economic slowdown will at least temporarily continue to affect second home building and tourism in Topsail Beach.

Topsail Beach is not located in close enough proximity (by existing road mileage) to metropolitan growth centers to be strongly susceptible to suburban spillover in the immediate future. Pender County has initiated an economic development program, however, which could promote more permanent residential development in the town if employment centers were developed nearby. The completion of the Penslow Health Clinic in Holly Ridge could encourage permanent location of more families and retired persons.

The great appeal of the town for both residents and vacationers is the high quality of its natural amenities and the outdoor recreation activities they provide. Continuance of the kind of growth desired in the town will depend, at least partially, on the maintenance of high standards of environmental quality -- clean air and water and ample open spaces -- as a "calling card" for vacationers and prospective home builders in search of a sound investment. Obviously, unavoidable natural disasters such as hurricanes or accelerated beach erosion could affect future growth by amplifying the risk inherent in owning or building on oceanfront property. But for the most part, maintenance of the quality of natural amenities as a factor promoting the kind of growth desired is within the capability of the town and its property owners.

The primary limiting factor for continued growth in Topsail Beach relates to the availability of sewage disposal facilities. The town, with Surf City and Onslow County, is currently participating in planning for a regional sewerage system which could be provided with 87.5 percent outside funding by the 201 Facilities program. The availability of adequate federal and state funds, however, is uncertain at best and the full cost of such facilities exceeds the financial resources of the three local jurisdictions. Even if construction of the system were approved soon, and funded, it could be several years before sewer lines are installed and the treatment facility becomes operational.

The soils of the island have severe limitations for septic tanks. There is no indication that the septic tanks in use in Topsail Beach are causing pollution problems at this time. Population densities throughout the town remain relatively low all year, and peak seasonal use of the area is short.

Since very few shallow water table wells remain in use, possible contamination of groundwater supplies is not of primary concern. Some shellfish waters adjacent to similar but higher density development north of Topsail Beach, however, have been closed to harvesting and domestic ground water supplies there found to be contaminated from subsurface wastewater disposal systems' malfunctioning in supersaturated soils. The potential for pollution of SA estuarine waters in the town, resulting in the closing of additional shellfish waters to harvesting, cannot be overemphasized.

The amount of residential and commercial land use which could be safely accommodated by septic tanks in Topsail Beach cannot realistically be determined at this time. It can only be assumed that some of the anticipated growth could be accommodated without degradation of the town's resources, but that at some undetermined point, the capacity of land and water resources would be exceeded. For that reason, failure to find means to install an adequate sewerage system could appreciably delay and perhaps prohibit some of the growth which has been projected.

Accommodating Future Populations

Residential Land

The projected population increase by 1985 consists of both permanent residents and vacationers. Housing in Topsail Beach is now almost entirely in the form of single family detached dwellings (41 percent), duplexes (33 percent), and motel units (20 percent). Property owners have emphasized their desire for the density of development to remain low in the future and for population increases to be accommodated without the use of apartment complexes, mobile home parks, camping areas or other multi-family forms of lodging. In other words, the kinds of housing to be provided in the future

are virtually the same as are provided now -- only the total number of these units and their arrangement with respect to the landscape and each other will change to meet market demands.

Approximately 81 percent of the 1975 peak summer population was housed in non-motel units, i.e., in houses and duplexes most of which are rented for part of the summer to vacationers. Assuming that that percentage will remain constant in the future, there should be a demand for enough houses or duplexes in 1985 to accommodate approximately 5900 persons, an increase of 2600. At an average occupancy rate of 4.6 persons per unit, approximately 565 additional units will be required.

There are 354 acres of developable land in the town zoned for residential use; of these 354 acres, about 183 are now actually in residential or other use, i.e. have structures on them. There are, therefore, approximately 171 acres of residential land in the town available for future development.

There are numerous lots which have not yet been built upon remaining in existing residential subdivisions; but neither the total number of these lots remaining nor the number of them that have already been sold to prospective home builders is known. It can be assumed that the Zoning Ordinance's minimum lot size requirements^a would allow for many of the additional residential units to be constructed within existing subdivisions; but no reliable estimate of the number of units that could be constructed in any particular subdivision has been made at this time, since some subdivisions have deed restrictions attached to them with minimum lot size requirements which exceed those of the Zoning Ordinance.

^a Minimum lot sizes vary from 3000 ft²/(duplex) dwelling unit to 5000 ft²/dwelling unit depending on the residential district.

The largest parcels of undeveloped residential land in Topsail Beach are located in the maritime forest. The future development of the forestland is of particular concern to the townspeople because of the forest's special scenic value and its potential for high quality development. The town's zoning and subdivision regulations were established partially for the purpose of regulating density so as to prevent the overcrowding of land and to facilitate adequate provision of public services. These traditional forms of regulation, though potentially effective means for limiting density and assuring that certain standards of quality are met, allow little flexibility in the design of subdivisions and tend to promote grid road patterns. For this reason, the town will attempt to amend its zoning and subdivision regulations to allow for Planned Unit Development (PUD)^a in the yet undeveloped parts of town. Overall density under PUD will probably remain the same as provided for in existing regulations; but the clustering of housing, more creative road alignment, common open spaces and the like will be encouraged in order to retain the maximum value of the forest.

Commercial Land

Approximately 19 percent of the 1975 peak summer population was housed in motel units. If the proportion of motel units to other residential units and the proportion of summer population using motel units remain constant, there should be a demand by 1985 for enough motel units to accommodate approximately 1400 persons, a demand for approximately 145 additional units.

^a PUD is a method of controlling land use that is designed to work on a project by project basis, adjusting rigid regulations to the needs of a proposed development when such adjustment would be in the mutual interest of the town and developer.

It has not been determined at this time how much of the 82 acres (19 percent of the total developable land in the town) zoned for commercial uses is built-upon to its fullest extent and how much remains developable. From aerial photography and ground work the number of business and public buildings (31 in 1975) can be counted. The amount of that land surrounding buildings that is already being used for business purposes (for parking, solid waste disposal, advertising, etc.), as opposed to the amount on which additional commercial structures could be built, however, has not been determined. There are no minimum lot or yard size requirements for commercial structures from which to estimate the "developed" status of land.

The town's property owners have declared a desire for very limited commercial activity in the future. There are certain commercial facilities, such as convenience stores, restaurants, tackleshops and the like which almost by necessity will accompany population increases. But currently many of the commercial needs of the townspeople are met in neighboring Surf City where there is a shopping center, bank, hardware store, and such, and where additional shopping and commercial recreation facilities are being encouraged in the future. Residents and vacationers in Topsail Beach (as well as the Onslow County portion of the island) will likely continue to rely heavily on Surf City commercial facilities in the future, as opposed to increasing the number of these facilities locally.

Governmental and Institutional Land

The need for additional governmental and institutional land in Topsail Beach does not at this time seem great. Should the regional sewerage system be installed, the treatment facility will likely be located either on the

mainland or more toward the center of the island than Topsail Beach. Except in the maritime forest, road systems are already developed; no additional land needs for fire or police protection, municipal water distribution or other public services are foreseen in the immediate future. The primary public land need concerning the town is for parking to support public use of the beaches and waterways. The town is currently investigating the level of responsibility for providing parking that should be assumed by the town as opposed to that which should be assumed by commercial tourist interests.

Public Recreational Land

The people of Topsail Beach recognize the need for some publicly owned and operated recreation areas, with adequate parking, sanitation and safety facilities. The high cost of beach area land, however, will limit the amount which the town will be able to purchase. At this time, land in the vicinity of the inlet is considered one of the most feasible places for establishment of a municipal park. The area is undeveloped but used extensively for recreation, particularly for fishing.

There are numerous structures in the town remaining from former military use of the island. Since the island was the forerunner to the missile and rocket program relocated at Cape Kennedy, many of these structures may have historical significance. The town will soon begin studying the feasibility of incorporating some of these structures, in particular an observation tower, into a municipal park complex.

LAND CLASSIFICATION SYSTEM

The North Carolina Land Policy Council has established a Land Classification System for localities to use to identify the most appropriate general uses of various kinds of land. The town's Land Classification Map (LCM) produced from the classification system will serve as a local government tool for informing state and federal authorities, as well as local residents and property owners, on where and at what density growth is desired, and of areas for which new or amended land use regulations will soon be established.

The Land Classification System categories would perhaps be more applicable to more urbanized places with more diverse land uses than Topsail Beach. Moreover, the system was established to deal with projected increases in permanent population, rather than seasonal population which in Topsail Beach is much higher. The population density needed to warrant the "Developed" or "Transitional" category, for instance, though applicable for the summer season, exceeds the highest densities found in the town in winter. Strict application of the defined criteria for each category, therefore, is impossible; but the system, when adapted to the town's needs, can be used for its intended purpose.

The Land Classification System includes the following five categories of land:

1. Developed - Lands where existing population density is moderate to high and where there is a variety of land uses which have the necessary public services.

2. Transitional - Lands where local government plans to accommodate moderate to high density development during the following ten-year period and where necessary public services will be provided to accommodate that growth.
3. Community - Lands where low density development is grouped in existing settlements or will occur in such settlements during the following ten-year period and will not require extensive public services now or in the future.
4. Rural - Lands whose highest use is for agriculture, forestry, mining, water supply etc., based on their natural resource potential. Also, lands for future needs not currently recognized.
5. Conservation - Fragile, hazardous, and other lands necessary to maintain a healthy natural environment and necessary to provide for the public health, safety, and welfare.

The two categories of land most applicable to Topsail Beach are Transitional and Conservation. The Conservation class includes the estuarine areas of the town, beaches and sand dunes, and undeveloped parts of the coastal inlet land; this designation indicates the municipal policy determination that services, including water and sewer lines and paved streets, will not be extended into conservation areas.^a

The Transitional class covers the remaining parts of the town where densities in the future will necessitate public service extension and appropriate development will be supported as necessary by public funds. Obviously, the key to the designation of this part of the town as Transitional

^a Anywhere, however, that these services have already been extended into Conservation areas they may remain.

lies in the assumption that public sewerage facilities will be available.

Failure to obtain such facilities in the future may necessitate redesignation of the area as Community.

SECTION V

PLAN ADOPTION AND IMPLEMENTATION

PLAN ADOPTION

As authorized by the Town Board of Commissioners, the Topsail Beach Land Use Plan was prepared by the Town Planning Board with technical assistance provided by Coastal Zone Resources Corporation. Current economic, social, and environmental conditions in the town were assessed; the major land use issues were addressed; and alternative policy measures which could be used to solve existing and deter potential problems were studied. During this process, public opinion was solicited, obtained and evaluated, and used as a primary determinant of future objectives, standards and policies.

In order to ensure that the Topsail Beach plan would be compatible with provisions and policies of the Pender County Plan, activities of the respective planning groups were closely coordinated. A regular part of the agenda for town planning meetings included reports of planning progress in adjacent Surf City and the county. On May 20, 1975, a meeting of elected officials and Planning Board members from each planning jurisdiction in the county was held in Burgaw to discuss mutual problems encountered. On October 30, 1975, a joint county-municipal Planning Board meeting was held in Burgaw in order for each jurisdiction to present to the others planning progress to date. On June 10, 1975, a meeting sponsored jointly by Onslow County, Surf City, and Topsail Beach was held in Surf City to coordinate 201 Plan and CAMA planning activities in the three jurisdictions. Representatives of planning firms involved and of the Cape Fear Council of Governments were in attendance at each of the three meetings.

The preliminary draft of the Land Use Plan, including recommended policies, was submitted in November 1975 to the Town Commissioners for review. The Planning Board and elected officials discussed at length the

issues involved and their implications for future growth and land use in the town. From this review session and further studies of alternatives, the proposed plan and policies for future development of the town were developed.

In order that the essential elements of the Plan, including its land use policies, objectives and standards, be available to all interested persons, a Synopsis of the Plan is being prepared. The Synopsis will include the Land Classification Map and examples of the Existing Land Use and Areas of Environmental Concern delineations, with an explanation of how additional information can be obtained upon request.

The sequence of events yet to come, before final adoption and implementation of the Plan, includes:

1. Municipal Public Hearing -- On May 2, 1976, the Town of Topsail Beach will hold a public hearing in order to receive comments from residents and property owners on the proposed Land Use Plan and Synopsis. Comments and suggestions made in the public hearing will be carefully reviewed; necessary changes in the Plan and Synopsis will be made before their formal adoption by the town.
2. Joint City/County Public Hearing -- On May 10, 1976, a joint public hearing, in which the Pender County and all municipal plans will be presented and comments on them received, will be held in Burgaw. The purpose of the joint hearing is to assure compatibility among the various plans compiled within the county.
3. Transmission to the Coastal Resources Commission -- By May 21, 1976, a certified copy of the Adopted Plan will be sent to the Coastal Resources Commission for its review and approval.

At least 30 days before the town's public hearing, a copy of the completed plan with maps will be placed in each Town Hall and the County Courthouse for public review and inspection. Notice of both public hearings and of the availability of the Plan for review will be made in newspapers distributed locally and will be mailed to all property owners.

Following adoption of the Plan and its approval by the Coastal Resources Commission, copies of the full Plan will be available for study in the Town Hall and County Courthouse. Copies of the Plan and/or of any of its maps can be obtained from the Town Hall, at cost, upon written request. The Synopsis will be mailed to all recorded property owners of the Town; additional copies of the Synopsis will be made available free of charge upon written request.

PLAN IMPLEMENTATION

The second phase of the CAMA planning process involves implementation of the Land Use Plan. The town's adoption of its Plan constitutes a formal declaration of land use policies; but many of the standards proposed for meeting objectives require either some revision of existing town ordinances or enactment of new ordinances in order to become effective. Related planning activities, as for a parks and recreation program, are also involved in plan implementation.

The major elements of the implementation phase of the Land Use Planning process in Topsail Beach are summarized as follows:

Revision of Town Ordinances

In order to carry out policy objectives, some revision of the town's Zoning Ordinance, Subdivision Regulations, Building Code, and Sand Dune Protection Ordinance will be necessary. Specifically, provisions will be made for:

1. requiring connection to the town's water system (and sewer system if installed),
2. limiting development to east of the center line of Banks Channel,
3. allowing for Planned Unit Developments,
4. assuring that all construction will meet applicable Federal Insurance Administration standards,
5. assuring that construction activities will minimize damage to the town's natural resources, and
6. establishing a method of reviewing proposed future development in light of the town's policies of service provision.

In addition, the town will review the feasibility of establishing a "no wake" ordinance.

Coordination of Permit-Letting Authorities

The 1974 Coastal Area Management Act provides for local permit-letting agencies to be established for minor development^a permits required in Areas of Environmental Concern (AEC's). In order to qualify for AEC permit-letting authority, a local jurisdiction must first declare its intent, then prepare a Local Management Plan acceptable to the Coastal Resources Commission (CRC). The CRC is currently establishing criteria for local implementation and enforcement programs including elements that will be required for approval of a Local Management Plan.

The CRC emphasizes the value of coordinating the activities of various local regulatory authorities, such as building and septic tank inspections, subdivision plat approvals, and sedimentation and erosion control program approvals, with the AEC minor development permit-letting authority. Such coordination could simplify the permit-letting process for both the jurisdiction and applicants involved and could reduce local governments costs of reviewing various kinds of applications. The CRC criteria being developed

^aThe term: "Minor Development" means any development other than a major development. The statutory definition of Major Development is "any development which requires permission, licensing, approval, certification or authorization in any form from the Environmental Management Commission, the Health Services Commission, the State Departments of Natural and Economic Resources or Conservation and Development, the State Department of Administration, the North Carolina Mining Commission, the North Carolina Pesticides Board, or the North Carolina Sedimentation Control Commission; or which occupies a land or water area in excess of 20 acres; or which contemplates drilling for or excavating natural resources on land or under water; or which occupies on a single parcel a structure or structures in excess of a ground area of 60,000 square feet."

will also allow for City-County coordinated permit-letting authorities.

Therefore, part of the implementation phase of planning in Topsail Beach will be development of the aforementioned Local Management Plan.

Related Planning Activities

As called for in the Objectives and Standards of the Plan, the Town Planning Board will study the feasibility of establishing a municipal park and recreation program and of developing bicycle lanes especially in the vicinity of recreation facilities. The Board will continue studying means for providing adequate structural accessways to the beaches and Banks Channel.

The town will continue its efforts (201 Plan) to have a regional sewage disposal facility established and to obtain adequate outside funding to alleviate excessive costs to the town and property owners.

Section 208 of the Federal Water Pollution Control Act Amendments of 1972 (PL 92-500), as well as other sections of this law, is designed to achieve water quality which "provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water" by July 1, 1983. Section 208, more specifically, is designed to plan ways to reduce all types of pollution in specially designated areas to the 1983 level and to set up a management agency to guarantee achievement and maintenance of the 1983 water quality level. Areas in North Carolina having complex water quality control problems have been designated by the Governor as priority 208 Planning Areas.

None of Pender County was included in the Governor's designations. However, the Greater Wilmington area has been so designated and the Pender County coast could be included administratively in Wilmington's 208 Planning

program. Inclusion in the 208 Planning program could allow Topsail Beach a means for studying its water quality situation should construction of the public sewer system not be feasible.

Periodic Review and Revision of the Plan

In order to make land use planning in Topsail Beach an on-going, effective process, the Town Planning Board, at its regular monthly meetings and at special meetings as needed, will consider orderly and prompt upgrading and revision of the Land Use Plan. Each October, the Board will make an annual report of its studies and recommendations to the Mayor and Town Board of Commissioners.

SECTION VI

REFERENCES CITED

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APPENDIX A

APPENDIX A. PUBLIC PARTICIPATION PROGRAM

The Topsail Beach Planning Board, with the concurrence and support of Mayor Lewis Orr and the Board of Town Commissioners, actively sought and utilized public views in preparing the land use plan. The planning process was open to all persons with an interest in Topsail Beach.

1) Conducting public information meetings.

Public information meetings, open to all property owners in Topsail Beach, were held monthly between May and October; meeting schedules were posted in the Topsail Beach Post Office and Town Hall. Throughout the summer, notices of upcoming meetings and agenda were given in area newspapers. All monthly Planning Board meetings were also open to the public.

On June 10, 1975, Topsail Beach, Surf City, and Onslow County jointly sponsored a public meeting on Topsail Island for the presentation and discussion of alternative growth and development models. The meeting offered a unique opportunity for the public to choose a future population in keeping with their perception of a desired life style. The descriptive material distributed at the meeting is part of Appendix B which is devoted to population forecasts and density of development.

2) Distribution of questionnaires and tabulation of responses.

Significant issues to be addressed in the questionnaire were drawn from public information meetings, the experience of the Planning Board, and the requirements of the CAMA. The issues were framed as questions with multiple option answers. (The questionnaire is Exhibit A-1.) The questionnaire was reproduced and mailed by the Town Clerk to the 831 taxpayers on record. Two hundred sixty-nine (269) questionnaires were returned - a 32 percent return. The responses were tabulated by Dr. Robert Wallace, Chairman of the Planning Board. The tabulations are shown as Exhibit A-2.

TOPSAIL BEACH CITIZENS QUESTIONNAIRE

CHECK APPROPRIATE BOX

Registered voter of Topsail Beach ☐Not registered to vote in Topsail Beach ☐

The Topsail Beach Planning Board and the City Commissioners are preparing the Coastal Area Management Plan for Topsail Beach. Your Planning Board and Commissioners are vitally interested in the comments and suggestions you and other citizens have and are inviting you to become involved in preparing the plan. Your help will aid us in making a plan for Topsail Beach's future which is based on your own goals and interests.

This questionnaire is the first step in the continuing process of getting the citizens involved. You will be kept informed of the progress we are making and will be invited to other meetings as they are scheduled.

Please take the time to fill out this brief questionnaire and hand it in at the end of the neighborhood meeting or mail to:

Dr. Robert Wallace
P. O. Box 136
Topsail Beach, N. C. 28445

-
1. What do you think are the four major problems in Topsail Beach today?
(Indicate priority by numbering 1, 2, 3, and 4.)

- ☐ Lack of housing, especially during the summer
- ☐ Poorly constructed housing
- ☐ Lack of year round employment opportunities
- ☐ Poor roads and traffic control facilities
- ☐ Lack of good shopping areas
- ☐ Inadequate educational opportunities
- ☐ Poor access to beaches
- ☐ Lack of public beach areas
- ☐ Lack of community recreational facilities (parks, golf courses, tennis courts, boat access points)
- ☐ Lack of cultural opportunities (drama, cultural arts, etc.)

___ Problems with septic tanks

___ Problems with solid waste

___ Beach erosion

___ Unsightly development

___ Flooding or drainage

___ Inadequate parking

___ Other (explain) _____

2. What do you think are the four major advantages to living in Topsail Beach today? (Indicate priority by numbering 1, 2, 3, and 4.)

___ Good supply of quality housing

___ Low taxes

___ Good opportunities for business

___ Lack of crowded living conditions

___ Closeness to beaches

___ Attractiveness of outdoor activities

___ Good schools

___ Low cost of living

___ Clean air and water

___ Tourist support economy

3. In the next 5 to 10 years, would you prefer to see the permanent Topsail Beach population - (Mark one)

___ Increase rapidly

___ Increase slowly

___ Remain the same

___ Slightly decline

___ Decline significantly

4. If the permanent population of Topsail Beach increases, there will be increased pressure for improved access to the mainland. Would you prefer to have (Mark one)

☐ A new bridge at the southern end of the island

☐ The existing road widened

☐ A ferry service

☐ No increased access

5. In the next 5 to 10 years, would you like to see the tourist trade and seasonal residents (as measured by numbers of motels, restaurants, camping areas, recreation areas, and summer homes)

☐ Increase rapidly

☐ Increase slowly

☐ Remain the same

☐ Slightly decline

☐ Decline significantly

6. If the population of Topsail Beach increases, there will be an increase in pressure for multi-family dwellings and commercial areas. Do you think that this growth should be regulated? ☐ Yes, ☐ No. If yes, how?

7. What would you like Topsail Beach to be like next year, 5 years from now, or 10 years from now?

8. Please make any additional comments or suggestions which would help us to plan for the future of Topsail Beach.

EXHIBIT A-2

Report on

TOPSAIL BEACH CITIZENS QUESTIONNAIRE: Responses through August 31, 1975

Questionnaires sent: 831; responses through August 31: 36 voters, 239 non-voters; 269 combined total; percentage responding: 32.37.

For questions 1 and 2, 4 responses were requested with designation of priorities 1 through 4. Where no priority was given but 4 checks were used, a weight of 2 was given each marked item. Results are tabulated (p. 2) to show the number of responses (R) and the intensity or weight of opinion (W). Only the number of responses to each choice is given for questions 3-5. Answering question 6, only 6 respondents rejected regulation of multi-family dwellings, and several of these did so because they favored outright exclusion of such dwellings in Topsail Beach.

The most striking differences of opinion between voters and non-voters throughout the questionnaire come in question 4: 52.9% of the voters favored a new bridge near the southern end of the island; only 33.47% of the non-voters did so, 38% favored no increased access, and 22.45% preferred widening the present road. Free responses to questions 6-8, among which a striking agreement emerged between voters and non-voters, are sampled below to cover points not directly covered in the tables. Their overwhelming trend was toward maintenance of a "village atmosphere" and "family beach."

6. If the population of Topsail Beach increases, there will be an increase in pressure for multi-family dwellings and commercial areas. How should this be regulated?

Both "can be appropriately integrated into the existing fabric if done by a knowledgeable professional planner - and not by a nit-wit environmentalist or a 'Fast Buck' addict"/ No apartment complexes/ "If you're going commercial my house is for sale now"/ "opposed to apartment complexes, condominiums, trailer parks, or public camping areas"/ Disallow/ No large-scale multi-family projects/ Limit apartments to north end of town/ Zone for business and permanent dwellings/ Motels only/ "By strict zoning for commercial areas"/ Regulate density/ Three-story limit/ Large buildings only on interior of island.

7. What would you like Topsail Beach to be like next year, 5 years from now, 10 years from now?

8. Please make any additional comments or suggestions which would help us plan for the future of Topsail Beach.

VOTER RESPONSE TO 7 and 8 COMBINED: Bike path the length of town (also suggested by several non-voters)/ No 2 houses on 1 lot/ Could use better food, gift & entertainment facilities/ Little change ever/ Family beach (often)/ Controlled moderate growth/ Cater more to young people/ Let long-established residents do the planning/ More year round population.

NON-VOTER RESPONSE TO 7 & 8 COMBINED: "As an experienced business planner, I know that any planning body feels a certain amount of pressure to prepare a plan which incorporates change. This pressure sometimes leads to change for change's sake. I would suggest that the Planning Board should never lose sight of this potential problem. In my opinion Topsail Beach is a marvelous and unique community as it stands today. Almost any plan I can envision which changes it significantly rather than preserves it, will, in the long run, prove negative and destructive."/ Quiet, secluded, clean family beach with facilities for tourist-supported economy/ More voice for non-residents/ Would move to Topsail if means of supporting family were available/ Minimize commercial development/ Small development of essential services and businesses/ No lagoons, canals, or fills/ Quality, not quantity/ Docking facilities/ More permanent residents, including retirees/ More multi-family dwellings, wide streets, scattered parks/ "Concerned that a few persons with financial interests will attempt to change the character of our town"/ Preserve the sound, wooded shore, marshlands & regulate pleasure craft/ No further development toward inlet/ Will retire here; wants "a place for middle income retirees, moderate income residents who run the business that supports the whole population."

1. "Four Major Problems" -- priorities 1 through 4.

	VOTERS		NON-VOTERS	
	R	W	R	W
Lack of housing, especially during summer	0	0	6	16
Poorly constructed housing	1	2	17	41
Lack of year round employment opportunities	13	30	29	68
Poor roads and traffic control facilities	8	16	42	118
Lack of good shopping areas	11	29	75	196
Inadequate educational opportunities	1	1	12	31
Poor access to beaches	12	29	58	153
Lack of public beach areas	2	4	29	66
Lack of community recreational facilities	8	21	77	190
Lack of cultural opportunities	0	0	25	42
Problems with septic tanks	11	31	68	190
Problems with solid waste	4	13	36	81
Beach erosion	17	54	131	407
Unsightly development	4	9	60	144
Flooding or drainage	7	15	48	99
Inadequate parking	7	11	36	68
Other: volunteer responses repeated 3 times or more; all responses combined.				
Lack of adequate dredging			6	18
Lack of medical, pharmaceutical facilities			4	11
Erosion by wake along banks channel			4	8
Lack of a good restaurant			3	10
Lack of designated walkways to the beach			3	9

2. "Four Major Advantages" -- priorities 1 through 4.

Good supply of quality housing	6	11	38	67
Low taxes	5	11	42	88
Good opportunities for business	5	12	12	26
Lack of crowded living conditions	23	72	176	542
Closeness to beaches	24	62	166	430
Attractiveness of outdoor activities	16	36	109	225
Good schools	0	0	1	1
Low cost of living	3	7	18	36
Clean air and water	26	63	178	470
Tourist support economy	7	13	15	45

3. In the next 5 to 10 years, would you prefer to see the permanent Topsail Beach population --

VOTERS	NON-VOTERS	
3	9	Increase rapidly
26	128	Increase slowly
6	85	Remain the same
1	6	Decline slightly
0	11	Decline significantly

5. In the next 5 to 10 years, would you like to see the tourist trade and seasonal residents --

VOTERS	NON-VOTERS
2	9
18	100
12	101
0	10
1	12

4. If the permanent population of Topsail Beach increases, there will be increased pressure for improved access to the mainland. Would you prefer to have --

	VOTERS	NON-VOTERS
A new bridge at (or near) the southern end of island	18	79
Existing road widened	6	53
A ferry service	3	15
No increased access	7	90

Before the Land Use Planning process formally began in Topsail Beach, public participation had been generated in efforts to assess opinions on a major issue facing the Town. A proposal to allow recreation vehicles and/or mobile homes to park in the Town was a matter of great concern to residents and non-residents. In September 1974, a questionnaire addressing the matter was mailed to all (795) property owners. A 69 percent (547) response to the questionnaire yielded the following results:^a

I.	a)	Do you favor allowing campers to park in public parking areas for up to a week?	Yes	No	Undecided
			45	489	13
	b)	Do you favor allowing self-propelled motorized mobile homes to park in public Parking areas for up to a week?	53	478	16
	c)	Do you favor allowing house trailers up to 30 feet to park in public parking areas for up to a week?	21	511	15
	d)	Do you favor allowing the parking of unoccupied house trailers/recreational vehicles in private driveways for up to a week?	99	421	27
II.	a)	Do you favor granting a special use permit for a mobile home park as proposed?	22	518	7

^aResponse tabulated by Dr. Robert Wallace, Chairman, Topsail Beach Planning Board.

APPENDIX B

APPENDIX B: CURRENT AND PROJECTED POPULATION

1975 Survey

It became obvious early in the planning process that the limited population information available for towns with less than 2,500 year-round residents was inadequate to describe the current population of Topsail Beach. Accurate counts of both permanent and seasonal residents from which to project future populations were needed not only for the land use plan but for 201 facilities plans and regional Council of Government studies as well.

In June 1975, Coastal Zone Resources Corporation (CZRC), Henry von Oesen and Associates (von Oesen), and the Cape Fear Council of Governments (COG) cooperatively formulated a door-to-door survey of Topsail Island. The survey, a sampling of ten percent of all dwelling units, was conducted by COG employees between June 21 and June 29, 1975. The questionnaires used to obtain information are shown as Exhibit B-1 and B-2. Results of the survey in Topsail Beach, tabulated by CZRC, are shown as Exhibit B-3.

Average summer figures in the tabulated results denote the number of people found (multiplied by 10) at the time of the survey. Peak summer figures were derived by allocating to units vacant at the time of the survey the appropriate number of persons per unit; i.e., peak summer counts assume full occupancy.

EXHIBIT B-1

COTTAGES

NAME OF TOWN	SECTION OF TOWN	DATE	APPROXIMATE TIME OF DAY	HOUSE VACANT ☐
	South		A.M.	
	Center		Afternoon	
	North		Evening	
				Name of Surveyor

QUESTIONS

1. How many people are in the party presently occupying this cottage?

_____ No. of Persons

2. Are you the owner of the cottage or are you renting it?

_____ Own _____ Rent

OWNER

Are you a resident of the town year round or are you here on vacation?

_____ Year Round

_____ Vacation

1. What is the size of the family living here year round?

_____ No. Persons

1. For how many weeks of the year is the cott. for rent?

_____ No. Weeks

2. Are you employed in the town?

_____ Yes _____ No

RENTER

1. Where did you come here from?

_____ Town, State

2. Why did you choose this town for your vacation?

3. How long is your intended visit here?

_____ No. of Days

EXHIBIT B-2

MOTELS

NAME OF TOWN	SECTION OF TOWN	DATE	APPROXIMATE TIME OF DAY	
	South		A.M.	
	Center		Afternoon	
	North		Evening	
				Name of Surveyor

QUESTIONS

1. How many people are presently registered in the motel?

_____ No. of Persons

2. How many units are in the motel?

_____ No. of Units

3. How many persons do you allow to occupy each unit?

_____ No. of Persons

4. During what months is the motel open?

From _____ To _____
Day/Mo. Day/Mo.

EXHIBIT B-3. TABULATED SURVEY RESULTS: TOPSAIL BEACH POPULATION 1975

Total Population	Population Make-Up	Population Distribution	Occupancy Rates Persons Per Unit
Average Summer 2974	Vacationers 2627	In Motels 589 (19%)	3.2
		In Non-Motel Units ^a 2038 (69%)	4.6
	Permanent Residents 347	In Non-Motel Units 347 (12%)	3.1
Peak Summer 4131	Combined Total 4131	In Motels 773 (19%)	4.2
		In Non-Motel Units 3358 (81%)	4.6

^a Includes single-family and multiple family units.

Growth Goals

The CRC Guidelines emphasize that residents and property owners of a municipal jurisdiction be allowed to voice opinions on what level of growth they desire. But terms such as "slow growth", "rapid growth", "low density", and "high density" mean different things to different people. In order to allow choices of more concrete growth alternatives to be made, five development models were formulated, with different ultimate population levels and densities. The models were based on the following assumptions:

1. Marshes, beaches, and foredunes are not developable.
2. The developable residential land (planimetered from the Town's zoning map) could be developed at various densities.
3. The new Division of Health Services' septic tank regulations would allow, on the average, 3 dwelling units per acre for development with septic tanks.
4. Development at densities greater than 3 units per acre would require public sewerage facilities (Thus, Model I below relates the population that could conceivably be supported with continued use of septic tanks).
5. The population associated with each model depicts the ultimate population to be achieved - that is, full development. The desired rate of growth toward full development is not in question here.

6. Low density - 3 dwelling units (DU's) per acre

Medium-low density - 5 DU's per acre

Medium density - 10 DU's per acre

Medium-high density - 15 DU's per acre

High density - 30 DU's per acre

7. The number of motel units would remain a constant percentage (20 percent) of the total number of dwelling units.

The five development models (shown as Exhibit B-4) were submitted for public inspection at a meeting sponsored jointly by Onslow County, Surf City, and Topsail Beach on July 29, 1975^a. The models were discussed again in public meetings (August 12 and August 24) in Topsail Beach. The importance of the choice was emphasized, as the choice of ultimate population was to be used for all future planning in the Town, most immediately for the 201 facilities plan currently being compiled.

On August 24, after much public discussion and review of the questionnaire returns, Model II with an ultimate peak population of 7,390 was chosen as the Planning Board's recommendation to the Town Board. On October 19, the Planning Board, in final review of its proposed Objectives and Standards, chose to recommend instead Model IV, with a peak population of 10,523. The choice of Model IV was

^a At the time of this meeting, only preliminary tabulations of the June survey were available. Final tabulations showed different population figures which resulted in different populations associated with each model. The models themselves and density alternatives submitted in July, however, are the same as appear in Exhibit B-4, submitted at subsequent meetings.

EXHIBIT B-4

TOPSAIL BEACH

Existing Population

Peak Season

Non-Motel Residential 3358

Motel 773

Total 4131

Year Round 347

Existing Land Use*

Residential 354 acres

Business 82 acres

Total Developable 436 acres

Total Developed Residential 183 acres

Total Developable
Residential 171 acres

*From zoning map

MODEL I

Peak Seasonal Development/Population

Residential 171 ac x 3 units/a c x 4.6 per/unit = 2360

Motel 531 units x .2 x 4.2 per/unit = 433

Existing (from above) 4131

total peak seasonal 6924

Non Seasonal Development/Population

Residential 513 units x 3.1 per/unit x .12 = 191

Existing (from above) 347

total non-seasonal 538

1,3

MODEL II

Peak Seasonal Development/Population

Residential

low density - $171 \text{ ac} \times .75 \times 3 \text{ un/ac} \times 4.6 \text{ per/unit} = 1766$

med low density - $171 \text{ ac} \times .25 \times 5 \text{ un/ac} \times 4.6 \text{ per/unit} = 989$

motels - $599 \text{ res. un} \times .20 \times 4.2 = 504$

Existing (from above) 4131

Total peak seasonal (Full development) 7390

Non Seasonal Development/Population

Residential $599 \text{ units} \times .12 \times 3.1 \text{ per/unit} = 223$

Existing (from above) 347
570

MODEL III

Peak Seasonal Development/Population

Residential

low density - $171 \times .5 \times 3 \times 4.6 = 1187$

med low density $171 \times .25 \times 5 \times 4.6 = 989$

med density $171 \times .25 \times 10 \times 4.3 = 1849$

motels $903 \text{ res. units} \times .20 \times 4.2 = 760$

Existing 4131

Total peak seasonal (Full Development) 8916

Non Seasonal Development/Population

Residential

low density $258 \times .12 \times 3.1 = 96$

med low density $215 \times .12 \times 3.1 = 80$

med density $430 \times .12 \times 3.1 = 160$

Existing 347

Total non-seasonal 683

MODEL IV

Peak Seasonal Development/Population

Residential

Low density	$171 \times .4 \times 3 \times 4.6$	=	943
med-low	$171 \times .2 \times 5 \times 4.6$	=	787
med	$171 \times .2 \times 10 \times 4.3$	=	1471
med-high	$171 \times .2 \times 15 \times 4.3$	=	2206
motels	$1231 \times .2 \times 4$	=	985

Existing 4131

Total peak seasonal 10523

Non Seasonal Development/Population

Residential

low density	$- 205 \times .12 \times 3.1$	=	76
med-low	$171 \times .12 \times 3.1$	=	64
med	$342 \times .12 \times 3.1$	=	127
med-high	$513 \times .12 \times 3.1$	=	191

Existing 347

Total non-seasonal 805

MODEL V

Peak Seasonal Development/Population

Residential

low density	$171 \times .3 \times 3 \times 4.6$	=	708
med-low	$171 \times .2 \times 5 \times 4.6$	=	787
med	$171 \times .2 \times 10 \times 4.3$	=	1471
med-high	$171 \times .2 \times 15 \times 4.3$	=	2206
high	$171 \times .1 \times 30 \times 3.9$	=	2001

motels 1643 x .20 x 4 = 1354

Existing 4131

Total peak seasonal 12658

Non Seasonal Development/Population

Residential

low density 154 x .12 x 3.1 57

med-low 171 x .12 x 3.1 64

med 342 x .12 x 3.1 127

med-high 513 x .12 x 3.1 190

high 513 x .12 x 2.6 160

Existing 347

Total non-seasonal 945

made in light of land ownership patterns in the Town, the existence of numerous small platted lots, and the current provisions of the zoning and subdivision regulations, all of which indicated that choosing too low a ultimate population could result in the "taking of land without compensation" on the part of the Town.

On November 12, 1975, in its regularly scheduled Board meeting, open to the public, the Topsail Beach Town Board officially adopted its Objectives and Standards statement including the choice of 10,500 people as the ultimate peak population to occur in the Town. For the purpose of planning for community services, 1995 was chosen as the full development year; the peak seasonal population projected to occur in 1985 is 7,300 with 600 permanent residents^a.

^a Throughout this planning process, great emphasis was placed on coordinating the land use plan with the 201 Facilities planning now underway. In 201 planning, however, local population projections are ordinarily based on projections issued by the U. S. Bureau of Economic Analysis rather than on growth goals. Efforts are now being made to reconcile any differences between official population projections and the Town's goals for future development with the NCDNER Division of Environmental Management and the U. S. Environmental Protection Agency who review 201 Plans.

