chapter III
management of
coastal resources

## A. GOALS AND OBJECTIVES

The policy of the State of South Carolina in the Coastal Zone Management Act of 1977 is to protect the quality of the coastal environment and to promote the economic and social improvement of the coastal zone and of all the people of the State.

In an effort to guide the State's coastal management program in keeping with this policy, the following goals and objectives have been developed by the South Carolina Coastal Council:

**Goal:**

Development of a management program that will achieve a rational balance between economic development and environmental conservation of natural resources in the coastal zone of South Carolina.

**Objectives:**

1. To protect and conserve coastal land and water areas of a significant resource value, including those of scientific, geologic, hydrologic and biologic importance.
2. To encourage and assist in research pertaining to coastal natural resource systems and economic and social impacts in order to develop a comprehensive data base to aid in making rational decisions.
3. To protect and sustain the unique character of life on the coast that is reflected in its cultural, historical, archeological, and aesthetic values.
4. To promote increased recreational opportunities in coastal areas and increased public access to tidal waters in a manner which protects the quality of coastal resources and public health and safety.
5. To develop and institute a comprehensive beach erosion policy that identifies critical erosion areas, evaluates the long-term costs and benefits of erosion control techniques, seeks to minimize the effects on natural systems (both biological and physical), and avoids damage to life and property.
6. To encourage new coastal development to locate in existing developed areas, capable of accommodating additional growth, and in areas determined to be more environmentally and economically suitable for development.
7. To resolve existing use conflicts and minimize potential conflicts among activities through improved coastal management reflecting the public's desires, natural resource capacity, and expected costs and benefits.
8. To encourage new water-dependent activities to locate in shoreline areas where adverse social, economic and environmental impacts can be minimized and to encourage the inland siting of facilities which are not water-dependent.
9. To promote employment of thorough assessments of probable energy benefits, positive and negative economic effects and probable social and environmental impacts as the basis for decisions on development of energy resources; and to ensure that affected local governments obtain sufficient financial and technical assistance to adequately cope with these impacts.
10. To support the wise commercial development of harbors, rivers and waterways for trade and commerce in locations and using methods which maintain the natural environmental integrity of the coastal region.
11. To protect and, where possible, to restore or enhance the resources of the State's coastal zone for this and succeeding generations.
12. To develop a coastal program with flexibility for revision and improvement with the evolution of increated knowledge and experience in managing coastal resources.

**Goal:**

To develop a permitting system for activities in critical areas of the coastal zone (beaches, primary sand dunes, tidelands, and coastal waters) that will serve to implement the goals and objectives of the management program and promote the best interests of all citizens of South Carolina.

**Objectives:**

1. To develop and implement a streamlined and simplified permitting system for activities in critical areas which maintains the integrity and purpose of the management program.

2. To include conditions and stipulations in permits for activities approved for critical areas in order to minimize negative impacts on water quality, marine productivity, beach and shoreline stability, and other environmental aspects.
3. To give full consideration to the Rules and Regulations for Permitting, as promulgated by the Coastal Council, in thorough and comprehensive reviews of all permit applications.
4. To specify environmentally suitable methods of design, construction and development in critical areas and assist permit applicants to incorporate these environmentally suitable alternatives in their proposals.

**Goal:**

To promote intergovernmental coordination and public participation in the development and implementation of the coastal management program for South Carolina.

**Objectives:**

1. To provide full opportunity for participation by relevant Federal, State, and local government agencies, concerned organizations, and the general public in the development, implementation, and updating of the Coastal Management Program.
2. To increase public awareness and encourage public participation in the development of the Coastal Council's management program and decisions made pursuant to that program.
3. To strengthen the planning and decision-making capabilities of cities and counties in the coastal zone through provision of financial, technical and other assistance, and provide for coordination of local comprehensive plans and ordinances with the policies and rules and regulations of the coastal management program.
4. To promote coordination and use of existing State programs to minimize duplication of efforts, conflicting actions and permit processing delays, and to achieve coastal management objectives and policies.
5. To provide adequate representation of the interests of the State of South Carolina in Federal agency decisions and actions affecting the coastal zone.

## B. COASTAL ZONE BOUNDARY

The Federal Coastal Zone Management Act and the guidelines promulgated thereunder require 4 elements to a state's coastal zone boundary:

1) inland boundary
2) seaward boundary
3) areas excluded from the boundary
4) interstate boundaries

(Sections 923.30-923.34, **Federal Register**, Volume 44, No. 61 March 28, 1979)

The South Carolina Coastal Council employs a two-tier approach to management of activities having a direct and significant impact on coastal waters. The "critical areas" will receive more intensive attention through a direct permitting system while the remainder of the coastal zone will be managed through cooperation with other State and local agencies.

The South Carolina coastal zone is defined in Section 3(B) of the South Carolina Coastal Management Act of 1977 as:

> (A)ll coastal waters and submerged lands seaward to the State's jurisdictional limits and all lands and waters in the counties of the State which contain any one or more of the critical areas. These counties are Beaufort, Berkeley, Charleston, Colleton, Dorchester, Horry, Jasper and Georgetown.

The critical areas are defined in Section 3(J) as coastal waters, tidelands, beaches and primary oceanfront sand dunes. The meaning of each of these four terms is detailed in Section 3 of the Act as shown in Appendix B, and also in the Glossary.

With biological field surveys and aerial photography, the Council has found the point on the upper reaches of the estuarine systems where tideland vegetation changes from predominately brackish to predominately fresh and has established a coastal water and tideland boundary using the nearest recognizable physical features within the area. This boundary is graphically depicted on the maps in the Appendices and verbally depicted in Appendix K(30-10) with a further discussion of the basis for its determination in Appendix L.

For beaches and sand dune critical areas, the Council employs the definition found in the Act in making a case-by-case determination of the critical area boundary.

The seaward boundary of the coastal zone is the State's jurisdictional limits, the three mile outer limit of the United States' territorial sea. The inland boundary is the inland boundary of each of the eight counties having critical areas. These lines are described in Title 4, Chapter 3 of the Code of Laws of South Carolina (1976).

Within the South Carolina coastal counties there is considerable Federally controlled land excluded from the coastal zone boundary under Section 304(1) of the Federal Coastal Zone Management Act of 1972, as amended. The Appendices contain a site-specific map indicating, under current OCZM interpretation, those lands which are "by law subject solely to the discretion of or which is held in trust by the Federal government, its officers or agents and are, as such, to be excluded from the coastal zone." Chapter V, addressing Federal government coordination, provides more specific discussion of Federally excluded lands.

The interstate boundaries separating South Carolina from Georgia, on the south, and North Carolina, on the north, are described in Section 1-1-10 of the Code of Laws of South Carolina (1976). The State of North Carolina also utilizes the two-tier approach to management, as described in the Final Draft, The North Carolina Coastal Plan (November, 1977). The first tier Areas of Environmental Concern include Coastal Wetlands, Estuarine Waters, Public Trust Areas, Estuarine Shorelines, Ocean Beaches, Frontal Dunes, Ocean Erosion Areas, Inlet Lands, Small Surface Water Supply Watersheds, Public Water Supply Well-Fields and certain Fragile Natural Resource Areas. These areas closely coincide, in scope, with the critical areas. In addition the North Carolina coastal area includes Brunswick County, the coastal county adjacent to the South Carolina-North Carolina line. Therefore, similar regulatory programs will be employed on either side of the border, and it appears that the North Carolina coastal zone boundary is compatible with that of South Carolina.

In Georgia the Coastal Resources Division of the Department of Natural Resources (the Department) is

charged with developing a statewide coastal management program. At present the Department administers the Coastal Marshlands Protection Act of 1970, an Act which requires permits for alterations in marshalnds. Marshlands are statutorily defined by tidal fluctuation as areas below the ordinary high tide line and functionally as that point below which ordinary cultivation cannot take place. The jurisdictional scope of the Department for permitting in marshlands is similar in scope to the tidelands and coastal waters critical areas of Council jurisdiction. The State of Georgia has not completed a draft management program. The Department is charged with developing the program, and at present the Department is defining the inland boundary of the coastal zone by rail rights-of-way, highway rights-of-way and county lines. Adjacent to the South Carolina-Georgia line, the Chatham County-Effingham County line is the inland boundary. Chatham County appears to include all areas of direct salt water influence. Although the geographical extent of the Georgia Coastal Zone is less than that of the South Carolina Coastal Zone along the state border, the Council considers the two boundaries to be compatible in coordinating interstate activities.

## C. USES OF MANAGEMENT CONCERN

### 1. CONSIDERATION OF NATIONAL INTEREST

Section 306(C) (8) of the Federal Coastal Zone Management Act and Section 923.52 of the coastal zone management development and approval regulations (**Federal Register**, Vol.44, No. 61, March 28,1979)require that the national interest receive adequate consideration in planning for and siting of facilities which are necessary to meet requirements more than local in nature. This requirement calls for an identification of the national interest associated with facilities that may be required in the South Carolina coastal zone to meet requirements more than local in nature, for an identification of the national interest in the conservation of coastal resources potentially affected by such facilities, and for a description of the process which allows consideration of the national interest in the implementation of the coastal management program. In addition, Section 8 (B) (6) of the South Carolina Management Act requires the Coastal Council to provide for adequate consideration of the national interest in developing and implementing the coastal management program.

Section 302 of the Federal Coastal Zone Management Act states that:

(a) There is a national interest in the effective management, beneficial use, protection, and development of the coastal zone.

(b) The coastal zone is rich in a variety of natural, commercial, recreational, ecological, industrial, and esthetic resources of immediate and potential value to the present and future well-being of the Nation.

Thus, the primary focus for the consideration of national interest is the balancing between the provision of facilities which are in the national interest and the protection of coastal resources which are also in the national interest.

Where the national interest in the consideration of facilities and in resource conservation conflict, the coastal management program resolves the conflict through the policies contained in the Resource Policies (Chapter III, C, 3) and the rules and regulations applicable to the specific facility or associated activity. These potential conflicts were considered in the development of the Coastal Council's policies and regulations.

The regulations and policies for activities in the coastal zone embody considerations of the relative values of resources and their uses in particular ways. With energy facilities and other facilities or activities in which there is a national interest, the value of the facility is evaluated in relation to the value of the coastal resources affected by such facilities or activities. The regulations and policies balance these values within the framework of the purpose of the management program. Consideration of the national interest for particular types of facilities and resources is thus reflected in the applicable policies and regulations governing activities associated with such facilities or resources.

The identification of facilities and coastal resources which are in the national interest was guided by Federal laws and regulations; executive policy statements; Federal agency studies and reports; interaction between the Coastal Council and staff; interstate agency information and plans; and response to a National Interest-Federal Consistency Questionnaire.

The following concerns are considered by South Carolina to be of such long-range, comprehensive importance as to be in the national interest:

1. National Defense
2. Energy Production and Transmission
3. Maintenance of Navigation
4. Coastal Resources:
   a) Significant fish species and habitats
   b) Threatened wildlife habitats
   c) Public recreation areas (for example, shoreline access and undisturbed natural areas)
   d) Drinking water supply
   e) Historical, cultural and archeological sites
   f) Barrier islands
   g) Wetlands

The process for considering the national interest in program implementation is the direct permitting authority and the review and certification process of the Coastal Council. Applications for facilities or activities in critical areas are placed on public notice, which Federal agencies also receive. Coastal Council review of these applications will consider the national interest as reflected in the regulations and policies, and will also consider the comments from the public and from Federal agencies concerning national interests involved in making a decision on the permit application. National interest consideration may also be raised for Coastal Council deliberation by Federal agencies at any time. Such deliberation may result in changes or additions to Coastal Council regulations or policies. Applications for permits from other agencies in the coastal zone are reviewed by the Coastal Council for certification of compliance with the coastal management program. The national interest is considered during this review, and the policies embodying national interest considerations must be complied with by the proposed facility or activity to receive certification.

## MANAGEMENT FOR FACILITIES AND RESOURCES IN THE NATIONAL INTEREST

### National Defense

All of the Resource Policies (Chapter III, C, 3) of the management program apply to national defense facilities if such facilities are not on Federal lands, which are excluded from the program. The Resource Policies of particular interest for national defense are:

Transportation
a) Ports
b) Roads and Highways
c) Airports
d) Railways

Dredging
a) Dredging
b) Dredge Material Disposal

### Energy Production and Transmission

The energy facilities and activities which are considered to be in the national interest are all those defined in Section 923.52 (c) of the coastal zone management development and approval regulations (**Federal Register**, Vol. 44, No.61, March 28,1979)and include, for example, electric generating plants, petroleum refineries and associated facilities, gasification plants, facilities associated with liquified natural gas, uranium enrichment or nuclear fuel processing facilities, and oil and gas facilities. The Energy Planning Process (Chapter IV, B) fully discusses the regulatory authority, policies and planning process for facilities and activities associated with energy production and transmission.

### Maintenance of Navigation

The vital importance of maintaining navigation has been stressed by numerous aspects of the program document. Navigation channels are identified both as Areas of Special Resource Significance and as Geographic Areas of Particular Concern. Navigation is also a consideration the Council must make in all permit decisions. Under Section 15(A)(2) of the S.C. Coastal Management Act, the State Ports Authority must review and certify to the Council that permit applications in the critical areas would not unreasonably restrict navigation before the Council may issue the permits. Resource Policies for Transportation, Dredging and Marine-Related Facilities specifically address navigation.

### Coastal Resources

#### Significant Fish Species and Habitats

The Resource Policies for Recreation and Tourism, Marine-Related Facilities, Wildlife and Fisheries Management and the Living Marine Resources section (Chapter IV, E) of the management program describe significant fish species and their habitats for coastal South Carolina. Resource Policies affecting significant fish species and their habitats include all policies affecting wetlands and waters, especially:

Residential Development
Marine-Related Facilities
Wildlife and Fisheries Management
Dredging
a) Dredging

b) Dredge Material Disposal
Erosion Control

**Threatened Wildlife Habitats**

Resource Policies, in conjunction with the priorities for use of Geographic Areas of Particular Concern (GAPCs), govern the activities that affect threatened wildlife and their habitats. Of particular interest are Resource Policies for: Residential Development; Transportation; Recreation and Tourism; Wildlife and Fisheries Management; and Public Services and Facilities. As specific policies under these and other areas indicate, activities that disturb threatened or endangered wildlife and vegetation, including their habitats, are discouraged in the coastal zone.

**Public Recreation Areas** (such as beaches, undisturbed natural areas)

In addition to the special management given GAPCs that contain Public Recreation Areas, several Resource Policies governing activities associated with recreational resources are also applicable. Of particular interest are Resource Policies for: Recreation and Tourism; Marine-Related Facilities, Erosion Control; Transportation; Coastal Industry; Dredging; and Public Services and Facilities.

**Drinking Water Supply**

Drinking water supply is affected by several factors, including adequacy of recharge areas, amount of extraction from supply, and purity of supply. The Resource Policies in general seek to direct activities in the coastal zone in such a way as to protect this invaluable resource. Of particular interest are Resource Policies for: Coastal Industries; Commercial Development; Public Services and Facilities; and Residential Development. In addition, designated groundwater recharge areas (identified by the S.C. Water Resources Commission) will be GAPCs and will be managed according to the priorities of use specified in the GAPC section.

**Historical, Cultural, and Archeological Sites**

Historical, cultural, and archeological sites will be included as GAPCs if designated to the National Register and may be included if they are eligible for designation. Priorities of use for those areas will govern proposed activities that might affect these resources. The Resource Policies generally discourage activities that would disturb such resources. Of particular interest are Resource Policies for: Transportation; Coastal Industries; Residential Development; and Recreation and Tourism. These policies will aid in preserving those resources in which there is a national interest.

The provision of improved, and protection of existing, public access to these valuable recreational areas is addressed in the Beach and Shoreline Access segment (Chapter IV (D)).

**Barrier Islands**

The national interest in barrier islands is reflected in several Resource Policies and is specifically reflected in Chapter IV (C), Erosion Control Program. Barrier islands are also included as Areas of Special Resource Significance in part XII of the Resource Policies. In managing activities affecting these valuable natural resources, the Resource Policies must balance sensitive ecological needs with the increasing pressures for their development. The following Resource Policies are of additional concern for protecting the national interest in these resources: Residential Development; Transportation; Commercial Development; Recreation and Tourism; Marine-Related Facilities; Dredging; and Public Services and Facilities. In addition, where GAPC designations are on part or all of a barrier island, the areas will be managed according to the priorities of use for the GAPC.

**Wetlands**

The national interest in wetlands is reflected throughout all the Resource Policies, which provide strong protection against unwarranted dredging, tilling or other pemanent alteration of salt, brackish and freshwater wetlands. The ecological significance of these wetland areas is fully described in Chapter I(C), The Natural Environment, and Chapter IV(E), Living Marine Resources.

## 2. ACTIVITIES OF REGIONAL BENEFIT

### INTRODUCTION

Section 306(e)(2) of the Federal Coastal Zone Management Act of 1972, as amended, requires that South Carolina make provision within its coastal zone management program to assure that local government regulations do not unreasonably restrict or exclude land and water uses of regional benefit. The initial step of this requirement is identification of those activities which are determined to be of regional benefit. Once selected, each state coastal management program must demonstrate the state legal authority which will assure that these activities are not unreasonably excluded from locating in the coastal zone by local government actions.

### DEFINITIONS

Tracking the language of the Federal regulations for achieving program approval (15 CFR 923), activites are considered to be of regional benefit in the South Carolina coastal zone if they:

1) have been identified as **Activities Subject to Management,** that is, those determined to have **direct and significant impact** on coastal waters,

**and**

2) result in a **multi-county** environmental, economic, social or cultural benefit.

Unreasonable local restriction of an activity is that which is arbitrary or capricious. It involves a local decision not based on rational or legal factors and implies an exclusion which works to the detriment of the region.

### FINDINGS

Because of the rural character of much of South Carolina's coastal zone, ample suitable site locations remain available for most proposed uses now and in the foreseeable future. This limited urbanization also presents less need and demand for regional-type facilities. Most public services are provided on a county-wide basis. Local and county governments in the coastal zone have not exhibited any trend toward excluding particular types of activities, particularly those which offer benefits to an area of greater than local concern.

Therefore, at this time a limited number of activities have been identified to be of regional benefit. The focus is on those coastal land and water uses which, by their nature, might require extension through more than one county or which meet a clearly recognized need, not only for the coastal region but for the State as a whole.

### THE ACTIVITIES

Activities of Regional Benefit in the South Carolina coastal zone are:

1) **Transportation facilities** - including highways, airports, railroads, ports and transit;
2) **Parks** - recreational areas of State or regional significance.

### MANAGEMENT AUTHORITY

Section 8(B) (6) of the South Carolina Coastal Management Act states that the Council, in developing the management program, shall

> (P)rovide for adequate consideration of the local, regional, state and national interest in the siting of facilities for...public services necessary to meet requirements which are other than local in nature.

Consistent with the general networking scheme for South Carolina's coastal program, the present authority of other State agencies will be utilized to comply with requirements for Activities of Regional Benefit. Assurances that these State agencies are cognizant of their authority and are willing to employ it to implement the program will be provided through memoranda of agreement. Section 7(A) of the Act requires the cooperation of other State agencies and compels the respective agencies to administer their authority in accord with the Act and Rules and Regulations promulgated thereunder.

Section 923.12(b)(2) of the **Federal Register,** March 28, 1979, provides illustrations of techniques which may be utilized in assuring that uses of regional benefit are not restricted. The Coastal Council through means of its system of "networking" with other State agencies, the State's Public Works Eminent Domain Law, as well as through specific acquisition powers of othe State agencies, will assure that adequate sites are or can be set aside for different uses of regional benefit. The legal basis for this system is already in place through the present powers vested in State agencies to acquire sites as the need arises for particular uses of regional benefit.

The State of South Carolina has a Public Works Eminent Domain Law. Section 28-5-30, Code of Laws of South Carolina (1976) allows any federal agency, State public body or authorized corporation to acquire real property necessary for any public works project. Section 28-5-20 (1976 Code) defines public works project as "any work or undertaking which is financed in whole or in part by a federal agency or a State public body." This all-encompassing power of public domain is supplemented by specific acquisition powers of various State agencies.

The Development Board is authorized in Section 13-3-100 (1976 Code) to:

> Acquire by purchase, gift, condemnation or in any other manner any lands, waters, water rights, riparian rights, flowage rights, rights of way, easements, licenses, franchises, engineering data, maps, construction plans or estimates or any other property of any kind, real, personal or mixed, necessary or useful in carrying out its powers.

This Board may also employ the eminent domain power pursuant to laws for railroads, telegraph and telephone companies, power companies and highways.

At present, the primary function of the Development Board is to encourage and assist industrial and commercial development within the State. The Development Board, under Section 13-3-100 (1976 Code) is also empowered to acquire, build and maintain among other items, railroads, highways, pipelines, dams, tunnels and bridges. The Board may also construct and establish parks and playgrounds for the use of the State's citizens as well as take proper steps to prevent and control soil erosion and floods. These powers may be exercised through its own efforts and resources or may be accomplished jointly with the United States, other states, private corporations or private individuals.

In addition to the Development Board's ability to acquire recreational areas, the Parks, Recreation and Tourism Commission through Section 51-1-60 (1976 Code) is responsible for managing, developing and expanding recreational areas and for developing a coordinated plan to utilize the State's natural resources as tourist attractions. Upon approval of the State Budget and Control Board, this Commission is able to acquire land by gift or purchase in carrying out its mandate.

The State Budget and Control Board is also vested with broad authority. It is the State agency responsible for management of State-owned lands and waters. It may, under Section 1-11-80 (1976 Code), grant easements and rights of way for construction and maintenance of power lines, pipelines, water and sewer lines and railroad facilities over or under vacant lands and marshlands owned by the State, upon payment of reasonable value. This Board has the authority under Section 1-11-110 (1976 Code) to acquire real property for the State by gift, purchase, or condemnation. Finally, the Board has been granted authority to lease any State lands for the purpose of drilling for and producing oil and gas and other minerals, subject to the approval of the Attorney General (Sections 10-9-10 and 48-43-390, 1976 Code).

The State Ports Authority is charged with the promotion, development and maintenance of harbors and seaports and related facilities and is provided condemnation powers in Section 54-3-150 (1976 Code). In addition, the Department of Highways and Public Transportation may implement its broad powers of planning, construction and maintenance of the State highway system through eminent domain proceedings under Sections 57-3-610, 57-5-32 and 57-5-1340 (1976 Code).

Section 10(B) of the Act states:

> Any city or county that is currently enforcing a zoning ordinance, subdivision regulation or building code, a part of which applies to critical areas, shall submit the elements of such ordinances and regulations applying to critical areas to the Council for review. The Council shall evaluate such ordinances and plans to determine that they meet the provisions of this act and rules and regulations promulgated hereunder. Upon determination and approval by the Council, such ordinances and regulations shall be adopted by the Council, followed by the Council

in meeting its permit responsibilities under this act and integrated into the Council's Coastal Management Program. Any change or modification in the elements of approved zoning ordinances, subdivision regulations or building codes applying to critical areas shall be disapproved by the Council if it is not in compliance with the provisions of this act and rules and regulations promulgated hereunder.

The Council will determine if uses of regional benefit could be arbitrarily excluded under local ordinances or plans. Any ordinance or plan which could arbitrarily exclude uses of regional benefit will not be adopted.

Section 6-7-830(a) of the Code of Laws for South Carolina (1976), as amended, states that:

> All agencies, departments and subdivisions of this State that use real property as owner or tenant, in any county or municipality in this State shall be subject to the zoning ordinances thereof.

Apparently, this statute is addressed to state use of real property for offices, warehouses, maintenance facilities and other support facilities since Article 8, Section 14 of the South Carolina Constitution prohibits a local government from taking action which would eliminate "the structure and administration of any governmental service or function, responsibility for which rests with the State government or which requires statewide uniformity." The uses of regional benefit, as defined, relate to services and functions vested in state agencies and presumably are not subject to Section 6-7-830(a) of the Code.

## 3. RESOURCE POLICIES

### INTRODUCTION

In addition to controlling activities in the critical areas of the coastal zone and preserving and protecting the priority use(s) of Special Management Areas (including Geographic Areas of Particular Concern), a comprehensive coastal management program must also include policies for management of the full range of activities which have a "direct and significant impact" on coastal waters. The need for this form of resource management was recognized in the Congressional findings of the Federal Coastal Zone Management Act of 1972, as amended, which describe the value of our coastal resources and the pressures for development from often competing uses. To achieve the National goals of this Act, Section 305 (D)(2) requires that to prepare an acceptable management program each state must include the following requirement:

> A definition of what shall constitute permissable land and water uses within the coastal zone which have a direct and significant impact on the coastal waters.

The South Carolina Coastal Council also is mandated by State legislation to consider various land and water activities. Section 8 (B) of the South Carolina Coastal Management Act of 1977 lists the following items to be considered in devising the State's comprehensive coastal management program:

( 1 ) Identify present land uses and coastal resources.
( 2 ) Evaluate these resources in terms of their quantity, qualtity and capability for use both now and in the future.
( 3 ) Determine the present and potential uses and the present and potential conflicts in uses of each coastal resource.

A variety of opportunities are available for benefits to all South Carolinians through wise use and preservation of coastal resources. Man's activities in the coastal zone involve economic, social and environmental impacts which may have positive and/or negative effects. It is the resolution of possible conflicts and the guidelines and policies which must be considered in decision-making in order to reduce possible negative impacts which constitute the need for sound, logical planning and management of coastal resources.

**Performance Standard Approach**

As part of the Uses Subject to Management Segment, "States must develop policies and procedures by which uses, determined to be subject to the management program, will be allowed, conditioned, modified, encouraged or prohibited." (§923.11, **Federal Register**, March 28, 1979)This refers to the Federal requirement that each State first identify the coastal activities which are considered significant enough to warrant management, and then identify the policies and the legal authority or review process which will govern each of these activities.

The South Carolina coastal program has selected an approach that might be called "performance standards" which deals with the impacts of an activity on coastal resources rather than with the activity itself. It is an indirect method of managing activities in the coastal zone by assessing the impacts of a proposed action on coastal resources. With this approach, policies need not be developed for **all** aspects of a type of activity but only for those which would have direct and significant coastal impacts.

Review and discussion on projects or proposals will be determined on the individual merits of each application with consideration for the effects on the marine and estuarine environments, based on the following policies. This process will be implemented through the Council's direct authority for critical area permit applications and review and certification of the permits of other State and Federal agencies. (The procedural as well as legal aspects of both levels of management authority are addressed in full in Chapter V.)

The alternative approach of designating which activities are permissible in different geographic areas of the coast is seen in the context of the South Carolina coastal program as an option for local governments to regulate land development and use. This type of approach by local governments is fully encouraged and supported by the Coastal Council. However, in terms of the details involved in its implementation, this approach would be inappropriate for State management of the coastal zone as a whole. This type of plan would not allow sufficient flexibility for future decision-making at the State level, with changing technology and advancements in development alternatives which might offer ways to reduce environmental or other impacts.

Therefore, the performance standard approach seems best suited to the needs for management of coastal

resources in South Carolina. It meets the overall intent of the South Carolina Coastal Management Act "to protect the quality of the coastal environment and to promote the economic and social improvement of the coastal zone..."

**DEFINITION: ACTIVITIES WITH A "DIRECT AND SIGNIFICANT IMPACT"**

The South Carolina Coastal Management Act of 1977 recognizes that there are specific parts of the coastal environment which are more vulnerable to the effects of man's activities than others. Experience and scientific research have demonstrated these ecosystems to be more fragile and, therefore, these "critical areas" are defined by the Act as coastal waters, tidal wetlands, beaches and primary sand dunes. To adequately manage these resources, the Act gives direct authority to the Coastal Council for issuance of permits for any alteration in these areas.

> Ninety days after the effective date of this Act no person shall fill, remove, dredge, drain or erect any structure on or in any way alter any critical area without first obtaining a permit from the Council. (Section 13 (C))

The Council evaluates these permits based on the general considerations of Section 15 of the Act and the specific project standards as presented in the Rules and Regulations for Permitting.

The South Carolina coastal program recognizes that in other parts of the coastal zone, some large-scale activities or particular aspects of man-made developments also can significantly impact coastal resources. In development of the comprehensive coastal management program, Section 8 (B) of the 1977 State legislation directs the Council to consider "all lands and waters in the coastal zone for planning purposes."

While the Council has no direct regulatory authority outside the critical areas of the coastal zone (Section 20, S.C. Coastal Management Act, Act 123 of the 1977 General Assembly) adequate management is provided through the Council's review and certification of permits of other State agencies. (Section 8 (B)(11), S.C. Coastal Management Act) (The legal basis for this management approach is explained in detail in the section "Legal Authorities.") The Federal consistency provisions of the Federal Coastal Zone Management Act of 1972, as amended, afford another mechanism for management throughout the coastal zone.

Identification of the activities which might have significant impacts has been based on the resource inventory and planning efforts of the coastal program staff since 1974; input from other participating local, State and Federal agencies; citizen working groups in the eight coastal counties; and the policy direction of the eighteen-member Coastal Council.

An activity is considered to have direct and significant impact on coastal waters and therefore is subject to management in the coastal zone if it entails one or more of the following criteria:

1) located **in** a critical area;
2) detrimental environmental impact upon a critical area (for example, water pollution upstream from an inland source which would then reach and result in degradation of the estuarine system);
3) adverse effects on the quality or quantity of coastal resources — natural, economic, social or historical;
4) disruption of access to a public coastal resource.

**Activities Subject To Management**

Below is a list of activities and areas of special resource significance which the Coastal Council has determined to meet the definition for having a potential for "direct and significant impact" on coastal waters. The policies of the South Carolina Coastal Council for each activity or area follow, beginning on p. III-16.

GUIDELINES FOR EVALUATION OF ALL PROJECTS

I. In review and certification of permit applications in the coastal zone, the Coastal Council will be guided by the following general considerations (apply to erosion control and energy facility projects, as well as activities covered under Resource Policies):

1) The extent to which the project will further the policies of the South Carolina General Assembly which are mandated for the Coastal Council in implementation of its management program, these being:

a) "To promote the economic and social improvement of the citizens of this State and to encourage development of coastal resources in order to achieve such improvement with due consideration for the environment and within the framework of a coastal planning program that is designed to protect the sensitive and fragile areas from inappropriate development and provide adequate environmental safeguards with respect to the construction of facilities in the critical areas of the coastal zone;

b) To protect and, where possible, to restore or enhance the resources of the State's coastal zone for this and succeeding generations." (Sections 2(B)(1) and (2), S.C. Coastal Management Act of 1977).

2) The extent to which the project will have adverse impacts on the "critical areas" (beaches, primary ocean-front sand dunes, coastal waters, tidelands).

3) The extent to which the project will protect, maintain or improve water quality, particularly in coastal aquatic areas of special resource value, for example, spawning areas or productive oyster beds.

4) The extent to which the project will meet existing State and Federal requirements for waste discharges, specifically point sources of air and water discharge, and for protection of inland wetlands.

5) The extent to which the project includes consideration for the maintenance or improvement of the economic stability of coastal communities.

6) The extent to which the project is in compliance with local zoning and/or comprehensive plans.

7) The possible long-range, cumulative effects of the project, when reviewed in the context of other possible development and the general character of the area.

8) The extent and significance of negative impacts on Geographic Areas of Particular Concern (GAPCs). The determination of negative impacts will be made by the Coastal Council in each case with reference to the priorities of use for the particular GAPC. Applications which would significantly impact a GAPC will not be approved or certified unless there are no feasible alternatives or an overriding public interest can be demonstrated, and any substantial environmental impact is minimized.

9) The extent and significance of impact on the following aspects of quality or quantity of these valuable coastal resources:

i) unique natural areas — destruction of endangered wildlife or vegetation or of significant marine species (as identified in the Living Marine Resources segment), degradation of existing water quality standards;

ii) public recreational lands — conversion of these lands to other uses without adequate replacement or compensation, interruption of existing public access, or degradation of environmental quality in these areas;

iii) historic or archeological resources — irretrievable loss of sites identified as significant by the S.C. Institute of Archeology and Anthropology or the S.C. Department of Archives and History without reasonable opportunity for professional examination and/or excavation, or preservation.

10) The extent to which the project is in the national interest.

I I . "In critical areas of the coastal zone, it is Council policy that, in determining whether a permit application is approved or denied, the Council shall base its determination on the individual merits of each application, the policies specified in Sections 1 and 2 (of the Act), and be guided by the following general considerations:

1 ) The extent to which the activity requires a waterfront location or is economically enhanced by its proximity to the water.

2 ) The extent to which the activity would harmfully obstruct the natural flow of navigable water. If the proposed project is in one or more of the State's harbors or in a waterway used for commercial navigation and shipping or in an area set aside for port development in an approved management plan, then a certificate from the South Carolina State Ports Authority declaring the proposed project or activity would not unreasonably interfere with commercial navigation and shipping must be obtained by the Council prior to issuing a permit.

3 ) The extent to which the applicant's completed project would affect the production of fish, shrimp, oysters, crabs or clams or any marine life or wildlife or other natural resources in a particular area including but not limited to water and oxygen supply.

4 ) The extent to which the activity could cause erosion, shoaling of channels or creation of stagnant water.

5 ) The extent to which the development could affect existing public access to tidal and submerged lands, navigable waters and beaches or other recreational coastal resources.

6 ) The extent to which the development could affect the habitats for rare and endangered species of wildlife or irreplaceable historic and archeological sites of South Carolina's coastal zone.

7 ) The extent of the economic benefits as compared with the benefits from preservation of an area in its unaltered state.

8 ) The extent of any adverse environmental impact which cannot be avoided by reasonable safeguards.

9 ) The extent to which all feasible safeguards are taken to avoid adverse environmental impact resulting from a project.

1 0 ) The extent to which the proposed use could affect the value and enjoyment of adjacent owners." (Section 15(A), S.C. Coastal Management Act of 1977)

## RESOURCE POLICIES

On the following pages are the Resource Policies for each of the identified Activities Subject to Management. A brief statement of findings describes why each activity is of coastal management concern. These policies are organized in three separate sections:

1 ) Policies for the coastal zone, including that portion outside the critical area in which the Coastal Council has indirect authority (review and certification).

2 ) Policies for the critical areas, where the Coastal Council has direct permit authority. These policies are the Rules and Regulations for Permitting (R. 30-1 through 30-11, S.C. Code of Laws of 1976). Each policy or group of policies appears with a citation ("R. 30-____") for the corresponding regulation.

3 ) Recommended or enhancement policies which are endorsed by the Coastal Council.

Policies 1) and 2) are those which the Coastal Council is authorized to enforce through the authority of the coastal program and the S.C. Coastal Management Act of 1977. These policies are highlighted in the text with a bold outline along the margins.

Following the policies for each activity is a brief discussion of the management authority which will implement these policies. A matrix at the end of this section illustrates the network of implementation authorities. Chapter V(A) further documents the existing legal authorities.

## I. RESIDENTIAL DEVELOPMENT

### Findings

Paralleling the national pattern, more than 20 percent of the State's residents live in the coastal zone of South Carolina. Recently there has been a substantial increase in the building of both permanent and second-homes or seasonal housing in coastal counties by residents and non-residents of South Carolina who have purchased coastal land for residential development.

With expanding industry and commerce and related employment opportunities, plus the increasing attractiveness of the southeastern "sun belt" states as a place to work and play, this residential growth can be expected to continue. Adequate, sound housing is a basic need for residents of the coastal zone. There are still many suitable locations for this type of development; however, there can be negative environmental impacts from residential growth if it is not properly managed.

Housing projects can have adverse effects on coastal water resources and ecosystems. Of primary concern is adequate treatment and disposal of domestic sewage from the residences, which if not properly handled can degrade water quality and impact marine and aquatic species. Uncontrolled development patterns can also have effects of increased soil erosion, sedimentation and contamination of coastal waters and possible flooding problems from rapid storm water runoff. Another potential impact of residential growth is associated with loss of vital wetland areas if dredging and/or filling of these areas are allowed in site preparation or construction.

An almost infinite number of potential resource conflicts exists, and one development may have several effects. For example, in one instance a residential development may provide badly needed housing but in so doing disrupt commercial fishing by degrading water quality due to improperly controlled sewage effluent and increased storm water runoff. This same housing development if located on beach front property might conflict with recreation by restricting access to a public beach.

These potential conflicts are addressed in the following policies for residential growth, which provide guidance on reaching and maintaining a balance between development and conservation of coastal resources.

### Policies

1 ) In the coastal zone, Council review and certification of State and Federal permits and comments on residential projects will be based on the following policies:

a ) Adequate sewage disposal service (septic tanks or treatment systems) which meet the Environmental Protection Agency, South Carolina Department of Health and Environmental Control, and local health department standards must be provided in residential development plans. Septic tanks should be permitted, where feasible, in low density residential developments when they are designed properly and soils are adequate to insure against pollutants leaching into surface or groundwater resources. Septic tanks must be situated a safe distance from the shoreline to ensure proper drainage and filtering of tank effluents before they reach the water's edge with special attention given in identified erosion areas. Policies for sewage treament plants and associated facilities appear in IX (A) of this section.

b ) Residential development which would require filling or other permanent alteration of salt, brackish or freshwater wetlands will be prohibited, unless no feasible alternatives exist or an overriding public interest can be demonstrated, and any substantial environmental damage can be minimized. These marshes are valuable habitat for wildlife and plant species and serve as hydrologic buffers, providing for absorption of storm water runoff and aquifer recharge, and therefore, their destruction for residential purposes must be avoided whenever possible.

c ) Location of new residential development in flood-prone river or other hazard areas is discouraged. When development does occur in flood hazard areas, the inclusion of natural, vegetated buffers between developed areas and the shoreline must be incorporated wherever possible to help absorb flood water surges. Within designated flood zone areas of participating communities residential development must meet existing Federal Flood Insurance Administration (Department of Housing and Urban Development) national building standards and

insurance requirements. Local governments in the coastal zone are urged to actively participate in the National Flood Insurance program.

d) Where appropriate, particularly adjacent to a critical area, drainage plans and construction measures for residential development shall be designed so as to control erosion and sedimentation, water quality degradation, and other negative impacts on adjacent water and wetlands. Example techniques include buffering and filtering runoff water; use of permeable surfacing materials for roads, parking and other paved areas within a subdivision; and grass ditching, surface drainage contours, or catchment ponds rather than direct storm water discharge. Best management practices (and any resultant regulations) designed to control nonpoint source runoff that are developed and implemented as part of the 208 Water Quality Planning process also apply to new housing projects. Developers proposing residential development activities should contact and work closely with local 208 planning agencies and local Soil and Water Conservation Districts.

e) Other activities associated with a residential development or subdivision will be subject to the policies for that activity, for example, dredging, docks and piers, marinas, commercial buildings, parking facilities or transportation access.

f) When local ordinances and plans applying to the critical areas are submitted to the Council for review, pursuant to Section 10(B) of the Act, such ordinances, plans or subdivision regulations must include provisions for insuring:
   i) adequate non-critical area vehicular access to each subdivision lot,
   ii) adequacy of septic tank or sewage treatment system disposal for each lot.

2) In the critical areas the Coastal Council has direct permitting authority and shall apply the following rules and regulations:

a) "The creation of.....residential lots strictly for private gain is not a legitimate justification for the filling of wetlands. Permit applications for the filling of wetlands and submerged lands for these purposes shall be denied." (R-30-12, (G)(2)(a)

b) "Nonwater-dependent structures such as apartment,.....(and other residences) have been constructed in the past on pilings over wetland areas. Such construction presents unnecessary encroachment on the aquatic ecosystem by shading out the underlying vegetation. Nonwater-dependent structures shall be discouraged from being sited over water and/or wetland areas. Only when public need is demonstrated and no feasible alternative sites are available should consideration be given towards approval of the proposed structure." (R. 30-12 (M))

c) "Nonwater-dependent structures such as residential buildings have been constructed on primary sand dunes or beach areas in the past. Such construction may seriously disrupt the dune/beach system and its vegetation, hampering their effectiveness as a storm and erosion buffer. The siting of nonwater-dependent structures on the primary dunes or the beaches will be discouraged where other feasible alternatives exist. Design and construction options which minimize destruction of the dunes and dune vegetation will be encouraged." (R. 30-13(D))

3) The Council **recommends** that the following policies be considered in planning residential development in the coastal zone:

a ) Local governments are encouraged to develop local plans and procedures which promote clustering of residential development where growth is most compatible with coastal resources and where necessary public services can be most easily provided with least adverse impacts on these resources. Criteria to judge those areas most capable of accommodating new growth with minimal impact on coastal resources would be included in local plans.

b) Developers are encouraged to incorporate common-use recreational areas in proposals for large-scale residential developments. With regard to water and boat access, "developers of subdivisions, motels, and multiple family dwellings will be encouraged to develop single, joint-

use moorage facilities while their plans are in the development stage" (R. 30-12 (A)(2)(f)), combined with building covenants to limit the proliferation of individual docks and piers.

**Management Authority**

If located in the critical areas, as defined by the S.C. Coastal Management Act, proposed new residential uses would require a permit from the Coastal Council before beginning construction.

Outside the critical areas, the Coastal Council will review a number of State agency permits required for certain residential developments to determine that issuance of these permits is consistent with the preceding coastal management policies. This review and certification process is mandated in Section 7(A) and 8(B)(11) of the Coastal Management Act.

A S.C. Budget and Control Board permit is required for the filling of waters or wetlands below mean high water (MHW) in that part of the State outside Coastal Council permitting jurisdiction.

S.C. Department of Health and Environmental Control (DHEC) permits are required for the construction of subdivision water supply and waste disposal systems. Because of the rural and suburban character of much of the coastal zone, there are large areas not served by public water or sewer systems. This DHEC authority will bring a majority of new residential developments under the Council certification process.

DHEC is the State agency responsible for administration of the National Pollution Discharge Elimination System (NPDES) permit process. This permit is required not only for effluent discharges, such as from a sewage treatment facility, but in some instances for such point-source discharges as storm drainage pipes. DHEC is also the S.C. agency responsible for "401" water quality certifications (Section 48-1-50 (15), 1976 S.C. Code of Laws), which are determinations of allowable water pollution levels required for any activity involving another Federal permit.

(A detailed legal analysis of the authority of each agency and of the Council certification procedure is contained in the Legal Authorities chapter.)

In addition to State management authority, major residential developments receiving some form of Federal financial assistance will be subject to the A-95 review process for which the Coastal Council is a commenting agency. Some projects will also require the submittal of Environmental Impact Statements, thereby having further Council review. Federal permits will be required for any proposed housing construction in the wetland or water areas under jurisdiction of Section 404(33 CFR §323) of the Federal Water Pollution Control Act, as amended in 1976.

## II. TRANSPORTATION FACILITIES

The construction and maintenance of all forms of transportation service are a vital part of the economic and social character and viability of the coastal zone. Almost always involving the expenditure of large sums of public money, investment in these facilities meets a definite need in the coastal zone, serving both coastal and State residents. Because of their role in national defense, as well as provision of access to coastal recreation areas and other resources, and contribution to general economic growth, transportation facilities are often in the national interest (p. III-5). Transportation systems are an important element in an overall coastal management program because they provide access to a variety of public resources — economic, as well as historic, social and recreational. There can be, however, potential environmental impacts from construction, maintenance, and operation of transportation in order to achieve the goals and objectives of South Carolina's coastal program.

### A. PORTS

**Findings**

The ports and commercial waterways of South Carolina represent major economic enterprises that meet the needs of waterborne commerce for both the coastal zone and the entire State of South Carolina. These ports and commercial waterways also have a major national impact by providing a means of access to international and domestic markets.

The economic impact of port development is substantial. Statistics for 1973 (Pender, D.R. and R. P. Wilder. **Impact of the State Ports Authority Upon the Economy of South Carolina.** Division of Research, Bur. Bus. and Econ. Research, College of Bus. Administration, Univ. of S.C., 1974. Occasional Study No. 6) indicate that direct port employment was 15,000 jobs, and direct income to the ports equalled $253 million. Secondary economic impacts almost double the above factors for each year. Some 1500 firms in the State regularly use the ports.

In the last decade, the Port of Charleston has emerged as one of the south's major commercial cargo ports. In 1976 it surpassed all other ports in the South Atlantic region in the value of general cargo handled in world commerce. One of the nation's most rapidly developing container ports, Charleston is now the ninth ranked container port in the United States. Smaller State Port facilities are located at Port Royal and Beaufort.

Port development and associated activities can have major direct and secondary environmental impacts, particularly in relatively undisturbed areas. The main impacts on the water side are associated with dredging required to create and maintain navigation channels. This considerable dredging can modify the hydrology of a harbor, result in salinity changes, and degrade water quality, thereby having a detrimental effect on aquatic resources. Initial and maintenance dredging can also create dredge material disposal problems. In addition, ports which handle oil products or toxic substance cargoes will involve risks of spills resulting in water quality degradation.

The secondary effects of port development primarily affect land resources and land use. Ports generate a large volume of rail and truck traffic and oftentimes are a spur to intensive industrial and urban development.

The South Carolina Ports Authority is currently preparing a comprehensive ports management plan for submittal to the Council, as mandated by Section II of the Coastal Management Act of 1977. This plan, which will have public review, will be incorporated into the coastal program upon its approval by the Council. It will delineate present and potential commercially navigable waterways in the coastal zone and relate these to relevant land development and environmental policies.

**Policies**

In the coastal zone, Coastal Council evaluation of critical area permits or review and certification of permit applications for port development will be based on the approved ports plan and the following policies:

1) New port development should take place in existing industrialized areas where sufficient support

facilities are available including public utilities, rail and highway transportation access, and navigational channels which are already maintained, unless there are no feasible alternatives or an overriding public interest can be demonstrated, and any substantial environment damage can be minimized.

2) Port development should occur in areas that have adequate high ground (non-wetland) acreage for proposed current development and near-term expansion plans, and related facilities. Port development should be located in areas where the filling of productive salt, brackish or freshwater wetlands will not be required or can be minimized. If site preparation does not require filling in these wetlands, it must be clearly demonstrated that no other feasible alternatives exist or an overriding public interest can be demonstrated, and any substantial environment damage can be minimized.

3) To the extent feasible, port development and expansion should locate on existing channels so that the need for initial and maintenance dredging can be minimized.

4) New port development that will require maintenance dredging must identify adequate upland (non-wetland) spoil areas, ocean disposal, or other environmentally-acceptable alternative disposal techniques to meet the long-term demands for soil disposal.

5) Port areas must provide for the handling of dangerous and volatile cargoes and materials in relatively isolated or restricted areas, so that in the event of accident, measures can be implemented to contain any spills or other contamination with minimal environmental damage and limited threat to the health, safety and welfare of the public.

6) Wharves, piers, mooring dolphins and other port-related structures should not restirct or block navigation or alter the natural pattern of water currents.

7) Proposed port development or expansion and operation must meet existing air and water quality standards, as regulated by the Federal Environmental Protection Agency, and the South Carolina Department of Health and Environmental Control.

8) Port facilities developed by the State Ports Authority (SPA), as well as by private developers, must be sited, constructed and operated in a manner that is consistent with local and State development objectives as set forth in public documents such as comprehensive plans, zoning ordinances and performance standards.

9) Potential negative impacts on navigation which might restrict port and harbor activities in the area will be considered in evaluation of permits for marinas, docks and piers, transportation facilities (especially bridges), cables and pipelines and other relevant activities.

10) Port development or expansion plans must include provision for necessary breakwater or other wake protection measures along major navigable ship channels where appropriate in order to reduce erosion damage. These structures must be in compliance with other applicable policies and Rules and Regulations.

11) All bulkheads associated with a port area must meet the policies as stated in the Erosion Control Program (Chapter IV (C)).

12) All dredging and dredge spoil disposal policies, as stated in VIII (A) and (B) of the Resource Policies will be applied to port activities.

13) All piers and dockage must meet the policy requirements as stated in VI (C) of the Resource Policies.

14) Transportation projects associated with port development must follow the transportation policies stated in II (B)-(E) of the Resource Policies.

15) The policies for manufacturing will apply to port development and related industrial development (III (D) of the Resource Policies).

**Recommended Policies**

The Council also recommends that the following policies be considered for port and harbor development projects in the coastal zone:

1)Encouraging comprehensive study of potential secondary impacts of port and harbor development projects.

2)Maximizing the use of existing developed port areas, when feasible, before establishing new facilities in relatively undeveloped areas.

3) Encouraging the State Ports Authority (SPA) to diversify their activities and areas of concern to include the promotion of sports and commercial fisheries and other marine activities.

**Management Authority**

In the critical areas, all new port facilities are under the direct permitting authority of the Coastal Council and subject to the Rules and Regulations thereunder. Both within and outside of the critical area, in instances where the permit of another State agency is required, the review and certification process of the Council will apply.

While not a permit agency, the South Carolina State Ports Authority (SPA) has the responsibility for the planning, construction, maintenance, and operation of the State's port system. Cooperative efforts between the Coastal Council and the Ports Authority, not only on project proposals, but also on long-range planning and policy development, are the best means to implement sound coastal management policies. The Legislature recognized the need for this cooperation when it mandated in Section II of the Coastal Management Act of 1977 (the Act) that the Ports Authority prepare and submit to the Council a management plan for port and harbor facilities and navigation channels. The port plan, upon approval by the Council, will become a part of the comprehensive management program.

Section 15 (A) of the Coastal Management Act states that:

> If the proposed project is in one or more of the State's harbors or in a waterway used for commercial navigation and shipping or in an area set aside for port development in an approved management plan, then a certificate from the South Carolina State Ports Authority declaring the proposed project or activity would not unreasonably interfere with commercial navigation and shipping must be obtained by the Council prior to issuing a permit.

In addition, the Memorandum of Agreement (MOA) between the two agencies is written so as to provide for cooperative efforts. Port projects and plans are subject to review and comment, and direct Coastal Council permitting in the critical areas, where applicable, based on the preceding policies. A further legal mandate for cooperative and consistent inplementation of the two agencies' programs is found in the Act in Section 7(A) and is further explained in the Legal Authorities and Networking section, Chapter V(A).

A majority of port and navigation projects also require Federal permits, and these permit reviews are subject to the Federal consistency provisions of the coastal program. Those projects involving Federal funding are subject to the Federal Office of Management and Budget (OMB) Circular A-95 review, and frequently to EIS review, under the National Environmental Policy Act.

B. **ROADS AND HIGHWAYS** (including bridges and transit facilities)

**Findings**

Roads and highways play a major role in shaping the growth patterns of the coastal area, as they do in other parts of the state. The motor vehicle is still the primary mover of people and goods, and access to and from the roadway network is a key factor in the economic gain of a community. Intersections, curb cuts and highway interchanges are often the site of extensive development.

In addition to these secondary effects, the construction, operation and maintenance of a roadway involve engineering and construction activities which may have direct negative environmental impacts if not properly managed. First and foremost is location of the facility itself, which may be routed along or through sensitive wetland areas or water bodies. The primary concern is destruction or significant deterioration of the ecological system mainly through dredge and fill operations. This is why bridges are favored in these areas over filling to create roadbeds or embankments which would result in loss of marsh habitat and disruption of waterflow or circulation.

Also associated with road and highway construction are possible impacts of drainage and sedimentation, through land clearing, grading, and slope stabilization. Changes in the natural drainage pattern may increase flooding hazards, and storm water runoff may become a problem. Water quality may also be affected due to heavy loads of toxic pollutants and nutrients from the road surface and adjacent embankments if care is not taken in design of roadways to handle storm water runoff.

Navigation presents another potential conflict when roads are planned to cross water bodies. Adequate clearance under bridges, rather than causeway construction, can ameliorate this problem.

**Policies**

1) In the coastal zone , Council review and certification of relevant State and Federal permit applications and comments on road or highway proposals will be based on the following policies:

a) Road and highway routes shall be aligned to avoid salt, brackish and freshwater wetlands wherever feasible. Where they cannot be avoided, bridging of these wetlands and all navigable waterways, rather than filling to create roadbeds, will be required wherever feasible. The use of existing fill areas or embankments for widening or improvement projects will be required wherever feasible. Whenever feasible, median and right-of-way widths shall be limited where they will impact salt, brackish, and freshwater wetlands.

b) Road structures through salt, brackish or freshwater wetlands or water bodies must be designed so as not to cause substantial changes in natural waterflow and circulation.

c) Bridges over navigable water bodies must provide adequate clearance for commercial or pleasure craft, where appropriate.

d) Care should be taken in design of roads to minimize direct drainage of roadway runoff into adjacent water bodies. Inclusion of techniques for filtering runoff water, such as grass ditching or vegetative buffers must be considered. During construction and in later maintenance, roadway embankments should be stabilized to minimize erosion and water quality degradation due to sedimentation problems.

e) Road, highway and bridging projects in wetland or water areas are strongly encouraged to include provision for placement of other utilities, such as cables or transmission lines, in their design to reduce the need for future disruption of adjacent wetlands or waterways.

f) Construction of private roadways for private access shall be aligned to avoid salt, brackish and freshwater wetlands wherever feasible, and, where applicable, must provide bridges, culverts or other means to maintain circulation and water flow. When practicable, permeable surfaces such as gravel or shell should be used rather than pavement.

g) When applicable to highway projects that require spoil disposal areas, the policies for dredge material disposal (Resource Policies VIII (B)) shall apply to that portion of the project proposal.

h) Road or bridge projects involving the expenditure of public funds to provide access to previously undeveloped barrier islands will not be approved unless an overwhelming public interest can be demonstrated, for example, provision of access to a public recreation area or other public facility.

i) Where feasible, new roads and bridges in the coastal zone should be designed to accommodate bicycle and foot paths and fishing catwalks and platforms.

j) The Coastal Council will cooperate and coordinate with the S.C. Department of Highways and Public Transportation in development and implementation of State policy and long-term planning for transportation in the coastal zone, through such mechanisms as the State Highway Action Plan.

2) In critical areas of the coastal zone, it is Council policy that:

a) Major highways, expressways...should be located inland from coastal wetland areas to the extent feasible inland from coastal wetland areas to the extent feasible.

b) In cases where wetlands cannot be avoided, bridging should be employed, to the maximum extent possible, rather than filling and embankment to create roadbeds.

c) Where wetlands will be destroyed, the productivity of these lands should be identified and weighed against public need in consideration of the project by the Council.

d) Structures over water should be designed so as not to alter the natural waterflow and circulation regimes or crease excessive shoaling. Adequate clearance for commercial and pleasure craft should be provided.

e) Maximum care shall be taken to prevent concentrated roadway runoff from entering adjacent water bodies.

f) Where appropriate, bridges and approaches should be designed to provide for the enhancement of public access by the utilization of fishermen catwalks, boat launching ramps and other structural features.

g) During the planning of a multi-lane widening or road improvement project, it is usually preferable to follow the existing alignment in wetland areas. Existing causeway and fill areas should be utilized wherever possible. The widths of medians of divided highways should be reduced as much as "possible wherever they cross wetland areas.

h) Roadway embankments and fill areas shall be stabilized by utilizing appropriate erosion devices and/or techniques in order to minimize erosion and water quality degradation problems.

i) The Council will encourage applicants for transportation permits to design such facilities to accommodate other public utilities, thus avoiding unnecessary future alteration such as that caused by the laying of cables or transmission lines in wetlands adjacent to an existing roadway." (R. 30-12(F)(2)a-i)

3) The council **recommends** that the following policies be considered for road and highway projects in the coastal zone:

a) Encouraging comprehensive study of the potential for secondary growth inducement from new road and highway construction;

b) Study of mass transit alternatives to road or highway construction in urban areas.

c) Encouraging project designs and route alignments which consider the impacts on locally-designated "Scenic Highways" and on other aesthetic considerations, for example, enhancement and protection of scenic vistas and preservation of unique tree canopies and other natural areas.

**Management Authority**

In the critical areas, roads and highways, both public and private, are under the direct permitting authority of the Coastal Council and subject to the Rules and Regulations thereunder.

While not a permit agency for highway construction, the authority for planning, construction, maintenance and operation of the State's highway system rests with the South Carolina Department of Highways and Public Transportation. Roadway projects by the Department are subject to review and comment by the Coastal Council based on the preceding policies, as outlined in the Memorandum of Agreement between the two agencies. In instances where the permit of another State agency is required for a roadway project, the review and certification process of the Coastal Council will apply.

Cooperative efforts between the Coastal Council and the Highway Department, not only on project proposals, but also on long-range planning and policy development, are the best means to implement sound coastal management policies. The Memorandum of Agreement (MOA) between these agencies is written so as to allow such cooperation. The legal mandate for cooperative and consistent implementation of the two agencies' programs is found in the Coastal Management Act of 1977 (Section 7 (A)), and is further explained in the Legal Authorities section of Chapter V.

The State Development Board, with the mandate of improving trade, commerce and employment opportunities in South Carolina, also has the authority to build or acquire roads and highways as part of the promotion of transportation systems in the State. Any projects proposed by the Development Board in the coastal zone would involve coordinated planning efforts with the Coastal Council based on the preceding policies, as mandated by the Act and outlined in the MOA. (Further legal analysis of this authority is provided in the Legal Authorities segment.)

A majority of road and highway projects also require Federal permits, and these permit reviews are subject to the Federal consistency provisions of the coastal program. Those projects involving Federal funding are subject to the Federal Office of Management and Budget (OMB) Circular A-95 review, and frequently to EIS review, under the National Environmental Policy Act.

Section 15(A) of the Coastal Management Act states that "If the proposed project is in one or more of the State's harbors or in a waterway used for commercial navigation and shipping or in an area set aside for port development in an approved management plan, then a certificate from the S.C. State Ports Authority declaring the proposed project or activity would not unreasonably interfere with commercial navigation and shipping must be obtained by the Council prior to issuing a permit."

## C. AIRPORTS

### Findings

Air transport is an increasingly important mode for the transportation of passengers and cargo, as has been highlighted in the discussion of coastal economy (Chapter I (D)). Airport facilities are generally of coastal zone management concern only when their construction or expansion may have significant impacts on coastal resources, for example, if extensive encroachment is proposed into productive wetland areas.

In addition to potential direct loss of unique natural habitats or valuable wetlands, the construction and operation of major airport facilities might result in water quality degradation if not properly managed, due to direct storm water discharge from paved parking or landing areas or from sedimentation and erosion. The development of adjacent land can pose a secondary concern if it may conflict with noise impact zones.

The Coastal Council supports the following goals and objectives of the South Carolina Aeronautics Commission, as summarized from the South Carolina State Airport Systems Plan, (second revision), March, 1975:

1) Provision of improved airports;
2) Expansion of scheduled air carrier service to and within the State;
3) Cooperation among State agencies with respect to airport-related highway and road access, recreation use and activity, environmental management, zoning, Federal regulation aid, and planning and plans implementation.

### Policies

1) In the coastal zone, Council review and certification of airport permit applications will be based on the following policies:

a) To the extent feasible, new airport facilities shall not encroach into salt, brackish or freshwater wetlands. Permit applications involving dredge or fill to construct these facilities in wetland areas generally will be denied, unless no feasible alternatives exist or an overriding public interest can be demonstrated, and any substantial environmental damage can be minimized.

b) To the extent feasible, the best available techniques and methods shall be used during design, construction and maintenance of airports to avoid erosion or sedimentation problems and prevent concentrated runoff water from aircraft use areas, parking areas and support facilities from directly entering and degrading adjacent surface water bodies or underground resources.

c) Proposals for airport facilities must demonstrate that they will meet applicable Federal and State air quality and noise control guidelines.

2) In the critical areas of the coastal zone it is Council policy that:

a) "Airports should be located inland from coastal wetland areas to the extent feasible." (R. 30-12 (F)(2)(a))

b) "Where wetlands will be destroyed, the productivity of these lands should be identified and weighed against public need in consideration of the project by the Council." (R. 30-12 (F)(2)(c))

3) The Council also **recommends** that the following policies be considered for airport projects in the coastal zone:

a) Consideration of the existing and planned transportation system or network in the area, for example, relationship to other airports and access to adequate transportation service by other modes.

b) Encouragement of joint-use or regional airport facilities where feasible (for example, joint military and civilian airports).

c) Compatibility with character and use of the area; local governments are encouraged to develop plans and procedures which maintain appropriate, compatible use areas around **existing** airports.

d) Alignment of approach corridors and corresponding noise zones during airport planning should consider any bird rookeries located in the area.

### Management Authority

The South Carolina Coastal Council has direct permit authority for all activities or alterations in the

critical areas of the coastal zone. This jurisdiction would include any proposed airport facilities located in the critical areas - beaches, primary sand dunes, coastal waters and tidal wetlands (salt and brackish).

The Aeronautics Commission has direct regulatory authority over the design, layout, location and other aspects of landing fields and landing strips for the State. Certificates of approval are required from the Commission in order to operate or establish an airport. After approval of the coastal management program by the Governor and General Assembly, a system of review and certification of other State agency permits and actions will be implemented. Aeronautics Commission certificates in the coastal zone will be reviewed by the Coastal Council, based on the preceding policies, as mandated in Section 7(A) and 8(B)(11). A Memorandum of Agreement facilitates the cooperative efforts of the two agencies.

Most airport facilities also involve Federal Aviation Administration (FAA) approval and/or financing, so these activities will be subject to A-95 review by the Coastal Council, and in some instances, Environmental Impact Statement (EIS) review.

## D. RAILWAYS

**Findings**

Railroads are a principal means of transporting industrial, commercial and agricultural goods to market in coastal areas of South Carolina. They serve as an important supplement for other transportation modes, for example, linking industrial and manufacturing sites to port facilities. While passenger travel has diminished and railroads, generally, have declined in other parts of the nation, to a large extent they retain their economic importance in South Carolina.

The possible negative environmental effects associated with development of new railroads are similar to the impacts of roads and highways. These include:

1) loss of valuable wetland habitats if extensive dredge or fill is required;
2) disruption of water flow and circulation if properly designed bridges or other means to provide circulation are not utilized;
3) degradation of adjacent water quality if storm water runoff and sedimentation are not adequately controlled during construction and operation.

Sound management practices and implementation of the following policies will reduce the potential for these environmental problems when new railroad corridors are selected and developed.

**Policies**

1) In the coastal zone , Council review and certification of railway permit applications will be based on the following policies:

a) Railways shall be located away from salt, brackish or freshwater wetlands, to the extent feasible. In cases where these wetlands cannot be avoided, bridging rather than filling to create railway beds will be required wherever feasible.

b) Railroad structures through salt, brackish or freshwater wetlands or water bodies must be designed so as not to alter natural waterflow or circulation. Where bridging is not feasible, provision of adequate culverts or other means for water to flow through or under the structure will be required.

c) Bridges over navigable water bodies must provide adequate clearance for commercial or pleasure craft, where appropriate.

d) Railway projects in wetland or water areas are strongly encouraged to include provision for placement of other utilities, such as cables or transmission lines, in their design to reduce the need for future disruption of adjacent wetlands or waterways.

e) To the extent feasible design of railways shall include techniques to prevent direct drainage of runoff water into adjacent water bodies and stabilization of embankments to minimize erosion and water quality degradation due to sedimentation.

f) Conversion of abandoned railroad tracks, bridges and rights-of-way in the coastal zone for reuse as transportation or utility corridors or for recreational uses, such as fishing piers or bicycle trails, is encouraged.

g) The extension of new railway corridors should be based on comprehensive evaluation of the need to provide improved access to existing industrialized areas, or to planned or proposed developments suitable for manufacturing sites.

2) In the critical areas of the coastal zone , it is Council policy that:

a) "....Railways should be located inland from coastal wetland areas to the extent feasible.

b) In some cases where wetlands cannot be avoided, bridging should be employed to the extent possible, rather than filling and embankment to create roadbeds.

c) Where wetlands will be destroyed, the productivity of these lands should be identified and weighed against public need in consideration of the project by the Council.

d) Structures over water should be designed so as not to alter the natural waterflow and circulation regimes or create excessive shoaling. Adequate clearance for commercial and pleasure craft should be provided.

e) Embankments and fill areas shall be stabilized by utilizing appropriate erosion devices and/or techniques in order to minimize erosion and water quality degradation problems." (R. 30-12 (F)(2)a-d, h)

3) The Council also **recommends** that the following policies be considered for railway projects in the coastal zone:

a) Minimizing possible aesthetic impacts from placement of rail lines and bridges,

b) Integrating railroad planning and development with other transportation facilities, in order to provide adequate transportation systems; for example, where feasible, new highway bridges might be designed to include railways (especially in urban areas where land is more limited and transportation needs are greatest).

c) In floodplain areas railway alignment should parallel the path of water flow, to the extent feasible, in order to minimize disruption of the floodplain ecosystem.

**Management Authority**

Proposed new railroad construction activities located in any critical areas will require a permit directly from the Coastal Council. These projects will be reviewed according to the Rules and Regulations for Permitting, which are restated here as Council policies for the critical areas.

Outside the critical areas, but within the eight-county coastal zone, the Council will review and certify permit applications to other State agencies involved in railroad projects, based on the preceding policies. The Memoranda of Agreement with these agencies outline the review process as mandated under Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act of 1977.

Section 15(A) of the Coastal Management Act states that: "If the proposed project is in one or more of the State's harbors or in a waterway used for commercial navigation and shipping or in an area set aside for port development in an approved management plan, then a certificate from the South Carolina State Ports Authority declaring the proposed project or activity would not unreasonably interfere with commercial navigation and shipping must be obtained by the Council prior to issuing a permit."

The Budget and Control Board retains permit authority in State waters below mean high water (MHW) in those portions of the coastal zone beyond the critical areas. Any dredging and/or filling or placement of facilities below MHW for railroad construction will have to receive this Budget and Control Board permit. As addressed in the MOA between these two agencies, the Coastal Council then reviews and certifies the permit for compliance with coastal policies.

The Public Railways Commission is authorized to acquire land, including through condemnation, for construction and operation of railroads and related facilities in South Carolina. Activities of the Railways Commission will be subject to the terms of the future MOA between the Commission and the Coastal Council. (Private railroad companies have the same condemnation powers and authority to construct railroads and associated facilities. Railroad company projects will be subject to Coastal Council, Budget and Control Board, and other applicable permit requirements.)

The State Development Board may also build or acquire railroads as part of its mandate to promote the transportation systems of the State for improved trade, commerce and employment. Development Board pro-

jects are coordinated closely with the Coastal Council, as outlined in the MOA. Any State permits associated with Development Board railway projects in the coastal zone would be subject to review and certification by the Coastal Council.

In some instances, railway projects may also require Federal permits, subject to review and comment and to the Federal consistency provisions of the Coastal Council.

## E. PARKING FACILITIES

### Findings

Parking lots or garages and other parking structures are of coastal management concern only if they might infringe on valuable wetland areas, degrade water quality in adjacent wetland or water areas, or negatively impact a Geographic Area of Particular Concern (GAPC) or other unique and significant coastal resource. While provision of adequate parking areas is an important and necessary aspect of public and private commercial, residential and industrial development, these facilities need proper location and design to minimize possible negative impacts on coastal resources.

### Policies

1) In the coastal zone, Council review and certification of permit applications for parking lots, garages or other parking facilities will be based on the following policies:

a) The filling or other permanent alteration of productive salt, brackish or freshwater wetlands will be prohibited for purposes of parking unless no feasible alternatives exist, the facility is directly associated with a water-dependent activity, any substantial environmental impacts can be minimized, and an overriding public interest can be demonstrated.

b) Proposed parking facilities must demonstrate compliance with applicable Federal and State water quality standards, specifically those addressing drainage and discharge of storm water runoff.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Nonwater-dependent structures such as parking garages have been built in the past on pilings over wetland areas. Such construction presents unnecessary encroachment on the aquatic ecosystem by shading out the underlying vegetation. Nonwater-dependent structures shall be discouraged from being sited over water and/or wetland areas. Only when public need is demonstrated and no feasible alternative sites are available should consideration be given towards approval of the proposed structure." (R. 30-12(M))

b) "Nonwater-dependent structures have been constructed on primary sand dunes or beach areas in the past. Such construction may seriously disrupt the dune/beach system and its vegetation, hampering their effectiveness as a storm and erosion buffer. The siting of nonwater-dependent structures on the primary dunes or the beaches will be discouraged where other feasible alternatives exist. Design and construction options which minimize destruction of the dunes and dune vegetation will be encouraged." (R. 30-13(D))

3) The Council also **recommends** that the following policies be considered in location and design of parking facilities:

a) Use of permeable surface materials such as gravel or shell rather than pavement, where appropriate, with consideration to possible air quality and groundwater impacts,

b) Retaining the maximum possible natural drainage and vegetative cover between parking spaces,

c) Provision of buffer areas around parking areas located adjacent to the critical areas, as visual and storm water runoff buffers.

### Management Authority

The Coastal Council has permit jurisdiction over any activity altering a critical area of the coastal zone. Any proposal for a parking facility to alter a critical area must therefore obtain a permit from the Council. As stated in R. 30-12(M) of the Permitting Rules and Regulations, parking facilities are nonwater-dependent and

are discouraged from being sited in critical areas.

The Budget and Control Board regulates the use of land below mean high water outside the critical areas of the coastal zone. A permit to construct parking facilities on such land is required from the Budget and Control Board. The Department of Health and Environmental Control has permit jurisdiction over the construction and use of parking facilities if the storm water discharge from such a facility has been identified as a significant contributor to pollution. (Otherwise such facilities are exempt from the Department's National Pollutant Discharge Elimination System permit program.) The Council reviews and certifies the permits of these two agencies for compliance with the preceding coastal management policies, pursuant to Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act of 1977.

# III. COASTAL INDUSTRIES

The South Carolina Coastal Management Program is concerned with promoting and maintaining a healthy coastal economy, as well as safeguarding coastal natural resources. To achieve this balance of development and environmental protection, there is need for sound management of the wide variety of coastal industries.

The coastal zone is unique in many of the resources necessary for particular water-dependent industrial activities, as well as its recreational and residential potential. But suitable site locations are limited, and many of the resources are finite. Competition for use of the coastal zone intensifies with growth and development.

This growth and development is increasing in South Carolina, with positive economic benefits but with potential negative environmental impacts. The importance of the following policies on coastal industries lies in the need to respond to these diverse economic interests, thereby furthering the well-being of coastal residents, while still protecting and conserving the unique, often fragile natural resources.

## A. AGRICULTURE

### Findings

The per acre value of farmland in the U.S. increased 9% in the year ending February, 1978. (**Land Use Planning Report**, May 1, 1978) Changing global weather patterns and resulting food shortages, increasing world population, inflationary pressures on food prices, the U.S. balance-of-payments and the possible offsetting role of farm products, low farm income, and loss of prime agricultural land to other uses have made agriculture a serious concern for coastal management.

Agriculture is a significant economic pursuit in South Carolina's coastal zone. In 1975, the eight county area had a 23 percent share of the State's crop lands, and 23 percent of the cash receipts earned by South Carolina farmers from marketing crops. (Stepp, James; **The Coastal Economy of South Carolina**, 1978) This contribution indicates the need to accommodate this industry in the coastal zone, which boasts favorable soils and climate for a variety of crops and livestock. Much of the land area suitable for farming is also highly desirable for other types of urban development; so as the coastal zone continues to grow there will be increasing pressure for conversion of agricultural areas.

While agriculture is a positive benefit to the economy and provides a source of food and fiber for citizens of the coastal zone, the State and the nation, there are potential negative effects on the coastal environment unless best management practices are employed:

> Water is also a significant output. With the exception of wind erosion and pesticide drift from aerial application, almost all agricultural pollution is associated with runoff from land being used for agricultural purposes...By volume, sediment is the most important agricultural non-point source pollutant. The process of erosion has been identified as the single most significant reaction that directly affects the coastal environment.
>
> (Hart, Robert D., "Cropland Pollution Control" in Clark, **Coastal Ecosystem Management**, 1977, p. 595)

The other potential water pollution sources include nutrients, such as nitrogen and phosphorus, which occur naturally in soil and are added as fertilizers. Elevated nutrient levels may result in oxygen depletion and resulting eutrophication of coastal waters.

In this State, the U.S. Department of Agriculture, the S.C. Land Resources Conservation Commission, and the local Soil and Water Conservation Districts have for years realized that conserving soil not only leads to more productive land, but also ensures higher water quality in our streams and reservoirs.

### Policies

1) In the coastal zone, Council review and certification of permits related to agriculture will be based on the following policies:

a) The Council supports the utilization of coastal resources for productive agriculture in the coastal zone, particularly on prime agricultural lands (as defined by the U.S. Department of Agriculture and

South Carolina Land Resources Conservation Commission), as a positive element of coastal economy and to provide sources of food and fiber products to citizens of the State and nation.

b) To reduce negative impacts on productive tidal salt, brackish and freshwater wetlands:

i) The filling or other permanent alteration of these tidal wetlands for the raising of crops will not be approved;

ii) Ditching for drainage from uplands shall avoid passing through productive wetlands to the maximum extent practicable.

c) To minimize negative impacts on water quality from sedimentation and erosion, applicants for permits relating to agricultural activities are encouraged to work closely with the local Soil and Water Conservation District to obtain assistance in reducing sedimentation and erosion problems. Modern conservation techniques recommended by the local Soil and Water Conservation Districts and the U.S. Department of Agriculture Soil Conservation Service should be utilized, including:

i) Methods or techniques such as contouring should be used to reduce direct surface water runoff into adjacent wetlands or water bodies;

ii) Maintenance and utilization of the natural drainage pattern of the land is encouraged as much as possible;

iii) Use of buffer strips of natural vegetation along the edge between watercourses and cultivated soils is encouraged.

d) Best management practices (and any resultant regulations) designed to control nonpoint source runoff that are developed as part of the 208 Water Quality Planning process should be implemented through the management of agricultural activities. Those engaged in agricultural activities are encouraged to contact and work closely with the local 208 planning agency and the local Soil and Water Conservation Districts.

2) In critical areas of the coastal zone it is Council policy that:

a) The policies for dredging and filling (R. 30-12(G)) and construction of canals and pipelines (R. 30-12(D) and (1)) shall be applied when these activities are involved in agricultural use in the critical areas.

3) The Council also **recommends** that the following policies be considered with regard to agricultural use and practices in the coastal zone:

a) Encouraging the utilization of detailed soil surveys prepared by the National Cooperative Soil Survey (which includes Clemson University Experiment Station, U.S. Department of Agriculture - Soil Conservation Service, and S.C. Land Resources Conservation Commission);

b) That local land use plans include considerations for protecting agricultural lands from premature or undesirable conversion into other development activities;

c) Encouraging the full implementation of 12-43-220 of the Code of Laws of South Carolina (1976) by local governments within the coastal zone to allow property tax incentives to protect farmlands from conversion to other uses.

d) That the soil testing facilities of Clemson University be utilized to determine the correct types and amounts of fertilizers to be applied to agricultural lands.

**Management Authority**

The Coastal Council has permit jurisdiction over any activity which in any way alters a critical area of the coastal zone. Therefore, any agricultural activity that directly alters a critical area must have a permit from the Council.

Outside of the critical areas of the coastal zone there are few direct controls over agricultural activities. The Soil and Water Conservation Law (§ 48-9-1210-1320), administered by the S.C. Land Resources Conservation Commission empowers local Soil and Water Conservation Districts to adopt rules and regulations, after public referenda, to control soil erosion. As mandated by Section 7(A) this authority will be administered in conformance with policies of the approved coastal program.

State and local Areawide Waste Treatment Management Plans, under Section 208 of the Federal Water

Pollution Control Act (Public Law 92-500) are also authorized to address agricultural best management practices in terms of non-point source water pollution. Development and implementation of these planning and regulatory efforts is closely coordinated with the Coastal Council.

The South Carolina Budget and Control Board retains direct regulatory authority over activities below mean high water in the coastal zone outside the critical areas. These permits are reviewed and certified by the Coastal Council, as mandated in Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act.

B. **FORESTRY** (Silviculture)

**Findings**

Forestry is an important coastal industry, with the coastal zone producing 17 percent of the State's pulpwood production and 30 percent of the physical volume of other forest products in 1975. (Stepp, **The Coastal Economy of South Carolina,** 1978) Forest areas also serve numerous important natural functions, such as preventing soil erosion and stabilizing runoff, maintaining high surface-water quality, and providing significant wildlife habitat and recreational areas.

If not properly managed, timber harvesting can have severe impacts on coastal ecosystems primarily from disrupting hydrologic systems, and it is these aspects which are of coastal management concern. Uncontrolled logging in coastal watersheds has a high potential for disruption of the complex and delicate forest ecosystem. Increased erosion of soil and nutrients as a result of deforestation can accelerate sedimentation downstream and reduce water quality. The storm water run-off from clearcut areas can be nine times that from undisturbed areas thereby causing increased flooding. (John Clark, **Coastal Ecosystem Management,** 1977, p. 373-380) These problems are less severe in the South Carolina coastal zone than other parts of the nation because of the relatively flat terrain, but still warrant concern and attention so that proper timber harvesting practices can be ensured. The processing of forest products also can cause environmental damage if proper controls are not observed for air and water effluent discharges.

**Policies**

1) In the coastal zone, Council review and certification of permit applications related to timber production will be based on the following policies:

a) The Coastal Council will cooperate with and support the State Forestry Commission and local Soil and Water Conservation Districts in encouraging good forest management practices on private and public lands in order to maintain a supply of good quality timber into the future, while protecting other forest values.

b) The disruption of salt, brackish or freshwater marshes for timber related activities such as drainage or access way shall be avoided to the extent feasible. Where no feasible alternatives exist to prevent distuption in these areas, project designs must include the mitigation measures as identified in the policies for each related activity-for example, roads, dredging, etc.

c) Erosion control methods are strongly encouraged for all phases of timber operations in order to reduce:

i) excessive erosion and sedimentation;
ii) detrital, nutrient and chemical or toxic runoff; and
iii) disruption of hydrologic cycles.

Logging operations should be managed so that drainage characteristics through forested and swampland areas remain, to the extent feasible, at the pre-existing water quality, volume and rate of flow.

d) The policies applicable to the processing of timber products are those for manufacturing activities ((III) (D) of the Resource Policies).

2) In critical areas of the coastal zone, it is Council policy that:

Where related activities, including drainage ditches or access road construction are proposed for

critical areas, the appropriate Rules and Regulations for that activity will apply. (Drainage ditches - R. 30-12(L); Transportation projects - R. 30-12(F))

3) The Council also **recommends** that the following policies be considered in forestry activity in the coastal zone:

a) Timber harvesting should be carried out in such a manner as to minimize effects on and protect soils, watersheds, aesthetics, wildlife, and recreational values. If damage does occur, restoration plans should be developed and carried out within a reasonable time.

b) Local land use plans should include retaining prime forest areas for sustained timber productivity in the future.

**Management Authority**

Any alteration of a critical area requires a permit from the Coastal Council. Applicants for forestry or related activities that alter a critical area must obtain a permit from the Council.

Outside of the critical areas of the coastal zone the State Commission of Forestry conducts forestry activities on State owned forest lands, and offers guidance and technical assistance to private timber operations including fire prevention and control practices. The Forestry Commission's authority will be administered in conformance with the approved coastal management program and the Coastal Management Act, as mandated by Section 7(A) and through the Memorandum of Agreement (MOA) executed between the S.C. State Commission of Forestry and the Coastal Council.

The Budget and Control Board has jurisdiction for issuance or denial of the State permit for activities below mean high water (MHW) in the rest of the coastal zone outside the critical areas. These permit applications are subject to the review and certification authority of the Coastal Council, as mandated by Sections 7(A) and 8(B)(11) of the Coastal Management Act.

## C. MINERAL EXTRACTION

**Findings**

Many mineral resources of great economic value may be found in the coastal zone, in tidal rivers and coastal waters and on the Continental Shelf under Atlantic Ocean waters. In addition to oil and gas, which are addressed separately under Energy and Energy-related Facilities, these minerals include sand, gravel, shell, salt and phosphates. They can be found on the surface, subsurface or in solution in the water.

Disturbances from mining activities may have physical, chemical and biological effects on coastal resources. These potentially adverse impacts are primarily associated with the loss of wetlands by dredging and/or filling, degragation of water quality, production of vast amounts of sediments and possible contamination of groundwater resources. Mineral extraction activities may have adverse topographic, physical or chemical effects if not properly conducted, and therefore, these activities are of concern for coastal management.

**Policies**

(Existing, active mining sites have been designated as Geographic Areas of Particular Concern (GAPCs) in the coastal zone, because of their unique mineral resource value and potential as development activities dependent on locating in the coastal zone.)

1) In the coastal zone, Council review and certification of mining permit applications will be based on the following policies:

a) Applicants for mining permits must submit an approved reclamation plan, as required by the Land Resources Conservation Commission under the S.C. Mining Act.

b) Dredge or strip mining operations are prohibited in wetland areas, unless no feasible alternatives exist and the benefits of mining outweigh the adverse impacts. If all or part of a mining site must involve

water bodies or wetland areas, policies for dredging (VIII (A) of the Resource Policies) shall apply.

c) To minimize negative impacts on water quality, the prevention of direct stormwater discharge from upland sites into adjacent wetlands or water bodies is required whenever possible through inclusion of such techniques as use of vegetated buffer areas, silt curtains and other erosion or sedimentation control methods. Negative effects on groundwater resources should also be avoided.

2) In critical areas of the coastal zone, it is Council policy that:
Policies for dredging activities (VIII of this section) and R.30-12(G) shall apply to mining operations.

3) The Council also recommends the following policies be considered in mining activities in the coastal zone:

a) Provision of scenic buffer areas around active mining sites;

b) That study of mineral resources be made before land is committed to development, and those areas found to contain significant mining resources be identified in local land use plans.

**Management Authority**

The Coastal Council has authority for a direct permit requirement for mining operations in critical areas of the coastal zone, based on Sections 5(E)-(I), and Section 13 of the S.C. Coastal Management Act of 1977.

In the coastal zone, within and outside the critical areas, the S.C. Land Resources Conservation Commission is responsible for implementation of the S.C. Mining Act. A permit, terms of which include a complete site reclamation plan, is required for any mining operation. The Coastal Council's review and certification of these permits, as required by Sections 7(A) and 8(B)(11) of the Coastal management Act, is confirmed by the Memorandum of Agreement between these two agencies.

Where mining operations extend below mean high water (MHW) outside the critical areas, the Budget and Control Board also has permit jurisdiction. These permit applications are subject to the review and certification procedure of the Coastal Council, as required by Sections 7(A) and 8(B)(11) of the Coastal Management Act.

The S.C. Department of Health and Environmental Control has authority over most mining operations for point-source discharge permits (NPDES) or best management practices (for non-point source runoff, under 208 Areawide Waste Treatment management planning).

Where mining operations are located in designated capacity use areas and groundwater pumping is required, a capacity permit is required from the Water Resources Commission.

## D. MANUFACTURING

**Findings**

Coastal areas are attractive to five major types of industrial manufacturing:

1) Industries that benefit from location near low-cost water transportation systems;

2) Industries that derive power from water or use water for manufacturing processes or cooling purposes;

3) Industries that benefit from location near coastal population centers, but do not have direct dependence on water use or access;

4) Marine transportation industries;

5) Industries that depend directly on the marine environment for raw materials (Clark, J., 1978, **Coastal Ecosystem Management**).

The growth and development of manufacturing uses is increasing in the South Carolina coastal zone, with potential for positive economic benefits. Manufacturing plants are a source of both employee payrolls and property tax revenues. New and existing industries can provide a diversified economic base, complementing government employment (military) and the long-standing importance of agriculture, forestry and fishing.

While potential benefits exist, so do possible negative impacts associated with manufacturing uses if they are not properly managed. "Waste disposal, oil spills and the escape of toxic materials in aquatic ecosystems are all unfortunate by-products of industry which affect the coastal environment." (Ketchum, B., 1972, **The Water's Edge**, p. 107)

In addition to water and air pollution discharges, the possible environmental impacts of industrial development in the coastal zone include:

- possible destruction of wetlands and the associated flora and fauna, by filling, dredging and/or draining for site preparation;
- impacts on soil erosion and flood control as effects of site preparation;
- effects of site preparation and facility operation on the quality and quantity of surface and groundwater resources;
- impacts of related secondary development, such as transportation access facilities, sewage treatment plants or port development.

Not only do possible conflicts exist between industrial growth and natural systems, but between industrial activities themselves, which vary widely in the coastal zone. For example, commercial fishing depends on the same natural resource of coastal water that is also vital to some manufacturing uses for transportation, cooling water, or effluent discharge. There may be resulting negative impacts on quality from the manufacturing uses that, therefore, severely limit the viability of fishing enterprises.

The coastal zone is unique in many of the resources necessary for particular water-dependent industrial activities, as well as its recreational and residential potential. But suitable site locations are limited, and many of the resources are finite. Competition for use of coastal zone resources intensifies with growth and development.

At this juncture, the State's coastal zone still retains many miles of unspoiled coastline, and acres of productive marshes and forest and farmlands. Heavy manufacturing is relatively limited in the coastal zone. The importance of the following policies on coastal manufacturing lies in the need to respond to diverse industrial interests, thereby furthering the economic well-being of coastal residents, while at the same time protecting and conserving the unique, often fragile, natural resources.

**Policies**

1) In the coastal zone, Council review and certification of permit applications for manufacturing and related activities will be based on the following policies:

a) Nonwater-dependent manufacturing or industrial facilities will be prohibited from locating in shorefront areas unless there are no feasible alternatives. Nonwater-dependent industries will be encouraged to locate in inland areas.

b) The filling or other permanent alteration of productive fresh, brackish and saltwater wetland areas for manufacturing facilities and related activities or structures will be prohibited, unless no feasible alternatives exist and any substantial environmental impact can be minimized. To the extent feasible heavy industry shall be directed away from ecologically sensitive areas such as marshes, forested wetlands, pocosins, etc.

c) Manufacturing operations and sites should be designed and constructed to reduce erosion and sedimentation, and to limit the impacts from direct stormwater discharge into adjacent water bodies and wetlands. Persons proposing to develop manufacturing activities are requested to contact and work closely with the local Soil and Water Conservation District in the county for assistance in developing site plans which reduce sedimentation and drainage problems. Applicants must demonstrate consideration of the following means of reducing these problems and use of these methods where appropriate:

i) Provision of a buffer strip of natural vegetation between the facility and the wetland's edge. This vegetated area should be sufficient in each case to serve its intended purpose: providing a visual screen, a noise buffer, a purification system for stormwater runoff, or a protective area for more ecologically sensitive shoreline areas, especially fringing wetlands;

ii) During site preparation, care should be taken to control storm runoff, soil erosion, and accidental placement of sediments in wetland areas;

iii) The use of permeable surfaces in parking lots and bulk storage areas to provide water recharge areas and minimize the effects of stormwater runoff;

iv) Retain open space or natural (undisturbed) areas around manufacturing sites as buffer zones and recharge areas.

d) Manufacturing facilities must meet the applicable water quality and effluent limitation standards of the U.S. Environmental Protection Agency and the South Carolina Department of Health and Environmental Control, under the National Pollution Discharge Elimination System, Sectons 401 and 402 of the Federal Water Pollution Control Act Amendments (Public Law 92-500). In some cases, pretreatment of industrial wastes before introduction into public waste treatment systems may be required, based on local 201 and 208 Waste Treatment Management Plans, as developed under the Federal Water Pollution Control Act. Siting of industrial facilities is encouraged in areas where waste discharges present the least ecological threat - for example, in areas where disruption of wetlands can be avoided or minimized, in areas with good tidal flushing and water circulation and along watercourses with relatively low water quality classifications.

e) Manifacturing facilities must meet applicable State and Federal air pollution standards and controls, as based on the National Clean Air Act, as amended (P.L. 91-604).

f) In instances where groundwater resources will be utilized either in the processing or effluent discharge stages of the production process, the project shall:

i) meet existing standards and/or management programs of the Water Resources Commission,

ii) prevent saltwater intrusion and land subsidence, to the extent feasible,

iii) where feasible, provide natural vegetated areas on the site where aquifer recharge can occur to mitigate the impacts of groundwater withdrawals.

g) When located in flood zone areas, manufacturing sites and structures must meet applicable floodplain management and construction requirements, as based on the Federal Flood Insurance Program.

h) To the extent feasible new water-dependent industries shall locate on already maintained channels of rivers to reduce the need for dredging of new channels. Where no presently maintained channel exists and one becomes necessary, the policies for dredging (VIII of the Resources Policies) will apply.

i) Dock or pier and berthing facilities associated with a manufacturing activity shall be designed to minimize possible negative impacts. The policies for docks and piers or other associated activities will apply.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Nonwater-dependent structures have been built in the past on pilings over wetland areas. Such construction presents unnecessary encroachment on the aquatic ecosystem by shading out the underlying vegetation. Nonwater-dependent structures shall be discouraged from being sited over water and/or wetland areas. Only when public need is demonstrated and no feasible alternative sites are available should consideration be given towards approval of the proposed structure." (R. 30-12 (M))

b) "Nonwater-dependent structures have been constructed on primary sand dunes or beach areas in the past. Such construction may seriously disrupt the dune/beach system and its vegetation, hampering their effectiveness as a storm and erosion buffer. The siting of nonwater-dependent structures on the primary dunes or the beaches will be discouraged where other feasible alternatives exist. Design and construction options which minimize destruction of the dunes and dune vegetation will be encouraged." (R. 30-13(D))

c) "The creation of commercial lots strictly for private gain is not a legitimate justification for the filling of wetlands. Permit applications for the filling of wetlands and submerged lands for these purposes shall be denied, except for erosion control (see R. 30-12(C)) or boat ramps (see R. 30-12(B)). All other dredge and fill activities not in the public interest will be discouraged." (R. 30-12(G)(a)).

d) Where other activities are associated with manufacturing development, such as construction of navigation channels, boat docks, or transportation access, the policies for that particular activity shall apply.

3) The Council also **recommends** that the following policies be considered in planning for or siting of manufacturing uses in the coastal zone:

a) Siting of industrial plants where they are served with existing well-developed road and railroad links to port areas and to major arterial transportation routes;

b) Development of local plans which direct manufacturing growth into areas committed to industrial use where services can be most readily provided;

c) Development of local plans which encourage comprehensive-type industrial parks, to facilitate well-planned, well-managed manufacturing and industrial centers that promote the advantages of locating in South Carolina;

d) Encouraging manufacturing that will provide significant new employment opportunities for coastal residents;

e) Considerations for minimizing noise and aesthetic impacts of manufacturing activities;

f) Consideration for allowing limited public access to the buffer zone as a recreational area.

**Management Authority**

Any manufacturing use or related activity proposed for the critical areas of the coastal zone would be required to obtain a permit from the Coastal Council. The policies for any related activity, and the procedures of the Rules and Regulations for Permitting would apply.

In the coastal zone outside the critical areas, the Council will review and certify the permits and projects of other State agencies to insure compliance with the Coastal Management program, as mandated in Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act of 1977.

The Budget and Control Board has authority for issuance of permits for activities below mean high water. Applications for these permits are reviewed and certified by the Council for compliance with the coastal management program.

Throughout the coastal zone, the Department of Health and Environmental Control is the State implementing agency for water quality and air quality standards. Permit applications for water and air discharges are subject to certification and review by the Council.

While not a permit agency, the State Development Board has the responsibility for planning and coordination to promote improved trade, commerce and employment opportunities in the State. Included in the Board's specific authority is promotion of industrial development. When appropriate, the Coastal Council will coordinate and support programs and projects of the Board to insure continued opportunities for manufacturing growth and development while at the same time maintaining sound coastal management policies.

Federal permits are required where any aspects of a manufacturing project fall under the jurisdiction of Section 10 of the Rivers and Harbors Act; Sections 401, 402 and 404 of the Federal Water Pollution Control Act Amendments; and the National Clean Air Act (P.L. 91-604, amend.). These permit applications are reviewed and certified by the Coastal Council, and are subject to Federal consistency provisions.

## E. FISH AND SEAFOOD PROCESSING

**Findings**

Commercial fisheries are a significant contributor to the South Carolina coastal economy. The 1975 data for dock-side value of commercial fish landings was over $13 million. (Stepp, **The Coastal Economy of South Carolina.**) Development and use of fisheries resources certainly are water-dependent activities which can only take place in coastal waters and adjacent areas. The "Living Marine Resources" segment (Chapter IV (E)) details the fin-fish and shellfish resources of the coast, the vital link to marsh and other ecosystems and the policies for their management.

Seafood processing can have negative impacts on coastal resources, particularly water quality. While the dumping of waste fish or parts of fish can be viewed as a return of nutrients or energy to the ecosystem, the high concentrations of nutrients may result in euthrophication of near-shore waters if adequate water circulation is not present. Also, wastewater discharges must be monitored to insure that by-products of the processing operation do not degrade water quality. Because of the necessity for proximity to the shoreline, seafood processing can pose loss of wetland habitat if extensive dredging or filling are proposed for these facilities.

**Policies**

1) In the coastal zone, Council review and certification or permit applications for seafood processing

plant proposals will be based on the following policies:

a) Drainage or discharge from any proposed seafood packing or processing operations must meet applicable State and Federal water quality standards.

b) Proposed seafood processing operations must comply with policies for dock and piers, and dredging and filling, where applicable.

c) To the extent feasible fish and seafood processing operations shall not be located where there would be significant adverse impacts on salt, brackish or freshwater wetlands. Filling or other permanent alteration of these wetlands for such purposes will be denied unless no feasible alternatives exist and the public benefits outweigh the adverse impacts.

d) Adequate facilities for proper handling of sewage, litter and other waste products must be provided at the site of new docking areas associated with seafood processing.

e) Care must be exercised in the discharge of water used to pump out the holds of fishing vessels so that water quality is not unnecessarily degraded and so that such discharges comply with applicable Department of Health and Environmental Control and U.S. Coast Guard regulations.

2) In critical areas of the coastal zone, it is Council policy that:

a) If dredging or filling is required for construction or maintenance at a seafood processing plant, policies for dredging activities (VIII of the Resources policies; R. 30-12(G)) shall apply.

b) Policies for docks and piers (VI(C) of the Resources Policies; R. 30-12(A)) shall apply to these industrial/commercial facilities, where applicable.

c) "The ceration of commercial lots strictly for private gain is not a legitimate justification for the filling of wetlands. Permit application for the filling of wetlands and submerged lands for these purposes shall be denied, except for erosion control or boat ramps." (R. 30-12(G)(a))

d) Where marina or dock and pier-type construction is included, project proposals shall include facilities for the proper handling of petroleum products, sewage, litter, waste and other refuse..." (R. 30-12(E)(H).

3) The Council also **recommends** that the following policies be considered in fish and seafood processing operations in the coastal zone:

a) Consideration should be given to the utilization of fish wastes or by-products for meal or fertilizers.

**Management Authority**

In the critical areas of the coastal zone, the Coastal Council has direct permit authority over seafood processing plants and related facilities.

In the rest of the coastal zone, the Council will review and certify the permit applications of several other State agencies. The first is the Budget and Control Board, which has jurisdiction outside the critical areas for activities below mean high water, in wetland areas and submerged bottoms.

The Department of Health and Environmental Control (DHEC) has permit authority for direct wastewater discharges, and for "401" water quality certifications for projects which require Federal permits. Through coordinated, joint efforts of both agencies, the Council will review and certify DHEC permits for their compliance with coastal policies.

Federal permits may also be required for dredging or filling, construction of docking areas, and for wastewater discharged associated with seafood processing.

## F. AQUACULTURE

**Findings**

Continuing world population growth and the associated increasing demand for food resources recently have focused more attention on one of the least-tapped sources of protein - the oceans. Traditional fishing activities, however, are encountering problems with best use of this resource, including lack of adequate research to improve knowledge of and techniques for long-term management, and lack of capital for development of

more efficient fishing methods.

Also, unrestricted development of coastal areas with its associated water pollution has led to destruction of some productive habitats and fishing areas and more limited harvests. To expand the potential of fisheries resources, increase protein production and reduce the cost per pound for the product, land-based or near shore culturing of fish or shellfish - aquaculture - is receiving increased attention. At present, the technology and cost of cultured seafood products is not competitive. However, with increasing energy and labor costs, aquaculture of some species, as an important coastal industry, may be a reality in the near future.

There are potential impacts associated with aquaculture activities which qualify them as having direct and significant impact on coastal resources. Since most aquaculture systems require large amounts of flowing water and surface area to be cost effective, tidal wetlands may be earmarked for diking to create impoundments for culture activities. This diking, while essential for proper culture management, may be more detrimental to the ecosystem as a whole since the function of the wetlands as biological filters and nursery areas for a variety of species and not just a "cultured" few will be lost. Therefore, it is important to weigh carefully food supplied by intensified management against food supplied by natural processes.

**Policies**

1) In the coastal zone, Council review and certification of aquaculture permit applications will be based on the following policies:

a) The impoundment of previously undisturbed, productive salt, brackish or freshwater wetlands for aquaculture will be prohibited where other feasible alternatives exist.

b) Aquaculture proposals must demonstrate compliance with applicable State and Federal water quality standards for discharge or drainage.

c) For each aquaculture proposal the value and yield which is anticipated from the project should be weighed against any environmental damage, such as loss of habitat from impounded areas. This consideration will be included by the Council in its decision-making, and applicants may be asked to provide relevant information towards the determination of such costs and benefits.

d) Applicants for aquaculture operations must provide an acceptable management plan for the operation.

2) In critical areas of the coastal zone, it is Council policy that:

a) Policies for dredging and filling and for marsh impoundments will be applied to aquaculture projects, where appropriate (R. 30-12(G) and (K)).

3) The Council also **recommends** that the following policies be considered in planning and research for aquaculture projects in the coastal zone:

a) Encouraging research efforts for "passive aquaculture" as opposed to use of artificial impoundments including:

i) fixed structure aquaculture (for example, setting supports and lines. This should be limited to open water areas where they can be placed on the periphery and not interfere with navigation);
ii) tray culture for shellfish;
iii) penning areas for soft shell crabs;
iv) trap culture for fish;
v) bottom culture, to avoid navigational problems;
vi) "agrarian" approaches, such as mechanized harvesters, seed beds, and restocking.

**Management Authority**

Any aquaculture activity that alters a critical area required a permit from the Coastal Council. The Final Rules and Regulations for Permitting apply to aquaculture activities which alter a critical area.

Outside of the critical areas in the coastal zone the Budget and Control Board has permit authority for uses of land and water below mean high water. Permit applications for aquaculture activities are subject to review

and certification for coastal management program compliance by the Coastal Council, under Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act. This certification authority extends to permits for impoundments or any other activity requiring a Board permit.

The Department of Health and Environmental Control has regulatory authority over aquaculture since many operations require an NPDES point-source discharge permit. The Wildlife and Marine Resources Department has regulatory authority over the living marine resource management aspects of aquaculture. In addition, the Wildlife and Marine Resources Department leases coastal bottoms for shellfish production. This regulatory authority must be administered in compliance with the approved coastal management program and the Coastal Management Act. The Council is granted enforcement authority for such compliance under Section 7(A) of the Act.

## IV. COMMERCIAL DEVELOPMENT

### Findings

The increasing number of commercial activities in the coastal zone is an integral part of growth. As population density increases, the commercial activities associated with residential and industrial development and coastal recreational activity will constantly expand to serve the varied needs of the people who live and visit in the coastal zone. South Carolina follows the typical pattern of higher population densities along the immediate coast than inland. In addition, the South Carolina beaches and barrier islands attract large numbers of visitors each year, and that portion of commercial activity which supports the tourist trade is a very significant aspect of coastal economy.

When evaluating the impacts associated with commercial activity, both the large-scale development and the cumulative effect of many small activities must be carefully considered. Commercial development requires not only buildings but also roads, parking lots, storm drain systems, water treatment facilities, etc., all of which have potential negative impacts. For example, increased development of buildings in flood prone areas or storm hazard areas which are not constructed adequately can raise the flood height and increase the loss of life and property. Disturbance of the natural drainage system by excessive clearing of vegetation, large areas of impermeable surfacing, etc. can cause soil erosion, sedimentation, contamination of coastal waters and a lowering of the water level in freshwater aquifers.

The solution to these and many other varied problems and potential negative impacts is not to stop development. Instead, the encouragement of certain types of construction, site preparation, and development standards can allow coastal resources to function naturally and regenerate themselves. In this way, commercial development which the people need and want can take place with minimum negative effects on coastal resources. Because much of South Carolina's coastal zone is still undeveloped, the State has a unique opportunity to develop in the least disruptive manner.

### Policies

1) In the coastal zone, Council review and certification or permit applications for commercial buildings will be based on the following policies:

a) For locations immediately adjacent to the shoreline, water-dependent commercial activities will be given priority consideration. Water-dependent is interpreted here to include activities which functionally require access to shoreline, for example, ship or boat repair or commercial fishing. Second priority will be given to water-related commercial uses which are significantly enhanced economically by proximity to the shoreline, for example, motel or restaurant activities.

b) Commercial proposals which require fill or other permanent alteration of salt, brackish or freshwater wetlands will be denied unless no feasible alternatives exist and the facility is water-dependent. Since these wetlands are valuable habitat for wildlife and plant species and serve as hydrologic buffers, providing for storm water runoff and aquifer recharge, commercial development is discouraged in these areas. The cumulative impacts of the commercial activity which exists or is likely to exist in the area will be considered.

c) Location of new commercial development in riverine and coastal areas where flooding has been a recurring, serious problem is discouraged. Within the 100-year flood plain of coastal waters, commercial development must meet the existing Federal Insurance Administration (Department of Housing and Urban Development) national building standards. Inclusion of buffer areas and protection of salt, brackish and freshwater wetlands will help absorb flood water surges and is encouraged in commercial development plans.

d) Drainage plans and construction measures for commercial development should be designed to lessen or eliminate erosion, water quality degradation and other negative impacts on adjacent waters and wetlands - for example, through buffering and filtering runoff water, use of naturally vegetated and permeable surfaces rather than paving, and grass-ditching and surface drainage rather than direct storm water discharges. Best management practices developed as part of the Areawide 208 Waste Treatment Management Program should be implemented through the management of major new commercial developments.

e) Adequate sewage disposal systems (septic tanks or treatment systems), meeting Federal Environmental Protection Agency, South Carolina Department of Health and Environmental Control, and local health department standards must be provided in new commercial development.

f) Shorefront commercial development that disrupts existing public access will be prohibited. Developers of commercial property on immediate beach or river-front are strongly encouraged to provide such area for general public use in their plans. Policies in the Beach and Shoreline Access segment, Chapter IV (D), will be considered in review of commercial activities.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Nonwater-dependent structures such as parking garages, apartments, restuarants, and shops have been built in the past on pilings over wetland areas. Such construction presents unnecessary encroachment on the aquatic ecosystem by shading out the underlying vegetation. Nonwater-dependent structures shall be discouraged from being sited over water and/or wetland areas. Only when public need is demonstrated and no feasible alternative sites are available should consideration be given towards approval of the proposed structure." [R.30-12(M)]

b) "Nonwater-dependent structures such as commercial and residential buildings have been constructed on primary sand dunes or beach areas in the past. Such construction may seriously disrupt the dune/beach system and its vegetation, hampering their effectiveness as a storm and erosion buffer. The siting of nonwater-dependent structures on the primary dunes or the beaches will be discouraged where other feasible alternatives exist. Design and construction options which minimize destruction of the dunes and dune vegetation will be encouraged." [R.30-13(D)]

**Management Authority**

Any commercial activities and associated development which alter a critical area require a permit from the Coastal Council. Commercial buildings and structures must meet the requirements of the Final Rules and Regulations for Permitting to obtain a Council permit.

Outside of the critical areas in the coastal zone the Budget and Control Board has permit authority over the use of land and water below mean high water for any activity, including commercial developments. Council review and certification of these permits pursuant to Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act is based on the preceding coastal management policies. Similarly, permits required for certain air pollution, sewage treatment or other associated support facilities by the Department of Health and Environmental Control are also subject to Council review and certification.

## V. RECREATION AND TOURISM

**Findings**

Recreation is physically and mentally important for people of all ages. As the leisure time of Americans continues to increase, recreation becomes an even more significant aspect of our daily lives. With expanding growth and development, the availability of open space or natural areas and of locations with adequate recreational facilities or equipment becomes a larger concern.

"More than half of all Americans vacation on the coasts and with current popluation trends, this use of the coasts will no doubt continue to expand." (Ketchum, **The Waters Edge**, 1975, pp. 12-13). Intensive studies in the early 1960's by the Outdoor Recreation Resources Commission indicated that 44% of outdoor recreation participants favored water-based activities over any others. Swimming, boating and fishing were ranked the highest. (U.S. Department of Commerce, NOAA, OCZM, **Coastal Recreation Handbook**, January, 1976).

Recreation is most certainly a booming coastal industry in South Carolina. There are a wide variety of recreational opportunities ranging from swimming, sailing and sport fishing to observing wildlife or scenic vistas. There are intensive amusement park-type receational activities such as those of the Myrtle Beach-Grand Strand area. And there are opportunities for more passive, contemplative recreation, such as walking or sitting alone on a wide expanse of beach. There are potential conflicts between these types of recreation and, hopefully, there will always be some of each type available to both citizens of South Carolina and her visitors. (Problems of Beach and Shoreline Access are discussed specifically in Chapter IV). The inevitable increasing demand for recreation in the coastal zone makes the following policies for management of recreational resources even more vital to the future of South Carolina's coastal zone.

### A. PARKS (AND OPEN SPACES)

The following objectives expressed in the South Carolina Overall Outdoor Recreation Plan, 1975, by the U.S. Department of Parks, Recreation and Tourism, have been incorporated by the Coastal Council as the objectives of the Coastal Program for Parks and Recreation.

**State Objectives**

1) To recognize the importance of recreation as one of the basic needs to ensure the healthful and wholesome development of all citizens;

2) To provide adequate facilities, including public park lands developed for the benefit of our citizens; and

3) To ensure the significant, scenic, scientific and historic features of the State are preserved and enjoyed by all.

**Definite Objectives**

To relate recreation land needs to all statewide land needs and uses with special relationship to agricultural, educational, industrial, transportation and residential needs and those of significant natural, historic and cultural value. Particular consideration should be given to maintaining the ecological balance of fragile areas such as swamps, marshlands and wildlife habitats.

To ensure that natural areas for recreation purposes are designed to facilitate the safeguarding of their ecological balance.

To aid the development of the cultural potential of South Carolina by developing its historic heritage, arts and unique natural attractions for the enjoyment of residents and nonresidents.

To ensure the development of recreation facilities in areas of rapid growth and in locations that are easily accessible to the economically deprived and handicapped in order to help reduce extended private vehicular trips to recreation sites.

**Policies**

(A number of State parks in the coastal zone have been identified as Geographic Areas of Particular Concern (GAPCs) because of their unique value as natural areas and as important recreational use areas. The priority of uses for these specific parks is addressed in the GAPC segment, Chapter IV [A].)

1) In the coastal zone, Council review and certification of permits for parks and related facilities will be based on the following policies:

a) Water-dependent recreational uses will be given priority consideration over other types of recreational development in locations immediately adjacent to shoreline, wetlands or open water. For example, boating or swimming oriented parks would be considered water-dependent and receive priority over golf courses and tennis courts.

b) Parks and open spaces are preferred uses in wetland areas, flood prone areas, beaches, and other environmentally significant or sensitive natural areas, with due consideration for types and intensity of development which reflect the "carrying capacity" of the area to accommodate influxes of large numbers of people without destruction or disruption of natural systems.

c) Park plans and designs must incorporate the following design features where appropriate:

i) preservation of a maximum of existing natural vegetation and open space,

ii) maximum use of permeable surfaces (rather than paved surfaces),

iii) provision of adequate parking (based on "carrying capacity" of the park) or alternative transportation access located in-shore or in less sensitive areas,

iv) construction methods that mitigate erosion and other environmental damage,

d) Park proposals which include filling or other permanent alteration of productive salt, brackish or freshwater marshes will be denied, unless no feasible alternatives exist.

e) Cooperative local, State and Federal efforts to maintain or enhance existing air and water quality in and near valuable recreational resource areas.

2) In critical areas of the coastal zone, it is Council policy that:

Any park facilities which would require construction or alteration of a critical area would be reviewed for a Council permit on the basis of the Rules and Regulations for the particular type of project, for example, a dock and pier, or a walkway.

3) The Council also **recommends** the following policies be considered in the planning and design of parks and open space areas in the coastal zone:

a) Provision of nature interpretation areas and nature-oriented facilities;

b) Park structures and facilities which provide for elderly and handicapped visitors;

c) Provision of new scenic vistas to the ocean, beaches, wetlands and other natural areas,and protection and enhancement of existing scenic areas;

d) Consideration of energy use, with preference to non-motorized recreational access and activities when appropriate;

e) Analysis of the recreational potential of surplus State and Federal lands;

f) Maintenance of any fee charged for use of public recreational facilities at a nominal level;

g) Encouraging park development along utility easements and abandoned rights-of-way, and on dredge material disposal areas - especially intensive-type or active parks since these are areas of previously altered natural environment.

h) Structures which are visually compatible with natural surroundings, in terms of such factors as scale, building materials and color.

**Management Authority**

The Coastal Council had direct permitting jurisdiction over any proposed park facilities located in the critical areas - waters, wetlands, beaches, primary sand dunes. This is a very important aspect of park management since recreation at the water's edge is expected to be the most significant recreational demand.

Outside the critical areas, but within the coastal zone, the Department of Parks, Recreation and Tourism (PRT) will cooperate in implementation of the preceding policies of the Coastal Management Program. PRT is the lead State agency with respect to the development and maintenance of the State park system. The Memorandum of Agreement between these two agencies confirms and outlines this cooperative recreational planning effort mandated by Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act.

Where any part of a proposed recreational area outside of critical areas will involve encroachment below mean high water (MHW), a permit would be required from the Budget and Control Board. These permits are reviewed and certified by the Coastal Council for their compliance with the coastal program.

The majority of public recreational facilities in the coastal zone (as throughout the State) will be financed in full or in part by the U.S. Department of the Interior, Heritage Conservation and Recreation Service. These project proposals will be subject to A-95 review as well as the Federal consistency proivisions of the coastal program.

B. **COMMERCIAL RECREATION** (tourist attractions, including, but not limited to amusement parks, boardwalks, and theme parks)

**Findings**

Commercial recreation or so-called "tourist attractions" are a significant economic enterprise and contribute to the success of many coastal areas in appealing to vacationers and travelers. While their construction and operation may require regulation for public safety or aesthetic reasons, these issues are primarily of local concern, in terms of local plans and building codes.

Commercial recreation facilities are of State-level coastal management concern only when they might alter a critical area, disrupt existing public access or significantly degrade water quality or other environmental factors. Observance of the following policies can ameliorate or reduce these possible negative impacts of tourist activities.

**Policies**

1) In the coastal zone, Council review and certification of permits for commercial recreation will be based on the following policies;

a) Proposals which include the filling, or other permanent alteration of productive salt, brackish or freshwater wetlands will not be approved unless no feasible alternatives exist.

b) For locations immediately adjacent to the shoreline, the water-dependent nature of the project must be demonstrated, particularly if adjacent wetlands or water bodies will be significantly impacted. Water-dependent is defined here to mean those activities which require access to waters of the coastal zone as an essential aspect of their primary function.

c) Construction methods and design features which minimize the possible degradation of adjacent water quality from erosion or storm water drainage are strongly encouraged, for example, use of silt screens and curtains, berm and swale drainage systems rather that direct discharge, and maintaining permeable surface rather than extensive pavement as much as possible.

d) Commercial recreation centers must demonstrate compliance with applicable State and Federal standards for sewage treatment facilities.

2) In critical areas of the coastal zone, it is Council policy that:

"a) Nonwater-dependent structures such as parking garages, apartments, restaurants, and shops have been built in the past on pilings over wetland areas. Such construction presents unnecessary encroachment on the aquatic ecosystem by shading out the underlying vegetation. Nonwater-dependent structures shall be discouraged from being sited over water and/or wetland areas. Only when public need is demonstrated and no feasible alternative sites are avaliable should consideration be given towards approval of the proposed structure.

b) Nonwater-dependent structures such as commercial and residential buildings have been constructed on primary sand dunes or beach areas in the past. Such construction may seriously disrupt the dune/beach system and its vegetation, hampering their effectiveness as a storm and erosion buffer. The siting of nonwater-dependent structures on the primary dunes or the beaches will be discouraged where other feasible alternatives exist. Design and construction options which minimize destruction of the dunes and dune vegetation will be encouraged."

3) Further, the Council **recommends** that the following policies be considered in planning for tourist attractions in the coastal zone:

a) Minimizing negative aesthetic impacts, for example, disruption of scenic vistas or significant alteration of the character of an area;

b) Development of local planning and zoning controls which address the location and design of tourist attractions;

c) Locating tourist activities in areas convenient to existing population centers rather than placement in remote areas which may encourage strip-development.

**Management Authority**

The South Carolina Coastal Council has direct permit authority over any activity in the critical areas of the coastal zone, including tourist-oriented or commercial recreation facilities. Therefore, the proposed construction of such structures on beachfront or primary dunes or in wetland areas is subject to permit requirements of the Council. Possible impacts on the critical areas are the major concern of these tourist developments.

In the rest of the eight county coastal zone, State permits are required from the Budget and Control Board for construction below mean high water (MHW). These permit applications are reviewed and certified by the Coastal Council for their compliance with policies of the coastal management program. This review and certification authority is mandated by Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act of 1977.

The Department of Health and Environmental Control has permit authority over certain aspects of facilities open to the public, including sewage systems and other sources of environmental pollution. These permit applications are subject to the review and certification process of the Coastal Council.

In some cases where dredging or filling in waters or wetland areas would be required, such commercial recreation areas are under the jurisdiction of Federal permit authority on the basis of Sections 10 of the Rivers and Harbors Act and 404 of the Federal Water Pollution Control Act of 1972, as amended. These permits are subject to the Federal consistency provisions of the coastal management program.

## IV. MARINE-RELATED FACILITIES

### MARINAS, BOAT RAMPS, and DOCKS and PIERS

**Findings**

Marinas are facilities that provide boat launchings, storage, mooring, supplies and service. They, along with ramps and docks and piers, support an important form of water-dependent recreation and by definition must locate along shorefront areas. Recreational boating is a significant economic enterprise, as well as a leisure-time activity for its participants.

All marinas, boat ramps, and docks and piers will affect aquatic habitat to some degree, due simply to their location, the action of boats in the water and associated spills or discharges of oils and other waste materials. However, adverse effects can be minimized by utilizing proper location and design features. Along with location and design, boat ramp construction should consider the type of materials used. Unacceptable materials for ramp construction are those with potential to deteriorate from the action of waves or water and contribute to water quality degradation.

### A. MARINAS

**Policies**

1) In the coastal zone, Council review and certification of permit applications and marina proposals will be based on the following policies:

a) To the extent feasible marinas shall locate only in areas that will have the least adverse impact on salt, brackish or freshwater wetlands and water quality.

b) To the extense feasible marinas shall be located in areas where maximum physical advantage exists and where the least initial and maintenance dredging will be required.

c) Marinas should avoid or minimize the disruption of currents. Dead-end or deep canals without adequate circulation or tidal flushing will not be permitted unless it can be determined that water quality will not be adversely affected.

d) Marina designs should minimize the need for excavation and filling of shoreline areas.

e) Provision of facilities for the proper handling of petroleum products, sewage, litter, waste and other refuse must be made in new marinas, with regard to South Carolina Department of Health and Environmental Control (DHEC) specifications.

f) In review and certification of marina permit applications outside the critical areas, the Council will consider the extent of public demand for the facilities, as demonstrated by the applicant.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Marinas should be located in areas that will have the least adverse impact on wetlands, water quality, wildlife and marine resources, or other critical habitats;

b) Marinas should not be located within 1,000 feet of open productive shellfish harvesting areas;

c) Marinas should be located in areas where maximum physical advantages exist and where the least initial and maintenance dredging will be required;

d) Marinas should avoid or minimize the disruption of currents;

e) Marina design should minimize the need for the excavation and filling of shoreline areas;

f) Open dockage extending to deepwater should be considered as a preferable alternative to the excavation of boat basins;

g) Turning basins and navigation channels shall be designed to prevent long-term degradation of water quality. Dead-end or deep canals without adequate circulation should be avoided. For example, the depth of boat basins and access channels shall not exceed that of the receiving body of water;

h) Project proposals shall include facilities for the proper handling of petroleum products, sewage, litter, waste, and other refuse with regard to the South Carolina Department of Health and Environmental Control (DHEC) specifications.

The following minimal on-shore restroom and shower facilities will be required as a condition of any marina permit so as to protect water quality of the affected waters.

| No. Slips or Moorings | Toilet (Head) Men-Women | Urinals Men | Lavatories Men-Women | Showers Men-Women |
|---|---|---|---|---|
| 1 - 20 | 1 - 1 | 1 | 1 - 1 | 1 - 1 |
| 21 - 40 | 1 - 2 | 1 | 2 - 2 | 2 - 2 |
| 41 - 60 | 2 - 3 | 2 | 2 - 2 | 2 - 3 |
| 61 - 80 | 3 - 4 | 2 | 3 - 3 | 3 - 3 |
| 81 - 100 | 4 - 5 | 3 | 3 - 3 | 3 - 3 |

If there are more than 100 slips, there shall be provided one additional toilet (head), lavatory and shower for each sex for each additional 40 slips or fraction thereof and one additional men's urinal for each 100 additional slips or fraction thereof.

Additional facilities are required by DHEC where restaurants, motels, laundries, and other non-water dependent structures are provided.

All pump-out and sewage facilities should be included in the public notice and certified by DHEC before permit approval. Also, DHEC can provide advice regarding the necessity of having hose connections from boats to shore-based sewage facilities where these boats are used as residences.

Trash receptacles or similar facilities should be plentiful and convenient for the proper disposal of trash, waste and noxious materials such as paints, rags and oil cans required for normal boat maintenance and repair.

Boat maintenance areas should be designed so that all bottom scraping and painting be accomplished over dry land allowing for proper control and deposition of residues, spills and storm water runoff.

i) Dry storage type marinas should be encouraged wherever possible;

j) Applications for construction of marina and commercial dock facilities will be considered by the Council only after demonstration by the applicant of public demand for the facilities;

k) Applications for marinas should include maintenance dredging schedules and dredged material removal sites when applicable." [R. 30-12 (E)(a-k)]

3) The Council also **recommends** that the following policies be considered in marina location and design:
   a) Adequacy of transporation access from the landward side,
   b) Adequacy of parking facilities,
   c) Upland facilities which are compatible with and enhance recreational boating opportunities.

**Management Authority**

In critical areas of the South Carolina coastal zone, permits are required from the Coastal Council for all new marina projects, including associated dredging and construction of docks, piers or other structures. (The Council's direct permit responsibility is explained in detail in the legal analysis in Chapter V [A].)

Beyond the critical areas, the creation of new marinas in the coastal zone is subject to the permit requirements of the Budget and Control Board for activities below mean high water (MHW). These permits are subject to the provisions of Sections 7(A) and 8(B)(11) of the 1977 Coastal Management Act by which the Coastal Council reviews and certifies each permit application in the coastal zone for compliance with provisions of the coastal program.

Permits may also be required from the Department of Health and Environmental Control (DHEC) if sewage treatment facilities are included as part of a marina project proposal or if 401 Water Quality Certification is required. Permits issued by DHEC in the coastal zone are subject to review and certification by the Coastal Council.

Marina facilities also require permits pursuant to certain Federal statutes which receive review and comment by the Coastal Council and its staff and will be subject to the Federal consistency provisions of the South Carolina coastal management program.

The State Ports Authority also has regulatory authority over marinas since Section 15(A) of the Act provides that:

If the proposed project is in one or more of the State's harbors or in a waterway used for commercial navigation and shipping or in an area set aside for port development in an approved management plan, then a certificate from the South Carolina State Ports Authority declaring the porposed project or activity would not unreasonably interfere with commercial navigation and shipping must be obtained by the Council prior to issuing a permit.

## B. BOAT RAMPS

**Policies**

1) In the coastal zone Council review and certification of applications for boat ramps will be based on the following policies:

a) Filling of productive salt, brackish, or freshwater wetlands for boat ramp construction is prohibited unless no feasible alternatives exist in adjacent non-wetland areas. In addition, the amount of fill required must be minimized.

b) The following priorities are considered when justifying boat ramp location in sensitive areas:

i) public use - open to all citizens,

ii) restricted use - open only to citizens of a particular area or organization,

iii) private use.

c) Boat ramp locations requiring dredging of productive salt, bracking or freshwater wetlands to provide channel access to deep-water will be discouraged.

d) Boat ramps must be constructed of environmentally acceptable materials.

2) In critical areas of the coastal zone it is Council policy that:

a) "Boat ramp construction materials should consist of environmentally acceptable materials such as concrete or oyster shell. Environmentally unacceptable materials include, but are not limited to, asphalt roofing shingles, asphalt, and rubble;

b) Justification for boat ramp construction in environmentally sensitive areas shall be considered using the following priorities:

i) public use - open to all citizens,

ii) restricted use - open to citizens of a particular area or organization only,

iii) private use - use for one citizen or family;

c) In cases where private use is necessary, siting of ramps should be in areas where the least environmental impact will accrue to that area. Locations requiring dredging or productive wetlands to provide deepwater access to the ramp are discouraged;

d) The siting of 'public use' boat ramps is encouraged in easily accessible areas such as bridged and deadend causeways." [R. 30-12(B)(a-d)].

3) The Council also **recommends** the following policies be considered in location and design of public boat ramps in the coastal zone:

a) Provision of adequate transportation access from the landward side;

b) Provision of adequate parking in non-wetland areas;

c) Incorporation with other public recreational and boating facilities to improve recreation opportunities;

d) Adequate facilities, for example, trash recepticles, restrooms, drinking water fountains, lighting;

e) Provision for continuing maintenance.

**Management Authority**

In critical areas of the coastal zone, a permit from the Coastal Council is required for any boat ramps which are proposed. (All boat ramps must involve filling in periodically inundated areas, in fact, below mean high water, in order to provide boats with access to the water. This filling is defined by the South Carolina Coastal Management Act as an alteration to a critical area - in this case, tidelands and/or coastal waters).

Boat ramps located in other than critical areas of the State are subject to permit requirements of the Budget and Control Board for activities on State-owned submerged bottoms (below MHW). In the coastal zone, these permit applications are also reviewed and certified by the Coastal Council for consistency with the coastal management program, pursuant to Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act.

In some areas a Federal agency permit may be required. These permit applications must be reviewed and certified by the Coastal Council and are subject to Federal consistency provisions.

## C. DOCKS AND PIERS

**Policies**

1) In the coastal zone, Council review and certification of permits for docks and piers will be based on the following policies:

a) Docks and piers will not be approved where they interfere with navigation or reasonable public use of the waters.

b) Docks and piers shall be constructed in a manner that does not restrict waterflow.

c) Docks and piers must be limited to a reasonable size and extension for the intended use.

d) Docks and piers should be located and designed to minimize disruption and shading out of salt, brackish or freshwater wetland vegetation.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Docks and piers shall not impede navigation or restrict the reasonable public use of waters;

b) Docks and piers shall be constructed in a manner that does not restrict waterflow;

c) The size and extension of a dock or pier should be limited to that which is reasonable for the intended use;

d) To preclude the adverse effects of shading marsh vegetation, walkways which are built over vegetated marsh and lead to the dock or pier shall not exceed four feet in width (unless the applicant can justify a need for a wider structure) and should be elevated at least three feet above mean high water;

e) Dry storage in uplands will be encouraged in preference to moorage in crowded areas;

f) Developers of subdivisions, motels, and multiple family dwellings will be encouraged to develop single, joint-use moorage facilities while their plans are in the development stage;

g) Project proposals shall include facilities for the proper handling of litter, waste, refuse, and petroleum products, where applicable;

h) Where docks and piers are to be constructed over bottoms under lease by the State for shellfish culture or other mairculture activity, the Council will consider rights of the leasee prior to approval or denial." [R. 30-12(A)(a-h)]

3) The Council also **recommends** that the following policies be considered in location and design of docks and piers:

a) Developing joint-use or community piers in future subdivisions rather than the proliferation of individual structures;

b) Use of construction materials which are easily maintained and repaired, for safety and aesthetic considerations;

c) Attention be given when property is subdivided to provide waterfront lot-owners with adequate riparian access, so that conflicts over the alignment of docks and piers will be avoided.

**Management Authority**

A permit directly from the South Carolina Coastal Council is required for docks and piers in the critical areas of the coastal zone. The Rules and Regulations governing permitting and the process specified therein are applied to docks and piers.

Outside the critical areas, a permit from the Budget and Control Board is required for activities involving

navigable waters of the State and all lands below the mean high water line in tidally-influenced areas and ordinary high water in non-tidal areas.

The Coastal Council reviews and certifies these permit applications in the coastal zone for their compliance with the coastal management program, based on the preceding policies, as mandated by Sections 7(A) and 8(B)(11) of the Coastal Management Act.

Docks and piers may also be subject to Federal agency permit authority based on Section 10 of the Rivers and Harbors Act and Section 404 of the Federal Water Pollution Control Act. The Coastal Council is involved in review and certification of such permit applications. Private docks and piers which meet certain size specifications are covered under the provisions of a general permit to the citizens of South Carolina from the U.S. Army Corps of Engineers. This is discussed in detail in Appendix K.

## VII. WILDLIFE AND FISHERIES MANAGEMENT

### A. WILDLIFE AND FISHERIES MANAGEMENT

**Findings**

The findings for this policy section are those presented in the Living Marine Resources Segment, Chapter IV(E).

**Policies**

The following policies were developed by the South Carolina Coastal Council in conjunction with the South Carolina Wildlife and Marine Resources Department for inclusion in the S.C. Coastal Program.

1) In the coastal zone, including critical areas, Council issuance or review and certification of permit applications which would impact wildlife and fisheries resources will be based on the following policies:

a) Activities deemed, by the South Carolina Coastal Council in consultation with the South Carolina Wildlife and Marine Resources Department, to have a significant negative impact on wildlife and fisheries resources, whether it be on the stocks themselves or their habitat, will not be approved unless overriding socio-economic considerations are involved. In reviewing permit applications relative to wildlife and fisheries resources, social and economic impacts as well as biological impacts will be considered.

b) Wildlife and fisheries stocks and populations should be maintained in a healthy and viable condition and these resources should be enhanced to the maximum extent possible.

c) Critical wildlife and fisheries habitat should be protected and enhanced to the extent possible.

**Management Authority**

The South Carolina Wildlife and Marine Resources Department is the principal State agency with statutory authority for the protection, management and conservation of wildlife and marine resources, including fish, game, non-game and endangered species. The Memorandum of Agreement between the Coastal Council and the Department confirms the cooperative relationship between the Council and the Department which has authority in the establishment, implementation, administration and enforcement of State game, fish and shellfish laws.

### B. ARTIFICIAL REEFS

**Findings**

The artificial reefs off South Carolina represent a well-used resource for the State. Recreational fishing as a whole offers great economic potential to the coastal zone. Correspondingly, commercial fishing has increased, especially in live bottom areas. Groundfish resources over natural live bottoms are heavily harvested both by recreational, "head-boat" industry, and the commercial hook and line fish trap fisheries. Artificial reefs harbor some of these same and very desirable live bottom groundfish species; most notably, black sea bass (**Centropristes striata**), sheepshead (**Archosargus probatocephalus**), jack crevalle (**Caranx hippos**), weakfish (**Cynoscion regalis**), spotted seatrout (**Cynoscion nothus**), red porgy (**Pagrus sedecim**), grouper (**Epinephelus sp.**), and spadefish (**Chaetodiperus faber**). Also, artificial reefs and accompanying midwater reef structures serve to attract pelagic fishes such as Spanish mackeral (**Scomberomorus maculatus**), King mackeral (**Scomberomorus cavalla**), little tunny (**Euthynnus alletteratus**), cobia (**Rachycentron canadum**) and scads (**Decapterus sp.**). These artificial reef areas also serve as habitat for many species of encrusting and free-living invertebrates. In turn, due to visual aspects and their geological relief, these reefs provide excellent habitat for a wide variety of flora and fauna on otherwise barren, gently sloping, hard-sand shelf areas prevalent off the South Carolina coast. The relief provided by sunken objects, such as ships, landing craft and caisons, provides not only a visual attraction but a suitable substrate for attachment of fouling by encrusting organisms which in turn provide the basis of the food chain for resident as well as transient fish species.

Besides the benefits of these reefs to the recreational fisherman, recreational scuba divers enjoy these artificial reefs for their aesthetic values. These reefs are bustling underwater communities with large schools of fish, ie., spadefish and scads, solitary brilliantly colored wrasses, triggerfish and sea urchins. Also, these reefs

provide the spearfisherman an opportunity to enjoy this form of recreation.

The artificial reef serves as a source of relatively inexpensive controllable and accessible live bottom research. One is able to study marine live-bottom community ecology, fishery recruitment and energy flow by using artificial reef areas. Also, food habit and behavior studies are more easily accomplished in reef areas due to their accessibility and reliability for attracting and maintaining certain species of groundfish. These groundfish resources are hardly found so easily and in such numbers over open bottoms.

Numerous aspects of man's activities can impact these artificial reef resources. The South Carolina artificial reefs would not be threatened directly by Outer Continental Shelf (OCS) oil and gas development. These reefs are well inshore of all tracts and potential drilling sites. However, pipeline corridors could possibly traverse some reef locations. Probably the most impending development in and around reef locations would be the possibility of open water dredged material disposal. Open water spoil disposal on or near an established artificial reef site would have a deleterious effect on the fauna and flora of the reef due to covering and possible suffocation of encrusting organisms, increased turbidity and toxicity of spoil material.

Additionally, commercial fishing pressure, such as blackfish traps and trawling, may occur as prices and supplies of marketable groundfish diminish or are regulated in the middle and northeast of artificial reef areas. These pressures could possibly deny the recreational fisherman of harvest and enjoyment of the very activities for which these reefs were created initially, using public funds. Also, net dragging may disrupt reefs both physically, by altering contour, and biologically, by increasing turbidity and non-selectivity of harvest.

**Policies**

In the critical areas of the coastal zone, it is Council policy that:

a) The location and development of artificial reefs should not interfere with navigation or with existing fisheries, and they should be compatible with all existing and approved uses for an area.

b) Materials utilized in the construction of artificial reefs must not create any adverse environmental impacts.

c) The development of artificial reefs for fisheries management purposes shall be encouraged, particularly in areas where the biological productivity will be enhanced.

d) In considering areas for artificial reef development, the possible impacts on historical or archaeological resources in the area will be considered.

**Management Authority**

Many artificial reefs along the South Carolina coast are beyond the 3-mile limit of State jurisdiction, and therefore, located outside the coastal zone.

Any artificial reefs located landward of the 3-mile limit would be within the "coastal waters" critical area, as defined in Section 3 of the S.C. Coastal Management Act of 1977. Alterations in these areas are subject to the direct permitting authority of the Coastal Council. The Rules and Regulations for Permitting and the previously stated policies would be applied to all artificial reef proposals in the critical areas.

Coordination with the South Carolina Wildlife and Marine Resources Department (SCWMRD) will be essential in any artificial reef proposals or projects for siting, construction and maintenance. SCWMRD is the State agency mandated to protect, manage and conserve wildlife and marine resources.

## C. IMPOUNDMENTS

**Findings**

Impoundments are wetland areas that have been separated from adjacent rivers and estuaries by a dike or series of dikes. There are usually flapgates or similar structures interspersed along the dikes that provide a method of controlling water levels within the impoundment. By selectively opening the flapgates on flood or ebb tides, water levels can be manipulated. Salinities within brackish impoundments can be controlled in a similar manner.

The majority of coastal impoundments in South Carolina were used for rice cultivation during the 1700's and are currently managed to attract waterfowl for hunting. Management techniques are variable but basically

consist of seasonal drawdown which drains the interior of the impoundments and which could eliminate natural wetland flora. Drawdown is followed by disking, burning, grazing or applying herbicides which further remove the flora (Landers **et. al.**, 1976). These techniques encourage the growth of attractive food plants for waterfowl but eliminate natural wetland production during important summer months.

Brackish impoundments are principally managed for widgeon-grass (**Ruppia maritima**), salt marsh bulrush (**Scripus robustus**) and dwarf spike-grass (**Eleocharis parvula**), which are excellent duck food species (Wilkerson, 1970). Other duck food plants, such as sago pondweed (**Potamogeton pectinatus**), soft-stem bulrush (**Scripus validus**), muskgrass (**Chara hornemannii**) and duckweeds (**Lemna** and **Spirodela**), may also be present (Tiner, 1977). Some natural but less desirable plants, from a duck management standpoint, may also persist in these diked wetlands. These plants include smooth cordgrass (**Spartina alterniflora**), black needlegrass (**Juncus romerianus**), glassworts (**Salicornia** spp.), marsh hay cordgrass (**Spartina patens**), giant cordgrass (**Spartina cynosuroides**) and others (Tiner, 1977). Under fresh-water conditions many other marsh plants which are desirable duck food are encouraged within waterfowl impoundments. Smartweeds (**Polygonum** spp.), panic grasses (**Panicum** spp.), wild millet (**Echinochloa** spp.), red root (**Lachnanthes caroliniana**), water shield (**Brasenia scherberi**), spike rushes (**Elecharis** spp.), pondweeds (**Potamogeton** spp.), arrow-arum (**Peltandra virginica**), white water-lily (**Nymphaca odordate**), southern naid (**Najas quadalupensis**), asiatic dayflower (**Aneilema keisak**), soft-stem bulrush (**Scirpus validus**), wild rice (**Zizania aquatica**), and watergrass (**Hydrochloa carolinensis**) (Conrad, 1965; Morgan, 1974). Cultivated crops, such as corn (**Zea mays**), brown top millet (**Panicum ramosum**), Japanese millet (**Echinochloa crusgalli**), wheat (**Triticum aestivum**), barley (**Hordeum** sp.), rye (**Secale cereale**), Italian rye grass (**Lolium** sp.), clover (**Trifolium** sp.), soybeans (**Glycine max**) and grain sorghum (**Sorghum** sp.), are planted in conjunction with summer drawdown in some fresh-water impoundments. Undesirable marsh plants found within fresh-water impoundments include alligator-weed, cattails, giant cordgrass, giant cutgrass, pickerel-weed, soft rush, sea myrtle, marsh fleabane, American frogbit, bladderwort, pennywort, coontail(**Ceratophyllum** spp.), waterweed, green algae (**Cladophora** spp.) and fanwort (**Cabomba caroliniana**) **(Conrad, 1965; Morgan, 1974; Tiner, 1977).**

Impoundments are areas of high productivity. When flooded, aquatic organisms are confined in an area where food is abundant and competition and predation is minimal. Fishes, such as the mummicho (**Fundulus heteroclitus**), the striped kikifish (**F. majilis**), eel (**Anguilla rostrata**), mullet (**Mugil cephalus**), spot (**Leio stomus xanthurus**), summer flounder (**Paralichthes lethostigma**) and others are found within impoundments. Some invertebrates found in impoundments include fiddler crabs (**Uca** spp.), blue crabs (**Callinectes sapidus**), snails (**Littorina irrorator** and **Melampus bidentatus**) and mussels (**Modiolus demissue**).

Impoundments substantially increase the utilization of wetlands by waterfowl and wading birds by enhancing resting and feeding opportunities. Although many species of fish and invertebrates can survive and even flourish within impoundments, very few can reproduce in this unnatural environment.

However, shallow wetland areas that are typically sites for impoundments are highly productive contributors of deritus to the estuarine food web and also supply vital habitat and nursery grounds for most commercial vertebrate and invertebrate estuarine species (Odum, 1961). Some important species using these nursery grounds are white shrimp (**Penaeus setiferus**), brown shrimp (**Penaeus aztecus**), blue crab (**Callinectes sapidus**), Atlantic oyster (**Crassostrea virginica**), croaker (**Micropogon undulatus**), menhaden (**Brevoortia tyrannus**), spot (**Leiostomus xanthurus**), pinfish (**Lagodon rhomboides**), and summer flounder (**Paralichthys lethostigma**) (Conner and Truesdale). When impounded, the function of wetlands in providing detrital export, nursery areas and estuarine habitat is removed from the estuarine system and consequently is extremely detrimental to the estuary from a marine fisheries standpoint.

**Policies**

1) In the coastal zone, the Council will apply the following policies in review and certification of permit applications for wetland impoundments:

a) Impoundment of previously undisturbed salt, brackish or tidal freshwater wetlands will be discouraged.

b) Impoundments are preferred in areas dominated by vegetation and water salinities characteristic of freshwater conditions rather than salt or brackish conditions.

c) The construction of dikes or embankments to create impoundments must not block public waterways navigable to commercial and recreational craft unless there is an overriding public necessity.

d) Wetland impoundments must be constructed in such a manner as to minimize adverse environmental impacts, including consideration for control of mosquitos.

e) 'Permit applications for wetland impoundments must include a detailed plan, subject to review and approval by the Council.

2) In critical areas of the coastal zone it is Council policy that:

a) "Impoundment of previously undisturbed saline and brackish water marshes shall be discouraged as these areas are among the most valuable and productive of our coastal wetlands.

b) The re-diking and embankment repair of former impoundments is preferred over the impoundment of undisturbed wetland areas.

c) Permit applications involving marsh impoundment proposals shall include details describing intent and use, as well as management plans which will be subject to Council review and approval, such management plans being a condition of any final permit and subject to enforcement." [R. 30-12(K)(2)a-c].

3) The Council also recommends that the following policies be considered in location and design of wetland impoundment proposals:

a) The inclusion of buffer zones, where appropriate, between the impoundment dike and the mean high water line of adjacent waterways, to help both in preventing erosion and providing limited marine and terrestrial habitat.

**Sources - Impoundments**


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## VIII. DREDGING

**Findings**

Dredging is the removal of sediments from waterways or wetland areas for the purposes of maintaining or deepening and extending navigable channels, harbors or marinas; for laying cables or pipelines; or for obtaining suitable fill and construction material (sand and aggregate). All of these activities may at times be necessary, economically justified projects in the coastal areas, but there also are potential negative impacts associated with dredging. These impacts may present conflicts not only with preservation of environmental quality, but with other economic interests dependent on the same resources - for example, shell fishing and recreational boating, both dependend on good water quality.

The most obvious effect is direct destruction of the natural habitat provided in submerged bottoms or coastal wetlands, the important of each of these resources being increasingly recognized [Chapter I (C) and Chapter IV (E) of the program document]. In addition, the removal, transportation and consequent disposal of these sediments can result in problems of siltation, increased turbidity and pollution which degrade water quality.

Marine and estruarine organisms may be severely impacted with uncontrolled dredging. Perhaps the most vulnerable life forms are oysters, because they are sedentary creatures. "A deposit of 1/20 inch of silt or shell or rocks from dredging is enough to make attachment impossible for young oysters", (Clark, John C. **Coastal Ecosystem Management**, p. 93). Harvesting of oysters is a significant recreational as well as commercial fishing enterprise in the South Carolina lowcountry.

Dredging upstream, beyond the reach of saline or brackish waters (defined in the South Carolina Coastal Management Act as "critical areas") also can have significant negative impacts on estuarine areas. Since freshwaters drain into the estuary, their quality play important roles in the function of the estuarine system.

Disposal of the dredged material is another major concern. The provision of adequate disposal areas while at the same time avoiding potential environmental impacts is vital to maintaining navigation in the S.C. coastal zone. For example, suitable upland disposal sites would be necessary for a channel deepening project as an alternative to disposal in adjacent waters or wetlands. Proper maintainence of disposal areas is also a concern in terms of mosquito control.

Underwater salvage is a very specialized activity, which would only have significant impacts in coastal waters if dredging were associated with a particular salvage operation. Therefore, the concerns and policies for this activity are limited in nature.

The need exists for maintaining navigational access in the coastal zone, for national defense, commercial shipping, commercial fishing and recreational boating. Pipeline and cable construction also meet economic needs, for commercial, industrial and residential growth. But serious environmental consequences present a potential problem and make the following policies for dredging, dredge material disposal and underwater salvage vital for South Carolina's coastal resources.

### A. DREDGING

**Policies**

1) In the coastal zone, Council review and certification of permit applications for dredging projects will be based on the following policies:

a) To the extent feasible dredging should be performed only during closed shellfishing season if proposed in a productive shellfish area.

b) Suspended sediments must be kept to a minimum. The use of structures such as weirs and silt curtains to minimize water quality degradation is encouraged. Where highly toxic sediments are encountered, dredging will be prohibited unless the activity is consistent with other dredging policies, as well as those for manufacturing or other industrial activities.

c) Dredging should not reduce water circulation, water currents, mixing, flushing or salinity in the immediate area.

d) Dredging for establishment of new canals which involves permanent alteration of valuable wetland habitats will be prohibited unless no feasible alternative exists or an overwhelming public interest

can be demonstrated. Establishment of canals for purposes of creating waterfront lots from inland property, especially where dead-end canals would result, will be prohitibed unless it can be demonstrated that there will be no significant environmental impacts.

2) In critical areas of the coastal zone, it is Council policy that:

a) Dredging for public projects in the wetland areas should be undertaken only if that activity is water-dependent and there are no feasible alternatives;

b) Dredge activities should be restricted in nursery areas, in public and private shellfish grounds during periods of migration, spawning, and early development of important sport and commercial species;

c) Dredging and excavation shall not create stagnant water conditions, lethal fish entrapments, or deposit sumps or otherwise contribute to water quality degradation;

d) Designs for dredging and excavation projects shall, where reasonable, include protective measures such as silt curtains, diapers, and weirs to protect water quality in adjacent areas during construction by preventing the dispersal of silt materials;

e) Dredged materials shall be deposited and contained in such a manner so as to prevent dispersal into adjacent wetland areas;

f) In general, excavation of materials from productive submerged and wetland areas for fill purposes shall be denied;

g) Wetlands shall not be utilized as depositories for waste materials except as discussed in R.30-12 (I);

h) A specialized form of dredging activity involves the creation and maintenance of navigational channels and access canals. These activities have a potential for severe environmental impacts and should meet a demonstrated public need;

i) To the extent feasible, project plans should utilize piers or catwalks, rather than channels or canals, to reach deep water areas;

j) Access canals shall be designed to insure adequate flushing and shall not create dead-end water or stagnant pockets. Open-end, U-shaped, or semicircular canals are generally preferred over dead-end canals, since they usually provide better water circulation;

k) Highway waterway construction that is slated to be tied into wetland areas should be constructed in the dry, if possible, so that sloping and stabilization of the banks can be completed before the plug is removed for the connection to open waters. Where dry construction is not possible, temporary plugs or silt curtains at the end of canals connected to waterways should be maintained until all sediment settles out;

l) The sides of navigation channels and access canals should be gently sloping rather than vertical to facilitate biological as well as physical stabilization of the canal banks;

m) When several landowners are to be served by a project, dredging for navigation channels and access canals should be well planned to prevent unnecessary excavation. Tributary canals in the highlands leading to a central navigation channel should be utilized rather than separate channels for each waterfront landowner;

n) The berm of access should be raised so that there is a gradual slope away from the canal edge. This will help prevent introduction of contaminants into adjacent wetland areas;

o) Alignment of channels and canals should make maximum use of natural or existing channels. Alignment of channels and canals should avoid shellfish beds, nursery areas, and spawning areas in highly productive wetlands. [R. 30-12(G) and (D)]

**Management Authority.**

In the critical areas of the coastal zone, a permit from the Coastal Council is required for any dredging activity other than a Federal activity (in which case Federal consistency provision would apply). The Final Rules and Regulations of the Council (presented in Appendix K) outline the conditions that must be satisfied for such permits to be issued.

Outside the critical area of the coastal zone, the Budget and Control Board has permit authority for dredging activity below mean high water. The Coastal Council must review and certify applications to the Budget and Control Board as being in compliance with the preceding policies, as mandated by Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act, and as outlined in the Memorandum of Agreement between the two agencies.

In certain locations, permits from Federal agencies will be required for dredging operations. The Council will review and certify these permit applications for their consistency with the coastal program.

## B. DREDGED MATERIAL DISPOSAL

**Policies**

1) In the coastal zone, Council review and certification of permit applications for dredged material disposal projects will be based on the following policies;

a) To the maximum extent feasible, dredged material must not be placed on high value natural habitats such as salt, brackish or freshwater wetlands; submerged vegetation; oyster reefs or tidal guts. Where upland disposal is not possible, areas of relatively low productivity should be utilized, or ocean disposal should be employed

b) Upland dredge material disposal sites must be stabilized and maintained where necessary to prevent erosion and direct water run-off.

c) Where water disposal is necessary, natural channels must not be blocked with dredged material and impact on existing water circulation should be minimized. Deposition in water areas of higher flushing rate will decrease damage from suspended sediments and oxygen depletion.

d) Consideration must be given to the temporal aspects of spoil deposition such as impacts on spawning seasons, fish migrations, waterfowl nesting and wintering areas, and mosquito control.

e) The selection of upland dredge disposal sites should include consideration for minimizing negative impacts on valuable terrestrial wildlife or vegetative habitats.

2) In critical areas of the coastal zone, it is Council policy that:

"a) Upland disposal of dredged material should always be sought in preference to disposal in wetlands. Where upland disposal is not possible, areas of relatively low productivity above mean high water mark should be utilized. Highly productive wetland areas or bottoms situated below the mean high water mark should not be utilized for disposal of dredged materials when other alternatives exist;

b) Open water and deep water disposal should be considered as an alternative if highland alternatives are not feasible. However, open and deep water disposal sites should be seriously considered only after careful consultation with the Council and other relevant State and Federal agencies;

c) Toxic and highly organic materials should be disposed of in highland areas behind impervious dikes;

d) Dikes surrounding disposal areas should be shaped and vegetated immediately to minimize erosion, with outfalls positioned to empty into non-wetland areas;

e) Future disposal sites shall be reviewed on a case-by-case basis;

f) Existing disposal areas should be utilized to the fullest extent possible; this utilization would include raising the height of the embankment to increase the holding capacity of the disposal area;

g) In evaluating potential sites for dredged material disposal, attention must be given to possible adverse impacts on public health and welfare as well as on critical fish and wildlife areas such as endangered species habitats, waterfowl wintering areas, and shellfish harvesting areas." [R. 30-12(I)]

3) The Council also **recommends** that the following policies be considered in planning for dredged material disposal:

a) Consideration for future maintenance of the spoil area, for example, development of spoil islands which have been found to be beneficial for terrestrial habitat and migratory waterfowl.

b) Abandoned sand or gravel pits in proximity to a dredge site, where spoil can be more adequately contained, should be used for disposal areas.

c) Consideration for reuse of spoil disposal sites, such as development of public parks or recreational areas.

d) Consideration for the mining of spoil areas so as to extend their life expectancies.

e) Prior to major dredging projects, the economic and environmental feasibility for alternative use of the dredged material should be studied. The physical and chemical characteristics of the spoil should be determined in order to decide the most appropriate disposal options. Spoil suitable as fill material for residential, commercial or industrial development should be utilized for such uses. Spoil shells can be used to stimulate oyster production or for dike construction. Beach renourishment and spoil disposal are related issues and should be addressed concurrently.

**Management Authority**

In the critical areas of the coastal zone, the Coastal Council has direct permitting authority for location of disposal sites for dredged material. The policies in the Rules and Regulations for Permitting, as well as the procedures thereunder, shall be applied.

Act 508 of the 1978 S.C. General Assembly (R. 601) gave the Coastal Council authority for the granting of rights and easements to the Federal government for spoil disposal sites for purposes of maintenance of navigable waterways, including the Atlantic Intracoastal Waterway. This authority was shifted from the S.C. Development Board where it had previously been located. (Chapter 5 of Title 3 of 1976 Code of Laws was amended, substituting the term "Coastal Council" for "State Development Board" wherever it appeared.)

Outside of the critical areas in the coastal zone, the Budget and Control Board has permitting authority for dredged material disposal sites which are below mean high water. Permit applications to the Budget and Control Board are reviewed and certified by the Coastal Council as being consistent with the Coastal Management Program, as mandated by Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act.

Section 15(A) of the Coastal Management Act states that:

> If the proposed project is in one or more of the State's harbors or in a waterway used for commercial navigation and shipping or in an area set aside for port development in an approved management plan, then a certificate from the South Carolina State Ports Authority declaring the proposed project or activity would not unreasonably interfere with commercial navigation and shipping must be obtained by the Council prior to issuing a permit.

The Department of Health and Environmental Control has responsibility for vector control throughout the State. Their expertise in mosquito abatement and control will be important in evaluation of the plans for on-going disposal area management. Comments from DHEC, Vector Control Division, are solicited on all Coastal Council permit applications.

In most areas a Federal agency permit will be required for dredge material disposal. Permit applications to appropriate Federal agencies must be reviewed and certified by the Coastal Council, under Federal consistency provisions of the coastal management program.

## C. UNDERWATER SALVAGE

**Policies**

1) In the coastal zone, Council review and certification of underwater salvage permits will be based on the policies for dredging activities when applicable, VI (A)(2), p. 107.

2) In the critical areas of the coastal zone, it is Council policy that:
Any dredging and dredge material disposal associated with a salvage operation will be subject to the policies for dredging, as expressed in the Rules and Regulations for Permitting, R.30-12(G), and VI (A)(1) of this section.

**Management Authority**

Underwater salvage operations are subject to the permitting authority of the Coastal Council if such opera-

tions will alter or disturb a critical area. The Institute of Archeology and Anthropology also controls such operations through a permitting program. Application for such permits will be reviewed and certified for consistency with the Coastal Management Program, as mandated by Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act.

Outside of the critical areas in the coastal zone, underwater salvage operations may be subject to Budget and Control Board authority, in addition to that of the Institute of Archeology and Anthropology. Council review and certification of permit applications to the Budget and Control Board are required.

In some areas a permit for underwater salvage operations may be required by a Federal agency. Applications for these permits must be reviewed and certified by the Coastal Council, subject to Federal consistency provisions.

## IX. PUBLIC SERVICES AND FACILITIES

**Findings**

The range of services and facilities provided by the public sector continues to increase with growing population and complexity of life-styles, especially in urbanized areas. In many instances, consideration of economics, efficiency or environmental constraints have led the way to government provision of these services — for example, sewer and water services which are very expensive for private concerns to construct and maintain. Individual systems such as wells and septic tanks are adequate where development is limited, but can have major environmental impacts in densely populated areas. For example, a proliferation of wells in some areas can seriously draw-down or drain the aquifer, reducing the groundwater resources, and possibly resulting in saltwater intrusion.

The continuing commercial and industrial expansion of the coastal zone in South Carolina will mean increasing populations which demand new and improved services. As rural areas are developed, the need to extend services to these areas will grow. The full range of public services must be supplied in order to provide for the needs of coastal residents, maintain economic interest to stimulate needed jobs, and at the same time conserve the environmental quality of coastal resources.

There are also potential negative impacts from these public facilities if they are not adequately planned and managed. Several activities are addressed under other headings, by specific type of activity, for example, recreation and transportation. For this section, public facilities include the following:

A. Sewage treatment
B. Solid waste disposal
C. Public/Quasi-public buildings
D. Dams and reservoirs
E. Water supply

Energy facilities are addressed in a separate section on Energy Facility Planning, Chapter IV(B).

In South Carolina's coastal zone, many of the benefits **and** potential negative effects of provision of public services have not yet been felt because growth was relatively slow in the past and most of the coastal zone is rural and undeveloped. Thus the following policies for coastal management of public services definitely will affect the future. In this State there is a unique opportunity to encourage positive growth and development while preserving and protecting coastal resources.

### A. SEWAGE TREATMENT (treatment plants and associated transmission systems, lagoons, impoundments, and outfalls; septic tanks)

**Findings**

The provision of adequate sewage treatment systems in order to protect public health and welfare, as well as environmental quality in coastal communities becomes increasingly important with growing populations and urban densities. The importance of these issues was stressed in the Federal Water Pollution Control Act Amendments of 1972, which provided for Section 201 Facilities Construction Grants and 208 Areawide Waste Treatment Management planning.

Other than actual location of facilities in sensitive areas, the major negative impact associated with sewage treatment systems is potential water quality degradation from effluent discharge - either septic tanks **or** treatment plants. Septic tanks are only effective in treating sewage in areas where soils are suitable for proper drainage, where they are spaced adequately and where groundwater and surfacewater are sufficient distance away. The provision of central treatment plants also can present environmental problems. Eventual disposal of the effluent or sludge may degrade the quality of coastal waters, and possibly disrupt wetland systems, recreational activities and fish and shellfish resources. The same issue involved in the laying of other pipelines can be present in construction of sewer transmission systems.

The potential secondary impacts of growth inducement from sewage treatment facilities can result if sewer systems are extended into areas with little previous development. This type of growth catalyst is only a serious problem if sensitive or fragile areas are threatened or if local zoning or other regulation is inadequate to provide proper management.

**Policies**

1) In the coastal zone, Council review and certification of sewage treatment and disposal permit applications will be based on the following policies:

a) Sewage treatment facilities and transmission systems in the coastal zone must meet applicable Federal, State and local construction and water quality standards.

b) The Coastal Council will coordinate with designated 208 Areawide Waste Treatment Management implementation agencies (pursuant to Section 208 of the Federal Water Pollution Control Act Amendments, P.L. 92-500) and other agencies with responsibility for implementing comprehensive plans affecting sewage treatment, to ensure that proposed projects are compatible with growth and development plans and that alternative locations for sewage treatment facilities are considered.

c) Construction of such facilities in productive salt, brackish or freshwater wetlands will not be approved where feasible alternatives exist. For locations adjacent to such sensitive habitats, priority consideration will be given to major public facilities over smaller, private package plants.

d) Sewage treatment facilities shall be constructed to limit effluent discharge as much as possible into areas containing productive shellfish beds. Construction of facilities shall in no case degrade the existing water quality classification of the receiving water body, and if the current classification is not the highest achievable, the plans shall show a consideration for the water body ultimately achieving the highest classification. In addition, the facilities shall be constructed in conformance with the appropriate policies contained elsewhere in the plan. Where appropriate, construction of the facilities and associated transmission systems shall be timed so as not to disrupt spawning seasons or migrations of significant marine resources.

e) Outfall locations should consider water depth, circulation and mixing in order to protect water quality. Effluent should not be discharged into poorly confined or poorly flushed estuarine areas.

f) Maximum study and analysis should be given to alternatives to conventional treatment methods; for example, land disposal, water conservation techniques, land application and overland flow.

g) Council will ensure that all proposed septic tank systems requireing a State permit will meet current DHEC standards and regulations.

h) The Coastal Council will also coordinate with local health departments, DHEC, and other implementing agencies to ensure that septic tank standards and regulatory enforcement are adequate to protect coastal resources.

i) Extension of public sewage treatment systems with excess capacity into previously undeveloped areas where the resulting growth would have detrimental impacts on the critical areas is discouraged.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Normal repair and maintenance of sewer facilities are exempted from Council permit requirements by Section 13(D) of the Act. The discharge of treated effluent is also exempted provided, however, that the Council shall review and comment on these discharges. The Council is concerned primarily with wetland degradation problems which could involve commercially important shellfish, recreational fisheries, and critical wildlife habitats. Standards applicable to these installations are as follows:

i)Applications for the construction of lagoons or impoundments for waste treatment facilities, and similar activities should be denied when adverse effects on productive tidelands will result;

ii)Such facilities should not be constructed in or immediately adjacent to wetland areas and must be designed in such a manner that no effluent will be discharged into areas open for shellfish harvesting." [R.30-12(J)]

b) "Excavating activities in critical areas are sometimes required for the installation of transmission lines. These installations should be designed to minimize adverse environmental impacts. In addition to standards for dredging and filling, the following standards are applicable:

i)Creation of permanent open water canals to install pipelines is discouraged since such projects generally interfere with drainage patterns and may adversely affect water quality through

bank erosion;

ii)Dimensions of excavated canals for cables and pipelines should be minimal. Silt curtains are recommended for all excavations;

iii)All excavations in wetland areas should be backfilled with the excavated material after installation of the appropriate structure, while being careful to maintain the original marsh elevation;

iv)The appropriate erosion control measures shall be employed during the crossing of wetland areas. Where appropriate, revegetation with suitable wetland species will be required;

v)Alignments of new projects should be designed to utilize existing rights-of-way and topographic features wherever possible." [R.30-12(D)].

c) The Coastal Council will coordinate with the Department of Health and Environmental Control (DHEC) and the designated 208 Areawide Waste Management and 201 Construction Grants implementation agencies to ensure that protection of critical areas is given priority in their programs and that processes are developed to prevent adverse effects from sewage facilities and discharges.

d) The Coastal Council will coordinate with the Department of Health and Environmental Control and local health departments or other implementing agencies to ensure that septic tank standards and regulatory enforcement are adequate to avoid adverse effects on critical areas.

3) The Council also **recommends** that the following policies be considered in planning and design of sewage treatment facilities:

a) Providing visual buffer areas around sewage treatment facilities;

b) Private package treatment plants proposed in subdivision areas and other developments should either be contained in the existing 208 Waste Treatment plan or receive 208 program approval before they are constructed;

c) Excess capacity in treatment facilities should not be approved unless the projects are contained in 208 plans and meet population projections for the area.

**Management Authority**

In the critical areas of the coastal zone, proposed construction of any new structure or facility to treat sewage must first receive a permit from the Coastal Council. This authority extends to placement of pipes or lagoons or any other activity which alters a critical area. Normal maintenance and repair and actual effluent discharge are exempted; however, the Council has the opportunity for review and comment on these activities.

In the coastal zone outside of the critical areas, there is an overlap of State agency authorities for sewage treatment facilities. Both the Budget and Control Board and the Department of Health and Environmental Control (DHEC) have regulatory authority over several aspects of sewage treatment facility placement and operation, (discussed in detail in the Legal Authorities chapter). DHEC retains regulatory authority over septic tanks with flow rate of 1500 gallons per day or greater (Section 44-1-140, S.C. Code of Laws). The permits of these agencies, whether issued jointly or independently, are subject to review and certification by the Coastal Council to ensure compliance with the preceding policies, as mandated by Sections 7(A) and 8(B)(11).

## B. SOLID WASTE DISPOSAL

**Findings**

Solid waste disposal may be a crucial problem in the future, since about nine pounds of solid waste is collected per day for each person in the U.S. (1972 data). In coastal areas where populations are concentrated, demand for disposal sites can be greatest while ecosystems are very fragile. The need for suitable upland disposal sites is clear since today it is recognized that productive wetlands are valuable habitat and should not be filled indiscriminately.

> In addition to their direct loss from filling with solid wastes, wetland and lower flood plain dump sites have high potentials for causing water pollution. In these areas there is a high rate of leaching of toxic chemicals, nutrient chemicals, and dissolved organic matter from the town dump into the groundwater, combined with the washoff of the same pollutants during rainstroms and flooding. Coastal waters may be adversely affected by the downstream flow of

polluted water from dump or landfill sites located far inland on coastal tributaries. (Clark, **Coastal Ecosystem Management**, 1977, p. 527)

The following policies for solid waste disposal are important for guiding the location and operation of disposal sites in the future in order to meet the need while protecting coastal resources.

**Policies**

1) In the coastal zone, Council review and certification of permit applications for solid waste disposal sites and facilities will be based on the following considerations:

a) All solid waste disposal sites in the coastal zone must meet applicable Federal, State water and air quality standards and local regulations for siting and operation.

b) The location of solid waste disposal or landfill sites in salt, brackish or freshwater wetlands will not be approved unless no alternative exists and an overwhelming public need can be demonstrated. Wherever possible, solid waste disposal sites must be located in appropriate upland sites, where they will not pollute surface waters, coastal waters or ground waters. Site-specific evaluations are made in each case by the Department of Health and Environmental Control to determine the suitability of the site, considering variables such as soil permeability, the characteristics of the leached refuse, and the distance from groundwater.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Wetlands shall not be utilized as depositories for waste materials." [R.30-12(G)(h)]

b) Policies for deposition of dredged materials shall also apply to solid waste disposal activities (excluding incineration).

3) The Council also **recommends** that the following be considered in solid waste disposal planning in the coastal zone:

a) Maximum study and analysis should be given to alternative means or techniques for refuse disposal such as recycling, reuse, burning for generation of electrical power, etc.

**Management Authority**

The alteration of a critical area, which includes filling or draining, requires a permit from the Coastal Council. The Final Rules and Regulations for Permitting apply to proposed solid waste disposal sites or facilities for critical areas [see R.30-12(G)].

Outside of critical areas in the coastal zone the Budget and Control Board requires permits for any use, including filling, of lands below mean high water. Permit applications for solid waste disposal in such areas must be reviewed and certified by the Coastal Council for compliance with the coastal management program. The Department of Health and Environmental Control issues permits for and otherwise regulates solid waste disposal outside of critical areas. Such permit applications are also subject to Council review and certification. The administration of these regulatory authorities must be in compliance with the rules, regulations and policies of the coastal management program as specified in Sections 7(A) and 8(B)(11) of the Coastal Management Act of 1977.

C. **PUBLIC/QUASI-PUBLIC BUILDINGS** (structures including but not limited to churches, governmental administration buildings, public park information centers, police and fire stations, public beach restroom facilities)

**Findings**

Although construction of new public or government buildings may serve a need in the public interest, the Council feels that these facilities should set an example for sound resource management in terms of location decisions, construction methods and building and site design.

Public and quasi-public buildings have potential negative impacts along similar lines to those associated with other developments, such as residential or commercial construction. They are of coastal management concern only if they involve problems of proposed dredging or filling in productive wetlands or impacts on water quality from erosion, storm water run-off or sewage discharges. There may also be conflicts with other

potential uses for the same site locations.

**Policies**

1) In the coastal zone, Council review and certification of permit applications for public/quasi-public buildings will be based on the following policies:

a) For locations immediately adjacent to the shoreline, the water-dependent nature of the structure must be demonstrated. A water-dependent facility is one which requires access to or use of the water as an essential aspect of its primary function.

b) Permanent alterations to productive salt, brackish or freshwater wetlands, from either dredging or filling for the construction of public buildings will not be approved unless no feasible alternatives exist or there is an overriding public interest or need.

c) The use of construction methods and site drainage plans which reduce erosion hazards and limit the direct discharge of storm water run-off are encouraged in order to protect coastal water quality. To the extent feasible, public buildings should not be located in high flood zone areas, as designated under the Federal Flood Insurance Program. Where public buildings must be located in these zones, they must meet applicable Flood Insurance criteria and/or building standards.

d) Plans for major public buildings or complexes must include adequate sewage disposal systems (septic tanks or treatment systems), meeting Federal Environmental Protection Agency, South Carolina Department of Health and Environmental Control, and local health department standards.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Nonwater-dependent structures such as parking garages, apartments, restaurants, and shops have been build in the past on pilings over wetland areas. Such construction presents unnecessary encroachment on the aquatic ecosystem by shading out the underlying vegetation. Nonwater-dependent structures shall be discouraged from being sited over water and/or wetland areas. Only when public need is demonstrated and no feasible alternative sites are available should consideration be given towards approval of the proposed structure." [R. 30-12(M)]

b) "Nonwater-dependent structures such as commercial and residential buildings have been constructed on primary sand dunes or beach areas in the past. Such construction may seriously disrupt the dune/beach system and its vegetation, hampering their effectiveness as a storm and erosion buffer. The siting of nonwater-dependent structures on the primary dunes or beaches will be discouraged where other feasible alternatives exist. Design and construction options which minimize destruction of the dunes and dune vegetation will be encouraged." [R.30-13(D)]

3) Further, the Council **recommends** that the following policies be considered with respect to public/quasi-public buildings in the coastal zone:

a) Encourage visual compatibility, to the maximum extent practicable with surrounding development and natural resources in terms of scale, height, materials, color, texture, and geometry of building and site design.

b) Development of local plans and development regulations that address the location and design of public/quasi-public buildings.

**Management Authority**

The construction of any public/quasi-public building in a critical area requires a permit from the Coastal Council. Any alteration of a critical area requires a permit under the Council's direct permit authority as implemented through the Final Rules and Regulations for Permitting.

The S.C. Department of Health and Environmental Control has permit authority for any septic tank (1500 gpd or greater) or sewage system associated with such buildings. These permit applications are subject to review by the Coastal Council for certification of compliance with the preceding policies of the coastal management program, based on Sections 7(A) and 8(B)(11) of the Coastal Management Act of 1977.

If fill below the mean high water is proposed for site preparation or construction, a permit would be

required from the Budget and Control Board. These permit applications also are subject to the review and certification process of the Council.

## D. DAMS AND RESERVOIRS

### Findings

Dams and reservoirs are not foreseen as a major issue for the South Carolina coastal zone because the nature of coastal rivers - which are broad, relatively slow-moving and pass through flat, low-lying areas, with little flooding problems - gives them limited suitability for hydroelectric or related flood control projects. However, because of the other benefits dams and reservoirs provide such as drinking water and recreational areas, they may become important in the coastal zone at some later time and must be included in the planning process now.

Most of the possible impacts of dams, reservoirs and rediversions which might locate in coastal waters are associated with the alteration of normal stream flow. These include water quality degradation, changes in salinity, loss of aquatic species habitat or adequate spawning periods, alteration of the character of downstream coastal marshes (Clark, **Coastal Ecosystem Management**, p. 602), and interdiction of upland sediments, in particular sand destined for coastal sediment budgets. Reservoirs or impoundments also may inundate areas of special geological significance, archeological importance or historic interest.

While many of the adverse environmental effects of dams and reservoirs cannot be avoided, there are management policies and techniques which can reduce the impact.

### Policies

1) In the coastal zone, Council review and certification of permit applications or project proposals for dams and reservoirs will be based on the following policies:

a) Floodplain and ecosystem management and other non-structural solutions are generally preferred to the erection of dams or flood control structures.

b) Water control structures and water management programs should be designed to preserve or upgrade existing water quality. Best management practices should be used upstream of the dam or reservoir to reduce agricultural and construction run-off and sedimentation thereby reducing the threat of eutrophication in the reservoir. This will also reduce the load of sediments deposited behind the dams, thereby prolonging the life of the facility.

c) To the extent feasible, dams should allow for retaining some degree of circulation of waters and sediment flow. This will help preserve water quality and aquatic habitats downstream, and maintain the sediment budget, which is important to related erosion problems in beach and shoreline areas downstream.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Impoundment of previously undisturbed saline and brackish water marshes shall be discouraged as these areas are among the most valuable and productive of our coastal wetlands." [R. 30-12(K)(a)].

3) The Council also **recommends** that the following additional policies be considered for dams and reservoirs in the coastal zone:

a) Installation of fish lifts where appropriate to facilitate the migratory passage of fish,

b) Design of release gates to allow water to be let out from different depths in the reservoir for control of temperatures at appropriate levels for downstream aquatic life.

c) When wildlife habitats are inundated or otherwise disturbed by construction of dams or flood control structures, lands suitable for wildlife management should be acquired elsewhere.

d) Encourage the restoration of previous natural conditions in abandoned reservoir areas.

### Management Authority

Any dam or reservoir proposed to alter a critical area would be under direct permit jurisdiction of the S.C.

Coastal Council.

The S.C. Land Resources Conservation Commission has permit authority over the construction of dams and reservoirs, other than those constructed by the U.S. Army Corps of Engineers or Soil Conservation Service, or licensed by the Federal Energy Regulatory Commission or S.C. Public Service Authority. This authority is for the safe maintenance of such structures and is based on the powers of inspection and certification for dams and reservoirs. (S.C. Dams and Reservoirs Safety Act, Act 60 of the 1977 General Assembly.) Permit applications for this activity will be reviewed by the Coastal Council for certification of their compliance with the preceding policies. This review and certification process is mandated by Sections 7(A) and 8(B)(11) of the S.C. Coastal Management Act.

The S.C. Public Service Authority (PSA) has authority to construct dams for certain purposes in the Cooper and Santee Rivers in the coastal zone. Coordination of the activities and policies of the two agencies, as mandated by Section 7(A) of South Carolina's coastal legislation, will be accomplished through provisions of the Memorandum of Agreement between PSA and the Coastal Council.

The South Carolina Budget and Control Board has authority for permits for alterations to waters or submerged bottoms of the State below the meah high water line (MHW), outside the critical areas. These permits are subject to the review and certification process of the Coastal Council as mandated by Sections 7(A) and 8(B)(11) of the South Carolina Coastal Management Act.

## E. WATER SUPPLY

### Findings

The provision of public drinking water supplies to residents and commercial and industrial users is a positive asset to the economic character of an area, This public service can, however, have negative effects, largely associated with the transmission of the freshwater. The laying of water pipelines can cause environmental damage where they cross productive wetlands or submerged bottoms. Withdrawal of water resources, whether public or private, can negatively impact groundwater resources, if not properly managed.

There are also potential secondary growth impacts from provision of new public drinking water systems. If public water supply is extended into previously undeveloped areas, it can induce rapid growth, with possible negative impacts if proper environmental management is not provided.

### Policies

1) In the coastal zone, Council review and certification of permit applications for water supply facilities will be based on the following policies:

a) The Coastal Council will coordinate with the Water Resources Commission in its efforts to ensure that groundwater is adequately managed, and that proposed withdrawals will not cause saltwater intrusion, land settling or other negative impacts.

b) The Coastal Council will coordinate with designated 208 Areawide Waste Treatment Management implementation agencies (pursuant to Section 208 of the Federal Water Pollution Control Act) and other agencies with responsibility for implementing comprehensive plans affecting water supply, to ensure that proposed projects are compatible with growth and development plans and that alternative locations for water supply facilities are considered.

c) Water supply facilities and transmission systems in the coastal zone must meet applicable Federal, State, and local construction and water quality standards.

d) Construction of such facilities in or adjacent to productive salt, brackish, or freshwater wetlands will be prohibited unless no feasible alternatives exist. Construction activities should be timed so as not to disrupt shellfish harvesting, spawning seasons or migratory fish populations.

2) In critical areas of the coastal zone, it is Council policy that:

a) "Dredging and filling for public projects in wetland areas should be undertaken only if that activity is water-dependent and there are no feasible alternatives." [R. 30-12(G)(2)(b)]

b) "Excavating activities in critical areas are sometimes required for the installation of submerged cables, pipelines, and transmission lines. These installations should be designed to minimize adverse en-

vironmental impacts.

c) In addition to standards for dredging and filling, the following standards are applicable:

i)Creation of permanent open water canals to install pipelines is discouraged since such projects generally interfere with drainage patterns and may adversely affect water quality through accelerated bank erosion;

ii)Dimensions of excavated canals for cables and pipelines should be minimal. Silt curtains are recommended for all excavations;

iii)All excavations in wetland areas should be backfilled with the excavating material after installation of the appropriate structure, while being careful to maintain the original marsh elevation;

iv)The appropriate erosion control measures shall be employed during the crossing of wetland areas. Where appropriate, revegetation with suitable wetland species will be required;

v)Alignments of new projects should be designed to utilize existing rights-of-way and topographic features wherever possible." [R. 30-12(D)]

**Management Authority**

Water supply activities, including the use of pipelines, pumping stations and treatment plants, in a critical area require a permit from the Coastal Council.

Outside of the critical areas of the coastal zone, the Department of Health and Environmental Control (DHEC) and the Water Resources Commission have regulatory authority and issue permits concerning water supply. DHEC requires a permit for construction, expansion, or modification of public water supplies. Permit applications for this activity must be reviewed and certified by the Council for compliance with the coastal program as mandated by Section 7(A) and 8(B)(11) of the S.C. Coastal Management Act. In capacity use areas, as declared by the Water Resource Commission, permits are required for the extraction of more than 100,000 gallons per day of groundwater and may be required for lesser amounts. (This does not apply to domestic wells.) These permit applications are also subject to the review and certification authority of the Council.

## X. EROSION CONTROL

The planning process, policies, and management authority for this element are contained in Chapter IV(C), Erosion Control Program.

## IX. ENERGY AND ENERGY-RELATED FACILITIES

The planning process, policies, and management authority for this element are contained in Chapter IV(B), Energy Facility Planning Process.

## XII. ACTIVITIES IN AREAS OF SPECIAL RESOURCE SIGNIFICANCE

The following types of areas in the South Carolina coastal zone have been identified through the resource inventory efforts of the Coastal Council and its staff as being unique and either environmentally fragile or economically significant to the coastal area and the State. These areas of special resource significance are:

-Barrier Islands
-Dune Areas (outside the critical areas)
-Navigation Channels
-Public Open Spaces
-Wetlands (outside the critical areas)

Because of this sensitivity and their role as an integral part of the coastal ecosystem, alterations in these areas are likely to have direct effects on the critical areas. Because of their value and characteristics the Coastal Council employs the additional resource policies presented in this section in review and certification of any permits associated with an activity in one of these areas. This is done in an effort to protect the value of the critical areas and of all coastal resources. The applicable policies for the individual activity which is proposed, as well as the general guidelines for evaluation of all projects, are also considered by the Council and its staff in permit and project reviews in these areas.

**Management Authority**

The Coastal Council has no direct permit authority in any of these areas (with the exception of critical areas of a barrier island and navigation channels, which come under the "coastal waters" category if within the critical areas boundary, and are then under the direct permit jurisdiction of the Coastal Council.) Resource policies in these areas will be implemented through the "network" of existing State agency authorities, and the Coastal Council's review and certification of the permit actions of these agencies, (as discussed in detail in the "Legal Authorities and Networking" segment of Chapter V.) The specific State agency with direct authority for each project will depend on the type of project or permit involved in the development proposal.

### A. BARRIER ISLANDS

**Findings**

Barrier islands are elongated landforms of unconsolidated material (usually sand), situated seaward of the inland shoreline and parallel to the ocean. They are one of the most dynamic coastal ecosystems since they are constantly being reshaped by the forces of wind or waves. (A more detailed discussion of their geologic characteristics is provided in Chapter I, "The Natural Environment").

These unique, dynamic islands perform a number of roles in the coastal system. They are the location of much of South Carolina's Atlantic Ocean beach-front, and are often significant wildlife habitats. Barrier islands help to create the proper conditions for saltwater wetlands and estuaries behind them. They are also a valuable storm and erosion buffer for more inland areas, being most effective when their dunes and vegetation are well-developed and intact.

South Carolina has approximately 30 barrier islands, part of a chain along the Atlantic and Gulf coasts which extends from Maine to Florida and around to Texas. South Carolina is fortunate in that many of these islands are already under State or Federal ownership and are therefore maintained for recreational use or in a natural state as wilderness-type areas. A listing of both publically and privately-owner barrier islands is contained in Table 1, with an indication of their development status.

**Policies**

Because of their fragile and dynamic nature and their resource value, the Coastal Council will consider the following additional policies in review or permit proposals on barrier islands. (Within critical areas of a barrier island, the Rules and Regulations for permitting applicable to the proposed activity will apply.)

1) Construction and development on barrier islands shall retain to the extent feasible existing dune ridges, drainage patterns and natural vegetation in landscaping and construction plans in order to maintain the value of the island as a storm buffer. Intensive or high density type development may not be

TABLE 1 **BARRIER ISLANDS OF SOUTH CAROLINA**

| ISLAND | DEVELOPMENT STATUS | PREDOMINANT OWNERSHIP |
|---|---|---|
| Waites | undeveloped | private |
| Pawleys | developed | private |
| North | undeveloped | State |
| South | undeveloped | State |
| Cedar | undeveloped | State |
| Murphy | undeveloped | State |
| Cape | undeveloped | Federal |
| Lighthouse | undeveloped | Federal |
| Raccoon Key | undeveloped | Federal |
| Bull | undeveloped | Federal |
| Capers | undeveloped | State |
| Dewees | undeveloped | private |
| Isle of Palms | developed | private |
| Sullivans | developed | private |
| Morris | undeveloped | private |
| Folly | developed | private |
| Kiawah | partially developed | private |
| Seabrook | partially developed | private |
| Deveaux | undeveloped | non-profit org. |
| Botany Bay | undeveloped | private |
| Eddingsville | undeveloped | private |
| Edisto Beach | developed | private |
| Pine | undeveloped | private |
| Otter | undeveloped | private |
| Hunting | undeveloped | State |
| Fripp | partially developed | private |
| Pritchards | undeveloped | private |
| Little Capers | undeveloped | private |
| St. Phillips | undeveloped | private |
| Bay Point | undeveloped | private |
| Hilton Head | developed | private |
| Daufuskie | undeveloped | private |

SOURCES: 1) **The Status of Barrier Islands of the Southeastern Coast**, Langdon Warner, 1976, Open Space Institute and Natural Resources Defense Council

2) Coastal Council Staff Update

suitable on some barrier islands which are less stable or more prone to erosion or other hazard risks; these factors must be taken into consideration when alternative development plans are formulated.

2) Because of their proximity to and strong ecological relationship with the critical areas of the coastal zone, project proposals for activities on barrier islands must demonstrate reasonable precautions to prevent or limit any direct negative impacts on the adjacent critical areas (beaches, primary dunes, coastal waters and wetlands).

3) New road or bridge projects involving the expenditure of public funds to provide access to previously undeveloped barrier islands will not be approved unless an overwhelming public interest can be demonstrated, for example, provision of access to a public recreation area or other facility. Preference will be given to ferry access in those instances where public funds cannot be expended for road access.

4) The extension of public services, such as sewer and water facilities, to barrier islands should only be proposed in a comprehensive approach which considers the natural "carrying capacity" of the island to support development and which integrates these facilities to parallel the level of access which is available to the island.

5) The Coastal Council encourages and supports State, local and private efforts to acquire coastal barrier islands for inclusion in preservation and protection programs. Public recreational benefit should be one primary motivation for these efforts, and where appropriate, barrier islands should be maintained for recreational use, based on the capacity of individual areas to accommodate human activity.

## B. **DUNE AREAS** (OTHER THAN CRITICAL AREAS)

### Findings

Much like the barrier islands, the beaches and dunes along the South Carolina foreshore are also dynamic ecosystems, the focus of energy where sea and land meet. The sands of the beach area are constantly in motion. As the waters of the tides ebb and flow, this wave action removes and deposits sand on the beaches. Both because of their dynamic characteristics and their value as unique recreational areas, the South Carolina General Assembly found them to need special management consideration. Beaches are identified as "critical areas" by the South Carolina Coastal Management Act of 1977, and defined as "those lands subject to periodic inundation by tidal and wave action so that no nonlithoral vegetation is established" (Section 3(H)). Within this beach critical area, the Coastal Council has direct permit jurisdiction, and the Rules and Regulations for Permitting are applied to any proposed activity.

The dunes which fall landward of the beach zones are also an active area, comprised of sands which are only partially stabilized and subject to the effects of wind and waves. Dunes serve as valuable physical storm buffers, as wildlife habitats and as recreational and aesthetic resources. They are also linked with the beach area as a reservoir of sand to replace that which is lost from the beach on severe tides or storms. Because of this interdependence with the beach system, and their fragile structure and susceptibility to disruption because of this indiscriminate building or alteration, the primary ocean-front dunes are considered "critical areas" under the South Carolina Coastal Management Act. A permit must be obtained directly from the Coastal Council for any activity on a primary sand dune, and the permitting Rules and Regulations apply in these areas.

Of concern in this section are the dunes upland from or behind the primary dune. While not as crucial as the first dune adjacent to the Atlantic, the dune fields or landward ridges of unconsolidated sand are still vital as part of the overall storm protection and sand reserve system. The Coastal Council has no direct jurisdiction over proposed activities in these areas, but does have review and certification authority with regard to the major permits of other State agencies.

### Policies

In review and certification of permit applications to other State agencies for proposals in the sand dune areas, the Coastal Council will consider the following additional policies:

1) Because of their proximity to and strong physical and ecological relationship with the beach and primary sand dune critical areas of the coastal zone, project proposals in secondary sand dunes must demonstrate reasonable precautions to prevent or limit any direct negative impacts on the adjacent

critical areas.

2) Special attention must be given in new construction activities in ocean-front areas to prevent or mitigate negative impacts on adjacent property owners, specifically, increased erosion or loss of protective dune formations on adjacent lots due to unnecessary destruction of or encroachment onto stable dunes.

3) Project proposals in ocean-front and sand dune areas must conform to the policies of the Beach Erosion, and Beach and Shoreline Access sections of the program, as well as other applicable Resource Policies.

**Recommended Policies**

1) Local governments with coastal shorefronts are encouraged to develop and implement strong local zoning and building ordinances for beach and sand dune areas.

2) Property owners, development interests and local governments are encouraged to institute and observe set-backs or buffer zones for construction in beach and dune areas.

## C. NAVIGATION CHANNELS

**Findings**

Water-ways in the coastal zone which provide adequate depths for navigation are essential for commercial fishing and for surface water transportation, and also to recreational boating which is one of the most significant water-dependent recreational activities along the coast. These tidal rivers and bays also play important ecological roles for estuarine water circulation and as feeding habitats for waterfowl and varieties of finfish and shellfish.

Growing pressure for use of shorefront can have detrimental effects on navigational access if development is not properly managed. Increased erosion and siltation from upland developments can reduce the depths of navigation channels. Maintenance dredging and associated dredge material disposal are also related issues.

The South Carolina General Assembly recognized the significance of navigation along the coastline in identifying navigation as a specific consideration which the Coastal Council must make in all permit reviews in the critical areas. Section 15(A)(2) of the South Carolina Coastal Management Act of 1977 directs the Coastal Council to consider:

> The extent to which the activity would harmfully obstruct the natural flow of navigable waters. If the proposed project is in one or more of the State's harbors or in a waterway used for commercial navigation and shipping or in an area set aside for port development in an approved management plan, then a certificate from the South Carolina State Ports Authority declaring the proposed project or activity would not unreasonably interfere with commercial navigation and shipping must be obtained by the Council prior to issuing a permit.

**Policies**

(A majority of navigation channels in the South Carolina coastal zone are within the critical areas, and therefore, subject to direct jurisdiction of the Coastal Council for the issuance of the State permit required for any alteration, and the Rules and Regulations for Permitting shall apply, as well as the following general policies.)

The Coastal Council will consider the following policies in review and certification of permit applications for projects in or directly affecting existing navigation channels:

1) Development which would result in loss of navigability will be prohibited.

2) Development which might increase upland soil and shoreline erosion problems and resulting siltation of navigation channels must utilize the best mitigation measures feasible that will effectively relieve the problem.

3) The South Carolina State Ports Authority, as mandated under Section 15(A)(2) of the Coastal Management Act, shall review applications for permits in navigable waterways in the critical areas and certify prior to the issuance of such permit that the project or activity would not unreasonably interfere

with commercial navigation.

4) Resource Policies and Rules and Regulations for Permitting which apply to Dredging and Dredge Material Disposal shall be applied.

## D. PUBLIC OPEN SPACES

**Findings**

(*NOTE* A number of State-owned or managed recreational and game management areas have been designated as Geographic Areas of Particular Concern (GAPCs). The priorities of use for each of these areas are addressed in that segment of the management program. For purposes of this section, public open spaces means State or local (county or municipal) parks or other open space areas, **other** than those designated as GAPCs.)

The values of public recreational and open space areas throughout the coastal zone cannot be overemphasized. They provide recreational and aesthetic opportunities and amenities which are both desired and needed by the people. With increasing populations and continued growth and development, these limited resources become even more precious, as increasing numbers of people seek to find recreational opportunities within more urbanized areas and from fewer available open spaces.

Open space is not only the basic resource necessary for development or recreational facilities, it also serves numerous other valuable functions. It can provide corridors for preservation of wildlife and may preserve unique natural areas and historic or archeological resources. Open space can serve as a buffer between incompatible types of development activity, and oftentimes open space increases the value of adjacent land.

**Policies**

The Coastal Council will apply the following policies in review and certification of permit applications located in or which would directly affect public open space areas:

1) Project proposals which would restrict or limit the continued use of a recreational open area or disrupt the character of such a natural area (aesthetically or environmentally) will not be certified where other alternatives exist.

2) Efforts to increase the amounts and distribution of public open space and recreational areas in the coastal zone are supported and encouraged by the Coastal Council.

## E. WETLANDS (OUTSIDE THE CRITICAL AREAS)

**Findings**

In addition to the extensive areas of salt and brackish marsh within the critical areas along the South Carolina coastline, the State's coastal zone also contains over 60,000 acres of fresh-water marshes. These wetlands further up the creeks and rivers, beyond the reach of saltwater at high tides, have a great diversity of plant species. They play a vitally important role in contributing nutrients to the waters which eventually reach the estuarine system (the critical areas). Fresh-water marsh areas are active filters for improving water quality, and since they are linked with the downstream system, they affect water quality in the critical areas. The fresh-water marshes are important flood buffers and also function in maintenance of salinity levels in downstream estuaries.

**Policies**

The Coastal Council will apply the following policies in review and certification of permit applications in freshwater wetland areas:

1) Project proposals which would require fill or other significant permanent alteration of a productive freshwater marsh will not be approved unless no feasible alternative exists or an overriding public interest can be demonstrated, and any substantial environmental impact can be minimized.

| AGENCIES WITH PERMITTING OR PLANNING/MANAGEMENT AUTHORITY FOR ACTIVITIES WITH A DIRECT AND SIGNIFICANT IMPACT<br>ACTIVITY | Coastal Council | Aeronautics Comm. | Arch. & Anthropology | Budget & Control Bd. | DHEC | Development Bd. | Forestry Comm. | Highway Dept. | Land Resources | PRT | Patriot's Point | Railways Comm. | PSA | PSC | State Housing Auth. | SPA | Water Resources | Wildlife/Marine Resources | LOCAL | FEDERAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| RESIDENTIAL DEVELOPMENT | X | | | X | X | | | | | | | | | | X | | | | X | X |
| TRANSPORTATION | | | | | | | | | | | | | | | | | | | | |
| Ports | X | | | X | | | | | | | | | | | | X | | | | X |
| Roads & Highways | X | | | X | | X | | X | | | | | | | | X | | | X | X |
| Airports | X | X | | X | | X | | | | | | | | | | | | | X | X |
| Railways | X | | | X | | X | | | | | | X | | | | X | | | X | X |
| Parking Facilities | X | | | X | X | | | | | | | | | | | | | | X | |
| COASTAL INDUSTRIES | | | | | | | | | | | | | | | | | | | | |
| Agriculture | X | | | | | | | | X | | | | | | | | | | | X |
| Forestry | X | | | | | | X | | | | | | | | | | | | | |
| Mineral Extraction | X | | | X | | | | | X | | | | | | | | | | | X |
| Manufacturing | X | | | | X | | | | | | | | | | | | | | X | |
| Fish & Seafood Processing | X | | | | X | | | | | | | | | | | | | | | |
| Aquacultire | X | | | X | X | | | | | | | | | | | | | X | | |
| COMMERCIAL DEVELOPMENT | X | | | X | X | | | | | | | | | | | | | | X | |
| RECREATION & TOURISM | | | | | | | | | | | | | | | | | | | | |
| Parks | X | | | | | X | | | | X | X | | | | | | | | X | X |
| Tourist Attractions | X | | | | X | | | | | X | X | | | | | | | | X | |
| MARINE RELATED FACILITIES | | | | | | | | | | | | | | | | | | | | |
| Marinas | X | | | X | | | | | | | X | | | | | X | | | X | |
| Boat ramps | X | | | X | | | | | | | X | | | | | | | X | X | |
| Docks and piers | X | | | X | | | | | | X | | | | | | X | | | | |
| WILDLIFE AND FISHERIES MAN. | X | | | | | | | | | | | | | | | | X | X | | |
| Artificial reefs | X | | | X | | | | | | | | | | | | | | X | | |
| Impoundments | X | | | X | | | | | | | | | | | | | | X | | |
| DREDGING | X | | | X | | | | | | | | | | | | | | | | X |
| Dredge Material Disposal | X | | | X | | | | | | | | | | | | | | | | X |
| Underwater Salvage | X | | X | | | | | | | | | | | | | | | | | |
| PUBLIC SERVICES & FACILITIES | | | | | | | | | | | | | | | | | | | | |
| Sewage treatment | X | | | X | X | | | | | | | | | | | | | | X | X |
| Solid waste disposal | X | | | | X | | | | | | | | | | | | | | X | |
| Public/Quasi-public buildings | X | | | | X | | | | | X | X | | | | | | | | X | X |
| Dams & Reservoirs | X | | | | | | | | | | | | X | | | | | | | X |
| Water supply | X | | | | X | | | | | | | | | | | | X | | X | X |
| EROSION CONTROL | X | | | | | | X | X | | | | | | | | X | | | X | X |
| ENERGY ACTIVITIES | X | | | X | X | X | X | | | | | | X | X | | | X | | X | X |

*A listing of the State agencies and citations for their statutory authority for each activity is included in Appendix C, p. C-15.