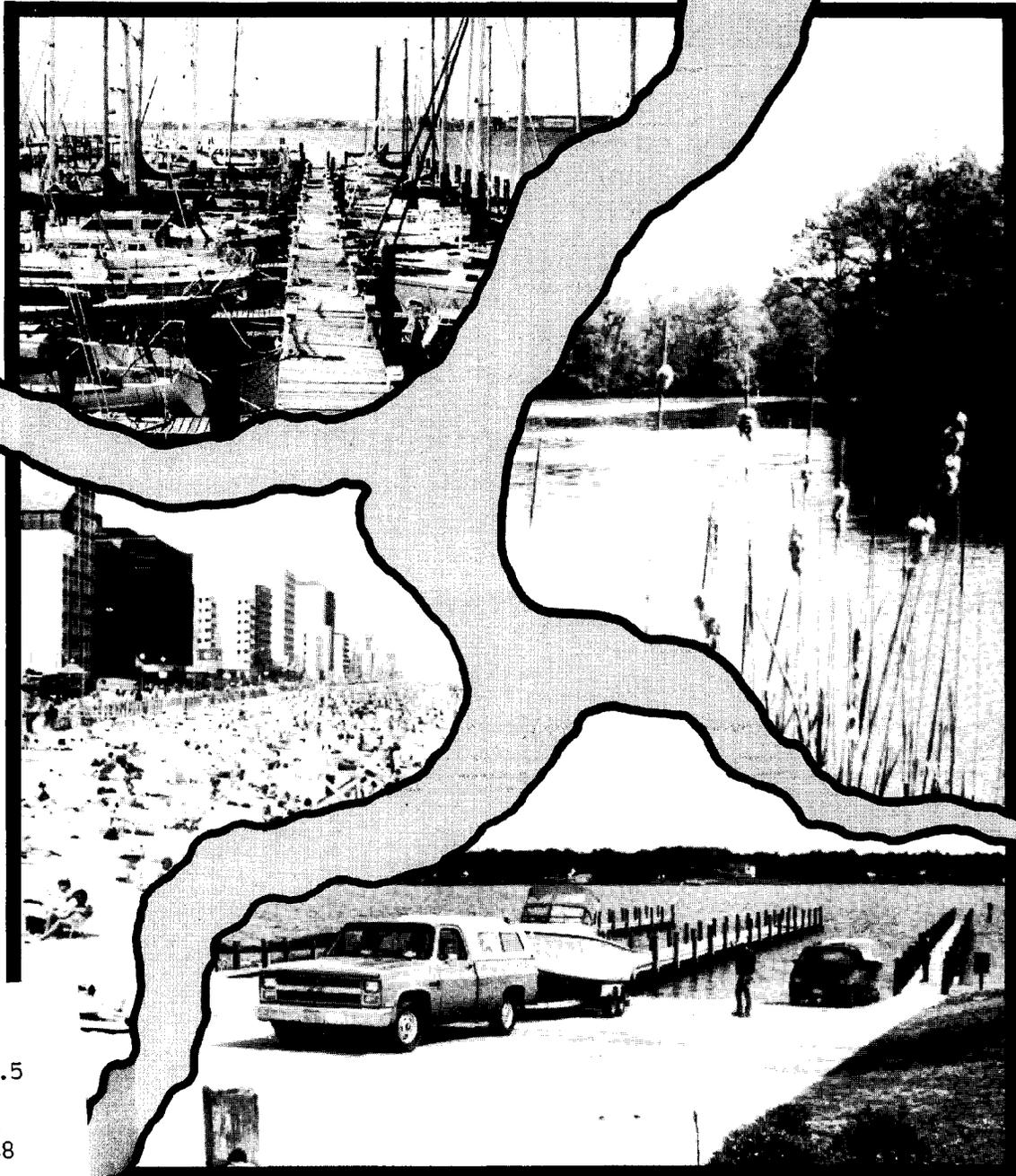


# THE WATERS OF SOUTHEASTERN VIRGINIA

VOLUME I: AN ANALYSIS OF WATER ACCESS NEEDS

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PREPARED BY: SOUTHEASTERN VIRGINIA PLANNING DISTRICT COMMISSION - JUNE 1988

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# THE WATERS OF SOUTHEASTERN VIRGINIA

## Volume I: An Analysis of Water Access Needs

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## EXECUTIVE SUMMARY

Southeastern Virginia is renowned for the wide variety of recreational opportunities provided by the region's twenty-five major water bodies. The region is also one of the fastest growing in the country. This growth has resulted in greater participation in water-based recreation and a corresponding increase in the need for additional water access facilities. Due to the concentration of new development along the region's shorelines and the escalation in the value of waterfront land, local governments have found it increasingly difficult to meet water access needs. This report examines this problem from a regional perspective and offers recommendations for its resolution.

The objectives of this report are: (1) to identify access opportunities and deficiencies throughout the region for all types of water-dependent recreational activities, and (2) to suggest ways that local governments can individually or collectively take advantage of the opportunities and rectify the deficiencies. To meet these objectives, this report contains the following:

Volume I: An Analysis of Water Access Needs. This volume contains a regional needs assessment, which analyzes the ability of existing resources to meet regional recreation demand; an identification of those areas, which are deficient in waterfront access opportunities; proposed siting and design criteria for developing water access facilities; and recommended strategies for use by local governments to improve waterfront access.

Volume II: A Regional Waterways Guide. This volume contains an inventory of local water bodies and a proposed regional scenic waterways system.

### ASSESSMENT OF THE REGION'S WATER-ORIENTED RECREATION NEEDS

In assessing the region's water-oriented recreation needs, the ability of water and shoreline resources to satisfy the demand for boat-dependent and shoreline-dependent recreational activities is considered. The ability of existing water access facilities to adequately serve the users of these resources is also evaluated.

### LOCAL WATER AND SHORELINE RESOURCES

As part of the preparation for the 1984 Virginia Outdoors Plan, the Virginia Division of Parks and Recreation (VDPR) conducted needs assessments for each of the State's eleven recreation planning regions, including Hampton Roads. These assessments were based on a statewide participation survey conducted in 1982 for twenty-six outdoor recreation activities. They included water-oriented activities such as power boating, water skiing, sailing, fishing, canoeing and beach swimming/sunbathing. The results of the VDPR's Hampton Roads assessment are used in this study to analyze the ability of the region's water and shoreline resources to meet water-dependent recreation demand.

The VDPR assessment indicates that the region has sufficient water and shoreline resources to satisfy existing and projected demand for most water-oriented recreational activities. Exceptions include water skiing, for which there is a significant shortage of suitable water acreage, and surfing, for which there is an extreme deficiency of designated surfing beaches during restricted use periods. Known and potential waterway use conflicts would reduce the ability of the region's waters to accommodate recreational activities. The VDPR assessment does not account for those conflicts.

#### **WATER ACCESS POINTS**

Although the VDPR needs estimates indicate that the region has sufficient water and shoreline resources to meet most of the demand, access to these resources is severely limited in much of the region. The adequacy of the region's water access facilities is discussed in terms of boat access (boat ramps, marinas and canoe put-in/take-out points) and pedestrian access (for swimming, sunbathing, surfing, shore fishing and so forth).

#### **BOAT ACCESS FACILITIES**

It is estimated that there are more than 28,000 State registered and Coast Guard documented motorboats and sailboats in Southeastern Virginia. This estimate does not include the large number of out-of-region boaters who visit Southeastern Virginia to take advantage of the region's numerous recreational opportunities. Also, local boat owners who register their boats outside of the region to avoid local taxes are not included. Considering only the State registered and Coast Guard documented boats, it is estimated that approximately 4,900 boats are kept at the region's sixty-seven marinas and 16,800 boaters depend on the region's 105 boat ramps. The remaining boats use "back yard" slips, ramps or moorings, or are tied to offshore moorings in public waters.

Nearly all of the marinas are filled to capacity during the summer months, some with lengthy waiting lists. Boat ramps providing access to tidal waters, especially to the Atlantic Ocean and lower Chesapeake Bay, often experience extreme overcrowding during the warmer months. Ramps providing access to freshwater systems are most heavily used, often to the point of overcrowding, during the spring months. Ramps located on water bodies which do not attract significant recreational use rarely, if ever, are used to their capacities.

Nearly all of the region's canoeable water bodies have a sufficient number of conveniently situated canoe put-in/take-out points to satisfy access needs. Although canoe access points are generally adequate in number and location, there are access problems such as limited parking and steep, brush covered banks.

#### **SHORELINE AREAS ACCESSIBLE TO PEDESTRIANS**

Adequate pedestrian access to and along the shoreline is essential for such recreational activities as beach swimming, surfing and shore fishing. There are also

a number of recreational pursuits which do not require shoreline access. Because of its aesthetic qualities, the shoreline is often the preferred location for participation in these activities, including sunbathing, jogging/hiking/strolling, picnicking, sight-seeing and wildlife observation. This report separates shoreline that is used for recreational activities into three categories: (1) beachfront which, in most cases, is open to all shoreline-dependent recreational activities, (2) fishing areas which lack swimming opportunities, but where most other activities are possible, and (3) other shoreline which is open for recreational use, but where swimming and fishing are not permitted or are undesirable.

#### BEACHFRONT

Of the region's 45.1 miles of beachfront, 30.1 miles are technically open to the public for swimming and other beach-oriented activities. Not all of this "open" beachfront is fully accessible. Access to 18.0 miles of the region's beachfront is "unrestricted" which means there is both parking and pedestrian access from behind the beach area. The number and spacing of pedestrian access points are generally adequate. Inadequate parking, however, is a major impediment to beach access along most of the "unrestricted" beachfront.

Access is "restricted" along 16.4 miles of the region's open beaches. Physical or institutional constraints impede full access. These constraints include no road access, no pedestrian access from behind the beach area, no parking facilities, ownership disputes, or restrictions which close beaches during certain periods or which severely limit recreational usage.

Approximately 10.7 miles of the region's beaches are closed to the general public for recreational use. Nearly all of these beaches front four military installations.

#### FISHING AREAS

Approximately five percent of the region's 1,200 to 1,500 miles of tidal and non-tidal shoreline is open to the general public for recreational use. Only a small portion of this waterfront is suitable for shore fishing. Therefore, most of the region's water bodies are deficient in shore fishing opportunities.

#### OTHER SHORELINE RECREATION AREAS

In Southeastern Virginia, waterfront locations often provide scenic vistas in an otherwise flat landscape. Such vistas serve to enhance the quality of all recreational activities including those that do not require physical access to the water. There is a need along nearly every water body for additional waterfront locations which provide the public with visual access to the region's wealth of water resources.

## **SPECIFIC WATER ACCESS NEEDS, EXISTING PROPOSALS AND ADDITIONAL RECOMMENDATIONS**

This chapter of the report summarizes water access needs in specific water bodies. It lists current proposals to improve water access and presents some additional SVPDC recommendations to resolve access problems and to increase water-oriented recreational opportunities.

### **ATLANTIC OCEAN AND CHESAPEAKE BAY**

The main access problem along Atlantic Ocean and Chesapeake Bay beaches is a shortage of parking within convenient walking distance of the beach on peak days during the summer. This problem is most apparent along the Virginia Beach oceanfront and bayfront. A shortage of parking along Norfolk's bayfront is not yet a severe problem.

Although the region as a whole has sufficient beach acreage to accommodate resident demand, there is localized overcrowding on some beaches that attract significant tourist usage and/or have a narrow width. Overcrowding is most common on peak days in the resort area and of Sandbridge.

Existing proposals to improve beachfront access include cooperative agreements to open beaches at military installations and State parks for public use, beach replenishment, and development of an oceanfront park in the resort area; and, renovation of the city pier, construction of a boardwalk and development of additional pedestrian access points in Ocean View. Additional SVPDC recommendations include increased beach parking opportunities, beach access plans, additional surfing areas, and improvement of bicycle access to beach areas.

### **RUDEE BASIN, LYNNHAVEN RIVER AND LITTLE CREEK**

Because these water bodies provide the most convenient access to popular boating and fishing areas in the Atlantic Ocean and lower Chesapeake Bay, they receive the heaviest demand for boat access. Existing boat access facilities in all three water bodies are unable to accommodate peak period demand. As a result, there is a crucial need for additional facilities. There is also a need for more shoreline that is accessible to pedestrians in some areas of the Lynnhaven and Little Creek systems.

Existing water access proposals include the construction of waterfront waysides and walkways, several marina and boat ramp projects, channel dredging in the Lynnhaven system, and raising the Shore Drive Bridge over Little Creek. Additional SVPDC recommendations include the use of abandoned Old Donation Parkway right-of-way for passive waterfront recreation use and canoe access, inclusion of a portion of the Lynnhaven system in the proposed regional scenic waterways system, and a boat ramp at the East Ocean View Elementary School site.

## **WILLOUGHBY BAY AND ELIZABETH RIVER**

These water bodies also provide excellent access to Hampton Roads and the lower Chesapeake Bay. There is a high demand for boat access. The need for additional access facilities is evidenced by full marinas and severe peak period overcrowding at the few publicly accessible boat ramps. Additional pedestrian access points are needed, and a number of existing public waterfront areas need improvement.

Current water access proposals include several marina and boat ramp projects, waterfront parks and walkways, cooperative agreements between the City of Portsmouth and the Federal Government to allow public access to federally owned shoreline, and the preparation of a shoreline master plan for Scott's Creek. Additional SVPDC recommendations include the creation of special urban waterfront zoning districts and the inclusion of certain upstream segments of the Elizabeth River in the proposed regional scenic waterways system.

## **HAMPTON ROADS AND THE JAMES RIVER**

Although these water bodies are heavily used by recreational boaters, most of the Hampton Roads/James River shoreline is not suitable for the development of boat access facilities. There is, however, the potential and the need for shoreline-dependent recreational facilities. The high bluffs found along both shorelines would be ideal for the development of passive waterfront parks. The construction of fishing piers would provide shore fishing opportunities where few currently exist.

Current proposals include the development of public waterfront recreation areas at several locations along the Hampton Roads/James River shoreline, and the construction of a boat ramp at Tidewater Community College. Additional SVPDC recommendations include the construction of fishing piers and platforms at several locations and the development of a public waterfront recreation area at Fort Boykin Historic Park.

## **NANSEMOND RIVER, CHUCKATUCK CREEK, PAGAN RIVER AND LAWNES CREEK**

These water bodies experience a lower demand for boat access facilities than tidal systems in the eastern part of the region because they do not provide convenient access to the lower Chesapeake Bay and Atlantic Ocean. Nonetheless, because there are so few facilities, the demand for boat access to the downstream portions of all four waterways is not being adequately met. Facility capacity problems are compounded by severe downstream shoaling problems in both the Nansemond River and Lawnes Creek. Boat access is particularly poor in Chuckatuck Creek. Pedestrian access for shoreline-dependent recreation activities is also poor in all four systems.

Current proposals for improved access to these water bodies call for several marina projects, the dredging of Bennetts Creek, and the development of a public use area at Constants Wharf on the Nansemond River. Additional SVPDC recommendations include the development of new and the improvement of existing ramp facilities, and the inclusion of segments of the Nansemond River, Pagan River and Lawnes Creek systems in the proposed regional scenic waterways system.

#### **BACK BAY, NORTH LANDING RIVER AND NORTHWEST RIVER**

Due to the decline in hunting and fishing success in the Back Bay, a number of boat access facilities have closed, and existing facilities easily accommodate current levels of demand. The North Landing River, unlike the Back Bay, experiences high recreational usage and most boat access facilities are used to capacity during peak periods. There is a significant need for additional boat ramps and marinas throughout the system. The Northwest River is moderately used for recreation. The one boat ramp that provides access to the system is generally able to accommodate boat access demand, although overcrowding occasionally occurs. New access facilities will undoubtedly be needed to serve future demand. Shoreline pedestrian access is currently inadequate in all three systems. Opportunities to develop waterfront recreation areas are limited, however, due to the presence of extensive hardwood swamp and marsh systems.

Existing proposals for improved access to these water bodies include zoning districts which would protect water access in the Back Bay system, additional canoe access facilities in the North Landing system, the formal designation of additional local and State scenic waterways, the development of a Chesapeake city park on Pocaty Creek, and the development of a private marina on the North Landing River. Additional SVPDC recommendations include the development of a public boat ramp on the Northwest River, the improvement of canoe access points on the Northwest River, a study to determine whether a portion of the Northwest River is eligible for inclusion in the State Scenic River System, and inclusion of portions of all three systems in the proposed regional scenic waterways system.

#### **ALBEMARLE AND CHESAPEAKE CANAL AND THE DISMAL SWAMP SYSTEM**

Recreational use of the Albemarle and Chesapeake Canal is moderate to heavy. The existing boat access facilities along the Canal receive heavy usage, but are generally able to accommodate demand. The Dismal Swamp System, which consists of the Dismal Swamp Canal, the Feeder Ditch and Lake Drummond, does not experience heavy recreational usage and existing boat access facilities easily accommodate current demand. Adequate shoreline pedestrian access is lacking along the Albemarle and Chesapeake Canal. In the Dismal Swamp System, pedestrian access is adequate along the Dismal Swamp Canal. Limited access to the Feeder Ditch and the Lake Drummond shorelines is possible only via the Great Dismal Swamp National Wildlife Refuge trail system.

Current water access proposals for these water bodies include shoreline hiking trails and boardwalks, the opening of currently impassable ditches to canoeing, development of a Refuge visitor contact station on the Dismal Swamp Canal, and resumption of Lake Drummond boat tours. The SVPDC recommends inclusion of existing City of Chesapeake scenic waterway trails in the proposed regional scenic waterways system.

#### **NORFOLK, PORTSMOUTH AND SUFFOLK RESERVOIR SYSTEMS AND MOUNT TRASHMORE LAKES**

Of the twenty-six manmade lakes comprising these four systems, twenty-two are accessible to the public for recreational use and sixteen are stocked for fishing. Boat access demand is heaviest and ramps may be crowded during the spring months when freshwater fishing is at its peak. Much of this excess demand could be accommodated through the improvement of existing ramp facilities. Because most of these lakes are water supply impoundments, pedestrian access to the shoreline is non-existent or limited on most lakes.

Water access proposals currently being considered include programs to improve existing ramp facilities and to develop additional shoreline recreational facilities on the Norfolk, Portsmouth and Suffolk Reservoirs. SVPDC recommendations include the construction of additional shore fishing facilities, the development of a regional park at Stumpy Lake, and inclusion of certain lakes in the proposed regional scenic waterways system.

#### **BLACKWATER AND NOTTOWAY RIVERS**

In the upstream areas of these two rivers, recreational activity is light to moderate. Boat ramp facilities are currently able to accommodate demand. Recreational usage is generally moderate in downstream areas, but can become heavy during peak periods. Ramps can become overcrowded on peak days. The waters of the lower Nottoway are sometimes overcrowded with water skiers. Pedestrian access to both rivers is extremely poor.

Current water access proposals include waterfront parks along the Blackwater River in the Franklin area, additional boat access facilities along both rivers, and inclusion of a portion of the Blackwater River in the State Scenic River System. The SVPDC recommends considering the inclusion of segments of both rivers in the State Scenic River System and the proposed regional scenic waterways system.

## **THE SITING, DESIGN AND CONSTRUCTION OF WATER ACCESS FACILITIES**

Because water access facilities can impact or be impacted by the surrounding environment, their development must take into account a number of environmental, social and economic issues. Many of these issues are addressed through federal, state and local regulatory procedures, while other non-regulated issues can be resolved through the careful siting and design of water access projects. Depending on the nature and scope of a project, development of a water access facility may require a U.S. Army Corps of Engineers permit for the discharge of dredged or fill materials; state permits for encroachment on subaqueous lands, wetlands alterations or sand dune alterations; or a local conditional use permit. Criteria used by regulatory agencies are described in the report in detail. They should be followed in the planning and design of access points.

### **BOAT ACCESS FACILITIES**

Marina development has the potential for causing severe environmental impacts. The extent of these impacts will depend on a number of interrelated, project-specific variables. The intensive development of the region's shoreline has eliminated many suitable locations for marina development. As a result, sites proposed for marinas are often environmentally marginal and do not satisfactorily meet the criteria necessary to obtain federal, state and local permit approval.

The environmental impacts of boat ramp development are generally much less severe than those associated with marina development. However, depending on the project, a boat ramp project may be subject to federal and state permitting requirements. As with marinas, the development of boat ramps is hindered by a scarcity of undeveloped, environmentally suitable shoreline.

Compared to marinas and boat ramps, the development of canoe access points has few environmental impacts, requires little in the way of construction and maintenance work, and is relatively inexpensive. Federal and state permits are generally not required for canoe access. Facilities proposed for sites owned by the Virginia Department of Transportation (VDOT), such as bridge crossings, require a VDOT special use permit.

### **SHORELINE PEDESTRIAN ACCESS AREAS**

Most of the region's unrestricted beachfront has been developed for public use. If, however, opportunities arise for opening currently restricted or closed beaches to public use, consideration will have to be given to support facility requirements and potential environmental impacts. Alterations to primary dunes may require a state or local sand dune development permit.

Development of a shore fishing area may be as simple as opening up a stretch of shoreline to fishing or as extensive as the construction of an open water pier. Pier construction may be subject to federal and state regulatory requirements.

The development of shoreline recreation areas that do not include physical access to the water generally has minimal impact on the environment. If elevated walkways and/or observation platforms are constructed over wetlands, dunes or open water, federal and state permitting requirements may apply.

### **STRATEGIES FOR IMPROVING WATER ACCESS**

A number of strategies which local governments may want to consider for improving water access are identified and described. These strategies include various land use controls, land acquisition techniques, state and federal assistance and development programs and cooperative agreements for joint facility use. The advantages and disadvantages of the use of these programs are described. Application of a broad mix of these strategies will be necessary to achieve adequate public access to the region's waters.

### **SOUTHEASTERN VIRGINIA REGIONAL WATERWAYS GUIDE**

The Southeastern Virginia Regional Waterways Guide is found in Volume II of this report. Contained in the Guide is an inventory of the region's twenty-five major water bodies and a proposal for a regional scenic waterways system.

The regional waterways inventory was prepared to assess the recreational potential of Southeastern Virginia's waterways. It consists of detailed fact sheets and maps. The information contained in each fact sheet includes location and general description, tributaries and related water bodies, size, depth, wind and tides, shoreline characteristics, indigenous flora and fauna. Appropriate recreational activities and facilities, such as swimming beaches, fishing access points, boating constraints, recreational marina slips and boat ramps, and canoe put-in/take-out points are also described. The maps accompanying the fact sheets show the locations of boat access facilities and other shoreline access areas.

The second section of the Regional Waterways Guide proposes a regional scenic waterways system which would serve canoeists and users of other small, non-motorized craft. Included in this section are descriptions of possible waterway trails and a discussion of various waterway system development issues.

## GLOSSARY

### Access, Formal

Describes a public water access point which has been specifically designed for boat access.

### Access, Informal

Describes a public water access point which has not been specifically designed for boat access.

### Activity Day Method

A needs assessment technique employed by the Virginia Division of Parks and Recreation in 1982 and used in this study to estimate the regional resident demand for various outdoor recreation activities.

### Atlantic Intracoastal Waterway

An inland waterway which begins at Mile Zero in Norfolk, Virginia and ends at Mile 1095 in Miami, Florida.

### Bulkhead

Structure or partition built, usually along a shoreline, to prevent erosion.

### Borrow Area (Pit)

A source of earth fill material used in the construction of embankments or other earth fill structures.

### COE

U.S. Army Corps of Engineers

### CRM

Coastal Resources Management

### Culvert

A drain or conduit under a road or embankment.

### Design Day Demand

Recreational demand on the peak day of an average week in the prime season.

Dike

An embankment to confine or control water, especially along the banks of a river to prevent overflow.

Downstream

In the direction of the mouth of a stream.

Estuarine

Pertaining to areas where freshwater meets saltwater (e.g., bays, mouths of rivers, salt marshes and lagoons).

Fastland

The relatively stable land found behind the immediate shoreline. The fastland is the site of most shoreline development.

Fetch

A continuous expanse of open water.

Groin

A rigid structure built at an angle (usually perpendicular) from the shore to protect it from erosion or to trap sand.

Habitat

The place, and the characteristics and conditions of that place, where an organism lives.

Hardwoods

Trees generally characterized as deciduous and having broad, flat leaves.

Head Boat

Commercial sportfishing boat providing recreational fishing opportunities for large groups of people.

Headwaters

The source of a stream.

LWCF

Land and Water Conservation Fund.

Marina

Small boat harbor or boat basin providing dockage, supplies and repair services for pleasure craft.

Marsh, Embayed or Creek

Marsh occupying a drowned creek valley.

Marsh, Extensive

Marsh with extensive acreage where the length and width are roughly comparable.

Marsh, Fringe

Marsh which borders a shoreline and generally has a greater length than width or depth.

M.L.W. (Mean Low Water)

Average height of low waters over a nineteen year period.

Mean Lunar Tide Range

The difference in height between the mean high water and the mean low water.

NWR

National Wildlife Refuge

Pier

A structure, usually of open construction, extending into the water from the shore. It serves as a landing and loading place for vessels, or for recreational purposes.

Piles

Long, heavy timber or section of concrete or metal driven or jetted into the earth for support or construction.

PDC

Planning District Commission.

Ramp

A sloping platform for launching small craft. In this study, each launch lane at a ramp facility is counted as one ramp.

Riprap

Large facing or protective mound of stones randomly placed to prevent erosion, scour or sloughing of embankment.

Shoaling

The accumulation of sand on the bottom of a body of water constituting a hazard to navigation.

Shoreline, Immediate

The buffer zone between open water and the fastland. The immediate shoreline generally consists of beach, marsh or swamps.

Surge

The rise above normal water level along a coast due only to the action of wind stress on the water surface.

Tide, Lunar

The rhythmic rise and fall of oceans and their tributaries caused by the gravitational effects of the moon and the sun.

Tide, Wind

The rise and fall of water level along the coast due only to the action of wind stress on the water surface.

Tidal Flat

A marshy or muddy area that is covered and uncovered by the rise and fall of the tide.

Upland

Land above the lowlands along streams.

Upstream

In the direction of the headwaters of a stream.

VCOE

Virginia Council on the Environment.

VCRMP

Virginia Coastal Resources Management Program.

VDOT

Virginia Department of Transportation.

VDPR

Virginia Division of Parks and Recreation

VGIF

Virginia Department of Game and Inland Fisheries.

VOF

Virginia Outdoors Fund.

Water, Brackish

Water with a salinity lower than seawater generally in the range of 0.5 - 17 parts per thousand.

Water, Fresh

Water with a salinity of less than 0.5 parts per thousand.

Water, Salt

Water with a salinity of greater than 17 parts per thousand (ppt). Seawater has a salinity of 30 - 35 ppt.

WMA

Wildlife Management Area.

## INTRODUCTION

The waters of Southeastern Virginia are the region's greatest recreational resource. Southeastern Virginia has long been a nationally renowned mecca for boaters, fishermen, waterfowl hunters and beach enthusiasts. This region is also one of the fastest growing in the country. With this growth has come a greater number of participants in water-oriented recreational activities, increased private development along the region's shorelines and an escalation in the value of waterfront land. This situation has resulted in a growing inability on the part of government to provide adequate public access to the region's water bodies. This study, which was funded by the Virginia Council on the Environment through the Virginia Coastal Resources Management Program, examines this problem and offers recommendations for its resolution.

## BACKGROUND

The need to improve waterfront access is not limited to Southeastern Virginia. As new development continues to concentrate in the nation's coastal areas, shoreline open space and water access opportunities are disappearing at a rapid rate. In its 1987 report, the President's Commission on Americans Outdoors acknowledges this problem and calls for states to conduct or update inventories of relatively undeveloped shoreline areas and to develop sites where public access is allowed. This recommendation is echoed in the 1987 Chesapeake Bay Agreement which was recently signed by the States of Virginia, Maryland, and Pennsylvania, the District of Columbia and the U.S. Environmental Protection Agency. The Agreement, which is a ten year plan for cleaning up the Bay, calls upon the participating governments to improve and expand public access opportunities by developing a strategy, by December 1990, which would encourage state and federal governments to secure additional tidal shorefront along the Bay and its tributaries. Incorporated in this effort would be the preparation of a baywide inventory of existing water access opportunities to be completed by July 1988.

The Commonwealth of Virginia has acknowledged the problem of inadequate shoreline access in initiatives other than its commitment to the Chesapeake Bay Agreement. In 1982, the Virginia Commission of Outdoor Recreation (now the State Division of Parks and Recreation), conducted the Tidewater Virginia Recreational Boating Access Study. This study concluded that there had been a dramatic increase in participation in boat-dependent recreational activities during the previous decade and that the State and local Tidewater governments would need to more than double efforts to develop water access facilities to meet existing and projected 1990 demand. The 1982 Outdoor Recreation Demand Survey, which was conducted by the State Division of Parks and Recreation (VDPR) as part of the preparation of the 1984 Virginia Outdoors Plan, also indicated that there was an escalating demand for water-oriented recreational activities and that existing access facilities were deficient in meeting this demand. As a result of the findings of the Tidewater Boating Access Study and the Outdoor Recreation Demand Survey, and in response

to considerable comments received from local government during the plan review process, the need to improve access to Virginia's tidal waters, inland rivers and beaches was incorporated into the goals, objectives and recommendations of the 1984 Virginia Outdoors Plan. More recently, a study conducted by the 1987 General Assembly's Joint Subcommittee to Study the Outdoor Recreation Needs of the Commonwealth concluded that there is a need for a public access grant program which, if approved, would provide funds to localities for the acquisition and development of additional boat launching, fishing, swimming and sunbathing facilities.

In Southeastern Virginia, the need for additional water access opportunities is evidenced by long waits and full parking lots at boat launching facilities, high rental fees and long waiting lists for marina slips, and a scarcity of parking within walking distance of publicly accessible beaches during the summer. The volatility of this issue has been witnessed in the magnitude of public controversies brought about by recent waterfront development proposals or by changes in public policy that diminish or eliminate existing shoreline access. Recent controversies have included the following:

- A decision by the U.S. Fish and Wildlife Service to close the beaches in the Back Bay National Wildlife Refuge to swimming, surfing and sunbathing.
- A decision by the Army Corps of Engineers to close the Dismal Swamp Canal to recreational boaters during the past two summers in order to protect the ecology of the Swamp during droughts.
- A decision by the Virginia National Guard to close 400 feet of Camp Pendleton beachfront which was previously leased to the City of Virginia Beach.
- The initiation of road improvements in Virginia Beach's North End neighborhood which will eliminate on-street parking used by beach users.
- A proposal to build a hotel on the last remaining parcel of open space along the Virginia Beach Resort Area beach. Subsequently, this parcel was purchased for recreational development by the City.
- Attempts by land owners to exclude non-resident beach users from privately-owned beaches along the Chesapeake Bay in Virginia Beach.
- Decisions by private marina owners in the Lynnhaven and Little Creek systems to replace ramp facilities with more profitable uses.

A number of regional and local studies and plans which address the need for additional waterfront access in Southeastern Virginia have been prepared. At the regional level, these studies include the following:

- Regional Open Space Plan: Boat Ramp Element, SVPDC, 1979. This element assesses regional boat launching needs, proposes site and design criteria for locating boat ramps, and suggests a process to encourage regional cooperation in the provision of boat ramps.
- Hampton Roads Boating Study, SVPDC, 1986. Primarily an economic analysis of the boating industry in the Hampton Roads area, this study also provides information about the growing popularity of boating in the region and the inability of local marinas to absorb this growth.

At the local level, the following studies have been conducted:

- Chesapeake Scenic Waterways, City of Chesapeake, 1975. This waterways guide resulted from a program developed and adopted by the City of Chesapeake which designated six scenic waterway trails and identified points of access to these trails.
- Virginia Beach Waterfront Access Study, SVPDC, 1981. This study inventoried beach access points and boat ramps, assessed local waterfront access needs and suggested possibilities for improving access.
- Little Creek Harbor: Boating Problem Assessment, SVPDC, 1984. This report inventoried harbor facilities, characterized existing and future harbor use, and evaluated existing and potential problems resulting from these uses.
- Virginia Beach Scenic Waterway Plan, SVPDC, 1985. This study examined the potential for a system of non-motorized recreational waterways in Virginia Beach. Included in this report is a detailed inventory of the City's inland waterways and the potential access points along them. As a result of this study, the City officially endorsed the concept of a Virginia Beach Scenic Waterway System and formally opened the first segment of this system, West Neck Creek, in September 1986.

Water access needs are also acknowledged and addressed to varying degrees in the following local parks and recreation plans and studies:

- Recreational Facilities Appraisal: the City of Portsmouth, 1985, by the State Division of Parks and Recreation.
- Portsmouth Long Range Recreation and Park and Open Space Plan, 1984.

- Chesapeake Park, Open Space and Recreation Plan, 1977.
- Recreational Opportunities in the City of Norfolk, 1976.

## PURPOSE AND METHODOLOGY

Although the problem of waterfront access has been addressed in a number of studies, there has never been a comprehensive, regional approach to this issue. The objectives of this report are to: (1) identify access opportunities and deficiencies throughout the region for all types of water-dependent recreational activities, and (2) suggest ways that local governments can individually or collectively take advantage of the opportunities and rectify the deficiencies. To meet these objectives, this report includes the following:

1. A regional waterways guide which contains a comprehensive inventory of the region's waterways and existing water access points, and a proposed regional scenic waterways system. This guide is found under separate cover in Volume II.
2. A regional needs assessment which analyzes the ability of existing resources to meet regional recreation demand and identifies those areas which are deficient in waterfront access opportunities.
3. Proposed siting and design criteria for developing water access facilities.
4. Recommended strategies for use by local governments to improve waterfront access.

The water-dependent recreational activities examined in this study fall into two categories. The first category contains those activities that are dependent on boat access points (ramps, marina slips and canoe landings) including boat fishing, power boating, water skiing, sailing and canoeing. The second category contains those activities that depend on access to and use of the shoreline and includes beach swimming, surfing and shore fishing. The second category also includes passive activities which might not require, but are generally enhanced by, shoreline access such as sunbathing, wildlife observation, sight-seeing and picnicking.

Twenty-five water bodies or systems located within the Southeastern Virginia Planning District are studied in this report. The Planning District includes the Cities of Chesapeake, Franklin, Norfolk, Portsmouth, Suffolk and Virginia Beach, and the Counties of Isle of Wight and Southampton. The twenty-five water bodies or systems under study include those surrounding the region (Atlantic Ocean and Chesapeake Bay within three miles of shore, and Hampton Roads and the James River within the corporate limits of Southeastern Virginia localities), the major tidal rivers and creeks that are tributary to these water bodies, the freshwater systems that flow into the Albemarle Sound, and the major manmade water supply impoundments, canals and recreational lakes.

## REGIONAL WATERWAYS GUIDE

The Regional Waterways Guide is found under separate cover in Volume II. The first chapter of this guide is the Southeastern Virginia Waterways Inventory. The purpose of this inventory is to determine the recreational potential of each water body, and to identify existing and potential waterfront access opportunities. Contained in the inventory are detailed fact sheets for each of the twenty-five water bodies or systems under study. Each fact sheet includes information on location and description, tributaries or related water bodies, size, depth, winds and tides, shoreline characteristics, and indigenous flora and fauna. Appropriate recreational activities, and facilities such as swimming beaches, fishing access points, boating constraints, recreational marina slips and boat ramps, and canoe access points are also described. Table 1 is a summary of the boat access facilities (boat ramps, marina slips and canoe put-in/take-out points) listed in the inventory. The table contains the number of public, commercial and private access facilities found in each water body or system. A public facility is owned and operated by a local or state public agency and is open to the general public. Commercial facilities are also open to the public, but are operated as private enterprises. Private facilities are closed to the general public and open only to specified users such as members of private clubs, residents of private communities or military personnel. Figure 1 is a map showing the locations of the facilities summarized in Table 1 and the locations of shoreline segments open to the general public for the various shoreline-dependent recreational activities. These include parks, public facility grounds, wildlife management areas, designated fishing areas and swimming beaches.

The second chapter of the Regional Waterways Guide proposes a regional scenic waterways system which would serve canoeists and users of other small, non-motorized craft. Included in this chapter are descriptions of a number of possible canoe trails. These descriptions contain brief overviews of the trails or trail systems, trail routes, trail distances, average trip times, and trail access points. Also contained in this chapter is a discussion of a variety of waterway system development issues including waterway use conflicts, shoreline use conflicts, safety, maintenance, promotion, administration and cost.

**TABLE 1**  
**SUMMARY OF BOAT ACCESS FACILITIES IN SOUTHEASTERN VIRGINIA**

Water Body	Boat Ramps <sup>1</sup>			Marina Slips <sup>2</sup>			Canoe Access Points <sup>3</sup>
	Public	Commercial	Private <sup>4</sup>	Public	Commercial	Private <sup>4</sup>	
Atlantic Ocean	0	0	0	0	0	0	0
Rudee Basin	3	0	0	0	180	67	3
Chesapeake Bay	0	0	0	0	0	0	0
Lynnhaven River	5	3	4	50	1,021	293	24
Little Creek	0	1	4	0	754	205	11
Hampton Roads	0	0	0	0	0	0	0
Willoughby Bay	2	4	4	0	653	90	0
Elizabeth River	9	2	6	62	717	292	23
Nansemond River	3	2	1	0	84	43	8
Chuckatuck Creek	0	0	0	0	0	0	1
James River	1	0	1	0	0	0	1
Pagan River	1	2	0	0	116	0	5
Lawnes Creek	1	0	0	0	0	0	2
Back Bay	2	4	0	0	0	0	13
North Landing River	2	6	0	0	90	0	28
Albemarle & Chesapeake Canal	0	1	0	0	200	0	0
Northwest River	0	1	0	0	10	0	6
Great Dismal Swamp	2	0	0	0	0	0	8
Blackwater River	2	0	1	0	0	0	4
Nottoway River	3	1	1	0	22	0	5
Mount Trashmore Lakes	0	0	0	0	0	0	1
Norfolk In-Town Reservoirs	2	0	0	0	0	0	2
Suffolk Reservoirs	8	0	0	0	0	0	10
Norfolk Western Reservoirs	4	0	0	0	0	0	4
Portsmouth Reservoirs	6	0	0	0	0	0	6
Total	56	27	22	110	3,847	990	165

Source: *SVPDC Southeastern Virginia Waterways Inventory, 1988.*

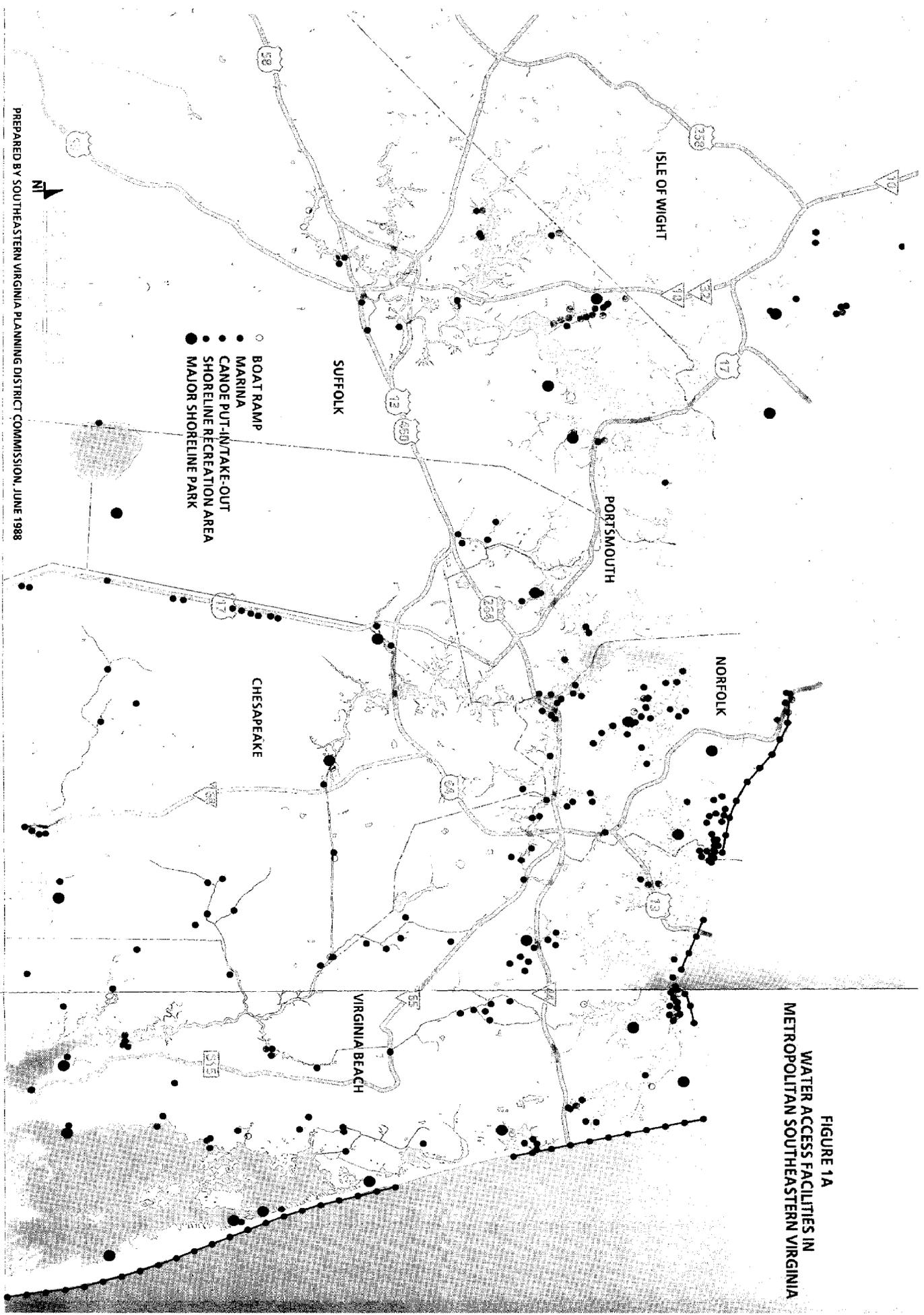
<sup>1</sup> Each launching lane is counted as one ramp.

<sup>2</sup> Includes both wet and dry slips.

<sup>3</sup> Includes boat ramps if they provide access to canoeable waters.

<sup>4</sup> Includes facilities belonging to private clubs, private communities, military installations or schools. Not included are private "backyard" facilities found at private residences.

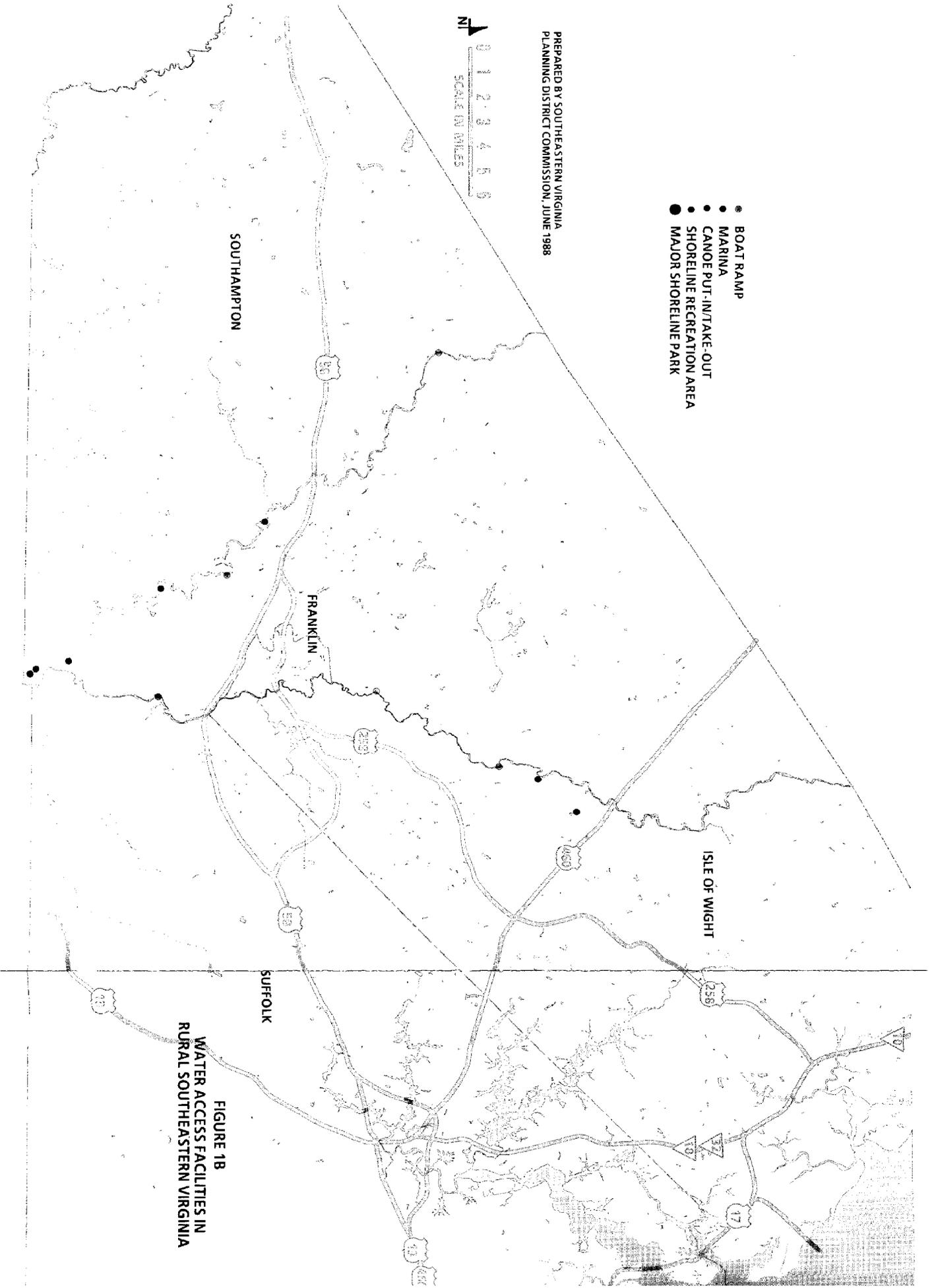
**FIGURE 1A**  
**WATER ACCESS FACILITIES IN**  
**METROPOLITAN SOUTHEASTERN VIRGINIA**



PREPARED BY SOUTHEASTERN VIRGINIA PLANNING DISTRICT COMMISSION, JUNE 1988

- BOAT RAMP
- MARINA
- CANOE PUT-IN/TAKE-OUT
- SHORELINE RECREATION AREA
- MAJOR SHORELINE PARK

PREPARED BY SOUTHEASTERN VIRGINIA  
PLANNING DISTRICT COMMISSION, JUNE 1988



**FIGURE 1B**  
**WATER ACCESS FACILITIES IN**  
**RURAL SOUTHEASTERN VIRGINIA**

## ASSESSMENT OF THE REGION'S WATER-ORIENTED RECREATION NEEDS

There are two steps in assessing Southeastern Virginia's water-oriented recreation needs. The first is to determine whether there are sufficient unrestricted water and shoreline resources to satisfy demand for boat-dependent and shoreline-dependent recreational activities. The second step is to determine whether existing water access points adequately serve the users of these resources.

### LOCAL WATER AND SHORELINE RESOURCES

In brief, a recreational needs assessment compares the supply of a resource or facility with the demand for that resource or facility. If demand exceeds supply, then the difference represents a need. There are a number of techniques for comparing supply and demand to determine need. One of the more commonly used techniques, the activity day method, was employed by the VDPR in conducting a needs assessment for the 1984 Virginia Outdoors Plan. The first component of this regional needs assessment, an analysis of the adequacy of existing unrestricted water and shoreline resources, is based on the results of the VDPR assessment.

The VDPR assessment was based on a participation survey conducted in 1982 for twenty-six outdoor recreation activities in each of the VDPR's eleven recreation planning regions, including Hampton Roads. In employing the activity day method, the participation rates derived from the survey were used with VDPR generated capacity, turnover and peak participation assumptions to estimate regional resident demand for each activity on the peak day of an average week during the prime season (also known as the "design day"). The demand estimates were then compared to existing supply totals to determine need. A more detailed description of the activity day method and the assumptions used by the VDPR in its application is found in Appendix A. Participation survey data and activity day method results were obtained from several VDPR documents including the 1984 Virginia Outdoor Plan, Virginia Outdoor Recreation Demand, Supply and Needs: 1982-1990-2010, and the Tidewater Virginia Recreational Boating Access Study.

Although the activity day method is one of the more stringent recreational needs assessment techniques, it does have several deficiencies when used to estimate regional demand for recreational water and shoreline resources. These deficiencies are as follows:

- The capacity, turnover and peak participation assumptions were developed for the State as a whole and may not reflect local conditions.
- Demand estimation is based on actual participation only and does not take into account latent demand that might be suppressed as a result of inadequate water and shoreline access.

- The participation survey included local residents only and not tourists or residents of adjacent regions who travel to Southeastern Virginia to participate in water-oriented recreation. On the other hand, it assumes that local residents restrict their activities to local facilities and resources only and do not travel outside of the region to recreate. It may be that in-coming tourist demand and out-going resident demand balance each other to some degree, but, given the region's wealth of recreational resources, there is undoubtedly more in-coming than out-going demand.
- The activity day method addresses each recreational activity separately and does not allow for possible use conflicts. For instance, application of the activity day method may indicate that the region has sufficient water area to accommodate resident design day sailing demand. Not considered, however, is that the same water area may be simultaneously used for other activities such as power boating, fishing and water skiing. Simultaneous usage may create conflicts that could affect the water area's capacity to accommodate sailing demand.

For the purposes of interpreting the results of the VDPR assessment, it is important to know that the latter three deficiencies most likely result in an underestimation rather than an overestimation of demand.

Before presenting the results of the VDPR assessment, it is important to note that VDPR's demand estimates were adjusted in two ways by the SVPDC staff to make them more useful to this study. First, because the VDPR's Hampton Roads Recreation Planning Region includes both the Peninsula and Southeastern Virginia regional planning districts, the demand estimates for the entire recreation region had to be disaggregated to produce estimates for Southeastern Virginia only. This was done by assuming that the ratio of Southeastern Virginia's demand to the total demand of the recreation region is equal to the ratio of Southeastern Virginia's population to that of the entire region.

The second adjustment increased 1982 demand estimates to reflect an increase in the region's population. The VDPR participation survey, though conducted in 1982, relied on 1980 population figures. The demand estimates were therefore adjusted upward to reflect the 1986 Tayloe-Murphy Institute population estimates for Southeastern Virginia. Demand estimates for 1995 were also developed using SVPDC population projections. For both the 1986 adjustment and the 1995 projections, change in demand is proportionate to change in population. This assumes that demand is constant and immune from the influences of economic trends, demographic shifts, changes in the popularity of different recreational activities, and environmental factors which might affect the quality of recreational experiences. This, of course, is a potentially erroneous assumption, but it is not within the scope of this study to predict demand influencing factors.

The water-oriented recreational activities addressed in the VDPR assessment include power boating, water skiing, sailing, fishing, canoeing and beach swimming/sunbathing. Surfing was not included in the 1982 survey, but was analyzed in the State's 1972 Outdoor Recreation Demand Survey. The 1972 demand estimates for surfing were therefore adjusted to reflect the estimated 1986 population. Listed below, under each of the water-oriented recreational activities analyzed, are summaries and interpretations of the adjusted results of the VDPR needs assessment. The reader is reminded that the VDPR assessment only addresses the adequacy of existing water and shoreline resources for recreational uses and does not address the adequacy of access to these resources. The access issue will be examined later in this chapter.

### POWER BOATING

For the purposes of this study, power boating is defined as the use of a power boat for the sole purpose of cruising and not for other recreational activities such as fishing or water skiing. Nearly seventeen percent of the region's population participates in power boating and the average participant accounts for ten activity days per year. Approximately 18,000 acres of boatable water are required to meet the estimated regional design day demand. By 1995, regional design day demand is expected to increase to 20,000 acres. Of the region's approximately 200,000 acres of water, a conservative estimate of water area open to and suitable for some kind of power boating is 150,000 acres.<sup>1</sup> It should be noted, however, that the definition of suitable boating waters can vary significantly when consideration is given to boat size, wind and tidal conditions, and to waters that may be boatable, but are aesthetically undesirable. Despite possible reductions in boatable waters due to these factors, and despite the additional, unmeasured demand from tourists and out-of-region boaters, it appears that there is more than enough boatable water acreage in Southeastern Virginia to satisfy existing and projected power boating demand.



ALBEMARLE AND CHESAPEAKE CANAL, INTRACOSTAL WATERWAY

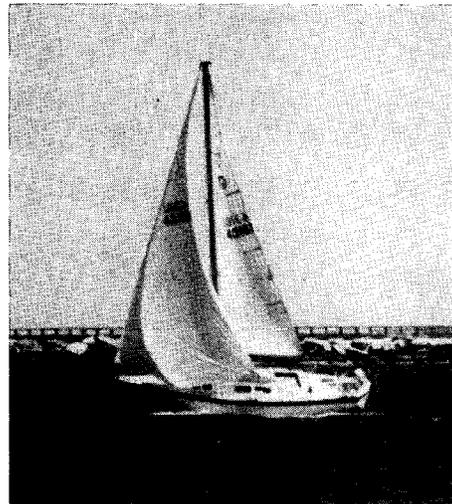
### WATER SKIING

Water skiing is participated in by approximately eight percent of the region's population and the average participant accounts for approximately eighteen activity days per year. It is estimated that 29,000 acres are needed to satisfy demand on a design day. By 1995, design day demand is projected to increase to 32,000 acres. It is estimated that approximately 27,000 acres of water in Southeastern Virginia are suitable for water skiing.<sup>2</sup> This means that, on a design day, regional

demand for skiable water area exceeds supply. This finding is consistent with the observations of local water skiers who report very crowded skiing conditions in such prime skiing areas as the North Landing River, Broad Bay in the Lynnhaven River system and in the upper reaches of the Southern Branch of the Elizabeth River. This situation can only worsen as the region's population continues to grow.

#### SAILING

Approximately ten percent of Southeastern Virginia's residents participate in sailing and the average participant accounts for thirteen activity days per year. It is estimated that design day demand for sailing area is approximately 11,000 acres. Projected 1995 demand is 12,000 acres. An estimated 125,000 acres of water are suitable for some type of sailing<sup>3</sup>. Not all of the water area suitable for sailing is appropriate for all types of sailing craft, but given the substantial difference between demand and supply, it can be assumed that the region, as a whole, has sufficient sailing areas to accommodate existing and projected design day demand.



SAILING THE CHESAPEAKE BAY

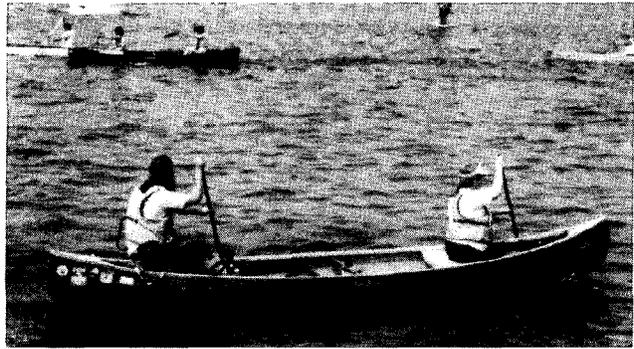
#### FISHING

With a 26% participation rate, fishing is one of the more popular recreational activities in Southeastern Virginia. It is estimated that the average participant goes fishing 21 times per year. Approximately 22,000 acres of water are required to meet existing design day fishing demand and it is projected that this number will increase to 25,000 acres by 1995.<sup>4</sup> Nearly all of the 200,000 acres of water in the 25 water bodies under study are open to fishing. Obviously, not all water areas support the types and quantities of finfish necessary to attract sport fishing activity. The productivity of a water body is dependent on such factors as past fishing pressures, water quality, fish migratory patterns and habitat management programs. For these reasons, it would be quite difficult to estimate the existing quantity of productive sport fishing waters. Given the difference between the demand for and the total supply of water area open to fishing, however, it can be assumed that there are sufficient fishing areas to meet existing and projected design day demand.

#### CANOEING

Nearly eight percent of the region's population participates in canoeing. An estimated 180 miles of canoe streams are required to meet existing demand on a design day. By 1995, there will be a demand for approximately 200 miles of streams.

There are an estimated 281 miles of canoeable streams in Southeastern Virginia<sup>5</sup>. This estimate includes major streams only and not minor tributaries, or canoeable open waters such as bays or lakes. From these findings, it is evident that the region's canoeable water areas will adequately accommodate existing and projected design day canoeing demand.

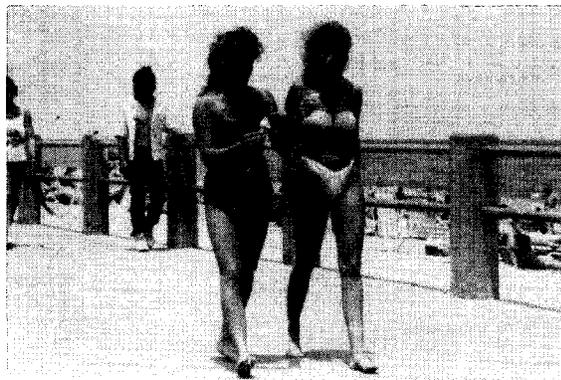


CANOING THE ELIZABETH RIVER

### BEACH SWIMMING AND SUNBATHING

Beach swimming and sunbathing are by far the most popular water oriented outdoor recreational activities in Southeastern Virginia. According to the VDPR assessment, an estimated 51% of the region's population participates in one or both of these beach activities and the average beach enthusiast goes to the beach about 40 times per year. To accommodate regional resident demand, an estimated 523 acres of beach are required on a design day. By 1995, 579 acres will be required. Because the region's beaches attract large numbers of tourists and out-of-region day visitors and the VDPR assessment estimates resident demand only, it can be assumed that these figures underestimate actual demand.

Disregarding accessibility problems, 30.1 miles of Southeastern Virginia's beaches are open to the public for swimming and sunbathing. Translating miles of beach into beach acreage requires making certain assumptions about beach width. Table 2 shows acreage totals under a number of beach width scenarios, and shows the percentage of existing and 1995 demand that can be satisfied under each scenario. Aerial photos indicate that the average beach width is about 200 feet.<sup>6</sup> Using the 200 foot beach width assumption, the 30.1 miles of open beaches would accommodate an estimated 140% of existing design day resident demand. This would mean that the region, taken as a whole, has sufficient beach resources to meet resident demand. Localized overcrowding can and frequently does occur, however, on beaches that are significantly narrower than average, or that attract substantial numbers of non-resident users. The beach fronting the Virginia Beach Resort Area is a case where both of these conditions exist. Despite the apparent ability of the region's beaches to meet resident demand, there are a number of barriers which restrict beach use. These barriers will be discussed later in this chapter.



VIRGINIA BEACH BOARDWALK

## SURFING

According to the adjusted results of the 1972 State assessment, there is a resident demand for 9.5 miles of surfing beach on a design day. During restricted hours (10:00 A.M. to 5:00 P.M. from Memorial Day to Labor Day), however, only 0.5 miles of designated surfing beaches are available to meet this demand. As a result, designated surfing areas become extremely crowded during restricted periods, especially if the surf is up. During non-restricted hours, 18.1 miles of beaches are open to surfing. This supply is more than adequate to meet demand, although the popularity of certain prime surfing areas will usually lead to overcrowding, even during non-restricted hours.

Since completion of the VDPR assessment, the sport of windsurfing has become increasingly popular in Southeastern Virginia. Participation rates for windsurfing were not determined through the VDPR Survey. Also, no capacity or area standards for windsurfing have been developed. Windsurfers can use the same water areas used by boaters and surfers. Space requirements appear to be greater than for surfing. Access does not appear to be a constraint. Space conflicts between windsurfers and boaters have been noted in the Lynnhaven System and between windsurfers and beach users. This issue should be addressed in the next VDPR participation survey.

As can be seen from the above discussions, with the exception of water skiing areas and designated surfing areas, the region has sufficient water and shoreline resources to satisfy existing and projected demand for the water-oriented recreational activities included in the VDPR assessment. The VDPR assessment did not specifically address shore fishing or shoreline-dependent passive activities such as wildlife observation, sight-seeing, picnicking and so forth, but it appears that there is sufficient potentially accessible shoreline to satisfy the demand for these activities.

**TABLE 2**  
**BEACH ACREAGE AS A PERCENT OF DEMAND**  
**Width Scenarios**

	50 Feet	100 Feet	150 Feet	200 Feet	250 Feet	300 Feet	350 Feet
Beach Open to General Public (in acres)	182	365	547	730	912	1,094	1,277
Percent of 1986 Demand	35%	70%	106%	140%	174%	209%	244%
Percent of 1995 Demand	31%	63%	96%	126%	158%	189%	221%

*Source: Southeastern Virginia Planning District Commission, 1988.*

Having reached the conclusion that there are adequate water and shoreline resources to meet most of Southeastern Virginia's water-oriented recreational needs, the next question is whether there is sufficient access to these resources. This will be addressed in the next section of this chapter.

## WATERFRONT ACCESS POINTS

The discussion of the adequacy of the region's water access points is divided into two parts: boat access (boat ramps, marinas and canoe put-in/take-out points) and pedestrian access (for swimming, sunbathing, surfing, shore fishing and so forth).

## BOAT ACCESS FACILITIES

As the regional participation rates presented earlier in this chapter indicate, a large number of Southeastern Virginia's residents participate in boat-dependent recreational activities. Another indication of the popularity of recreational boating in this region is the number of boats registered with the Virginia Department of Game and Inland Fisheries (VGIF) or documented by the U.S. Coast Guard. The VGIF requires the registration of all motorboats and sailboats over eighteen feet, unless they are documented by the Coast Guard. Coast Guard documentation generally applies to larger boats only (more than 26 feet in length) and obviates the VGIF registration requirement. In 1987, there were 27,413 VGIF registered boats in Southeastern Virginia. Data on the number of Coast Guard documented vessels are not gathered at the local level, but a 1980 estimate put the number of Coast Guard documented vessels claiming a home port in Hampton Roads at slightly more than 1,000.<sup>7</sup> The total number of VGIF registered and Coast Guard documented boats does not include the large number of tourist and out-of-region boaters who visit Southeastern Virginia, especially in the summer, to take advantage of the region's numerous recreational opportunities. Nor does it include local boat owners who register their boats outside of the region to avoid local taxes, but still boat in Southeastern Virginia waters.

The growing popularity of recreational boating in Southeastern Virginia is evidenced by a twelve percent increase in the number of VGIF registered boats between 1977 and 1987. (Table 3 presents the number of VGIF registered boats by locality for 1977 and 1987.) By comparison, population growth was only nine percent during the same period. Another indication of the growing popularity of boat-dependent recreation is a 32% increase in the number of activity days attributable to power boating, water skiing, sailing and fishing between 1972 and 1982 compared to a ten percent increase in population during the same period.<sup>8</sup> The increase in boat ownership and boat-dependent recreational activity relative to population growth is attributable to a strong national and regional economy and a decline in the real price of fuel.

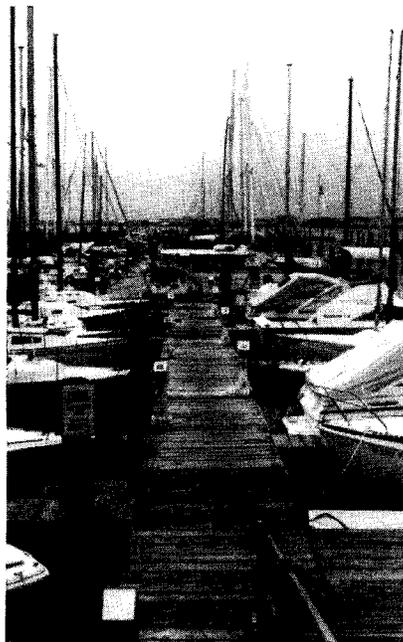
**TABLE 3**  
**STATE REGISTERED BOATS BY LOCALITY, 1977 AND 1987**

	1977	1987	Percent Change
Chesapeake	3,704	4,203	+ 13%
Franklin	249	217	-13%
Isle of Wight	976	1,339	+ 37%
Norfolk	5,417	4,991	-8%
Portsmouth	2,152	2,547	+ 18%
Southampton	1,009	1,166	+ 11%
Suffolk	2,222	2,668	+ 20%
Virginia Beach	8,713	10,282	+ 18%

*Source: Virginia Commission of Game and Inland Fisheries, 1977 & 1987.*

### Marinas

The more than 28,000 owners of motorboats and sailboats in Southeastern Virginia as well as the visiting boaters from outside the region are served by 4,947 boat slips at 67 marinas (2 public, 45 commercial and 20 private). Due to the large number of boaters desiring access to the region's waters, the region's marina facilities are unable to accommodate existing demand. Nearly all of the region's freshwater and saltwater marinas are filled to capacity during the summer months, some with lengthy waiting lists.<sup>9,10</sup> The only exceptions are marinas which purposely keep slips open for transient boaters, or have poor reputations because of theft and vandalism or because improper design has resulted in damaged boats during severe weather conditions.



WILLOUGHBY HARBOR

## Boat Ramps

Considering only the region's VGIF registered boats and assuming that 98% of the region's marina slips are rented during the prime season, approximately 4,898 of the region's registered boats are kept at marinas. To estimate the number of registered boaters depending solely on boat ramps for water access, it is assumed that from 60% - 80% of all registered boat owners depend on boat ramps for water access.<sup>11</sup> Using a conservative assumption of 60%, approximately 16,800 boaters depend on the region's 105 boat ramps (56 public, 27 commercial and 22 private) for water access. This translates to about 160 registered boats per ramp. The remaining 6,352 registered boat owners are not dependent on the marina slips or boat ramps identified in this study and most likely use "back yard" slips, ramps or moorings at private waterfront residences, or are tied to offshore moorings in public waters.

That there is one ramp for every 160 registered boats requiring launching facilities does not fully describe the region's boat ramp shortage. Many boat ramps are unable to accommodate their proportionate share of the total demand because of limited parking, poor design, inadequate maintenance, incompatible shoreline characteristics or restrictions which prohibit usage by the general public. Another reason why boat access demand is not spread evenly among the region's boat ramps is that the differing recreational attributes of each water body attract different types and quantities of recreational boaters. As a result, the peak usage periods of water bodies will vary as will the numbers of boaters requiring boat ramps. This means that, depending on the water body, some boat ramps will experience heavy usage throughout most of the year, others will be used to capacity during certain times of the year only, and others will never realize maximum usage.

For example, due to the availability of a wide range of possible recreational opportunities, ramps providing access to saltwater receive heavy usage throughout the spring, summer and fall months, with peak usage occurring during the summer. A ramp user can anticipate full parking lots and/or long waits to launch and retrieve boats at most tidal ramps on spring, summer and fall weekends and holidays, and, at some locations, on weekdays during the summer. As a result of this situation, there is a significant need for additional boat ramp access to the region's tidal water bodies especially to those providing direct access to the Atlantic Ocean and the Chesapeake Bay (Rudee Basin, Lynnhaven River, Little Creek, Willoughby Bay and Elizabeth River).

Ramps providing access to the region's freshwater systems will be most heavily used in the spring months when freshwater fishing is at its peak. This is the case at the stocked Portsmouth and Norfolk water supply lakes where, on spring weekends and holidays, the existing public ramps are unable to accommodate boat access demand.<sup>12</sup> During the remainder of the year, however, these ramps are generally able to serve adequately all boat ramp users. In this case, the excess boat ramp demand is seasonal.



MUNDEN POINT CITY BOAT RAMPS

Boat ramps located on water bodies that do not have the recreational attributes necessary to attract large numbers of recreational boaters rarely, if ever, are used to their capacities and the existing supply of boat ramps is adequate. Water bodies, where this is the case, include the Back Bay, the Dismal Swamp Canal and the upper reaches of the Blackwater and Nottoway Rivers.

#### Canoe Put-in/Take-out Points

Unlike marina slips and boat ramps, it appears that the region's 165 canoe access points sufficiently meet regional demand. A canoe access point is defined as any location along a canoeable waterway where a canoe, or any other small craft, can realistically be hand carried to the water's edge without crossing private property. Nearly all of the region's canoeable water bodies have an adequate number of conveniently situated canoe put-in/take-out points that meet this definition. The only exception is Chuckatuck Creek where there is only one access point. The adequacy of canoe access opportunities in Southeastern Virginia is due to a relatively small number of canoeists and the versatility of canoes. Because canoes can be hand carried, they can be launched and retrieved wherever there is convenient pedestrian access to the water's edge. Although canoe access opportunities in Southeastern Virginia are generally sufficient in number and conveniently situated along canoeable waterways, there are some access problems that will be discussed in more detail later in this report. These problems include limited parking, and physical constraints such as steep, brush covered banks. Also, even though canoe access is generally adequate throughout the region, localities should still endeavor to take advantage of canoe access opportunities as they arise. Canoe put-in/take-out facilities are relatively inexpensive to develop, and more access opportunities will improve the recreational potential of a waterway.

#### SHORELINE PEDESTRIAN ACCESS AREAS

As mentioned earlier in this report, several water-oriented recreational activities require pedestrian access to and along the water's edge. These activities

include beach swimming, surfing and shore fishing. In addition, there are a number of other recreational activities which do not require shoreline access, but, because of its aesthetic qualities, the shoreline is often the preferred location for participation in these activities. Recreational activities falling into this category include sunbathing, jogging/hiking/strolling, picnicking, sight-seeing and wildlife observation. Given the variety of recreational activities which either require or are improved by pedestrian access to the shoreline, this needs assessment separates shoreline which is used for recreational activities into three categories. These categories include: (1) beachfront along which all of the above mentioned activities are, in most cases, possible, (2) fishing areas where swimming is not allowed, but where fishing and other activities are possible (includes fishing piers, bridges, platforms and docks), and (3) other shoreline which is publicly accessible for recreational use but where swimming and fishing are either not permitted or undesirable. Appendix B lists, by water body, all publicly accessible shoreline areas in the region which fall into each of these categories and Figure 1 shows their locations. The previously identified boat ramps and canoe access points are included as pedestrian access areas only if there is significant shoreline adjacent to the actual ramp or put-in/take-out facility that is appropriate for shoreline-dependent recreational activities. The remainder of this section addresses the access needs associated with each of the three categories of publicly accessible shoreline.

#### Beachfront

Although 30.1 miles of the region's 45.1 miles of beaches are technically open to the general public for swimming and other beach-oriented activities, not all of these beaches are fully accessible. Table 4 shows the degree of accessibility, by beach segment, of Atlantic Ocean and Chesapeake Bay beaches. Beaches designated as "unrestricted public beach" are publicly owned, have parking facilities and provide pedestrian access from behind the beach area. Beaches designated as "unrestricted private beach" are privately owned, but open to the general public, have parking facilities and provide pedestrian access from behind the beach area. "Restricted access" beaches are those that are used by the general public, but have constraints which impede access. These constraints might include no road access, no pedestrian access from areas behind the beach, no parking facilities, ownership disputes, or restrictions which either close beaches during certain periods or severely limit recreational usage. Beaches designated as "not open to public" are those where recreational use by the general public is prohibited. Figure 2 shows the region's beaches and the designations given to each beach segment.

**TABLE 4**  
**ACCESSIBILITY OF ATLANTIC OCEAN AND CHESAPEAKE BAY BEACHES**  
 (Linear Miles)

Beach Segments	Unrestricted Public Beach	Unrestricted Private Beach	Restricted Access	Not Open to Public	Total
False Cape State Park			5.7		5.7
Back Bay NWR			4.3 <sup>1</sup>		4.3
Little Island Park	0.7				0.7
South Sandbridge	0.1	1.5	1.9		3.5
North Sandbridge			1.0		1.0
Dam Neck				3.9	3.9
Camp Pendleton			0.1	0.1	0.2
Croatan	0.8				0.8
Resort Area	2.7				2.7
North End	3.0	0.4			3.4
Fort Story			0.1	3.5	3.6
Seashore State Park				1.0	1.0
Lynnhaven	0.3		1.7		2.0
Ocean Park			1.0		1.0
Baylake Beach			0.6		0.6
Chesapeake Beach		1.0			1.0
Little Creek				2.2	2.2
Norfolk City Beaches	7.5				7.5
Total	15.1	2.9	16.4	10.7	45.1

Source: *Southeastern Virginia Planning District Commission, Virginia Beach Waterfront Access Study, 1981, p. 42.*

<sup>1</sup>Swimming, surfing and sunbathing are prohibited. Beach use is for wildlife oriented activities only.

Forty percent or 18.0 miles of the region's beaches meet the "unrestricted public beach" and "unrestricted private beach" criteria described above. These beaches include Little Island City Park, a portion of South Sandbridge Beach, Sandbridge Park Beach, Croatan Beach, the Resort Area Beach, the North End Beach, Chesapeake Beach and the Norfolk City beaches. Because a beach meets the "unrestricted beach" criteria of providing parking and pedestrian access, it does not mean it is without accessibility problems. A shortage of convenient beach parking creates severe access problems along most of these beaches during the summer months. There are approximately 3,800 off-street parking spaces along unrestricted beaches located in Virginia Beach. A total for on-street parking spaces is not available for all unrestricted beaches, but a survey conducted by the SVPDC in 1987 counted 6,140 on-street parking spaces in the Virginia Beach Resort Area.<sup>13</sup> Parking spaces within convenient walking distance of most unrestricted beaches fill up very quickly on weekends during the summer, especially if the weather is conducive to beach activities. As an indication of the beach parking problem in Virginia Beach, in the summer of 1986, 1,500 cars were towed away for being illegally parked and 7,000 parking tickets were issued along the City's beachfront. This number of parking tickets tripled the number issued in 1984. Areas where the parking shortages create a major impediment to beach access include the Resort Area, the North End, Croatan Beach and Sandbridge.<sup>14</sup>

The number and spacing of pedestrian access points is adequate along most public and private unrestricted beaches. There are about 174 pedestrian access points along these beaches and in most areas they are located about one block apart.<sup>15</sup> A listing of the pedestrian access points along both unrestricted and restricted access beaches is found in Appendix C. Figure 2 shows the access characteristics of the region's beaches. The only unrestricted beach with insufficient pedestrian access is Chesapeake Beach located along the Virginia Beach bayfront.

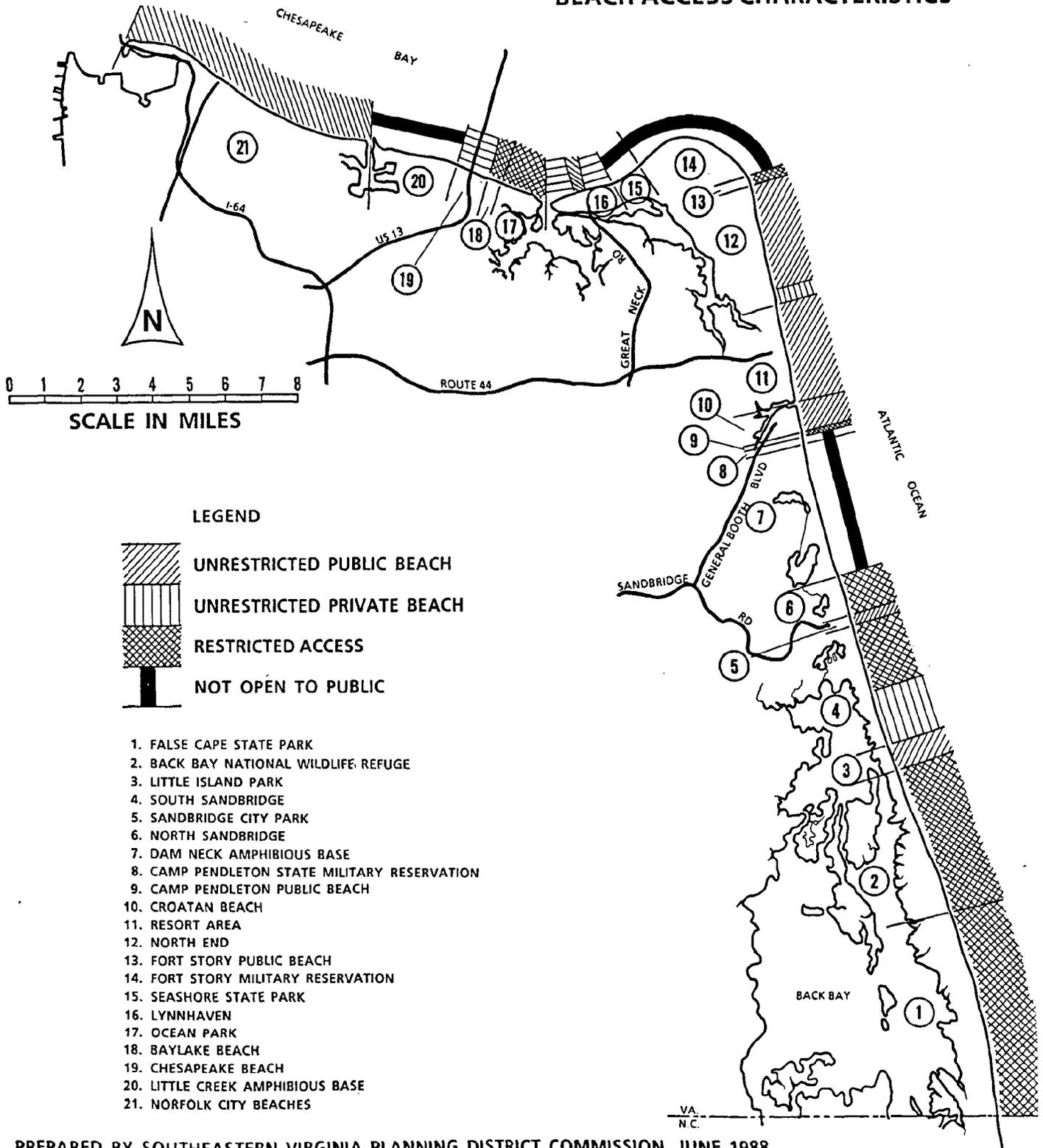


PUBLIC BEACH ACCESS, WILLOUGHBY SPIT

Thirty-six percent or 16.4 miles of the region's beaches have restricted access. Ten miles of these beaches are found in Back Bay National Wildlife Refuge and False Cape State Park. Beach access to the Refuge's 4.3 miles of beach is for wildlife-oriented activities only. Allowable activities include surf fishing, wildlife observation, photography and hiking. Swimming, surfing and sunbathing are not permitted. These three activities are allowed on the 5.7 miles of State Park beaches, but there is no auto access. Access to the State Park and its beaches is possible only by hiking or biking through the Back Bay Refuge, or by boat via the Back Bay.

FIGURE 2

ATLANTIC OCEAN AND  
CHESAPEAKE BAY  
BEACH ACCESS CHARACTERISTICS

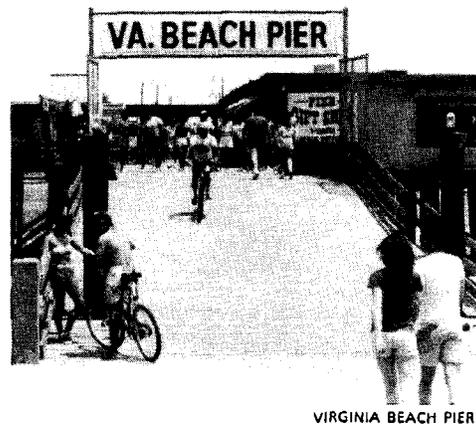


Other restricted beaches include a portion of South Sandbridge Beach, North Sandbridge Beach, Lynnhaven Beach, Ocean Park Beach, and Baylake Beach. These beaches meet the restricted access criteria because there are no or very few on-street or off-street parking opportunities. Also there has been an ongoing dispute between the City of Virginia Beach and some bayfront property owners, especially along Lynnhaven Beach, over public access rights to Bay beaches. This dispute has yet to be resolved and has, in the past, kept non-residents from using bayfront beaches. Access to the Virginia National Guard's Camp Pendleton public beach and the U.S. Army's Fort Story public beach is also restricted because they are subject to periodic closings during military operations.

Twenty-four percent or 10.7 miles of the region's beaches are closed to the general public for recreational use. All but one mile of these beaches front four military installations (U.S. Navy Dam Neck Amphibious Base, Camp Pendleton State Military Reservation, the U.S. Army's Fort Story and the U.S. Navy's Little Creek Amphibious Base). The one mile stretch of non-military beach that is closed to the public is found at Seashore State Park which opens its bayfront beach to park campers only.

#### Fishing Areas

Existing shoreline facilities which provide pedestrian access for shore fishing are shown in Figure 1 and listed in Appendix B. The reader is reminded that pedestrian access to Atlantic Ocean and Chesapeake Bay beaches for all beach activities, including surf fishing, is addressed in the preceding section. Shoreline facilities addressed in this section include fishing areas along publicly owned, non-beach waterfront; shoreline at private shore fishing concessions; public and private fishing piers, platforms and docks; and bridges from which fishing is permitted.



It is estimated that there are between 1,200 and 1,500 miles of tidal and non-tidal shoreline in Southeastern Virginia. A vast majority of this shoreline is in private ownership or is publicly owned for non-recreational uses. Approximately five percent of the region's waterfront is open to the general public for recreational activities, and only a small portion of this waterfront is suitable for shore fishing.<sup>16</sup> Pedestrian access to the shoreline is not the only requirement for shore fishing. The presence of such physical features as marsh, tidal flats, very shallow water, steep banks or dense brush often makes shore fishing impossible or undesirable. Also, not all publicly accessible shoreline fronts water that supports populations of popular game fish. As a result of a shortage of publicly accessible waterfront and the presence of shoreline and water characteristics that preclude fishing, most of the

region's water bodies are deficient in shore fishing opportunities. Water bodies with healthy game fish populations, but with relatively few shore fishing opportunities, include Chuckatuck Creek, the Nansemond, the Pagan, the North Landing, the Northwest, the Blackwater, and the Nottoway Rivers, and the Norfolk and Portsmouth Reservoirs.

Fishing structures (piers, bridge platforms or catwalks, and docks) are often used to enhance fishing opportunities, especially in areas where the shoreline is not suitable for bank fishing. Appendix B and Figure 1 note the locations of such structures throughout the region. Many of the water bodies which currently lack adequate shore fishing opportunities would greatly benefit from the construction of fishing structures.

#### Other Shoreline Recreation Areas

A number of shoreline access areas in Southeastern Virginia are not suitable for swimming or fishing. Due to their waterfront locations, they provide aesthetically pleasing environments which can enhance the quality of such recreational activities as picnicking, sunbathing, wildlife observation, sight-seeing or walking. Because access to the water's edge is difficult or impossible at most of these waterfront areas, the benefits incurred by recreationists are generally visual in nature.

Public shoreline areas can be important resources in that they provide a feeling of open space and offer waterfront scenery. They are particularly valuable in a region like Southeastern Virginia which, because of its flat topography, does not provide many opportunities to enjoy scenic vistas. The visual benefits of a waterfront location can be enjoyed in an urban as well as a natural setting. Many people enjoy Towne Point Park in Norfolk and the Seawall in Portsmouth because they provide views of the urban skyline, the Portsmouth Naval Shipyard and various water activities in the main stem of the Elizabeth River. Natural areas, on the other hand, provide numerous opportunities to observe and study natural vegetation and wildlife.

As mentioned in the previous section, only five percent of the region's shoreline is publicly accessible for recreation use. The remainder is privately owned, or publicly owned and inaccessible. The value of shoreline access should not always be measured by the potential for direct access to the water's edge. There is also a substantial need throughout the region, along nearly every water body, for additional publicly accessible waterfront which provides visual access to the region's wealth of water resources.

## **SPECIFIC WATER ACCESS NEEDS, EXISTING PROPOSALS AND ADDITIONAL RECOMMENDATIONS**

This chapter briefly summarizes water access needs in specific water bodies. It also presents current proposals to improve water access, and, where appropriate, includes additional recommendations to resolve access problems and increase water-oriented recreational opportunities. The current proposals listed in this chapter include projects which are presently being considered or planned by local, state or federal government agencies, or by the private sector. The additional recommendations were developed by the SVPDC staff during the conduct of this study.

For the sake of brevity, contiguous or similar water bodies have been grouped together. The proposals and recommendations presented in this chapter are water body specific. The water access development strategies identified in a later chapter are more general and are potentially applicable to a number of water bodies.

### **ATLANTIC OCEAN AND CHESAPEAKE BAY**

The main access problem along Atlantic Ocean and Chesapeake Bay beaches is a shortage of parking within convenient walking distance of the beach on peak days (weekends and holidays) during the summer. This problem is most apparent along Virginia Beach's ocean and bay beaches. A shortage of parking along Norfolk beaches is not yet a severe problem. However, as the City continues its efforts to revitalize the Ocean View and Willoughby neighborhoods, and as access problems worsen along the beachfront in Virginia Beach, more people will be attracted to Norfolk's beaches and parking problems are likely to develop.

At the regional level, there is sufficient publicly accessible beach acreage to accommodate resident demand. There is, however, localized beach overcrowding on peak summer days along some stretches of the Resort Area and Sandbridge beaches. This is due to heavy usage by tourists and/or a narrow beach width. There is also adequate pedestrian access along most of the region's public beachfront. Exceptions are the False Cape State Park beaches and Virginia Beach's bayfront.

### **EXISTING PROPOSALS**

- A number of studies and plans, including the 1984 Virginia Outdoors Plan, have proposed that local governments establish cooperative agreements with local military installations to allow greater public access to military controlled ocean and bay beaches.
- The state and federal governments are negotiating the possible construction of a paved road through the Back Bay National Wildlife Refuge to provide public shuttle bus service to the False Cape State Park beaches.

- A bill introduced to the 1988 Virginia General Assembly by local state legislators proposed that Camp Pendleton and its beachfront be opened to the public for recreational use. The bill died in committee.
- The U.S. Army Corps of Engineers has prepared a beach replenishment plan which would widen the Resort Area beach by an additional 60-100 feet with dredging spoils from a Chesapeake Bay channel deepening project. This would provide additional beach acreage in an area that experiences beach capacity problems on peak days in the summer.
- The City of Virginia Beach recently matched funds raised by a local citizen's group to purchase a parcel of open space located immediately north of the Virginia Beach Maritime Historical Museum on the Resort Area beach. The current proposal is to develop this parcel into an oceanfront park for passive recreational activities. The City is also in the process of developing small oceanfront parks where stub-end streets currently exist.
- The 1979 Virginia General Assembly adopted a resolution, still in effect, which instructs the Governor to work towards reclaiming portions of the Fort Story beachfront that belonged to the State prior to World War II. The State has been in active pursuit of this objective since 1979.
- The City of Virginia Beach has formally requested that the State open the bayfront beach in Seashore State Park to the public. This beach is currently opened to park campers only.
- A recent report prepared by the Urban Land Institute (ULI) for the City of Norfolk proposes renovation of the Ocean View City Pier and the construction of a boardwalk between the City Pier and Harrison's Pier. The report also proposes the use of jellyfish nets to improve swimming opportunities during the summer months.
- The City of Norfolk plans to develop an additional 20-25 pedestrian beach access points over the next three years.

#### ADDITIONAL RECOMMENDATIONS

- Any future road improvement projects along oceanfront and bayfront beaches should retain or increase on-street parking opportunities as long as adequate traffic flow can be maintained. This recommendation does not apply to the Virginia Beach Resort Area where the City, through its "Streetscape" program, intends to replace much of the area's on-street parking with off-street parking facilities to improve traffic flow. Consideration should also be given to converting existing undeveloped access rights-of-way to off-street parking facilities.

- The City of Virginia Beach should consider or encourage the construction of multi-level parking structures within a three block walk to the beach.
- The City of Virginia Beach should consider the establishment of additional, or the expansion of, existing surfing areas.
- Linkages with existing bikeways and bike storage facilities should be developed in order to provide bicycle access to beach areas with limited parking opportunities.
- The City of Virginia Beach should continue to work towards a resolution of the controversy regarding public access rights along the Chesapeake Bay. To prevent such problems from reoccurring, beach access plans should be developed for residential areas bordering beachfronts. These plans would specifically address conflicts between private property owners and non-resident beach users.

#### **RUDEE BASIN, LYNNHAVEN RIVER AND LITTLE CREEK**

These three water bodies are similar in that they are all located in the most densely populated portion of the region and they provide convenient access to popular fishing and boating areas in the Atlantic Ocean and lower Chesapeake Bay. Due to their locations, these water bodies receive the region's heaviest demand for boat access facilities. Marinas in these systems are filled to capacity, and users of the small number of publicly accessible boat ramps are usually confronted by severe parking problems and long delays to launch and retrieve their boats. There is, therefore, a crucial need for more boat access facilities in all three water bodies. Land suitable for the development of such facilities is at a premium. Most shoreline is either already developed with other uses or has environmental constraints that would preclude the construction of boat ramps and marinas.

In some areas of the Lynnhaven River and Little Creek systems, there is also a need for more shoreline that is accessible to pedestrians. Most of the shoreline in these two systems is privately owned and developed for residential use. There are, therefore, relatively few existing public access opportunities.

#### **EXISTING PROPOSALS**

- The Virginia Beach Resort Area Commission has proposed extending the Oceanfront Boardwalk to pass under the General Booth Boulevard Bridge and along the shore of Lake Rudee.

- A proposal developed by local state legislators to convert Camp Pendleton to a recreational facility includes plans to provide freshwater fishing and boating opportunities on Lake Christine in the Rudee Basin. A bill supporting this proposal was introduced during the 1988 General Assembly Session, but died in committee.
- The Virginia Beach Saltwater Marina Study, prepared by the City, recommended three potential marina sites, two in the Lynnhaven system and one in the Rudee Basin. These sites are as follows:
  1. Property owned by the City known as Davis Island. This site is located west of the Great Neck Road Bridge between Long Creek and the Long Creek Canal.
  2. Private property on Crab Creek just south of the City-owned Winder property.
  3. Private property located on Lake Rudee between the Ocean Way Marina and the Virginia Beach Sport Fishing Center.
- The City of Virginia Beach is planning to construct a six-lane public boat ramp with parking for 200 cars and trailers at a dredge spoil site adjacent to the west side of Lesner Bridge. This facility would also provide for other beach-type recreation of activities.
- The Virginia Beach Mayor's Task Force on the City's Appearance has proposed a "Fisherman's Wharf" near the mouth of the Lynnhaven River which would include restaurants and pedestrian access areas. The Task Force also recommends the creation of public waysides along city streets for public enjoyment of local waterways.
- The City of Virginia Beach is planning to dredge the Eastern Branch of the Lynnhaven River. This will give waterfront homeowners with boats access to navigable waters thus alleviating demand pressure for public and commercial boat access facilities. Ancillary channels to provide access to the City channel have been proposed, and permits applied for, by many homeowners.
- The City of Virginia Beach has designed and will soon begin construction of Great Neck Park which will be located on the banks of Lynnhaven Bay. This park will not provide direct water access, but will provide opportunities for scenic vistas of the Lynnhaven River from elevated walkways and observation platforms.
- The City of Virginia Beach is considering the development of a Nature Park on Owl Creek adjacent to the Virginia Marine Science Museum. Current plans call for the development of interpretive trails, a bicycle path and improvements to the Owl Creek Boat Ramps.

- The 1987 ULI Report prepared for the City of Norfolk recommends that the Shore Drive Bridge be raised in order to allow passage of larger boats which would encourage boat access facility development upstream of the bridge. The City of Norfolk has determined that additional analysis of the economic costs and benefits and engineering feasibility of this proposal is necessary.
- The City of Norfolk has proposed the development of a linear park and waterfront trail along the north shore of Little Creek west of the Shore Drive Bridge.
- A condominium project with 309 private marina slips is proposed for a parcel located on the west side of Little Creek Inlet.
- An existing marina on Fisherman's Cove in Little Creek has proposed a 204 slip expansion.
- The City of Norfolk has proposed the construction of a 637 foot elevated wooden walkway with observation decks which would extend from Tarrollton Community Park over marshes bordering Little Creek. This facility would be used by park visitors wishing to observe marsh vegetation and wildlife.

#### ADDITIONAL RECOMMENDATIONS

- The City of Virginia Beach owns several riverfront parcels left over from the abandoned Old Donation Parkway project. These parcels meet the water at locations where the Parkway would have bridged the Lynnhaven or its tributaries. These locations should be considered for development as possible canoe put-in/take-out points and passive waterfront parks. Intensive recreation activities including boat ramps are inappropriate uses of those sites. Similar facilities could be developed where other public rights-of-way end at the shore of any of these water bodies.
- The spine of the Virginia Beach Scenic Waterway System consists of a canoe trail that runs along the Eastern Branch of the Lynnhaven River and then continues along London Bridge Creek, West Neck Creek and the North Landing River. This trail should be considered for inclusion in a proposed regional scenic waterways system described in the second volume of this report.
- The City of Norfolk should consider constructing a boat ramp on the East Ocean View Elementary School site adjacent to the Ocean View Community Center.

## WILLOUGHBY BAY AND ELIZABETH RIVER

Access problems in these water bodies are similar to those found in the Rudee Basin, Lynnhaven and Little Creek systems. Because Willoughby Bay and the downstream areas of the Elizabeth River provide good access to the waters of Hampton Roads and the lower Chesapeake Bay, there is an extremely high demand for boat access points. Nearly all marinas are filled to capacity, and the few publicly accessible boat ramps are severely overcrowded on peak days in the summer. Also, the Main Stem and Southern Branch of the Elizabeth River form part of the Atlantic Intracoastal Waterway. Transient boaters using the Waterway place heavy demand on local marina facilities, especially during the "migrations" of boaters heading south in the fall and north in the spring. Opportunities for developing new boat access facilities are limited because the vast majority of the shoreline is in private or military ownership, or is environmentally unsuitable.<sup>17</sup>

Although there are a number of opportunities for pedestrian access to the waterfront along these two water bodies, there are still extensive sections of shoreline without access and a number of existing public waterfront areas that need improvement.

### EXISTING PROPOSALS

- The 1987 ULI report prepared for the City of Norfolk recommends that the City develop an approach to the use of the U.S. Navy's dredge spoils site on Willoughby Bay at the south end of 4th View Street for a mixed-use development that would include a marina.
- The City of Norfolk is planning to improve the existing boat ramps at its Willoughby Bay Landing.
- The City of Norfolk has proposed a wooden walkway and observation deck that would extend from the City's tourist information center over the marsh bordering Willoughby Bay.
- The City of Norfolk has proposed a waterfront park on an abandoned landfill site near Lambert's Point which would provide opportunities for passive waterfront recreation activities. A grant application to the National Endowment for the Arts for this project has recently been rejected. Other funding options are being explored.
- The City of Norfolk has proposed two separate but adjacent developments on the Downtown waterfront. The first, Freemason Harbor Park, would provide passive recreational opportunities including pedestrian walkways and an observation deck. The second, the National Maritime Center, would include a museum, a marina and pedestrian walkways.

- The City of Norfolk's 1976 Recreational Opportunities Plan proposes several water access facilities that have yet to be developed. These proposed projects include:
  1. A waterfront walkway along Holly Avenue on the Lafayette River.
  2. Two riverside neighborhood parks on the south shore of the Eastern Branch of the Elizabeth River in the Berkely neighborhood.
  3. The renovation and reopening of the Grandy Park boat ramp.
- The 1984 Portsmouth Long Range Recreation and Park, and Open Space Plan includes a number of projects to improve water access including:
  1. The construction of a boat ramp on Craney Island Creek near the U.S. Coast Guard Base.
  2. A waterfront park at the mouth of Scotts Creek which would include a boat ramp and opportunities for passive waterfront recreation activities.
  3. An expansion of Bayview Park into the Elizabeth River to create an area for passive waterfront recreation activities.
  4. The construction of a boat ramp facility on the southeast side of the Victory Boulevard Bridge over Paradise Creek.
  5. Cooperative agreements between the City and the Federal Government to allow public access to federally owned shoreline for recreational activities.
- The City of Portsmouth is currently preparing a Master Plan for Scotts Creek. This effort was initiated following requests from local citizens groups to explore options for developing the Scotts Creek shoreline for water-oriented residential, recreational and commercial uses.
- The City of Chesapeake has requested funding through the VGIF administered Federal Aid in Sport Fish Restoration Program to construct a boat ramp on city-owned property adjacent to the Jordan Bridge. This site would also be the location of a City waterfront park. Permit applications for this project have been submitted to the regulatory agencies.
- The City of Chesapeake has proposed that a park be developed on a closed landfill located on the Southern Branch of the Elizabeth River near Great Bridge. This park would provide passive waterfront recreational activities.

- A private developer has proposed the construction of a private marina and boat club on the Forbes site at the mouth of Steamboat Creek. Success of this project depends on the resolution of a property ownership dispute.
- A private developer has received the necessary permits to construct a 162 slip marina at the mouth of Scotts Creek.
- The owners of the Elizabeth Cove Condominiums have received the necessary permits to construct a private 56 slip marina for use by the condominium residents.

#### ADDITIONAL RECOMMENDATIONS

- The four cities in the Elizabeth River Basin should consider special zoning districts for urban waterfront along the Elizabeth River. These districts might include height limitations and setbacks to maintain visual access, pedestrian easements to and along the waterfront, provisions for the preservation of waterfront open space, and provision of pedestrian plazas, or land use designations which encourage the development of water access facilities.
- Consideration should be given to the development of passive recreation areas and canoe put-in/take-out points where public rights-of-way, including paper streets, terminate or abut the shoreline.
- Certain upstream segments of the Elizabeth River are suitable for canoeing and should be considered for inclusion in a proposed regional scenic waterways system described in the second volume of this report.

#### HAMPTON ROADS AND JAMES RIVER

Although these water bodies are heavily used by recreational boaters, the potential for developing water access facilities along their shorelines is extremely limited. Nearly all of the waterfront is privately owned and, due to long fetches along most of the shoreline, boat ramp or marina development would require the construction of costly wave barriers. The development of swimming beaches and shore fishing areas is also limited because existing beaches are narrow, are vegetated or composed of clay and rocks, and are often fronted by fringe marshes and tidal flats. Despite these constraints, there is still the potential and need for water-oriented recreational facilities along these shorelines. A few isolated areas do provide enough shelter for boat access facilities, and the scenic vistas provided by the high bluffs found along much of the shoreline suggest that there are excellent opportunities for waterfront passive parks. Also, in areas where shore fishing is

precluded by unfavorable shoreline characteristics, piers would be a means of providing fishing opportunities.

#### EXISTING PROPOSALS

- The 1984 Portsmouth Long Range Recreation and Park, and Open Space Plan includes several proposals to improve water access to Hampton Roads including:
  1. City acquisition of the Craney Island dredge spoil site, once it has reached its capacity, to develop it with a mix of water-related uses including water-oriented recreation.
  2. City acquisition of 122 acres of land along Rivershore Road that is currently owned by the Virginia Department of Transportation for development of a waterfront park.
  3. Establishment of a lease program with the Frederick Campus of Tidewater Community College to acquire a site for the construction of a boat ramp.
- The 1984 Virginia Outdoors Plan recommends that upland areas adjacent to the Ragged Island Wildlife Management area be acquired by the State to increase recreational potential of the site. At present, most of the site is marsh and therefore has limited recreational potential. The Plan also notes the unrealized recreational potential of Tidewater Community College-Frederick Campus.
- The owner of Art's Recreation Facility at Tylers Beach has proposed the development of a swimming beach, a campground and a small boat harbor on a site adjacent to the VGIF Tylers Beach Landing.

#### ADDITIONAL RECOMMENDATIONS

- Consideration should be given to the construction of additional fishing piers and platforms. Possible locations might include the Ragged Island WMA, the U.S. 17 James River Bridge and Fort Boykin Historic Park.
- Isle of Wight County should work with the State Department of Conservation and Historic Resources to provide passive waterfront recreation facilities at Fort Boykin Historic Park.

#### NANSEMOND RIVER, CHUCKATUCK CREEK, PAGAN RIVER AND LAWNES CREEK

These water bodies are tidal tributaries of Hampton Roads and the James River and are popular destinations for many boaters and fishermen. They are not as

heavily used for recreation as the tidal estuaries in the eastern part of the region. Because they are located in less densely populated areas and do not provide convenient access to the popular fishing grounds of the lower Chesapeake Bay and Atlantic Ocean. Despite a lower demand for water access, there is still a severe shortage of water access facilities in downstream areas. This shortage is evidenced by full marinas and frequent long delays at publicly accessible boat ramps during the summer. Capacity problems are compounded by severe shoaling problems downstream of the Bennetts Creek Park and Hog Island WMA boat ramps. Capacity problems are not nearly as acute at water access facilities located in the upper reaches of the Nansemond River. This is because the long distance to Hampton Roads and the slow speed limits encountered along the way tend to discourage boaters and divert them to downstream access facilities. Water access is particularly poor along Chuckatuck Creek which has no marinas and only one unimproved boat ramp on shallow water near the Creek's headwaters in Lone Star Lakes Park.

There are also few opportunities for pedestrian shoreline access along these water bodies. Nearly all of the shoreline is either privately owned or publicly owned but inaccessible. Again, Chuckatuck Creek has poor shoreline access for pedestrians with the only opportunity being at the Creek's headwaters in Lone Star Lakes Park.

#### EXISTING PROPOSALS

- The U.S. Army Corps of Engineers has proposed to dredge a navigation channel in Bennetts Creek. This will improve access to the Nansemond River for boaters using Bennetts Creek Marina and the boat ramp at Bennetts Creek Park. Due to shoaling problems, access to the River is presently possible at high tide only.
- The City of Suffolk proposes to develop, or solicit proposals to develop, a marina and launch ramp facility at the abandoned Lone Star wharf on the Nansemond River in Lone Star Lakes Park. Water access at this location was also proposed in the Lone Star Lakes Recreation Master Plan and the 1984 Virginia Outdoors Plan.
- The City of Suffolk plans to solicit proposals for a private mixed use development at Constant's Wharf on the Nansemond River near the City's downtown area. Current plans are to preserve part of the site for some type of public use.
- The necessary permits have been obtained to construct a private 35 slip marina to serve the residents of the Bennetts Creek Landing subdivision.
- The owners of Smithfield Station hotel/restaurant on the Pagan River have proposed a 35 slip addition to the existing marina facility to allow more visitors to arrive by boat.

- Gatling Pointe, a residential subdivision currently being constructed on the Pagan River, will include a private marina.

#### ADDITIONAL RECOMMENDATIONS

- Once the dredging of Bennetts Creek has been completed, the City of Suffolk should consider expanding its existing boat launch facility in Bennetts Creek Park.
- The ramp and parking lot at the Hog Island WMA boat launch are in poor condition. The VGIF should consider repairing and possibly expanding the facility.
- Segments of the Nansemond River, the Pagan River and Lawnes Creek should be included in a regional scenic waterways system described in the second volume of this report.

#### BACK BAY, NORTH LANDING RIVER AND NORTHWEST RIVER

These water bodies are tributary to the Currituck Sound in North Carolina. All three are fresh or brackish water systems with moderate to heavy recreational usage.

The Back Bay was once one of the most productive hunting and fishing areas in the state. During that time, the Bay supported a number of boat launching facilities, marinas and hunt clubs. In recent years, however, due to a drastic decline in submerged aquatic vegetation, fishing and waterfowl hunting have been poor. The cause for the decline in vegetation is currently under investigation, but the result has been a significant decrease in recreational use of the Bay and a corresponding decrease in the number of water access facilities. There are now no functioning marinas on the Bay and only three publicly accessible boat ramps which are never used to capacity. The Bay is used only moderately for hunting and fishing. It is hoped, however, that existing and proposed management programs will improve the Bay habitat and restore the populations of fish and waterfowl species that once attracted large numbers of hunters and fishermen. The Bay is also moderately used by those participating in recreation activities other than hunting and fishing. The relative isolation, natural scenery and abundance of non-game wildlife offered by the Bay environment attract participants in such activities as canoeing, bird watching, wildlife photography and hiking.

Existing boat access facilities on the Back Bay easily accommodate current levels of demand. These facilities should be maintained to serve existing users and assure continued water access opportunities if conditions in the Bay improve. There does appear to be a need for additional shoreline areas which provide convenient pedestrian access, especially along the western and northern sides of the Bay. Opportunities for the development of such areas are limited, however, because nearly all of the shoreline is in private ownership and fronted by extensive marsh systems.

The North Landing River, unlike the Back Bay, experiences high recreational usage. This is because it is part of the Atlantic Intracoastal Waterway, provides good fishing opportunities and, in the downstream areas, is used extensively for water skiing. The River and its tributaries are included in several scenic waterways systems and are therefore popular with canoeists. The River and its tributaries are included in the Virginia Beach Scenic Waterway System. This system will eventually be a city-wide network of non-motorized recreational waterways. West Neck Creek, a tributary of the North Landing, is the first formally designated segment of the system. The City of Chesapeake also has a scenic waterways program and has designated Pocatay Creek as one of its six Scenic Waterway Trails. In addition, the State has recently added a portion of the North Landing River and three of its tributaries to the State Scenic River System.

Due to the recreational attributes of the North Landing River, existing water access facilities are heavily used. During the summer, marinas are fully occupied and nearly all boat ramps are crowded on peak days. The River's largest launching facility at Munden Point City Park has yet to experience frequent overcrowding, but park personnel and ramp use data indicate that usage is increasing annually and capacity problems may develop in the future.<sup>18</sup> Shoreline pedestrian access is severely deficient in the North Landing System. Only one percent of the shoreline is in public ownership and Munden Point Park has the only accessible publicly owned shoreline in the system.<sup>19</sup> Development opportunities for additional boat access points or shoreline pedestrian areas are limited along most of the River due to private land ownership, and the presence of extensive marsh systems and hardwood swamps.

The Northwest River is moderately used for recreation. The most popular recreation activity along the Northwest is fishing. The River's status as a water supply source, however, has limited fishing potential. During the past two summers, substantial water withdrawals during droughts have resulted in saltwater intrusion from the Currituck Sound. This has had a detrimental effect on freshwater fish populations and has discouraged many fishermen. The Northwest has remained popular for fishing during the spring and fall, however, and is used for other water-oriented recreational activities throughout the year. A portion of the system has been designated by the City of Chesapeake as a Scenic Waterway Trail and attracts a number of canoeists.

Water access in the Northwest River System is limited. There is only one publicly accessible boat ramp, one ten-slip commercial marina and four canoe put-in/take-out points. At present, the existing commercial boat ramp is generally able to accommodate boat access demand, although overcrowding occasionally occurs on spring weekends. It is expected that, as the region continues to grow, additional facilities will be needed. Shoreline pedestrian access is currently inadequate. The only available access is at Northwest River Park where either a shuttle bus ride or a 1-1/4 mile walk is required to reach the main stem of the River. Like Back Bay and

the North Landing River, opportunities for the development of additional access are scarce due to the presence of hardwood swamps between the fastland and the river channel.

#### EXISTING PROPOSALS

- The 1984 Management Plan for Back Bay recommends that the City of Virginia Beach adopt zoning in the Back Bay watershed for "areas of critical community value" which would include water access points.
- The Virginia Beach Scenic Waterway Plan, the planning document which conceptualized the existing Virginia Beach Scenic Waterway System, recommends the improvement of existing canoe put-in/take-out points in the Back Bay and North Landing River systems. Such improvements might include additional parking, signs to identify access points, picnic tables, restrooms, litter receptacles, or the reconstruction of steep waterside banks to facilitate access for people carrying canoes from their cars to the water. The Plan also recommends the establishment of a "service center" along West Neck Creek or the North Landing River which would provide canoeists with parking, canoe access, information regarding the waterway system, equipment rental, food, restrooms and possibly camping.
- The City of Virginia Beach plans to formally designate portions of the Back Bay system and additional portions of the North Landing River system as components of its Scenic Waterway System.
- A segment of the Northwest River from Bunch Walnuts Road to Northwest River Park has been found by the VDPR to be "worthy of future evaluation" for inclusion in the Virginia Scenic Waterways System. No official action has been taken.
- The City of Chesapeake has acquired a 568 acre parcel of land on Pocatay Creek which it plans to use for a recreational facility which would provide water access.
- A private developer has been granted a COE permit for the construction of a 26 slip private marina on the North Landing River one mile north of Pungo Ferry Road. This marina would serve a proposed residential subdivision.

## ADDITIONAL RECOMMENDATIONS

- The realignment and reconstruction of the Route 168 bridge over the Northwest River has left an abandoned right-of-way that might be used in the future as a site for a public boat ramp facility.
- The City of Chesapeake should consider improving the designated canoe access points located along its Northwest River Scenic Waterway Trail. Improvements might include signage, additional parking, and bank reconstruction to facilitate water access.
- If the City of Chesapeake decides not to proceed with additional water supply development of the Northwest River, it should request the State Division of Parks and Recreation to conduct a study to determine whether the River from Bunch Walnuts Road to Northwest River Park is eligible for inclusion in the Virginia Scenic River System.
- The second volume of this report identifies canoe trails in the Back Bay, North Landing River and Northwest River systems that should be considered for inclusion in a proposed regional scenic waterways system.

## ALBEMARLE AND CHESAPEAKE CANAL AND THE DISMAL SWAMP SYSTEM

These water bodies are freshwater systems comprised mainly of manmade canals and ditches. The only natural component of either of these systems is Lake Drummond in the Dismal Swamp National Wildlife Refuge. This lake is one of only two natural lakes in Virginia.

The Albemarle and Chesapeake Canal is a segment of the Atlantic Intracoastal Waterway which links the Southern Branch of the Elizabeth River with the North Landing River. The level of recreational activity in the Canal is considered moderate to heavy. The main recreational users of the Canal are shore fishermen, water skiers and transient boaters following the Intracoastal Waterway. Wakes caused by heavy commercial and recreational boat traffic along this relatively narrow waterway generally preclude canoeing and fishing from small boats.

There are two small marina and boat ramp facilities which provide boat access to the Canal. These marinas are filled to capacity in the summer and the boat ramps are heavily used, but are rarely overcrowded. Adequate shoreline pedestrian access is lacking. There are only two areas providing public access, and only one of these areas, Great Bridge Locks Park, is developed specifically for public access.

The Dismal Swamp System consists of three main water bodies, (the Dismal Swamp Canal, the Feeder Ditch and Lake Drummond) and a number of unnavigable drainage ditches. The Dismal Swamp Canal, a component of the Atlantic Intracoastal Waterway, is open only to smaller recreational craft and offers an

alternative to the more active Albemarle and Chesapeake Canal/North Landing River route. Recreational use of the Dismal Swamp water bodies is usually moderate with the primary users being fishermen, canoeists and transient boaters following the Intracoastal Waterway. During the past several summers, however, there has been a decline in recreational usage due to the closing of the Dismal Swamp Canal locks. The locks were closed to maintain water levels in the Dismal Swamp National Wildlife Refuge during droughts, and to make lock repairs. During the closures, boat ramp access was still possible at the VGIF Dismal Swamp Canal Landing, but transient boaters and local boaters depending on the locks were denied access.

The VGIF boat ramp and numerous canoe put-in/take-out points along the Dismal Swamp Canal and the FWS boat ramp on Lake Drummond adequately serve the existing demand for boat access to the Dismal Swamp system. Pedestrian shoreline access is adequate along the Dismal Swamp Canal due to five waysides along U.S. 17 which parallels the Canal. Pedestrian access to the Feeder Ditch and Lake Drummond, however, is very difficult. A public Army Corps of Engineers campground, which is accessible only by boat, is located next to the Feeder Ditch. The Refuge's trail system offers an opportunity for a three mile hike to the shore of Lake Drummond from the west side of the Refuge.

#### EXISTING PROPOSALS

- A 1987 report entitled, Trail Opportunities in the City of Chesapeake, which was prepared by the SVPDC for the City of Chesapeake, proposes two recreational trail facilities that would improve pedestrian access to the Albemarle and Chesapeake and the Dismal Swamp Canals. These proposals are as follows:
  1. An eight mile hiking trail along the Albemarle and Chesapeake Canal. This trail would offer shore fishing opportunities, scenic waterfront vantage points for hikers and possibly small shorefront parks for passive recreational activities.
  2. A 12.4 mile hiking trail along the Dismal Swamp Canal. This trail would also offer shore fishing opportunities and scenic vantage points. It would also benefit from the existing recreational facilities at the six waysides along U.S. 17.
- The 1986 draft Dismal Swamp National Wildlife Refuge Master Plan contains several proposals that would improve public access to the Refuge's water bodies. These proposals include:
  1. Construct a boardwalk and visitor contact point on the shore of Lake Drummond.
  2. Open currently impassable ditches to canoeing.

3. Develop a visitor contact point on the Dismal Swamp Canal near the mouth of the Feeder Ditch.
4. Re-establish a private concession to operate private boat tours to Lake Drummond from Arbuckle Landing on U.S. 17 at the mouth of the Feeder Ditch.

#### ADDITIONAL RECOMMENDATION

- The two Chesapeake Scenic Waterway Trails located within the Dismal Swamp System (the Dismal Swamp Canal Trail and the Feeder Ditch Trail) should be considered for inclusion in a proposed regional scenic waterways system described in the second volume of this report.

#### NORFOLK, PORTSMOUTH AND SUFFOLK RESERVOIR SYSTEMS AND MOUNT TRASHMORE LAKES

These four water systems comprise a total of twenty-six manmade lakes. All, except the two Mount Trashmore Lakes, are water supply impoundments, and, all but three of Norfolk's In-Town Lakes and one of Suffolk's lakes, are accessible to the public for recreational use. Fishing is the most popular recreational activity on these lakes. This is due primarily to ongoing VGIF programs which stock sixteen of the twenty-two publicly accessible lakes. Fishing pressures and boat access demand are high during the spring months when freshwater fishing is at its peak.

Because most of these lakes are water supply impoundments, many recreational activities are limited or prohibited. Depending on the lake, outboard motors are either prohibited or are limited to ten or twelve horsepower. In addition, swimming and water skiing are prohibited in all lakes. With the exception of Lake Trashmore, pedestrian access is strictly controlled along all lake shorelines. Due to extensive private land ownership around many lakes and the need for the cities owning the lakes to maintain water quality, pedestrian access opportunities are nonexistent on some lakes and limited to a few small, well-defined areas on other lakes.

Twenty-two public ramps provide access to seventeen of the twenty-two publicly accessible lakes. At present, the existing ramps are able to accommodate most of the demand for boat access. Fishing pressures and boat ramp usage have been steadily increasing in recent years, however, especially in the Norfolk Western and Portsmouth Reservoirs. This is due to an increasing regional population and a decline in fishing success in Back Bay and the Norfolk In-Town Lakes.<sup>20</sup> There have been occasions on some spring weekends and holidays when certain ramp facilities along some of the better fishing lakes have become overcrowded. Some of this growing demand could be accommodated through improvements to existing ramps. A number of public ramps are in states of disrepair and/or have inadequate parking facilities.

As alluded to above, there is also a deficiency of shoreline pedestrian areas in some of the water systems. Pedestrian access is good in the Suffolk Reservoir and Trashmore Lakes systems, fair in Norfolk's In-Town system, and poor in the Norfolk Western and Portsmouth systems. The Norfolk Western and Portsmouth Reservoirs, which consist of seven lakes and nearly 5,000 acres of water, have only four small shore fishing areas and one lakefront park where access to the water's edge is prohibited.

#### EXISTING PROPOSALS

- The City of Norfolk has embarked on a program to improve existing and develop new boat ramp facilities on both the Western Reservoir and In-Town Lakes.
- The Cities of Norfolk and Portsmouth are considering the development of additional pedestrian shoreline access and fishing piers on their water supply lakes in Suffolk. These facilities would be of a barrier-free design to ensure access by the widest range of participants.
- The City of Suffolk has plans to improve boat ramp facilities on its water supply lakes in Lone Star Lakes Park.
- The 1984 Virginia Outdoors Plan recommends that additional recreational facilities such as picnic grounds and hiking trails be developed at the Norfolk Western and Portsmouth reservoirs.

#### ADDITIONAL RECOMMENDATIONS

- One of the alignment alternatives for the proposed Constitution Drive Flyover project would involve a bridge over a portion of Lake Trashmore. If this alternative is selected and safety permits, consideration should be given to constructing a catwalk along the bridge for fishing.
- Consideration should be given to developing a regional public park with water access facilities at Stumpy Lake. The City of Norfolk currently owns, but has put up for sale, the Lake and about 1,000 acres of surrounding land. Part of this property is being used for a golf course, but the remaining land is undeveloped open space and would be ideal for a regional-scale park. Development of a regional park at Stumpy Lake was included in the 1984 Virginia Outdoor Plan and in the 1972 SVPDC Regional Open Space Plan.
- Certain lakes in the Norfolk, Portsmouth and Suffolk reservoir systems should be considered for inclusion in a proposed regional scenic waterways system described in the second volume of this report.

## BLACKWATER AND NOTTOWAY RIVERS

These two freshwater streams traverse Southeastern Virginia and merge at the North Carolina line to form the Chowan River which ultimately flows into the Albemarle Sound. The degree of recreational activity along both of these streams varies depending on location. In the upstream areas, recreational activity is light to moderate. This is due to navigation difficulties (shallow water, timber snags, and a narrow, poorly defined stream bed), limited access and low population density. Upstream reaches are mostly used for canoeing, fishing and hunting. In the wider downstream areas, recreational activity is generally moderate, but can be heavy on some peak days during the summer. Popular recreational activities in the downstream areas include fishing, power boating and water skiing.

Ramp facilities along the upper reaches of these rivers are currently able to accommodate boat access demand. In downstream areas, however, ramps can become overcrowded on peak summer days and the waters of the lower Nottoway are sometimes overly congested with water skiers. Pedestrian access to both rivers is extremely poor. Nearly all of the shoreline is in private ownership and the small areas of publicly owned riverfront have not been improved for public access. Public riverfront pedestrian access is possible only at small areas adjacent to the five VGIF boat landings (two on the Blackwater and three on the Nottoway).

### EXISTING PROPOSALS

- A 1983 study conducted for the City of Franklin by an American Institute of Architects Regional/Urban Design Team recommended that a community park be developed at Barrett's Landing at the southern end of Main Street. This park would include a terrace overlooking the Blackwater, picnic tables and boat rental facilities.
- The City of Franklin Comprehensive Plan (1980 Update) proposes a linear park consisting of trails and natural areas which would follow the Blackwater River through Franklin. The Plan also includes a regional recreation/natural area along the Blackwater to the north of the City. This area was originally proposed in the 1979 Virginia Outdoors Plan.
- The 1984 Virginia Outdoors Plan recommends that additional water access points be developed along both the Blackwater and Nottoway Rivers.
- The VDPR has determined that a 12.5 mile segment of the Blackwater River between Zuni and Franklin qualifies for inclusion in the Virginia Scenic Rivers System. No legislative action has been taken. The VDPR has also found that other segments of both the Blackwater and Nottoway Rivers are worthy of future evaluation.

## ADDITIONAL RECOMMENDATIONS

- The Counties of Isle of Wight and Southampton should formally request that the General Assembly designate the Blackwater River from Zuni to Franklin as a component of the Virginia Scenic River System. Also, the two Counties and the Cities of Franklin and Suffolk should request that the VDPR conduct evaluations to determine whether other segments of the Blackwater and Nottoway qualify for inclusion in the State Scenic Rivers System.
- Segments of both the Blackwater and Nottoway Rivers should be considered for inclusion in a proposed regional scenic waterways system described in the second volume of this report.
- The local governments should work with the Virginia Department of Transportation and the VDPR to develop additional boat access facilities at highway bridges across the Blackwater and Nottoway Rivers and their principal tributaries.

## THE SITING, DESIGN AND CONSTRUCTION OF WATER ACCESS FACILITIES

Because water access facilities can significantly impact or be impacted by the surrounding environment, their development must take into account a number of environmental, social and economic issues. Many of these issues are addressed through federal, state and local regulatory procedures, while other non-regulated issues can be resolved through careful siting and design of water access projects. The purpose of this chapter is to provide an overview of the existing regulations governing water access development and to propose guidelines for facility siting and design. This chapter is divided into separate discussions for boat access facilities (marinas, boat ramps and canoe put-in/take-out points) and shoreline pedestrian access areas (beachfront, fishing areas and other shoreline recreation areas).

### BOAT ACCESS FACILITIES

#### MARINAS

The construction and operation of a marina has the potential for severe environmental impacts. Possible adverse impacts include the loss of upland, wetland or benthic habitat due to dredging or filling activities, decline in water quality due to stormwater runoff, discharges from boats or bottom paint dissolution, and degradation of aesthetic values. The significance of these impacts will not be the same for every marina. The extent of adverse environmental impacts associated with marina development is a function of many interrelated, project-specific variables including the degree of dredging and filling activities, existing hydrologic characteristics (particularly flushing rates, depths and wave heights), existing water quality, upland soil and topographic conditions, the presence of sensitive plant and animal communities, the size and design of a marina, the types of services offered at a marina, the cumulative environmental impacts of other shoreline uses, and the existing uses and navigation patterns of the adjacent water body.

Due to the potential severity and complexities of the environmental impacts associated with marina construction and operation, marina development is subject to strict regulatory procedures. Depending on the scope of a marina project, the following federal, state and local permits may be required.<sup>21</sup>

- A Federal permit from the U.S. Army Corps of Engineers (COE) for the discharge of dredged or fill materials in navigable waters, their tributaries and adjacent wetlands. In addition, a certification from the State Water Control Board that no adverse water quality impacts will result will be required before a permit is granted.

- A state permit from the Virginia Marine Resources Commission (VMRC) for all non-exempt activities affecting State-owned subaqueous lands. Also, before a VMRC permit can be granted for the development of a marina, a plan for sewage treatment or disposal must be approved by the State Department of Health.



BENNETTS CREEK MARINA

- A state or local permit is required for any activities which alter vegetated or nonvegetated tidal wetlands. This permit is obtained from local authorities when a locality has adopted a State-approved wetlands ordinance and established a wetlands board. The permit is processed through the VMRC when a locality has elected not to adopt an ordinance establishing a wetlands board. In Southeastern Virginia, Chesapeake, Isle of Wight County, Norfolk, Suffolk and Virginia Beach have wetlands boards, while the VMRC has administered the permit process for Portsmouth. Portsmouth has recently established a local Wetlands Board. Franklin and Southampton County do not have tidal wetlands and are therefore not subject to the permitting process. Local government development activity on publicly owned land is exempt from this permit requirement.
- At the local level, a marina developer will, in most cases, have to obtain a rezoning and/or a conditional use permit before a building permit is issued.

The intensive development of the region's shoreline over the last two decades has eliminated many suitable locations for marina development. As a result, sites proposed for marinas are often environmentally marginal and do not satisfactorily meet the criteria necessary to obtain federal, state or local permit approval. Table 5 presents a synthesis of the criteria used by federal, state and local authorities in evaluating marina development proposals. These criteria should be given consideration early in the process of siting any marina facility.

## BOAT RAMPS

Like marina development, the construction and operation of boat ramp facilities is likely to have an adverse impact on the shoreline environment. In general, however, boat ramp impacts are much less significant than marina impacts. This is because boat ramp facilities are generally smaller in scale, accommodate less noxious uses and usually require less encroachment on subaqueous land. Boat ramp development is subject to the Federal COE, State subaqueous and State/local wetlands permit requirements described above.



PUBLIC RAMP AT LAKE PRINCE

As with marina development, there is a scarcity of shoreline that is both environmentally suitable for boat ramp development and located in an area where boat ramp access is deficient. The Virginia Department of Game and Inland Fisheries has developed criteria to assist in the identification of suitable landing sites and to ensure the proper design and construction of boat ramps. These criteria are contained in Table 6.

**TABLE 5**  
**GUIDELINES FOR THE SITING AND DESIGN OF MARINA FACILITIES**

**LOCATION**

1. The need for a marina facility should be clearly demonstrated.
2. The additional vessels drawn to a waterway by a new facility should not exceed the carrying capacity of that waterway.
3. The physical dimensions and characteristics of a waterway (i.e. depth, current, tide range, fetch, surface area, flushing rate) should be compatible with the size and design of a marina and the type of vessels it will berth.
4. Vessel movement in and out of a facility should not infringe on the riparian waters of adjacent properties or interfere with navigation on the receiving waterway.
5. Convex shoreline areas at the mouths of waterways are preferred locations. Also, deep water sites are preferred over sites where dredging is required.
6. Marinas should be sited away from productive or actively worked shellfish areas, seagrass communities, finfish spawning areas and areas frequented by endangered species.
7. The site should be served by public water and sewer services.
8. A marina should be compatible with adjacent land and water uses.
9. A marina should not restrict existing physical or visual waterfront access.

**DESIGN**

1. Marinas should have sufficient upland area to accommodate necessary parking, storm water management best management practices, fuel and sanitary facilities.
2. An upland or deep water site should be identified for construction and maintenance dredging spoils
3. Structures should not extend more than one-third the distance across a waterway and should not impede existing navigation.

**TABLE 5**  
**GUIDELINES FOR THE SITING AND DESIGN OF MARINA FACILITIES**  
**(Continued)**

4. If a site involves wetlands, all structures except those needed for access should be located landward or channelward of wetland vegetation. The dredging or filling of wetlands should always be kept to an absolute minimum.
5. All structures should be open-pile or floating.
6. Slips for deep draft boats should be built in the naturally deeper waters of the marina.
7. Dredging of access channels and basins should be kept to a minimum. Where channels and basins are necessary, dead-end canals and restricted inlets should be avoided and depths of basins and channels should not exceed depth of receiving waters.
8. Design of breakwaters should permit adequate water circulation within the facility.
9. Dry storage facilities are encouraged to minimize environmental impacts.

Sources: Existing and proposed VMRC regulations.  
COE, EPA, FWS and NMFS permit evaluation criteria.  
Virginia Beach Saltwater Marina Study, updated 1987.

**TABLE 6**  
**GUIDELINES FOR THE SITING AND DESIGN OF BOAT RAMPS**

**LOCATION**

1. Primary consideration should be given to sites in areas where the demand for boat ramp facilities exceeds the supply.
2. Sites should be at least three to five acres in size with two or more acres suitable for parking.
3. Water depth should be a minimum of two feet at the end of the ramp at mean low water.
4. Avoid sites with excessive siltation or erosion.
5. Sites requiring extensive dredging or filling should be avoided.
6. Site should be close to a public road to avoid the expense of access road construction.

**DESIGN**

1. Build ramps at a slope of eleven to thirteen percent with lane widths between twelve and sixteen feet.
2. Ramps constructed on flowing rivers should enter the river at an angle to facilitate boat launching and reduce siltation.
3. Extend the ramp to a depth of five feet, install riprap at the end of the ramp or increase the slope for the last ten to fifteen feet of the ramp to protect the end of the ramp.
4. Provide about 35 car-trailer parking spaces for each launching lane. Each car-trailer space should be ten feet wide and forty feet long, and the parking lot should provide adequate maneuvering room.
5. If two launch lanes are constructed, build a pier between the two to serve both lanes and to insure that one user cannot tie up both lanes.
6. Support facilities should include litter receptacles and restrooms.

Source: Virginia Department of Game and Inland Fisheries, 1986.

## CANOE PUT-IN/TAKE-OUT POINTS

Because the development of canoe put-in/take-out points does not normally involve filling or dredging activities, encroachment on subaqueous land or the alteration of wetlands, the permits discussed in the previous sections of this chapter are usually not required. Many existing informal canoe access points are located next to bridge crossings on land owned by the Virginia Department of Transportation (VDOT). The VDOT does not encourage the use of these locations for water access, but will not prohibit access unless negligent use occurs. Should a locality wish to develop a formal canoe access point on VDOT owned land, a special use permit must be obtained from the VDOT.



POCATY CREEK AT BLACKWATER ROAD

Compared to marinas and boat ramps, canoe access points have few adverse environmental impacts, require little in the way of construction and maintenance work, and are relatively inexpensive to develop. Table 7 contains siting and design criteria for canoe access points.

## SHORELINE PEDESTRIAN ACCESS AREAS

### BEACHFRONT

In Southeastern Virginia, nearly all of the unrestricted beachfront has been developed for public beach use. There are, however, extensive segments of restricted and closed beaches which are suitable for development as public beaches. If these beaches ever become available for public usage, there are a number of factors which must be considered in their development. Public beaches require extensive support facilities. These facilities include restrooms, showers, drinking fountains, litter receptacles, rental equipment and food concessions, and life guard



PUBLIC BEACH ACCESS, VIRGINIA BEACH - NORTH END

facilities. Public beach development may also require the construction of facilities that impact or alter the primary coastal dune system. Such facilities might include access roads to the beach site, parking lots,<sup>22</sup> and pedestrian and/or emergency vehicle access points to the waterfront through the dune line. The State, in

**TABLE 7**  
**GUIDELINES FOR THE SITING AND DESIGN OF**  
**CANOE PUT-IN/TAKE-OUT FACILITIES**

**LOCATION**

1. Facility should be on a waterway that is suitable for canoeing and along a stretch of that waterway that is deficient in canoe access opportunities.
2. Access point should be within a short portage of parking area.
3. Facility should not be located on water that is too shallow, has an extreme drop-off, has severe currents or has underwater obstructions.

**DESIGN**

1. Approach to waterway should not be too steep and should be clear of brush. If banks are steep, consideration should be given to reconstructing the bank through grading and possibly the installation of steps.
2. Site should provide adequate and safe parking, preferably in an off-road location.
3. Site should have picnic tables, litter receptacles, restrooms, an information kiosk and signs which designate the site as a canoe access facility.

Source: Virginia Beach Scenic Waterway Plan, 1985.

recognizing the environmental importance of coastal primary dunes, has promulgated strict development guidelines and permitting procedures for activities which alter dunes. Under State enabling legislation, a locality which has a State-approved wetlands ordinance and a wetlands board may adopt a primary sand dunes ordinance and entrust its wetlands board with the permitting process. In Southeastern Virginia, the two localities with coastal primary dunes, Norfolk and Virginia Beach, have locally administered sand dune permitting programs. It should be noted, however, that local government activity on publicly owned or leased property is exempt from the permitting requirements. In other words, if a city is developing a public beach on land owned or leased by that city, a sand dune development permit would not be required.

#### FISHING AREAS

Development of a fishing area might be as simple as opening up a stretch of publicly owned shoreline to fishing or as extensive as constructing an open water pier. For the most part, the development of fishing areas is not as heavily regulated as the development of other water access facilities. The development of shoreline fishing areas is not subject to federal COE, state subaqueous or state/local wetlands permits unless dredging or filling of wetlands or subaqueous land is required. The construction of noncommercial fishing piers does not require a wetlands permit, but may require a state subaqueous and/or a federal COE permit. The construction of commercial fishing piers, however, is subject to all three permitting procedures. Table 8 lists suggested guidelines for siting and designing fishing facilities.

#### OTHER SHORELINE RECREATIONAL AREAS

Because these shoreline facilities accommodate recreational activities that do not require direct access to the water, their development generally has minimal impact on the marine environment. It may be desirable at some facilities, however, to construct elevated walkways and/or observation platforms over wetlands or open water for nature observation or to provide scenic vistas. Construction of such facilities by a local government may require a federal COE and/or a state subaqueous permit, but not a state/local wetlands permit. Guidelines for the siting and design of shoreline facilities that do not provide boat access and are unsuitable for swimming or fishing are found in Table 9.



TOWN POINT PARK

**TABLE 8**  
**GUIDELINES FOR THE SITING AND DESIGN OF FISHING FACILITIES**

**LOCATION**

1. Facility should be located on a water body with a productive fishery and acceptable water quality.
2. Consideration should be given to potential conflicts with adjacent land use and other water activities.
3. A shore fishing area should be free of obstructions such as steep banks, dense brush or low hanging tree limbs. Also, the water fronting a fishing area should be of sufficient depth and devoid of underwater obstructions that would interfere with fishing.
4. Consideration should be given to incorporating fishing facilities into water-related construction projects. For example, catwalks and platforms can be built into bridge projects, or fishing areas can be developed in areas adjacent to bridge approaches. Safety considerations must be integral to the location and design of such facilities. Fishing areas may also be developed at park sites, next to boat landings, on breakwaters, along bulkheading projects or at highway waysides. Adequate space for safe parking must exist or be easily provided.

**DESIGN**

1. Support facilities appropriate to fishing areas include parking areas, restrooms, drinking fountains, litter receptacles, picnic tables, fish cleaning facilities, and boat rental, bait and food concessions.
2. Fishing structures should be of barrier-free design to afford fishing opportunities for the widest range of participants.
3. Piers should be of open-pile construction, and piers constructed over vegetated wetlands should be high enough to prevent loss of existing vegetation through shading.

Sources: Existing VMRC regulations.  
Southeastern Virginia Planning District Commission, 1988.

**TABLE 9**  
**GUIDELINES FOR THE SITING AND DESIGN OF SHORELINE RECREATION**  
**AREAS<sup>1</sup>**

**LOCATION**

1. Site should offer special qualities that will attract public usage (e.g., scenic vistas or nature observation).
2. Public access to the shoreline (either pedestrian or visual) should be incorporated whenever possible into public and private waterfront development projects. Such projects might include waterfront retail, office, residential or mixed use developments, marinas, public parks, and highways.

**DESIGN**

1. Conflicts between public shoreline access facilities and adjacent uses might be mitigated by design techniques such as grade separation, landscaping and natural buffering, and fences.
2. Recreational facilities that might be included in public shoreline areas include piers and observation decks, telescopes, play grounds, amphitheaters, walkways or bike paths along the waterfront, children's play areas, and picnic tables. Support facilities might include parking areas, park benches, food concessions, restrooms and litter receptacles. Facilities should be barrier free.
3. Publicly accessible waterfront in downtown areas should be well lit, patrolled frequently by law enforcement personnel and designed so as to provide an overall sense of security.

Source: Southeastern Virginia Planning District Commission, 1988.

<sup>1</sup>Includes areas that provide waterfront access but do not provide boat access and are not physically or environmentally suitable for swimming or fishing.

## STRATEGIES FOR IMPROVING WATER ACCESS

This chapter identifies and briefly describes a number of strategies that local governments can use to improve water access. These strategies have been divided into four categories: land use controls, land acquisition techniques, state and federal programs and cooperative agreements for joint use.

### LAND USE CONTROLS

A number of traditional and innovative land use controls can be implemented by local governments to promote public shoreline access. These strategies can be used to control development on privately owned land, or on publicly owned land to be sold, leased or donated for private development.

#### PRIVATELY OWNED LAND

Under a local government's "police powers" to regulate the use of privately owned land, a number of techniques exist to encourage public shoreline access. These techniques follow.

##### Traditional Zoning

In recognizing that the waterfront is a unique area deserving special treatment, a local government may adopt a "waterfront zone" as part of its existing zoning ordinance. This zoning classification would regulate waterfront development by specifying permitted as-of-right and conditional shoreline uses, and by establishing design and siting criteria that are appropriate to waterfront development. It could also be employed to insure that physical and/or visual water access opportunities are maintained or created. Because of the environmental sensitivity of shoreline areas, a locality may also want to consider the inclusion of performance standards in a waterfront zoning classification. Performance standards permit land use activities up to the point at which they begin to interfere with or harm environmental processes.

Waterfront zoning would be most effective if implemented in conjunction with the adoption of special waterfront planning areas. These planning areas would be incorporated into the city or county comprehensive plan and would be subject to area-specific goals, objectives and policies established by the community to govern waterfront development.

## Concessions from Developers

Developers of waterfront properties can be encouraged to provide water access through the following techniques:

- **Open Space Dedication Requirement.** In some Southeastern Virginia localities, as a condition for approval of a final subdivision plat, a city or county may require a developer to reserve or dedicate land for parks, schools or similar public uses. If a proposed subdivision is located on the water, an open space dedication requirement may be used to acquire and develop a water access site.
- **Rezoning Negotiations.** During rezoning negotiations, a developer of a waterfront site may be encouraged by a locality to provide water access as a condition for the desired rezoning.
- **Density Bonuses.** Zoning ordinances might be revised to allow the granting of development bonuses to developers who provide some type of public benefit. For example, a waterfront developer who incorporates public waterfront access into his project would be allowed an increase in the project's floor area ratio or in the number of allowable units per acre.

## Overlay Zoning

Overlay zoning offers an alternative to the sometimes static nature of traditional zoning. Overlay zones "float" over a community and are placed in specific locations, such as waterfront areas, when they are needed. These zones are not intended to replace existing zoning. Instead, they impose additional regulatory provisions to strengthen existing zoning. If current zoning is outdated or inefficient, it would be better to undertake a comprehensive rezoning than to apply an overlay zone. In a waterfront area, overlay zoning is typically used to promote public access to the water, improve scenic and aesthetic controls, and encourage compatibility among shoreline uses.

## Special Districts

Special districts are sub-units of local government which are created to provide services to or to govern the development of a specified area. These districts are formed when the needs of an area cannot be adequately met by local governmental processes. Created through state enabling legislation, special districts often have powers similar to those held by local governments, including eminent domain, taxation powers, and controls over planning and urban design. Special districts have specific boundaries and the powers granted to the appointed or elected officials of the district apply only within these boundaries. In waterfront areas, the special district is often used to address a variety of community issues including

public shoreline access. Other issues might include economic development, historic preservation, recreation, and open space conservation.

### Planned Unit Development

A strategy that is particularly effective in preserving waterfront open space and creating water access opportunities is planned unit development (PUD). PUD is a land use control technique in which subdivision and zoning regulations apply to an entire project area rather than to individual lots. Through the PUD approach, development density criteria are applied to the whole project area rather than to specific parcels. This allows a PUD designer to cluster development and maximize areas available for the development of public facilities and the preservation of open space. In a waterfront setting, PUD can be used to preserve environmentally critical shoreline areas, and to leave shoreline open for the development of waterfront parks and/or boat access facilities.

### Transfer of Development Rights

Another method for preserving waterfront open space is through the transfer of development rights (TDR). The TDR process allows a property owner to transfer (sell) his development rights to a developer of another site. That developer would then be allowed to increase the density or size of his development. The advantage to this approach is that the loss of development potential due to governmental action does not result in financial loss to the property owner. Like PUD, this technique could be used to preserve the shoreline environment and improve public water access. Before TDR can be implemented, however, a city or county ordinance must be adopted which delineates eligible transfer and receiving properties, and clearly defines the restrictions and criteria guiding the process.

### PUBLICLY OWNED LAND

If a locality decides to sell, lease or donate waterfront property to a private developer, there are two ways that it can insure that the property is developed in such a manner that public physical and visual access to the water is maintained or created. First, any land transfer agreement between public and private entities could include stipulations that dictate the amount, location and types of public access to be provided; any design criteria to be used in the development of water access facilities; and any waterfront property that is to remain in public ownership. Second, where land is disposed of through a competitive bid process, the use of a Request for Proposals (RFP) can be effective in exacting development concessions. An RFP can stipulate that, for a proposal to be considered, it must meet certain water access and facility design criteria.

## LAND ACQUISITION TECHNIQUES

This section identifies and briefly describes a variety of techniques that can be used by local governments to acquire waterfront land for the purpose of developing water access facilities.

### FEE-SIMPLE ACQUISITION

Fee simple acquisition is the assumption of complete ownership of land through outright purchase, gift, condemnation or purchase with donated funds. Unless land is acquired through donation, this is the most expensive way of acquiring land. It does assure, however, that a locality will have full control over the use of the purchased land.

One variation of fee-simple acquisition is a purchase/leaseback arrangement. Under this arrangement, a local government will purchase land and lease it back to a private interest which will develop it. There are several advantages to this approach. First, the local government can defray acquisition costs with revenues from the leaseback arrangement. Second, the costs of improvements are assumed by the developer. Finally, and most important in the context of waterfront access, a local government can attach stipulations to the lease requiring that the developer provide public benefits, including physical and visual access.

### CONSERVATION EASEMENTS

A conservation easement is a technique by which certain rights to the use of land are granted, through sale or donation, by a landowner to a public agency or a conservation organization. Private property ownership is retained by the landowner. Only those rights which he specifically agrees to forego are transferred to the recipient of the easement. An easement is signed and recorded like other deeds and is a covenant running with the property title. The State Open Space Land Act of 1966 enables all public landholding bodies in Virginia to use conservation easements. The 1988 Virginia General Assembly passed a bill creating the Virginia Conservation Easement Act. This Act enables private, tax-exempt conservation organizations to acquire conservation easements.

In waterfront areas, conservation easements are used to protect environmentally critical shoreline, to provide public access to or along the shoreline, and/or to provide visual access by restricting building heights or creating setbacks. Conservation easements benefit property owners by providing tax breaks and assurances that land will remain perpetually undeveloped. They can provide public benefits by achieving conservation and water access objectives without having to commit funds for fee-simple land acquisition.

## LAND BANKING

Land banking is the public purchase of land which is held in reserve for resale or future public development. Land banking can be used by a locality as a hedge against predicted inflation in land values, to control the pattern of private development or to obtain optimum locations for future public facilities. Large scale land banking is generally impractical for most localities because it requires large capital outlays, is often politically unpopular and takes property off the tax rolls. Small scale land banking, however, is more feasible in that it can provide specific sites for future public water access facilities, and it can allow localities to control and attach appropriate deed restrictions and covenants to the eventual disposition of public waterfront land for private development.

## LAND TRUSTS

Land trusts are similar to land banks. The principal difference is that land is acquired for conservation only, without intentions for eventual resale or development. Limited public waterfront access can often be developed on land held for conservation purposes. Land trusts are usually established by state governments or private nonprofit organizations. The primary role of many private land trusts is to pre-acquire conservation land for conveyance to public agencies. In this way, private land trusts can offset the limited land acquisition funding capacity of the public sector. The creation of land trusts by local governments is not common, but it may be worth investigating. The prime disadvantage in establishing a public land trust is finding a dependable, long term funding source. Many public trusts are funded by periodic bond authorizations. Other potential sources include general funds, recreation user fees and rental fees from environmentally appropriate uses of land trust properties.

## STATE AND FEDERAL PROGRAMS

A number of state, federal and joint state/federal programs exist which can be used to develop local water access facilities. Some of these programs were created specifically to provide water access. Others were devised to achieve other objectives, but water access may be realized as a secondary benefit.

### Federal Aid in Sport Fish Restoration Program

The Federal Aid in Sport Fish Restoration Program has been the principal source of public funds for the development of water access facilities. This program diverts the federal excise taxes on fishing tackle, motorboat fuel taxes and impart duties on tackle and boats to state fishery agencies for the development of sport fisheries and boat access projects. The Sport Fish Restoration Program is administered by the U.S. Fish and Wildlife Service (FWS) at the federal level. At the state level, the Department of Game and Inland Fisheries (VGIF) receives program funds from the FWS, combines them with fishing license revenues and then provides

grants to eligible recipients for Federally approved projects. A variety of water access projects can be approved for funding as long as they promote state fishery management objectives. These projects might include boat ramps, docking and marina facilities, breakwaters, restrooms, parking areas and maintenance of existing facilities. Eligible recipients include other state agencies, county or municipal governments, universities or private organizations.

Sport Fish Restoration funds are provided as a 75% reimbursement for completed projects. This means that the VGIF must fund 100% of a project upfront. The VGIF has indicated that chances for acceptance of a project into the program will be greatly enhanced if a local recipient rather than the State provides the 25% share not covered by Sport Fish Restoration funding. The VGIF is also more inclined to consider sites that are readily available and do not have to be acquired by the State.

The development of a number of boat ramp facilities in Southeastern Virginia was made possible by the Sport Fish Restoration Program. For a proposed boat ramp to be accepted into the program, it must meet certain VGIF siting and design criteria (See Table 6). In addition, once a proposed boat ramp site has been accepted into the program, the VGIF reserves the right to conduct all design and construction activities. The locality will be responsible for maintaining and operating the ramp.

#### Virginia Board on Conservation and Development of Public Beaches Grant Program

The Virginia Board on Conservation and Development of Public Beaches was created under the Public Beach Conservation and Development Act of 1980 to conserve, protect, improve, maintain and develop public beaches for the benefit, use and enjoyment of the citizens of the Commonwealth. In keeping with this mandate, the Board administers a grant program to provide local governments with up to 50% fund assistance for erosion abatement projects on public beaches. A public beach is defined by the Act as a sandy beach located on a tidal shoreline suitable for bathing and open to indefinite public use. To qualify for a beach development grant, a local government must have an erosion advisory commission.

Projects funded by this program often provide water access as well as erosion control benefits. For example, the City of Norfolk recently applied for a beach development grant to construct elevated beach accessways over the dunes to the Chesapeake Bay beachfront. This project will serve the dual purpose of protecting the fragile dune system and increasing beach access opportunities. Other eligible erosion control projects may serve to protect beachfront recreational facilities and/or to ensure adequate beach width for beachfront recreational activities.

## State Scenic Rivers Program

The Scenic Rivers Program is administered by the Virginia Division of Parks and Recreation (VDPR) of the Department of Conservation and Historic Resources. The purpose of this program is to identify and protect those rivers or streams whose scenic beauty, historic importance and natural free-flowing characteristics make them resources of particular statewide importance. Although the VDPR has conducted a number of preliminary assessments of potential scenic rivers, formal designation of a river must be initiated by the city or county in which that river is located.

Enabling legislation for this program was passed in 1970 in the form of the Scenic Rivers Act (Title 10, Chapter 15 of the Code of Virginia). Although this Act does not contain specific provisions for the development of water access, it does include provisions which promote preservation of a river's recreation, scenic, historic and biological resources. In addition, the Act prohibits the construction of any structure which impedes the natural flow of a scenic river without authorization from the General Assembly. It also authorizes the Director of the Department of Conservation and Historic Resources, or other administering agency, to acquire, through gift or purchase but not through eminent domain, any property which is necessary or desirable for the protection of a scenic river. This provision could lead to the acquisition of property that is suitable for water access facilities.

Legislation to include a portion of the North Landing River and several of its tributaries in the Virginia Scenic Rivers System was passed by the 1988 General Assembly. This is the first time a Southeastern Virginia waterway has been granted State Scenic River status. A portion of the Blackwater River has been found to qualify for inclusion in the system, but no action has been taken.

## Virginia Outdoors Fund

The Virginia Outdoors Fund (VOF) is administered by the VDPR and is a supplemental source of funding for the acquisition and development of recreation lands at the state and local levels. The VOF is comprised of state funds appropriated by the General Assembly, and funds allocated to the State from the National Park Service's Land and Water Conservation Fund (LWCF). At least 50% of the LWCF allocation must go to local projects. For individual local projects, the VDPR may allocate up to 50% fund assistance through the VOF. The remainder of the project's cost is the responsibility of the local government.

Because of decreasing Federal LWCF allocations, VOF allocations to localities are able to finance only a small portion of local recreation needs. At one time, the LWCF was the single most important source of funding for the acquisition and development of recreational facilities. The Fund has provided almost \$3 billion in assistance to state and local governments nationwide since 1965. However, federal

budget cuts since 1980 have led to a severe decrease in LWCF appropriations. For example, in 1979, Virginia received \$7.5 million from the LWCF. By 1986, the State's LWCF allocation had declined to \$723,000. Nonetheless, if a proposed water access facility is consistent with VDPR's policies and criteria, a VOF grant is worth pursuing.

#### Virginia Outdoors Foundation

The Virginia Outdoors Foundation is a private entity established under state charter by the General Assembly in 1966. The Foundation, which is housed in the Virginia Division of Historic Landmarks, is authorized to solicit and accept gifts of money, securities, property or property easements in order to preserve open space resources. Since its inception, the Foundation has solicited easements on over 30,000 acres of open space and protects another 4,000 acres through fee-simple ownership. In many instances, waterfront property or water access easements have been acquired by the Foundation. A locality might further its conservation and water access objectives by informing the Foundation of acquisition opportunities within its jurisdiction.

#### Virginia Department of Transportation Programs

There are several Virginia Department of Transportation (VDOT) programs which might either directly or indirectly provide water access opportunities. These programs are as follows:

- The VDOT, the VDPR and the VGIF have initiated a cooperative agreement aimed at increasing public access to rivers, streams and estuaries. Potential bridge replacement and road realignment projects are screened by all three agencies to determine the feasibility and desirability of incorporating water access into the project.
- State enabling legislation permits the VDOT to construct fishing piers or attach fishing structures to bridges in conjunction with bridge construction projects. However, the costs associated with such projects must be borne by others.
- The VDOT administers a Recreation Access Fund which is used to provide road or bikeway access to public recreation sites or to the major attractions within such sites. Although this program does not directly provide water access, it may be used to construct roads or bikeways to waterfront recreation areas, or to water access facilities within recreation areas.

- The VDOT will often allow the development of water access facilities on VDOT owned waterfront property. Before such development occurs, however, a local government would have to apply for and be granted a VDOT special use permit.

#### Chesapeake Bay Youth Conservation Corps Program

The goal of the Chesapeake Bay Youth Conservation Corps (YCC) program is to improve the waters and the environment of the Chesapeake Bay and its tributaries through conservation projects that employ youth, with an emphasis on the employment of the economically-disadvantaged. Through this program, which is administered by the VDPR, a total of \$300,000 in grant funds is made available annually to eligible recipients and projects for the hiring of YCC workers. Eligible recipients include all political subdivisions in the Tidewater area. For a project to be eligible for funding, it must provide a direct benefit to the waters and environment of the Bay. Eligible projects generally involve such activities as erosion control, shoreline stabilization and clearance of dumpsites. Consideration will be given, however, to projects which incorporate the development of water access facilities into these activities.

#### The Chesapeake Bay Agreement

The Chesapeake Bay Agreement was signed in 1987 by the States of Virginia, Maryland, and Pennsylvania, the District of Columbia and the U.S. Environmental Protection Agency. This Agreement consists of a number of initiatives which constitute a ten year plan for cleaning up the Bay. One of these initiatives calls upon the participating governments to improve and expand public access opportunities to the Bay. Commitments contained in this initiative include (1) the preparation of an inventory, by December 1988, of the States' existing and potential water access sites, and (2) the development of a strategy, by December 1990, which would encourage state and federal governments to secure additional tidal shorefront along the Bay and its tributaries. In response to these commitments, the Virginia Department of Conservation and Historic Resources has directed the VDPR to begin working with local governments to compile an inventory of water access sites. This study should provide the information necessary to complete the Southeastern Virginia portion of this inventory. The VDPR has also proposed a public access grant program which would make available \$5 million per year in grants to Tidewater localities for the purpose of constructing or developing additional boat launching, fishing, swimming and sunbathing facilities. It is proposed that participating localities would be required to provide 25% of each project's cost.

## Coastal Resources Management Grant Program

Coastal Resource Management (CRM) grants are allocated to state governments through the National Oceanic and Atmospheric Administration's Office of Coastal Resource Management. The CRM grant program is authorized by the Coastal Zone Management Act of 1972. The purpose of the CRM grant program is to provide funding to state, regional and local governments for coastal resource planning and technical assistance. For a state to qualify for CRM grants, it must establish a coastal resource management program that is approved by the Secretary of Commerce. In Virginia, this program is the Virginia Coastal Resources Management Program (VCRMP) administered by the Virginia Council on the Environment (VCOE). One of the stated goals of the VCRMP is "to provide and increase public recreational access to coastal waters and shorefront lands."<sup>23</sup>

The VCOE has committed to allocating up to one-half of federal CRM funds to the 44 localities and nine planning district commissions (PDCs) in the Tidewater area. The remaining funds are used to assist state agency bay and coastal activities. There are two sources of CRM funding available to local governments and PDCs through the VCRMP - basic formula grants and competitive grants. The basic formula grants are allocated to the PDCs primarily for providing technical assistance to local governments. The competitive grants are available to both local governments and PDCs and may be used for a variety of planning projects including those dealing with water access improvement. The conduct of this water access study was made possible through a VCRMP competitive grant. In addition, several of the Southeastern Virginia localities bordering the Chesapeake Bay or its tributaries are currently engaged in CRM projects funded by competitive grants.

## Design Arts Program

The Design Arts Program is administered by the National Endowment for the Arts and is authorized by the National Foundation of the Arts and the Humanities Act of 1965. The aim of this program is to encourage communities to integrate art into the design of public places through the collaboration of design professionals and visual artists. Funds are therefore used to select appropriate designers and artists and to support the integrated design/art process. The City of Norfolk applied for, but did not receive, a Design Arts Grant for a proposed waterfront park on the abandoned Lambert's Point Landfill on the Elizabeth River.

## Miscellaneous Federal Programs

There are other federal grant programs that represent potential indirect funding sources for water access facilities. These programs, which are targeted at other problems (e.g. water quality, community development, etc.), may fund water access facilities if they are consistent with grant regulations and contribute to overall program goals. Funding sources fitting into this category include Community Development Block Grants and Urban Development Action Grants.

## COOPERATIVE AGREEMENTS

Nearly twenty percent of the region's ocean and bay beaches, as well as other shoreline areas with significant recreational potential, are closed to public recreation by virtue of their control by the military. Similarly, other public entities and private corporations own large undeveloped or under-used shoreline areas. Joint use of such areas would greatly enhance the region's ability to satisfy resident and tourist demand for water-oriented recreation.

Cooperative agreements between local governments and the state or federal government or the private sector represent a vehicle for achieving joint facility use. At the present time, 0.2 miles of military-controlled beaches have been opened for public recreation through such agreements. Similar agreements have permitted long-term public use of military lands for other forms of public recreation and for various public services including education, fire training and youth homes. Camping and other outdoor recreation opportunities have been made available to the Boy Scouts, Girl Scouts and similar groups through cooperative agreements with the military. The private sector has participated in similar agreements for joint use of waterfront lands. In other communities, long-term recreational use of public lands earmarked for development has been achieved. Similarly, land being held for future development has been used for recreational purposes through agreements between the local government and the private developer. Southeastern Virginia does not have a concerted ongoing program, under the auspices of landowners or the public, to obtain joint use agreements.

Joint use agreements cover the terms of the shared use of lands. These terms include lease costs, security, nature of facilities provided, duration of agreement and time restrictions on joint use. For example, the U.S. Army permits weekend summertime use of only a portion of the Fort Story beach and may close the beach to avoid potential conflict with training activities. Agreements with the private sector have provided for public use only during special events. Lease costs are generally minimal. Obviously any agreement must be "tailored" to the specific circumstances.

The use of cooperative agreements may enable the locality to meet additional recreational needs in a cost-effective manner. This is especially true for shoreline access facilities which are not capital intensive. They may enhance community goodwill toward major shoreline landowners. Unfortunately, the cooperative agreement approach may require protracted negotiations with landowners. Time restrictions on joint use and short durations due to planned development will tend to preclude this approach from being a long-term solution, on a site-specific basis, to the community's recreation needs.

## CONCLUSION

The abundance of recreational opportunities provided by the waters of Southeastern Virginia is one of the contributing factors to the region's healthy economy and high quality of life. According to the VDPR's 1982 Recreation Demand Survey, the majority of the region's residents participate in some type of water-dependent recreational activity. From this finding it is clear that water-based recreation plays an important role in the happiness and well being of the region's residents.

The recreational attributes of the region's waters also provide a number of economic benefits. Tourism is one of Southeastern Virginia's leading industries and is essential to the vitality of the regional economy. Such an industry has been made possible by the recreational attractions provided by the region's waterways and beaches. In addition, the recreation potential offered by the region's waters lends strength to the regional economy by serving as one of the prime amenities that draws new employers and workers to Southeastern Virginia. A substantial service industry has also developed around water-dependent recreation. The total economic impact of such enterprises as boat and yacht sales and repairs, marina services, water-oriented sporting goods sales, and fishing concessions is considerable.

The recreational use of the region's waterways also has indirect water quality benefits. All water-oriented recreational activities depend to some extent on the maintenance of adequate water quality. This is especially true for primary contact activities (swimming, water skiing and surfing) as well as for wildlife-oriented activities such as fishing, hunting and nature observation. Participants in these activities have a stake in the continued health of the region's water and are likely to be on the "front-line" in any efforts to improve water quality.

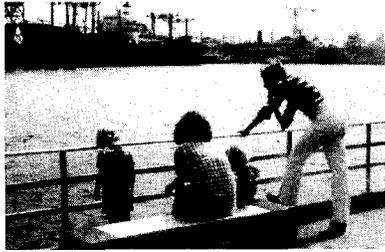
Adequate public water access is essential if the region is going to continue realizing the benefits noted above. Unfortunately, the development of water access facilities has not kept pace with the increasing demand for water access brought about by a rapidly growing population. As a result, many of the existing facilities experience extreme overcrowding problems. To make matters worse, in some areas there has been an actual decline in water access opportunities. This has been caused by commercial property owners who have responded to escalating land values by converting water access facilities to more profitable uses, and by public entities who have eliminated or restricted water access to achieve non-recreational objectives. Contributing to the inability of the public and private sectors to accommodate water access demand is an overall decrease in the availability of suitable waterfront sites due to extensive private waterfront development and increasingly stringent environmental regulations.

As the region continues to grow, so will barriers to water access development. It is therefore essential that local governments not only work towards resolving existing deficiencies, but also begin planning for future water access demand. It is hoped that the information presented in this report will provide some guidance in these efforts.

The following summarizes the key findings and recommendations contained in this report:

- The region has sufficient shoreline and water resources to satisfy existing and projected demand for most water-oriented recreational activities. Throughout much of the region, however, adequate access to these resources is lacking.
- There is a severe shortage of marina slips and boat ramps in the water bodies which provide convenient access to the Atlantic Ocean and lower Chesapeake Bay. This problem will worsen as the popularity of recreational boating continues to grow.
- Inadequate parking is the greatest impediment to public beach access.
- There is a need to maintain and encourage additional visual access to the region's waterways. There is also a need throughout the region to develop public shoreline areas for passive recreational activities.
- A variety of water access projects has been proposed for specific water bodies throughout the region by the local, State and Federal governments and by the private sector. These projects are listed in the report and include public and private marinas, public boat ramps, elevated walkways and piers, waterside trails, scenic waterway trails, passive waterfront parks, channel dredging for recreational boating, and cooperative agreements for the public use of waterfront property located at schools and military installations.
- In addition to the existing proposals noted above, the SVPDC staff has presented a number of waterway-specific recommendations for improving water access. Some of the more notable recommendations detailed in the report include a regional scenic waterways system, neighborhood-specific beach access plans, waterfront zoning districts, the renovation or expansion of a number of existing facilities, and the use of abandoned road rights-of-way for water access development.

- Specific siting and design criteria have been presented which promote the development of functional, safe and environmentally compatible water access facilities.
- A number of strategies, which are available to local governments for improving water access, have been identified and described. These strategies include a variety of land use controls, land acquisition techniques, state and federal programs and cooperative agreements between local governments and public or private landowners.



PORTSMOUTH SEAWALL

**APPENDIX A**

**A DESCRIPTION OF THE ACTIVITY DAY METHOD**

## METHODOLOGY

The first step in the Activity Day Method is to determine the number of "activity days" during the prime season which are attributable to the activity being studied. An activity day represents any part of a day spent participating in an activity. Thus, one person could account for several activity days in a single day's outing. The total number of activity days for an activity can be determined through a random sample survey by determining the average number of activity days per survey participant and multiplying that number by the total population of the region. The estimated total number of activity days for an activity during the prime season can then be used with capacity, turnover and design day assumptions to estimate demand. The formula used in this process is as follows:

$$\frac{AD}{WCT} = F$$

- A = estimated total number of activity days during the prime season
- D = estimated percent of activity days occurring on the design day
- W = number of weeks in prime season
- C = daily capacity
- T = turnover rate
- F = design day demand

## ASSUMPTIONS

The following capacity and turnover assumptions were used by the VDPR in estimating the demand associated with the water oriented recreational activities examined in this study.

### POWER BOATING

Instant Unit Capacity: 3 people/boat, 1 boat/12 acres  
Maximum Turnover: 3  
Daily Capacity: .75 activity days/acre

### WATER SKIING

Same as power boating.

### SAILING

Instant Unit Capacity: 3 people/boat, 1 boat/6 acres  
Maximum Turnover: 2  
Daily Capacity: 1 activity day/acre

## FISHING

Instant Unit Capacity: Boat - 2 people/boat, 1 boat/4 acres

Shore - 10 people/mile

Maximum Turnover: 4

Daily Capacity: Boat - 2 activity days/acre

Shore - 40 activity days/mile

## CANOEING

Instant Unit Capacity: 2 people/boat, 4 boats/mile

Maximum Turnover: 6

Daily Capacity: 48 activity days/mile

## BEACH SWIMMING AND SUNBATHING

Instant Unit Capacity: 150 people/acre

Maximum Turnover: 2

Daily Capacity: 300 activity days/acre

## SURFING

Instant Unit Capacity: 0.2 people/linear foot of beach

Maximum Turnover: 5

Daily Capacity: 1.0 activity days/linear foot of beach

**APPENDIX B**  
**PUBLICLY ACCESSIBLE SHORELINE AREAS**

NOTE: These areas do not include boat ramp or canoe put-in/take-out facilities, unless there is significant shoreline adjacent to these facilities to accomodate other shoreline-dependent activities.

WATER BODY	SWIMMING BEACHES	FISHING AREAS	OTHER SHORELINE RECREATION AREAS
Atlantic Ocean	False Cape State Park Little Island City Park Sandbridge Beach Sandbridge City Park Camp Pendleton Public Beach Croatan Beach Resort Area Beach North End Beach Fort Story Public Beach	Back Bay National Wildlife Refuge Little Island Fishing Pier Virginia Beach Fishing Pier	
Rudee Basin		Shoreline Adjacent to Lighthouse Restaurant Private Fishing Concession Across from Rudee Inlet	Virginia Marine Science Museum
Chesapeake Bay	Lynnhaven Beach Ocean Park Baylake Beach Chesapeake Beach Norfolk City Beaches	Lynnhaven Fishing Pier Harrison's Fishing Pier Seagull Fishing Pier	
Lynnhaven River		Seashore State Park	Great Neck City Park Thalia ES and Princess Anne HS (Thalia Creek)
		Beach Adjacent to Lesner Bridge Virginia Beach Boulevard bridges at Thalia and London Bridge Creeks Laskin Road Bridge over Linkhorn Bay Mt. Trashmore Park (Thalia Creek)	
Little Creek System		Shoreline between 18th Bay and 22nd Bay Streets (including the Ocean View Community Center)	Tarrallton ES and Park Norristown Drive Park Halprin Drive Park Mona Avenue Park
Hampton Roads		Tidewater Community College (Pier) Ragged Island State Wildlife Management Area	

WATER BODY	SWIMMING BEACHES	FISHING AREAS	OTHER SHORELINE RECREATION AREAS
Willoughby Bay		Willoughby Bay Marina Fishing Pier Willoughby City Boat Ramp	Willoughby Neighborhood Park Northside Park (Mason Creek)
Elizabeth River Main Stem			Mowbray Arch Walkway (Smith Creek) Hague Park (Smith Creek) Stone Park (Smith Creek)
Lafayette River		Fishing Platform on Hampton Boulevard Bridge Fishing Platform on Granby Street Bridge	The Hermitage Foundation Museum Larchmont Library Granby ES (Crab Creek)
			North Shore Road Park (Crab Creek) Millbrook Road. Park.(Crab Creek)
			Larchmont ES
			Lafayette Park
			Mayflower Drive Walkway
			26th Street Bridge Park
			Lindenwood ES
			Barraud Park
			Lakewood Park (Wayne Creek)
Eastern Branch			Town Point Park
			Waterside Promenade & Esplanade
			Berkeley Waterfront Park
			Grandy Park
			Poplar Halls ES (Broad Creek) Poplar
			Broad Creek Pedestrian Bridge
			Wayside Park
			Arrowhead ES
			Carolanne Farms Park
			Fairfield Forest Park

WATER BODY	SWIMMING BEACHES	FISHING AREAS	OTHER SHORELINE RECREATION AREAS
Southern Branch		Area Adjacent to Jordan Bridge Deep Creek Locks Park (Shoreline and Pier) Great Bridge Locks Park	Portsmouth Seawall
Western Branch		Area adjacent to south side of West Norfolk Bridge Portsmouth City Park	Simonsdale ES (Baines Creek) Western Branch Park (Bailey Creek) Southwestern ES
Nansemond River		Bennett's Creek Park (pier) Constants Wharf	Sleepy Hole Park
Chukatuck Creek		Tylers Beach	Lone Star Lakes Park
James River		Fort Boykin Historical Park	
Pagan River		Carrollton Nike Park. (Pier on Jones Creek)	
Lawnes Creek		Mt. Holly Creek Reservoir	
Back Bay		Hog Island Wildlife Management Area Little Island City Park	Lotus Gardens Park (Asheville Crk.)
		Back Bay National Wildlife Refuge	
		Pocahontas/Trojan Wildlife Management Area	
		False Cape State Park	
		VGIF Back Bay Landing	
		Davis Landing	
		Numerous areas adjacent to bridge crossings on Bay tributaries	
North Landing River	Captain George's Restaurant <sup>1</sup>	Private Fishing Concession next to North Landing Road Bridge	
		Indian River Road Bridge (West Neck Creek)	
		Munden Point Park	
		West Neck Road Bridge (West Neck Creek)	
		Numerous areas adjacent to bridge crossings on the River's tributaries	
Albemarle and Chesapeake Canal		Great Bridge Locks Park	
Northwest River		Area adjacent to Centerville Turnpike Bridge Northwest River Park	
		Bob's Fishing Hole	
		Battlefield Boulevard (S.R. 168) Bridge	
		Indian Creek Road Bridge (Indian Creek)	
		Bunch Walnuts Road Bridge	
		Ballhack Road (Central Ditch)	

WATER BODY	SWIMMING BEACHES	FISHING AREAS	OTHER SHORELINE RECREATION AREAS
Great Dismal Swamp		Deep Creek Locks Park	
		Six U.S. 17 Waysides along Dismal Swamp Canal	
		Terminus of Washington Ditch Trail (Lake Drummond)	
Blackwater River		Blackwater Bridge (S.R. 603) VGIF Landing	Blackwater Ecological Preserve
		Joyner's Bridge (S.R. 611) VGIF Landing	
		S.R. 189 turnoff (1/2 mile east of junction with S.R. 690)	
Nottoway River		VGIF Carey's Landing (S.R. 653)	
		VGIF Hercules Landing (S.R. 671)	
		General Vaughn Bridge (S.R. 258) VGIF Landing	
Mt. Trashmore Lakes		Mount Trashmore City Park	
Norfolk In-Town Reservoirs		Norfolk Botanical Gardens (Fishing Islands and Piers)	Larrymore ES
		Lake Smith Bait and Tackle Shop	Lake Taylor High School
Suffolk Reservoir		Lone Star Lakes Park (fishing docks and piers)	
Norfolk Western Reservoir System		Lake Prince Bait and Tackle Shop	
		Western Branch Bait and Tackle Shop	
Portsmouth Reservoir System		Lake Cohoon Dam	Lakeside Park
		Lake Kilby Dam	

*Fishing is prohibited.*

**APPENDIX C**  
**PEDESTRIAN ACCESS POINTS ALONG**  
**UNRESTRICTED AND RESTRICTED ACCESS BEACHES**

FALSE CAPE STATE PARK (Restricted Access Beach)

Dudley Island Trail  
Wash Woods Beach Trail  
False Cape Landing Trail

BACK BAY NATIONAL WILDLIFE REFUGE (Restricted Access Beach)

Dune Trail  
Seaside Trail

LITTLE ISLAND PARK (Unrestricted Access Beach)

Wooden walkway from parking lot to beach

SOUTH SANDBRIDGE (Unrestricted Access Beach)

Whitecap Lane  
North of Whitecap Lane (1)  
North of Whitecap Lane (2)  
North of Whitecap Lane (3)  
Seascape Road  
North of Seascape Road (1)  
North of Seascape Road (2)  
North of Seascape Road (3)  
North of Seascape Road (4)

Molly Cooper Road  
Angelfish Lane  
North of Angelfish Lane (1)  
North of Angelfish Lane (2)  
North of Angelfish Lane (3)  
North of Angelfish Lane (4)  
North of Angelfish Lane (5)  
North of Angelfish Lane (6)  
Pike Lane

SOUTH SANDBRIDGE (Restricted Access Beach)

North of Pike Lane  
Whiting Lane  
North of Whiting Lane (1)  
North of Whiting Lane (2)  
North of Whiting Lane (3)  
Rock Lane  
North of Rock Lane (1)  
North of Rock lane (2)  
North of Rock Lane (3)  
Tuna Lane

North of Tuna Lane (1)  
North of Tuna Lane (2)  
North of Tuna Lane (3)  
North of Tuna Lane (4)  
North of Tuna Lane (5)  
North of Tuna Lane (6)  
North of Tuna Lane (7)  
North of Tuna Lane (8)  
North of Tuna Lane (9)

SANDBRIDGE CITY PARK (Unrestricted Access Beach)

Pathway from Sandfiddler Road to beach

NORTH SANDBRIDGE (Restricted Access Beach)

Marlin Lane

North of Marlin Lane (1)

North of Marlin Lane (2)

North of Marlin Lane (3)

North of Marlin Lane (4)

North of Marlin Lane (5)

North of Marlin Lane (6)

North of Marlin Lane (7)

Perch Lane

North of Perch Lane (1)

North of Perch lane (2)

CAMP PENDLETON PUBLIC BEACH (Restricted Access Beach)

Pathway from parking lot to beach

CROATAN BEACH (Unrestricted Access Beach)

Lockheed Avenue

Maryland Avenue

Aqua Lane

Carolina Avenue (Croatan Road)

Twilight Lane (Diane Lane)

Dare Drive

RESORT AREA (Unrestricted Access Beach)

1st Street

2nd Street

3rd Street

4th Street

5th Street

6th Street

7th Street

8th Street

9th Street

10th Street

11th Street

12th Street

13th Street

14th Street

16th Street

17th Street (Virginia Beach Blvd.)

18th Street

20th Street

22nd Street

24th Street

25th Street

26th Street

27th Street

28th Street

29th Street

30th Street

31st Street (Laskin Road)

33rd Street

34th Street

35th Street

36th Street

37th Street

38th Street

39th Street

NORTH END (Unrestricted Access Beach)

40th Street  
Cavalier Drive  
42nd Street  
43rd Street  
44th Street  
45th Street  
46th Street  
47th Street (Bay Colony Drive)  
48th Street  
49th Street  
50th street  
51st Street  
52nd Street  
53rd Street  
54th Street  
55th Street  
56th Street  
57th Street  
59th Street  
60th Street  
61st Street  
62nd Street  
63rd Street  
64th Street  
65th Street

66th Street  
67th Street  
68th Street  
69th Street  
70th Street  
71st Street  
72nd Street  
73rd Street  
74th Street  
75th Street  
76th Street  
77th Street  
78th Street  
79th Street  
80th Street  
81st Street  
82nd Street  
83rd Street  
84th Street  
85th Street  
86th Street  
87th Street  
88th Street  
89th Street

FORT STORY PUBLIC BEACH (Restricted Access Beach)

Pathway from parking lot to beach

LYNNHAVEN (Restricted Access Beach)

Kendall Street  
Calvert Street  
First Landing Lane  
Walke Street  
Hatton Street  
Wake Forest Street  
Bayberry Street  
Sandlewood Street  
Maple Street  
Oak Street

Beech Street  
Old Seaview Park Property  
Whaler, Ketch and Spinnaker  
Courts  
Ebbtide Road  
Red Tide Road  
Seashell Road  
Lynnhaven Pier  
Starfish Road  
Jade Street  
Duck Inn

OCEAN PARK (Restricted Access Beach)

Lesner Bridge - West End  
Stratford Road  
Dinwiddie Road  
Rockbridge Road  
Roanoke Avenue

Albemarle Avenue  
Jefferson Boulevard  
Raleigh Avenue  
Woodlawn Avenue

BAYLAKE BEACH (Restricted Access Beach)

Windy Road  
Sandy Bay Drive (Joyce Avenue)

CHESAPEAKE BEACH (Unrestricted Access Beach)

Lee Avenue  
Mortons Road  
Seaview Avenue  
Fentress Avenue  
Bay Bridge Lane & Beaufort Avenue  
Bayview Avenue  
Lauderdale and Guy Avenues

NORFOLK CITY BEACHES (Unrestricted Access Beach)

City Beach  
27th Bay Street  
25th Bay Street  
23rd Bay Street  
21st Bay Street  
19th Bay Street  
17th Bay Street  
15th Bay Street  
13th Bay Street  
11th Bay Street  
9th Bay Street  
7th Bay Street  
5th Bay Street  
3rd Bay Street  
1st Bay Street  
Inlet Road

Atlans Street  
Chesapeake Boulevard  
Community Beach  
Ocean View Pier and Beach  
First View Street  
Sarah Constance Beach  
4th View Street  
Harrisons Fishing Pier  
6th View Street  
8th View Street  
9th View Street  
Salem Street  
10th View Street  
11th View Street  
12th View Street  
13th View Street

Cape View Avenue  
Grove Avenue  
Beaumont Street  
Sturgis Street

15th View Street  
16th View Street

Source: Southeastern Virginia Planning District Commission, Virginia Beach Waterfront Access Study, (Norfolk, Virginia: SVPDC, 1981), pp. 6-15. SVPDC Survey, 1987.

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**END NOTES**

1. Assumes 115,000 acres of offshore waters and 35,000 acres of inland tidal and nontidal waters are boatable.
2. Assumes that water skiing is possible in portions of the following water bodies: Lynnhaven River, Elizabeth River, Nansemond River, Chuckatuck Creek, Pagan River, North Landing River, Albemarle and Chesapeake Canal, Blackwater River, Nottoway River and James River.
3. Assumes that 115,000 acres of offshore waters and 15,000 acres of inland tidal waters are suitable for sailing.
4. Estimates include demand for fishable water area that is accessed by either boat, shore or pier.
5. Supply estimate assumes canoeing is possible in the following water bodies or systems: Rudee Basin, Lynnhaven River, Little Creek, Elizabeth River (upstream areas only), minor tributaries to Hampton Roads, Nansemond River, Chuckatuck Creek, minor tributaries to the James River, Pagan River, Lawnes Creek, North Landing River, Northwest River, Dismal Swamp, Blackwater River and Nottoway River.
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10. Conversation with Don Mathias, City of Norfolk Environmental Services Coordinator, February 16, 1988.
11. Southeastern Virginia Planning District Commission, 1979 Regional Open Space Plan: Boat Ramp Element (Norfolk, Virginia: SVPDC), p. 4.
12. Conversations with the Norfolk and Portsmouth Public Utilities Departments, February, 1988.
13. Waterfront Access Study, p.35, and SVPDC Oceanfront Parking Survey, 1987. Off-street parking estimates for Norfolk City Beaches are not available.
14. Cyril T. Zaneski, "Day Visitors, Residents Fight for Spot in Sun" in The Virginian-Pilot and the Ledger-Star, May 31, 1986.
15. SVPDC, Waterfront Access Study, pp. 17-39, and SVPDC Survey, 1987.

16. Estimate of shoreline open to the public for recreational use was derived from a series of Shoreline Situation Reports prepared by the Virginia Institute of Marine Science, 1975 - 1978.
17. In Portsmouth, 29.3% of the shoreline is owned by the Federal Government, 68.1% is in private ownership and only 2.6% is owned by the City.
18. Monthly boat launch data gathered by park personnel show that, between 1982 and 1987, there was a 125% increase in the number of boat launches occurring during the summer.
19. Virginia Division of Parks and Recreation, The North Landing Scenic River System, (Richmond, Virginia: VDPR, 1987), p. 9.
20. Hutchinson, Bob, "Hot Spot: Suffolk Lakes Gain Popularity" in the Virginian-Pilot and Ledger Star, January 10, 1988, p. D-12.
21. To avoid redundancy, applications for U.S. Army Corps of Engineers permits, VMRC subaqueous permits and State/local wetlands permits are processed through a joint application process.
22. The National Recreation and Park Association recommends one parking space for every four anticipated beach visitors. Given the high demand for beach access in Southeastern Virginia, however, it may be difficult to develop parking facilities that would meet this standard.
23. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, Commonwealth of Virginia Coastal Resources Management Program and Final Environmental Impact Report, (Washington, D.C.: NOAA, 1986), pp. I-3.



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