MATHEWS COUNTY
SHORELANDS ACCESS DEVELOPMENT PLAN

Prepared for:

Mathews County Planning and Zoning

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ACKNOWLEDGEMENTS

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WHY A SHORELANDS ACCESS PLAN FOR MATHEWS COUNTY?

Nationwide, coastal areas have become hot spots for development. As land values escalate and private interests restrict access, pressure mounts on fewer and fewer public access points to coastal waters. The 1987 President's Commission on Americans Outdoors called for states to inventory undeveloped shoreline recreation opportunities and develop these for public use. Virginia, under the 1987 Chesapeake Bay Agreement, has partially completed a Tidewater access study and will soon recommend sites and funding for development.

Mathews County offers the benefits of some of the most extensive shoreline in Tidewater Virginia to its residents. However, these people will not be able to utilize this resource for recreational or commercial purposes unless they are permitted and guaranteed future public access. Currently only a very small percentage of county shoreline is publicly accessible. If the county grows as projected, 70% during the fifty year period to 2030, these existing sites and facilities will be increasingly inadequate for Mathews County residents.

Population growth in Mathews County is primarily due at present to retirees and second home owners who are attracted by, among other things, its water resources (Middle Peninsula Planning District Commission 1989). Of residents of Mathews County, 35% are 55 years or older, which is twice the average for Virginia overall (Mathews County Planning Commission 1989). This trend will continue in future years, lessened somewhat by the influx of younger people who serve this population.

Population growth in the county may indeed be sharper than currently projected, especially if growth spills over from Gloucester County. As many as 14,260 people may be living in Mathews County by 2010 (Table 1), compared to the 11,500 currently projected for 2010.

A growing population, a healthy economy, and increased housing alternatives are all desirable, but these will place heavier pressure on shoreline environments and water quality, making an already finite resource more limited for future growth. The Chesapeake Bay Agreement recognizes this intricate relationship. Through the provisions of the Chesapeake Bay Preservation Act, jurisdictions in Virginia are being asked for the first time to look beyond their immediate boundaries to exercise their powers to protect water quality in state waters. This will no doubt change the patterns of development, and can offer increasing waterside recreation opportunities for more people.

This Shorelands Access Plan, which was produced in part through financial assistance pursuant to Coastal Resources Grant #NA 88 AA-D-CZ092 from the National Oceanic and Atmospheric Administration, attempts to:

- o inventory existing and proposed shorelands access sites;
- o develop preliminary site development plans with cost estimates;
- o identify technical and financial resources for development; and
- o develop recommendations for a system to prioritize site development.

HOW THIS PLAN WAS COMPILED

Two categories of water-dependent activities are examined in this study:

Activities needing boat access

- o power boating
- o water skiing
- o sailing
- o canoeing

Activities needing pedestrian access

- o beach swimming
- o fishing
- o activities enhanced by the shore
  - sunbathing
  - sight-seeing
  - picnicking

Relative demands for these activities are assessed and compared to the total water resource available, which is usually not limited in Mathews County. Then access points for boat or pedestrian activities are assessed. These include boat ramps, marinas, car top put-in points, beaches and fishing areas. Although the first step may seem to be unnecessary, this stepped process was chosen to evaluate future demands for different types of access and to help develop a system for prioritizing site development. For instance, while a relative demand for canoeing exists in Mathews County, the county lacks canoe streams. Therefore, consideration should be given to developing the many car top boat or canoe size put-in points into boat ramps which can handle the increased boat sizes, trailers and vehicular traffic generated by other boating activities.

The county was divided into five waterbody planning areas: Piankatank River, Chesapeake Bay, Mobjack Bay, East River and North River. These planning areas include their tributaries and harbors, which have been considered to have access to the main waterbody. Hills Bay and Milford Haven, with access to the Chesapeake Bay, are included in the Chesapeake Bay planning area.

Much of the information in this plan has been adapted or compiled from other sources. The Southeastern Virginia Planning District Commission provided a helpful model in its Waters of Southeastern Virginia. The recent publication, the Chesapeake Bay and Susquehanna River Public Access Guide should be credited with its succinct inventory, maps and descriptive information. The original field notes prepared by the Virginia Division of Parks and Recreation were invaluable sources of specific data on site features. The Mathews County Shoreline Situation Report, published by the Virginia Institute of Marine Science in 1975, continues to provide data on shoreline characteristics and erosion patterns. All of the secondary sources for this plan are listed in the References section.

TABLE 1

POPULATION PROJECTIONS
1990-2010

MATHEWS COUNTY

	Dwelling Units (Year Round)	Population
1980	3642	7,995
1985	4186	9,795
1990	4622	10,816
2000	5117	11,512
2005	6107	13,192
2010	6602	14,260

Assumptions

1. Household sizes of 2.6 for 1980-90; 2.5 for 1990-2000; and, 2.4 for 2000-10.

2. A 10 percent vacancy rate throughout the planning period. (The county had almost 14% vacancy in 1980.)

3. An average annual increase in dwelling units of 99 which is consistent with the average annual rate from 1980-88 (Mathews County Comprehensive Plan 1989).

Comments

- These projections assume that 617 seasonal units are not homes for permanent residents; however, it should be considered that the units are a housing reservoir for permanent residents and may be converted as such without the County's knowledge. It should also be noted that these units, though seasonal, may have a greater impact on waterfront recreational amenities than other residences.

- An average annual increase in dwellings of 99 does not take into consideration increased exurban growth pressures currently experienced by neighboring Gloucester County.

- One-third of mobile homes may be replacements.

SHORELINES AND TIDAL WATERS IN MATHEWS COUNTY

Plankatank River (Godfrey Bay)

Nine miles along the Plankatank River shoreline from the county line east to Iron Point on Godfrey Bay is beach with a mainly narrow[1] nearshore. Flood hazard is generally low and water quality satisfactory for swimming and fishing. Most beaches are very narrow and are limited by poor access. Shore erosion rates are generally low, less than 1 foot/year. Depending on local fetch, wind direction, local traffic and access, there may be potential for beach improvement. The Plankatank River has a maintained navigation channel, with commercial traffic.

From Iron Point to Burton Point, Godfrey Bay has 2.3 miles of beach and 12 acres of fringe marsh in addition to marsh in Chapel Creek. The nearshore is mainly narrow and water quality is satisfactory. The maximum fetch is greater than 20 miles across the Chesapeake Bay but from the north and east about 2 miles. Flood hazard is low as the land is above 10 feet. Beaches are narrow and there are no protected anchorages. Erosion is moderate, about 2.2 feet per year.

Chesapeake Bay (Hills Bay, The Narrows, Gwynn's Island, Stutts Creek, Bethel Beach, Horn Harbor, New Point Comfort)

Hills Bay, the approach to Queen's Creek, is very exposed with a fetch over 20 miles to the northeast, thus erosion rates are severe, more than 3.7 feet per year. Beach comprises the shore in more exposed areas, while coves contain embayed marshes. Flood hazards are low. Queen's Creek is a small tidal river with about 19 acres of fringe or embayed marsh. Water quality in this area is satisfactory for swimming or fishing.

The Narrows separates Gywnn's Island from the mainland, and because of the location, slight to moderate erosion rates and shoreline characteristics there is potential for marina development. Flood hazard is critically high however, with most of the land area below 7 feet. Areas with fringe marshes should be protected because of their water quality and shoreline erosion protection potential. Areas overlooking Milford Haven are also low and have extensive marshes, making them unsuitable for beaches.

Gwynn's Island, facing east to the Chesapeake Bay has an excellent beach, but erosion rates are severe, historically over 7 feet per year. Much of the shoreline area is groined or bulkheaded. A uniform bulkhead line and standards for construction may help to alleviate the localized erosion

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[1] the widths of the nearshore are defined by the location of 12 foot depths as: narrow (less than 400 yards from shore); intermediate (between 400 and 1,400 yards); and wide (more than 1,400 yards from shore). The calculated mean was 919 yards for a selection of Chesapeake Bay and major tributary rivers (VIMS 1975).

resulting from scouring (VIMS 1975). There are no protected anchorages on the east side of the island, but ample access from Milford Haven.

Stutts Creek, with its tidal tributaries, has 28.2 miles of shoreline and extensive marshes comprising 260 acres. The tidal creeks are generally shallow, less than 6 feet, but are popular for shellfishing, fishing and boating activities. Water quality is satisfactory for fishing except the upper part of Stutts Creek, which has sewage outfall. There are virtually no beaches in the area.

Bethel Beach extends 9.8 miles from Rigby Island to Potato Neck, and is mainly a narrow barrier island on the Chesapeake Bay. Beaches are narrow, and because of the severe erosion rates here, offer little opportunity for site facilities enhancement. Although now open, the inlet between Rigby Island and Bethel Beach has historically been closed. The back beaches have a narrow, somewhat protective tidal marsh.

From Potato Neck to New Point Comfort, including Horn Harbor, there are 47.7 miles of shoreline with about 500 acres of extensive marshes, and small localized beaches. Flood hazard is high due to the low-lying land. Water quality is satisfactory, except for Horn Harbor. Bay shoreline is susceptible to severe erosion rates, as much as 30 feet per year near Dyer Creek. At New Point Comfort, a channel separates the lighthouse from the point.

Mobjack Bay

Nineteen miles of shoreline extend from New Point Comfort to the East River, most of which is marsh. Water quality is satisfactory and erosion rates are from slight to severe, depending on local fetch and shoreline characteristics. Davis Creek and Pepper Creek have potential as marina and commercial watermen service areas. The area is popular for fishing, shellfishing and water sports.

East River

Containing 183 acres of fringe and embayed marsh, the East River has a narrow marked channel with depth of at least 4 feet, with local shoals. Water quality is satisfactory except for the upper end of Put-In Creek at Mathews Courthouse. Flood hazards vary from moderate to low as topography rises upstream. The shore has many boat yards and private or quasi-private boat access points. Town Point Landing, an improved boat ramp owned by the county is located on Put-In Creek.

North River

Like the lower Mobjack Bay, this area contains no beaches, but is popular for boating and fishing. Water quality is satisfactory. The channel has depths to 12 feet, and Blackwater Creek is 7 feet up to Greenmansion Cove. There is localized shoaling. The shoreline has many piers and fish traps.

COMPARING SUPPLY WITH DEMAND
THE INVENTORY OF PRESENT ACCESS SITES

The following table (Table 2) is a list of shorelands access sites in Mathews County. Some of these sites are developed and contain facilities such as parking, boat ramps and boat storage. Some, although undeveloped, are used as boat launch areas or fishing piers. This list includes publicly owned sites, owned by the County, The Commonwealth of Virginia and the U. S. Coast Guard. Sites which are listed as commercial (Q) or private (P) have also been included, but this may not be a complete listing of privately owned access points. It does not include individual piers, private beaches or private launch sites.

Each listing contains the following information where applicable:

- One of five waterbody planning areas: the Piankatank, Chesapeake, Mobjack, East River or North River;
- Number of state road
- Ownership: C=County; S=State; F=Federal; Q=Commercial; P=Private;
- Size in acres where acreage for each site was obtained from the records of the County Commissioners of Revenue. Losses of land due to erosion may not be accounted for.
- Adjacent land use: R=Residential; C=Commercial; I=Industrial;

For items following land use, a dot indicates that this item is present or the site is currently used for this purpose. Remarks follow, which detail a specific site condition and potential for development.

TABLE 2

MATHEWS COUNTY WATER ACCESS INVENTORY

	Waterbody	Road Access	Owner	Size (acres)	Land Use	Commerical Watermen	Shoulder Parking	Small Parking Lot (cars < 10)	Large Parking Lot (cars > 10)	Slips/Moorings	Boat Storage	Boat Ramp	Car Top Only	Fishing Bank or Pier	Swimming Beach	Hiking/Natural Area	Picnicking	Restrooms	Food/Fuel	Handicapped Access	Fee/Permit	Remarks
AUBURN PUBLIC LANDING	NORTH	620	C	0.67	R								•	•								MODERATELY STEEP BANK. ERODED. ONLY PUBLIC SITE WEST OF COUNTY. ON NORTH RIVER.
BAYSIDE END 633	CHES	633	C		R								•	•	•	•						BEACH LOCATION ON GWYNN'S ISLAND. WATER DEPTH NEAR-SHORE GREATER THAN 2'.
BETHEL BEACH	CHES	609			R										•							END OF ROAD, UNAPPROPRIATED. EXISTING BEACH USE.
CHERRY POINT LANDING	CHES	664	P		R							•										HAS BEEN USED FOR BOAT LAUNCH WITH PERMISSION FROM OWNER.
COURTHOUSE PARKING LOT	EAST	611	C	2.23	C			•						•		•						LOCATED AT SANITARY PLANT. POTENTIAL FOR EDUCATIONAL USE. EXISTING DOCK IN FAIR CONDITION, CURRENTLY LIGHT USE.
DAVIS CREEK LANDING	MOBJ	689	C	0.40	C		•						•	•								EXISTING 175' DOCK
DOCTOR'S CREEK LANDING	CHES	661	C	0.47	R									•								POTENTIAL FOR BOAT LAUNCH IF DEVELOPED; USED AS LOCAL TIE-UP.
EDWARD'S RAILWAY	CHES	636	Q	2		•			•	•					•		•				•	

MATHEWS COUNTY WATER ACCESS INVENTORY

	Waterbody	Road Access	Owner	Size (acres)	Land Use	Commercial Watermen	Shoulder Parking	Small Parking Lot (cars < 10)	Large Parking Lot (cars > 10)	Slips/Moorings	Boat Storage	Boat Ramp	Car Top Only	Fishing Bank or Pier	Swimming Beach	Hiking/Natural Area	Picnicking	Restrooms	Food/Fuel	Handicapped Access	Fee/Permit	Remarks
GARDEN CREEK CANAL	CHES	648	C	2.66	R								•	•	•	•						WIDE BEACH. CURRENTLY LIGHT TO MODERATE USE. SUBJECT TO SEVERE EROSION.
GINNEY POINT MARINA	PIANK	628	G					•		•	•							•				
GRIMSTEAD PUBLIC LANDING	CHES	728	C	0.98	C	N		•				•								•		ADJACENT TO SEA-BREEZE RESTAURANT, PARKING MAY BE SHARED WITH OTHER USES.
GWYNN'S ISLAND BOATEL	CHES	669	G							•	•							•	•		•	
HAVEN BEACH	CHES	643	C	21.3	R		•						•		•	•						BEACH SUBJECT TO SEVERE EROSION; IMPROVEMENTS HAVE BEEN WASHED AWAY.
HAVEN PUBLIC LANDING	CHES	682	C	0.25	R		•			•			•									CURRENT HEAVY COMMERCIAL USE; *GOOD UNDEVELOPED* SITE FOR BOAT RAMP. EXISTING 190' DOCK, MINOR EROSION, NEAR-SHORE WATER DEPTH 1-2'.
HODGES MARINA	PIANK	701	G									•						•				
HORN HARBOR LANDING	CHES	698	C	0.90	R								•	•		•						
HORN HARBOR MARINA	CHES	710	G							•	•							•	•		•	

MATHEWS COUNTY WATER ACCESS INVENTORY

	Waterbody	Road Access	Owner	Size (acres)	Land Use	Commerical Watermen	Shoulder Parking	Small Parking Lot (cars < 10)	Large Parking Lot (cars > 10)	Slips/Moorings	Boat Storage	Boat Ramp	Car Top Only	Fishing Bank or Pier	Swimming Beach	Hiking/Natural Area	Picnicking	Restrooms	Food/Fuel	Handicapped Access	Fee/Permit	Remarks
STEAMSHIP WHARF	MOBJ	14	S	4.37	R											•	•					SITE HAS NO ACCESS FROM PUBLIC ROAD. FORMER STEAMSHIP WHARF WAS DEPARTURE POINT FOR TOUR BOATS OF LOWER BAY AND MAY HAVE LOCAL OR STATE HISTORICAL SIGNIFICANCE. BEACH WITH LITTLE EROSION. ENCOURAGE STATE TO NEGOTIATE ACCESS AND CONSIDER DEVELOPMENT, PERHAPS AS DEPARTURE POINT FOR NEW POINT COMFORT LIGHTHOUSE AND/OR TOURIST DESTINATION.
THE NARROWS MARINA	CHES	223	9		R	•			•	•	•	•			•		•	•	•		•	
TOWN POINT PUBLIC LANDING	EAST	615	C	1.37	R		•	•				•		•		•				•		EXCELLENT LOCATION CLOSE TO MATHEWS COURTHOUSE. BOAT RAMP IN GOOD CONDITION; RIPRAP SHORE ERODED. CONSIDER SMALL AREA OF TIDAL MARSH FOR EDUCATIONAL USES. FISHING AND SWIMMING PROBABLY NOT COMPATIBLE WITH PROXIMITY TO SEWAGE TREATMENT PLANT. NEEDS SIGNS AND REFUSE COLLECTION.

MATHEWS COUNTY WATER ACCESS INVENTORY

	Waterbody	Road Access	Owner	Size (acres)	Land Use	Commerical Watermen	Shoulder Parking	Small Parking Lot (cars < 10)	Large Parking Lot (cars > 10)	Slips/Moorings	Boat Storage	Boat Ramp	Car Top Only	Fishing Bank or Pier	Swimming Beach	Hiking/Natural Area	Picnicking	Restrooms	Food/Fuel	Handicapped Access	Fee/Permit	Remarks
MATHEWS YACHT CLUB	CHES	639	P						•	•		•		•			•	•	•		•	
MILFORD PUBLIC LANDING	CHES	672	C	0.05	R					•				•						•		LIMITED BY LACK OF PARKING. LOCAL WATERMEN OBJECT TO HEAVY USE BY OUT-SIDE WATERMEN DURING PEAK SEASON.
MOBJACK BAY MARINA	NORTH	617	P							•	•	•						•	•		•	
NEW POINT COMFORT ISLAND	CHES		C	194											•	•						ACCESSIBLE BY BOAT ONLY. LIGHTHOUSE NOW ON SEPARATE PARCEL. SUBJECT TO SEVERE EROSION. LARGE NATURAL AREA IMPORTANT BEACH FOR COUNTY RESIDENTS.
OLD MILL LANDING	CHES	607																				
PIANKATANK RIVER LANDING	PIANK	632	C	0.48	R	N		•					•		•							SHALLOW NEARSHORE, WIDE ATTRACTIVE BEACH ON GODFREY BAY. POTENTIAL FOR DEVELOPMENT INTO PICNIC AREA. ALSO CALLED HALLIEFORD PUBLIC LANDING.

MATHEWS COUNTY WATER ACCESS INVENTORY

	Waterbody	Road Access	Owner	Size (acres)	Land Use	Commerical Watermen	Shoulder Parking	Small Parking Lot (cars < 10)	Large Parking Lot (cars > 10)	Slips/Moorings	Boat Storage	Boat Ramp	Car Top Only	Fishing Bank or Pier	Swimming Beach	Hiking/Natural Area	Picnicking	Restrooms	Food/Fuel	Handicapped Access	Fee/Permit	Remarks
POINT ROAD	MOBJ	600			R		•						•	•		•						IF OWNERSHIP LOCAL, MAY BE ALTERNATIVE SITE FOR DEVELOPMENT FOR BOAT ACCESS TO NEW POINT COMFORT. PARKING EXPANSION AREA.
POWELL'S BOAT YARD			9							•												
QUEEN'S CREEK LANDING	CHES	639									•											
QUEEN'S CREEK MARINA	CHES		9							•								•				
ROANE'S POINT LANDING	PIANK	630	C	0.45	R	N	•						•	•								POTENTIAL FOR DEVELOPMENT FOR BOAT LAUNCH AND PARKING
ROSE'S CREEK LANDING	CHES	662	C	0.74	R		•						•	•								LOCAL RESIDENTS AND WATERMEN TIE UP TO PIER; APPARENT HEAVY USE.
SANDY POINT BEACH	CHES		P		R										•	•						RECOMMENDED BY SHORELINE SITUATION REPORT (1975) AS ONE OF THE BEST SANDY BEACHES ON THE BAY. EROSION IS SEVERE, HISTORICALLY OVER 7' PER YEAR. PROBABLY IN PRIVATE OWNERSHIP.
SEABREEZE RESTAURANT	CHES	223	9		R				•			•							•			ADJACENT TO PUBLIC BOAT RAMP ON GWYNN'S ISLAND

MATHEWS COUNTY WATER ACCESS INVENTORY

	Waterbody	Road Access	Owner	Size (acres)	Land Use	Commercial Watermen	Shoulder Parking	Small Parking Lot (cars < 10)	Large Parking Lot (cars > 10)	Slips/Moorings	Boat Storage	Boat Ramp	Car Top Only	Fishing Bank or Pier	Swimming Beach	Hiking/Natural Area	Picnicking	Restrooms	Food/Fuel	Handicapped Access	Fee/Permit	Remarks
U.S. COAST GUARD STATION	CHES	225	P	6.35	C																	
WAREHOUSE CREEK LANDING	PIANK	631	C	0.24	R	N							•	•	•							MODERATELY STEEP BANK, SOME CONCRETE POURED DOWNSLOPE. POTENTIAL FOR DEVELOPMENT, BUT LIMITED BY PARKING.
WILLIAMS WHARF	EAST	614	P		I								•	•								FORMER OYSTER WHARF MAY BE GOOD LOCATION FOR SOUTHERN COUNTY WITH FAST ROAD ACCESS TO OTHER AREAS OF COUNTY. OWNERSHIP NOW PRIVATE. EXISTING 180' DOCK.
WINTER HARBOR HAVEN	CHES	608	C	1.00	R		•						•	•								LOCATED NEXT TO MARINA. ROAD ACCESS MAY BE LIMITING FOR DEVELOPMENT. EXISTING 160' DOCK.
WINTER HARBOR LANDING	CHES	611	C	1.00	R		•						•			•						EXISTING 160' DOCK IN POOR CONDITION. HEAVY USE BY LOCAL WATERMEN.

COMPARING SUPPLY WITH DEMAND: CURRENT AND FUTURE NEEDS

In this three-step process, future needs for water and shoreline activities in Mathews County will be compared with existing facilities. First, because these activities take place on a finite resource - the waters and tributaries of the Chesapeake Bay - we examine the spatial requirements of these activities and determine whether this can be satisfied in or near the waters of Mathews County. Secondly, we determine whether access for these activities can be provided. Finally, the existing access points are inventoried and their potential for development assessed.

The following discussion follows guidelines in the Virginia Outdoor Plan (1989) and The Waters of Southeastern Virginia (1988). It is based on participation rates developed in the Virginia Outdoor Recreation Demand Survey, which was updated in 1987. Two population estimates were used to estimate future demands. In Table 3, the population and demands projected by the Virginia Outdoor Plan (1989) are presented. These include local and nonlocal needs, which are significantly greater. The following tables (4-6) project local demands only, based on population projected specifically for this plan (Table 1). These demand projections are planning guidelines only.

Water Oriented Recreation Activities

Power Boating

Power boating is usually defined as cruising, not including fishing or water skiing. In the Mathews County area, approximately 27% of the total population participates in this activity. The total area required for this, including local and nonlocal residents, is 7,580 acres in 1990, which will increase to 9,140 acres by 2010.

Mathews County is virtually surrounded by Bay waters and tributaries. However, depending on wind, tide and shoreline characteristics, certain areas have higher traffic volumes, and the potential for bottlenecks or accidents exists in such areas as the Narrows or Stutts Creek. Despite these factors, plenty of boating waters exist to accomodate present and future demands.

TABLE 3

MATHEWS COUNTY RECREATION FACILITIES DEMANDS

PROJECTED 1990 POPULATION

ACTIVITY	1990							2010		UNIT
	PCNT. PART.	LOCAL NEED	NON LOCAL	TOTAL NEED	TOTAL SUPPLY	PRIVATE SUPPLY	NEED GAP	NEED	NEED GAP	
Fishing	31.97	82	386	468	11297	0	-10829	574	-10723	Stream Miles
Canoeing, Etc.	11.14	3	0	3	0	0	3	5	5	Stream Miles
Sailing	7.19	121	3185	3306	90373	0	-87067	4952	-85421	Acres
Power Boating	27.08	351	7229	7580	90373	0	-82793	9142	-81231	Acres
Water Skiing	11.38	428	10958	11386	90373	0	-78987	16686	-73687	Acres
Swimming Outdoors	42.95	4	15	19	6	6	13	24	18	Beach Acres
Beach Use, Sunning	44.04	4	9	13	6	6	7	16	10	Acres
Picnicking	34.6	52	0	52	19	14	33	63	44	Tables

Source: Virginia Outdoor Plan (1989)

TABLE 4

MATHEWS COUNTY RECREATION FACILITIES DEMANDS

(unadjusted for age)

YEAR: 1990
POPULATION: 10,816
DESIGN FACTOR: 1.5

ACTIVITY	PART. RATE	NUMBER OF PART.	INDIV YEARLY OCCUR.	OCCASIONS DEMAND PER YEAR	DAYS IN SEASON	FACILITY UNIT	DAILY FAC. CAP.	MINI. FAC. DEMAND.	PEAK FAC. DEMAND.
Bicycle Trails (Pleasure)	38.61%	4,176	24.00	100,225	182	Mile	200	3	4
Boating (Power)	27.08%	2,929	5.20	15,231	182	Acre	1	84	126
Camping	21.31%	2,305	6.70	15,443	182	Acre	15	6	8
Canoe Trails	11.14%	1,205	3.90	4,699	182	Mile	48	1	1
Fishing	31.97%	3,458	9.60	33,196	182	Acre	2	91	137
Nature Walks	8.94%	967	5.80	5,608	182	Mile	75	0	1
Picnicking	34.60%	3,742	4.80	17,963	182	Table	8	12	19
Sunbathing (Beach)	44.04%	4,763	11.70	55,731	140	Acre	300	1	2
Swimming (Beach)	42.95%	4,645	9.30	43,203	98	Acre	300	1	2
Waterskiing	11.38%	1,231	12.00	14,770	182	Acre	1	81	122

Source: Virginia Department of Conservation and Historic Resources
Redman/Johnston Associates, Ltd.

TABLE 5

MATHEWS COUNTY RECREATION FACILITIES DEMANDS

(unadjusted for age)

YEAR: 2000
POPULATION: 12,627
DESIGN FACTOR: 1.5

ACTIVITY	PART. RATE	NUMBER OF PART.	INDIV YEARLY OCCUR.	OCCASIONS DEMAND PER YEAR	DAYS IN SEASON	FACILITY UNIT	DAILY FAC. CAP.	MINI. FAC. DEMAND.	PEAK FAC. DEMAND.
Bicycle Trails (Pleasure)	38.61%	4,875	24.00	117,007	182	Mile	200	3	5
Boating (Power)	27.08%	3,419	5.20	17,781	182	Acre	1	98	147
Camping	21.31%	2,691	6.70	18,028	182	Acre	15	7	10
Canoe Trails	11.14%	1,407	3.90	5,486	182	Mile	48	1	1
Fishing	31.97%	4,037	9.60	38,754	182	Acre	2	106	160
Nature Walks	8.94%	1,129	5.80	6,547	182	Mile	75	0	1
Picnicking	34.60%	4,369	4.80	20,971	182	Table	8	14	22
Sunbathing (Beach)	44.04%	5,561	11.70	65,063	140	Acre	300	2	2
Swimming (Beach)	42.95%	5,423	9.30	50,437	98	Acre	300	2	3
Waterskiing	11.38%	1,437	12.00	17,243	182	Acre	1	95	142

Source: Virginia Department of Conservation and Historic Resources
Redman/Johnston Associates, Ltd.

TABLE 6

MATHEWS COUNTY RECREATION FACILITIES DEMANDS

(unadjusted for age)

YEAR: 2010
POPULATION: 14,260
DESIGN FACTOR: 1.5

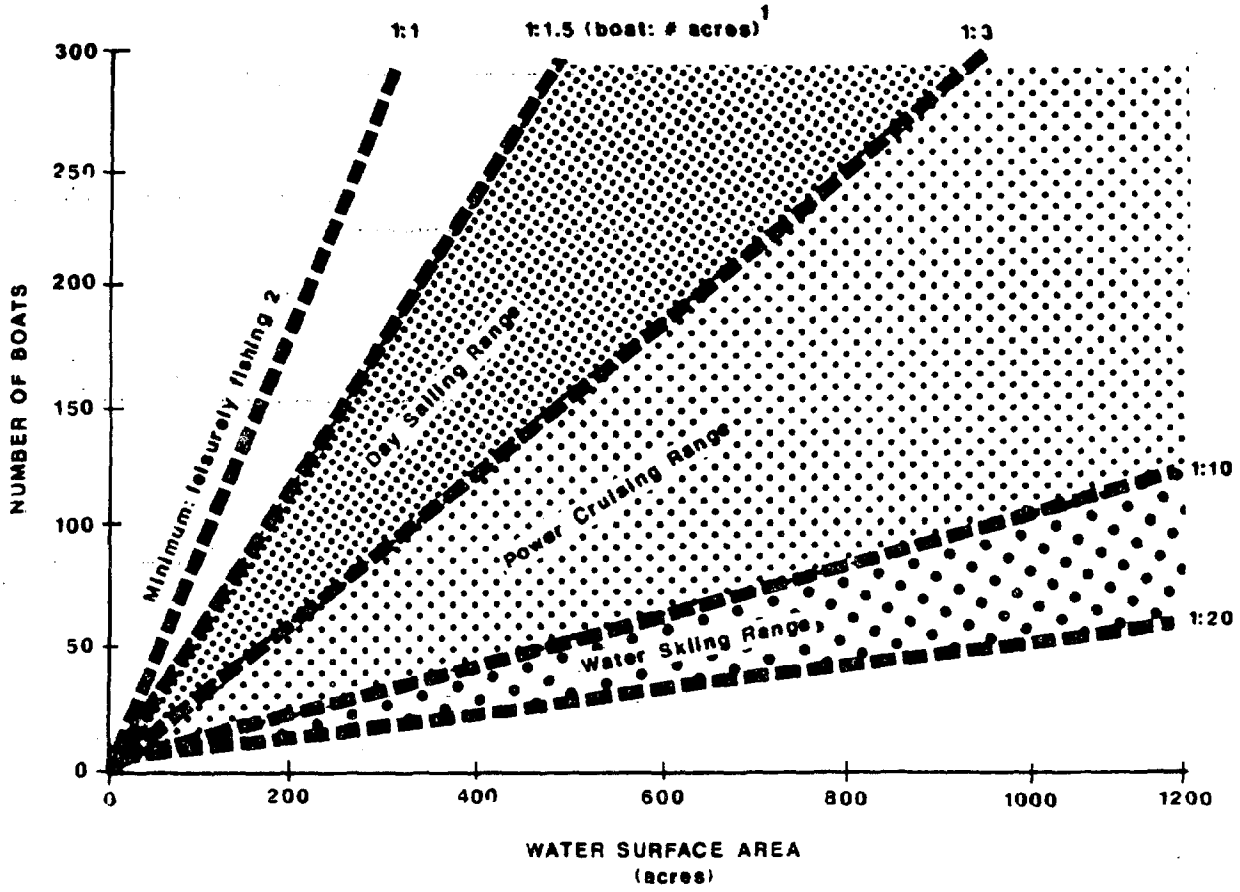
ACTIVITY	PART. RATE	NUMBER OF PART.	INDIV YEARLY OCCUR.	OCCASIONS DEMAND PER YEAR	DAYS IN SEASON	FACILITY UNIT	DAILY FAC. CAP.	MINI. FAC. DEMAND.	PEAK FAC. DEMAND.
Bicycle Trails (Pleasure)	38.61%	5,506	24.00	132,139	182	Mile	200	4	5
Boating (Power)	27.08%	3,862	5.20	20,080	182	Acre	1	110	165
Camping	21.31%	3,039	6.70	20,360	182	Acre	15	7	11
Canoe Trails	11.14%	1,589	3.90	6,195	182	Mile	48	1	1
Fishing	31.97%	4,559	9.60	43,766	182	Acre	2	120	180
Nature Walks	8.94%	1,275	5.80	7,394	182	Mile	75	1	1
Picnicking	34.60%	4,934	4.80	23,683	182	Table	8	16	24
Sunbathing (Beach)	44.04%	6,280	11.70	73,477	140	Acre	300	2	3
Swimming (Beach)	42.95%	6,125	9.30	56,959	98	Acre	300	2	3
Waterskiing	11.38%	1,623	12.00	19,473	182	Acre	1	107	160

Source: Virginia Department of Conservation and Historic Resources
Redman/Johnston Associates, Ltd.

Water Skiing

Water skiing requires the largest space of any boating activity (Figure 1). In Mathews County, about 11% of the residents water ski, for which 430 acres are needed. An additional 11,000 acres will be needed to satisfy non-residents needs for 1990. As for power boating, it has been estimated that 90,400 acres are available locally, therefore, this demand should be easily met at the same time as demands for other boating activities.

FIGURE 1



Generalized Area Requirements of Selected Boating Activities

Sailing

Like power boating, the waters most attractive for sailing depend on wind, tide and shoreline. Also, as for power boating, the level of use depends on the craft - smaller craft are suitable for day sailing and have an effective use radius of only a few miles from an access point. In Mathews County, 7% of residents sail, for which only 120 acres are needed in 1990. Non-residents will require substantially more area, totalling almost 5,000 acres in 2010, however, this is easily provided by local waters.

In the future, in areas of high traffic, the enjoyment of boating activities, such as day sailing may be affected as power boating or water skiing compete for space.

Fishing

Fishing as a past-time is extremely popular in Mathews County - 32% of the area population fishes from a bank, a pier or from a boat. By 2010, 570 stream miles, well below the available estimated area, will be required to meet the total demand for this activity. The actual productivity of fishing areas depends on many factors, such as past fishing pressure, water quality, fish migratory patterns, and habitat management. Given this variability, and the wide extent of potential open water fishing grounds in the Mathews County area, fishing as a recreational activity will probably be more limited in the future by limited access than actual area.

Canoeing

Canoeing is about as popular in this area as water skiing - about 11% of the population engages in this activity. When only major streams are considered, not including open waters and minor tributaries, Mathews County has no canoeing waters available, although local demand will be 5 stream miles by 2010.

Beach Swimming and Sunbathing

This is the most popular water-oriented activity in the region, participated in by approximately 44% of the local population. An average person goes to the beach 40 times per year. From 16 to 24 acres of beach will be needed by 2010 to accomodate local and seasonal demands. Assuming that the ideal beach width is from 100 to 200 feet, this translates into about two miles of beach.

Many sandy beach areas currently exist in Mathews County - however, numerous barriers exist for their public use or development. These will be discussed later.

The waters of Mathews County provide ample opportunity to participate in these activities, with the possible exception of canoe streams. The next aspect of this analysis is to examine water access points. This is divided into two parts: boat access, which comprises boat ramps, car top boat or canoe put in points and marinas, and, pedestrian access for swimming, sunbathing and shore fishing.

Boat Access

An accurate estimate of boat access needs in Mathews County is difficult to assess. The Virginia Department of Game and Inland Fisheries (VGIF), Boat Registration, (804-367-0939) has registered 2,389 boats as of 1989 in Mathews County, 1,917 of which have been re-registered and presumed active. VGIF registers any boat with a motor, and any sailboat over 18 feet, unless these are documented with the U. S. Coast Guard. Coast Guard documentation covers any boat greater than 5 net tons, generally more than 26 feet long. Data for documented boats is not analyzed on a local basis. Furthermore, these statistics will not reveal the large numbers, as much as 25 times greater, of visitors with boats to these waters.

Marinas

Most area marinas serve both power and sailboats year-round. These marinas provide overnight or seasonal docking, and may also allow permanent liveaboards. The many services offered include engine, hull and propeller repair, fuel, electricity, sanitary services and food.

In addition to their value in providing protected moorage for boats, coastal marinas provide many social and economic benefits, including:

- o access to tidal waters
- o focal points for community activities
- o foci for upland development
- o tax revenues for local government
- o revenue for owners and the marine industry
- o employment opportunities.

There are about 750 boat slips in Mathews County (VA Department of Parks and Recreation Inventory 1989), at either commercial marinas or private docks. The Virginia Division of Water Programs maintains a list of slips for commercial or recreational use to monitor sewage disposal: a recent listing numbers 901 slips which are used seasonally.

Boat Ramps

The number of launching ramps required to meet estimated demand is a function of peak use rather than average use. There are several methods to estimate demand. One estimate may be made with the following assumptions.

Disregarding any boats registered outside Mathews County, and assuming that all boats registered are also kept in the county, if all slips are full during the season, 900 area registered boats will be kept in the water in slips, or tied at public docks. Estimates for the proportion of the boating population which trailers boats and depends solely on boat ramps vary widely, depending on availability of private piers and moorings. Sixty percent is considered a conservative estimate by the Southeastern Virginia Planning District Commission (1988); alternatively, a survey of 279 Anne Arundel County, Maryland boaters indicated that only 20% required trailering to boat ramps. Assuming that 60% of the active registered boats in Mathews County require access by boat ramp, 1,150 boaters regularly use local boat ramps. Allowing 40 launches per day per ramp, 29 ramps are needed to accomodate this use.

Many of Mathews County boat ramps may not be able to accomodate the total demand for their use, due to parking being limited to road shoulders, inadequate maintenance and incompatible shoreline characteristics. Demand is also not evenly distributed among the county's access points because different areas have different recreational attributes and attract different types and quantities of boaters. A survey of the use during peak periods, such as holiday weekends would best evaluate the manner in which demand is met with current facilities.

Car Top or Canoe Put-In

This type of access is designated for a light cart or hand carried boat, which because of its small size is probably not registered. Such access points, especially on large bays, can easily be served by more multi-purpose boat ramps, or wherever there is pedestrian access to the water. There is little specific need in Mathews County for canoe put-in because of the lack of canoe streams.

While there is probably adequate access of this type, there are problems with its use, such as parking and steep or eroded banks. Specific conditions are discussed in the inventory of existing access sites.

Shoreline Pedestrian Access

Water activities such as swimming and bank or pier fishing require pedestrian access. In addition, the shore is often the preferred site for activities such as sunbathing, walking, picnicking, and nature study. Pedestrian shoreline access needs may therefore be divided into three categories: 1) beachfront where swimming in particular is desired, but where all of these activities may occur; 2) fishing areas where swimming is not allowed or practical, and 3) swimming or fishing is not permitted, but where the shoreline is accessible for the enhancement of other activities.

Beachfront

Mathews County beaches can be found on the Chesapeake Bay and in areas along the Piankatank River, such as in Godfrey Bay. Because of the severe erosion on the Chesapeake Bay, many beach areas are narrow, and on Gwynn's Island are groined or bulkheaded. Water quality is generally not restrictive for swimming, except at the heads of creeks where sewage outfall points are located. The primary constraint to beach use at present is restricted access: either beaches are privately owned, to mean low water, or there is limited parking and maintenance, or no road access at all.

Fishing Areas

Pedestrian access to the shore is not the only requirement to good fishing sites. Low shore, including marshes, tidal flats and very shallow water may make certain types of fishing undesirable. Fishing structures such as piers or bridge platforms are often used to enhance fishing opportunities where fish populations are healthy and abundant. Many piers are currently available in Mathews County, but are often commercially used by local watermen for crab pot storage or for boat tie-up. As noted in the access inventory, many of these docks are in fair or poor condition.

Other Shoreline Recreation Areas

These areas are important for obtaining or maintaining open space or natural resource protection objectives. Development in Resource Protection and Management Areas, when these are designated and protection mechanisms are in place under the Chesapeake Bay

Preservation Act, will be signficantly restricted. However, development which protects water quality and provides for many passive and some active recreational activities will probably be encouraged. More opportunities for this type of access may result.

The following are standards for park design which aim to achieve the needed capacities to meet future demands for water related activities. For instance, 25 linear feet of beach shoreline, or 0.2 acres of beach, should be provided for every 1,000 people. A beach of 3.0 acres will hold 150 people at one time. Standards are given for:

- swimming beach
- boat ramps
- fishing
  - bank or pier
  - boat
  - stream
- picnicking
- boating
- hiking
- canoeing
- bicycle trail

STANDARDS FOR PARK DESIGN

ACTIVITY TYPE	DIMENSIONS W x L	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POPULATION	REMARKS
Swimming Beach	200 ' x 600' (1)	3.0	150	25' Shore/ 1000	100' wide beach desirable with 100' swimming water assumes 30% users in water share support facilities with other activities.
	665' x 600' (2) Length < 3,600'	4.0	150 day/ 50	25'/1,000	200' wide beach desirable with 100' swimming water 100' buffer zone for utilities and picnicking. 150 square feet water/ swimmer; three (3) acres support per acre net recommended.
	(3)	2.5		50'/1,000	0.2 acres beach per 1000

SOURCES:

1. Virginia Outdoor Plan (1989)
2. de Chiara and Koppelman (1975)
3. Gold (1980)
4. Roy Mann Associates (1976)

* Does not include area needed for support facilities, parking and buffer

STANDARDS FOR PARK DESIGN

ACTIVITY TYPE	DIMENSIONS W x L	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POPULATION	REMARKS
Fishing - Bank	8 x 50' (1)	400 sq. ft.	100/mile shoreline	1 mile shore/ 1,000	(1) Consider on any water body that can support fish population- VGIF suggest 10 acre minimum size where unlimited fishing pressure anticipated. Fishing water is a plus for any community, district, regional or state facility. (2) Should be within an hours drive (or 50 miles) of a city of 20,000 persons and within five (5) to ten (10) miles of a good highway.
	(2)	3 surface acres/lake			
Boat	(1)	4 acre water/ boat with 2 people	.50 acres	4 acres/1,000	
	(2)	8 acres water/ boat			
	(3)	Rivers: .02 acres/boat All: .14-.5 acres/boat Lakes: 8 acres/boat			
Stream	(1)	1 mile/8 fishermen	4/mile		

SOURCES:

1. Virginia Outdoor Plan (1989)
2. de Chiara and Koppelman (1975)
3. Gold (1980)
4. Roy Mann Associates (1976)

* Does not include area needed for support facilities, parking and buffer

STANDARDS FOR PARK DESIGN

ACTIVITY TYPE	DIMENSIONS W x L	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POPULATION	REMARKS
Bicycle Trail	6' Width x Length	0.7 acre/mile	50	1 mile/1,000	Provide bike paths off roads where possible; connect schools, parks, other facilities.
	Minimum width 3.3' (2)				Rentals desirable for touring
	One rider lanes 6.4' for 2 riders 10.9' for 3 riders				Max. 10% grade short Average 4-5% runs grade
					Consider parking at terminus

SOURCES:

1. Virginia Outdoor Plan (1989)
2. de Chiara and Koppelman (1975)
3. Gold (1980)
4. Roy Mann Associates (1976)

* Does not include area needed for support facilities, parking and buffer

STANDARDS FOR PARK DESIGN

ACTIVITY TYPE	DIMENSIONS W x L	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POPULATION	REMARKS
Canoeing	(1)		8 canoes/ mile*		* Capacity depends on stream width 10'-40' 4/mile 40'-70' 8/mile 75'+ 12+/mile
	(2)		2-4 canoes/ mile		Streams must have average flow 100 cubic feet/sec to be suitable Quality of river experience depends on traffic. May be lower to preserve wildness

SOURCES:

1. Virginia Outdoor Plan (1989)
2. de Chiara and Koppelman (1975)
3. Gold (1980)
4. Roy Mann Associates (1976)

* Does not include area needed for support facilities, parking and buffer

STANDARDS FOR PARK DESIGN

ACTIVITY TYPE	DIMENSIONS W x L	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POPULATION	REMARKS
Hiking	Variable (1) 4' wide for medium use (2) 6-10' wide for very heavy use (2)	5 acres/mile 1.2 acres/mile	8/mile 50/mile 400/mile/day	2 mile/1,000	Hiking trails should vary from 1/2 mile to several miles depending on resources available. Shorter nature trails and walks desirable in urban rights-of-way to connect facilities where possible. Develop as wide a variety of trails as possible.

SOURCES:

1. Virginia Outdoor Plan (1989)
2. de Chiara and Koppelman (1975)
3. Gold (1980)
4. Roy Mann Associates (1976)

* Does not include area needed for support facilities, parking and buffer

STANDARDS FOR PARK DESIGN

ACTIVITY TYPE	DIMENSIONS	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POPULATION	REMARKS
Boat Ramps	12' x 20' minimum (1)	2 acres	8 boats/hour		* 1 ramp/40 boats anticipated use on a designated day
	(2)	1-1.5 acres	50-75/day		Average 8 trips/year 21,000 sq. ft. parking ramp 75' vehicular turn-around

SOURCES:

1. Virginia Outdoor Plan (1989)
2. de Chiara and Koppelman (1975)
3. Gold (1980)
4. Roy Mann Associates (1976)

* Does not include area needed for support facilities, parking and buffer

STANDARDS FOR PARK DESIGN

ACTIVITY TYPE	DIMENSIONS W x L	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POPULATION	REMARKS
Picnicking	Variable (1)		4/table	10 units/ 1,000	Tie in with other activities Density higher in urbanized areas
	(2) Family 100'x100'	10,000 ft^2	30 peak users 200 users/ acre		
	Group 200'x200'	40,000 ft^2	200 peak users 200 users/acre		
	(3)				Shelters of 20' x 30' accommodate 60 persons Shelters of 30' x 50' accommodate 150 persons

SOURCES:

1. Virginia Outdoor Plan (1989)
2. de Chiara and Koppelman (1975)
3. Gold (1980)
4. Roy Mann Associates (1976)

* Does not include area needed for support facilities, parking and buffer

STANDARDS FOR PARK DESIGN

ACTIVITY TYPE	DIMENSIONS W x L	NET ACRES* REQUIRED	INSTANT CAPACITY	UNITS/ POPULATION	REMARKS
Boating (power) and/or Water Skiing*	N/A (1)	12 acre/boat		0.5 acres/ 1,000	Minimum 100 acres open water > 4' depth, accommodates 8 boats
	(2)			0.25 acres/ 1,000	One ski boat/40 acres water, power boat/ 20 acres water
* Requires lowest use densities (Figure 1)	(4)				1 ski boat/15 acres, powerboat/6-7.5 acres

SOURCES:

1. Virginia Outdoor Plan (1989)
2. de Chiara and Koppelman (1975)
3. Gold (1980)
4. Roy Mann Associates (1976)

* Does not include area needed for support facilities, parking and buffer

IMPROVING WATER ACCESS: ACQUISITION AND DEVELOPMENT

A Model for Acquisition and Development

The following flow chart (Table 7) illustrates the questions which should be asked when any site is screened for either acquisition or development.

Starting at the upper left hand corner, three initial criteria must be satisfied before a site can be considered for boat access or pedestrian access. These are:

1. shore frontage
2. direct road access, preferably by a state road;
3. site size greater than two acres.

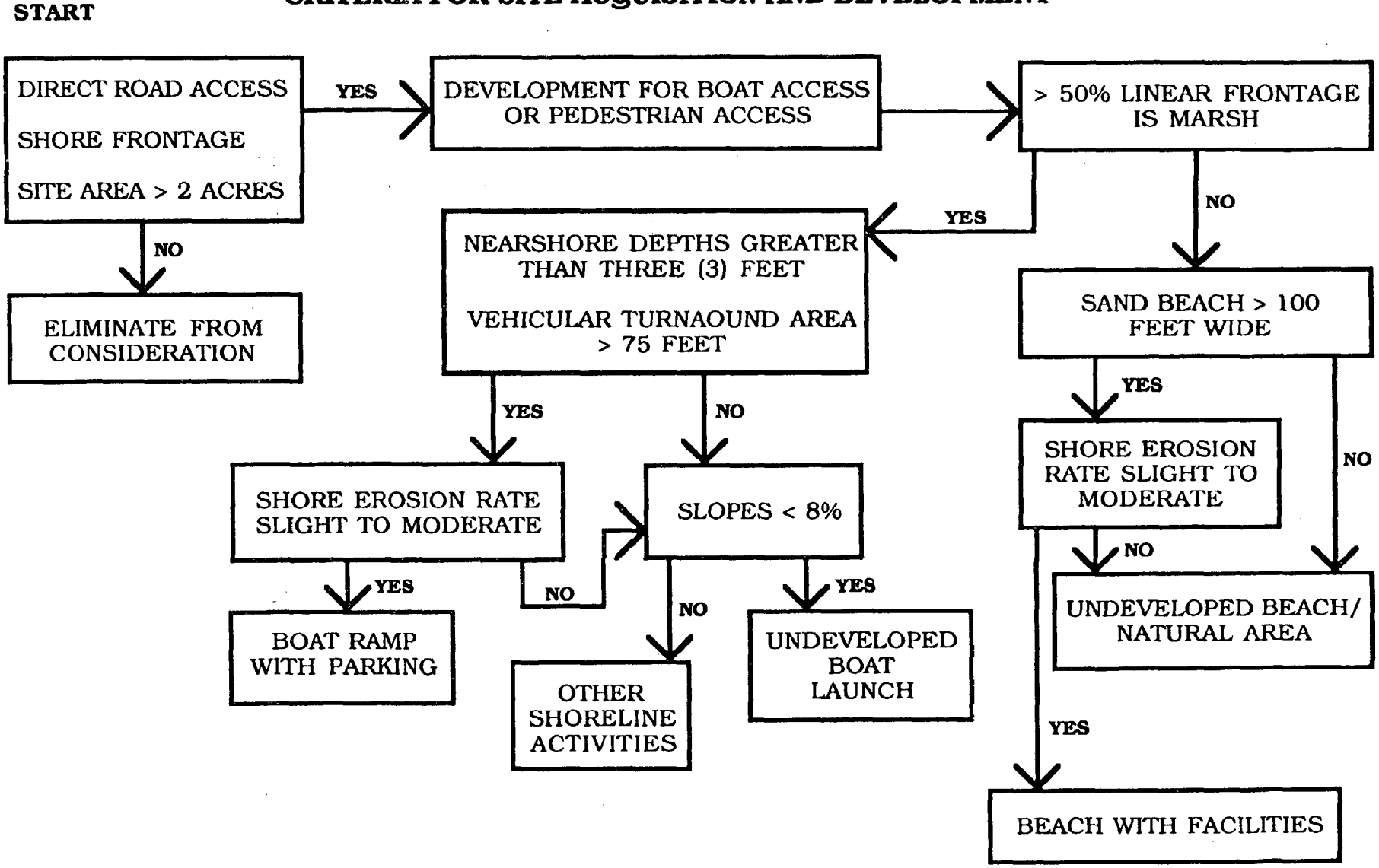
Many of the VDOT sites which are currently used as undeveloped boat launch areas do not satisfy criterion 3; however, because they are already publicly used, they should be screened for development, and if appropriate, land acquisition for parking and turnaround for trailers should be considered.

If these criteria are satisfied, the nature of the shoreline should be assessed. Where marsh does not dominate the shoreline, the site may be suitable for a beach area. Park standards for beaches recommend at least 100 feet in width, and 200 foot wide beaches are preferable. This standard may be prohibitive in Mathews County, where beaches are generally narrow. Some beach areas may be suitable for nourishment and development, but where erosion rates are severe, natural undeveloped beaches, with appropriate public access are more suitable.

Where marsh does dominate the shoreline, other uses than beaches may be appropriate. Boat ramps may be located in small areas that do not require dredging or filling, and where there is room for adequate parking and vehicular turnaround. If these criteria are not satisfied, the site may be useful for car top boat launching, if slopes are less than 8% and the distance for carrying a boat not prohibitive. If none of these criteria are satisfied, the site may still be considered for other shoreline recreation: part of a trail link-greenway with other parks or recreational facilities, an outdoor classroom, a way to preserve scenic vistas or local character. Fishing piers and swimming floats may be alternatives to the limitations posed by shoreline characteristics.

TABLE 7

MATHEWS COUNTY SHORELANDS ACCESS PLAN
CRITERIA FOR SITE ACQUISITION AND DEVELOPMENT



Location, Design and Construction of Water Access Facilities

Depending on their scale and use, all water access points may affect water quality, which is protected by the Chesapeake Bay Preservation Act, and other environmental factors. Their construction and use has significant environmental, social or economic implications, which in many cases are resolved by regulatory permitting. Other issues which arise may often be resolved by careful consideration to location and design. This section will summarize the current regulations in Mathews County and propose guidelines for general development of facilities. **This discussion will not encompass any measures for Chesapeake Bay Resource Protection or Management Areas which may be adopted in the future by local or state jurisdictions.** The water access facilities are divided into boat access and pedestrian access categories.

Marinas

The potential for adverse impacts is due to many variables which include marina location, design, services offered and the number and type of boats served. Site selection based on a clear understanding of potential environmental impacts may be the single most important factor for successful development. Proper siting, especially as location points become more limited, can avoid many permitting issues and help to eliminate costly mitigative measures. Almost any coastal site can be made into a marina, but in general, the more extensive the required modifications, the greater the construction costs and potential for adverse impacts. Table 8 summarizes potential impacts resulting from activities, and suggests stages at which these may best be addressed.

Because of these impacts, marina development and operation is strictly regulated. Depending on the scope of the project, federal, state and local permits may be required. Applications for U. S. Army Corps of Engineers Section 10 Waterways and Section 404 permits, VMRC subaqueous permits and State/local wetlands permits are processed jointly.

Boat Ramps

Environmental impacts from boat ramps are usually less significant than impacts from marina development, because ramps are smaller, entail fewer uses on the site and require less encroachment on tidal waters and wetlands. They are usually subject to the same permits as marinas.

TABLE 8
MARINA ENVIRONMENTAL IMPACTS

	WATER QUALITY										HABITATS								
IMPACT SOURCES	Turbidity	Dissolved Oxygen	Nutrients	Pathogens	Heavy Metals	Hydrocarbons	Toxic Substances	Other Pollutants	Erosion	Hydrological	Endangered Species	Birds and Rookeries	Benthos	Shellfish	Other Aquatic Organisms	SAV	Wetlands	Fish Nursery Areas	Terrestrial Habitats
Location										S	S	S		S		S	S	S	S
Dredging	S	S	S		S	S	S	S		S	S		S	S	S	S	S	S	
Spoils Disposal	S	S			S	S					S	S	S	S	S	S	S	S	S
Filling	S	S	S					S		S	S	S	S	S	S	S	S	S	S
Grading and Clearing	C		C						C			C							C
Hydrological Modification	D	D	D	D	D	D	D	D		D							D		
Structures									D	D				D			D	D	D
Point Wastewater Discharge	D	D	D	D	D						D		D	D					
Non-Point Source Runoff	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D
Boat Operation	E								E		E			E		E	E	E	
Boat Discharge		E	E	E										E					
Spills						O						O	O	O	O			O	
Boat Maintenance			E			O	O	O						O					
Water										E									
Noise											O								

Marina Development Potential for Environmental Solutions

S = S ite Selection

D = Site Design

C = Site Construction

O = Marina and Boat Operations and Maintenance

E = Enforcement

Adapted from EPA 1985

Car Top or Canoe Put-In

These areas do not ususally require dredging or filling, or substantial wetland disturbance, hence permits may not be required. Many existing put-ins are located on Virginia Department of Transportation (VDOT) property. While VDOT may not encourage their use, access is not prohibited. If these areas are to be developed however, a special use permit should be obtained.

Beaches

If land becomes available for beach use, or if development of existing publicly owned beach areas is desired, the addition of support facilities should be carefully considered. These may include access roads, parking, restrooms, drinking fountains, showers, litter receptacles, rental and food concessions and life guard stations. Areas which are subjected to severe rates of erosion should be especially scrutinized for development, as these improvements may not be practical.

Beach development may also require construction that may alter or disturb coastal dune systems, which are protected. Under Virginia enabling legislation, Mathews County adopted a local coastal primary sand dunes ordinance, and activities are regulated by the local wetlands board. Local government development on publicly owned or leased land is exempt from these permitting requirements.

Fishing Areas

Development of simple shoreline fishing banks is not regulated unless dredging or filling of wetlands or subaqueous land is proposed. Construction of noncommercial fishing piers does not require a wetlands permit, but may require a state subaqueous and or a federal permit. Commercial fishing piers will usually be regulated by all permitting agencies.

Other Shoreline Areas

Because direct access to the water usually is not required, these activities are not regulated by federal and state agencies. Elevated walkways or observation platforms may be constructed in tidal wetlands or open waters with a federal and or a state subaqueous permit, but not a state wetlands permit.

The following table (Table 9) summarizes permit requirements for these facilities. Guidelines for design of each of these facilities follow.

TABLE 9

WATER ACCESS PERMITS

Jurisdictional Authority/ Administering Agency	Regulated Activities	Marinas	Boat Ramps	Car-Top Put-In	Beach	Fishing	Other Recreation
Section 404, Clean Water Act Section 10, River and Harbors Act U.S. Army Corps of Engineers Section 401, Clean Water Act State Water Control Board	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.	■	■	▩	□	▩	▩
Virginia Marine Resources Commission (VMRC) Virginia Department of Health	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.	■	■	▩	□	▩	▩
Wetlands Protection Act 1972 Amended 1982 VMRC Local Wetlands Board	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. Local government development activity on publicly owned land is exempt from this permit requirement.	■	■	▩	▩	▩	□
Mathews County Zoning Ordinance	Community recreation allowable activity in R-1. Commercial marinas, railway allowable in B-1						
Coastal Sand Dunes Ordinance Mathews County							▩

■ Usually applies

▩ May apply

□ Is not required

LOCATION AND DESIGN GUIDELINES
MARINAS

Location

- Need for a marina facility should be clearly demonstrated.
- Additional vessels drawn to a waterway by a new facility should not exceed the carrying capacity of that waterway.
- 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.
- Vessel movement in and out of a facility should not infringe on the riparian rights of adjacent properties or interfere with navigation on the receiving waterway.
- Locate near maintained channels.
- Convex shoreline areas at the mouths of waterways are preferred locations. Deep water sites are preferred over sites where dredging is required. Also sheltered areas which provide adequate storm protection are desirable.
- Marinas should be served by public water and sewer services as well as other utilities.
- Should be compatible with adjacent land and water uses.
- Should not restrict existing physical or visual waterfront access.

Design

- Should have sufficient upland area to accommodate necessary parking, storm water management best management practices, fuel and sanitary facilities.
- An upland or deep water site should be identified for construction and maintenance dredging spoils. Locate marina near currently permitted public areas for disposal of dredged materials whenever possible.
- Structures should not extend more than one-third the distance across a waterway and should not impede existing navigation.

- o 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.

- o All structures should be open-file or floating.

- o Slips for deep draft boats should be built in the naturally deeper waters of the marina.

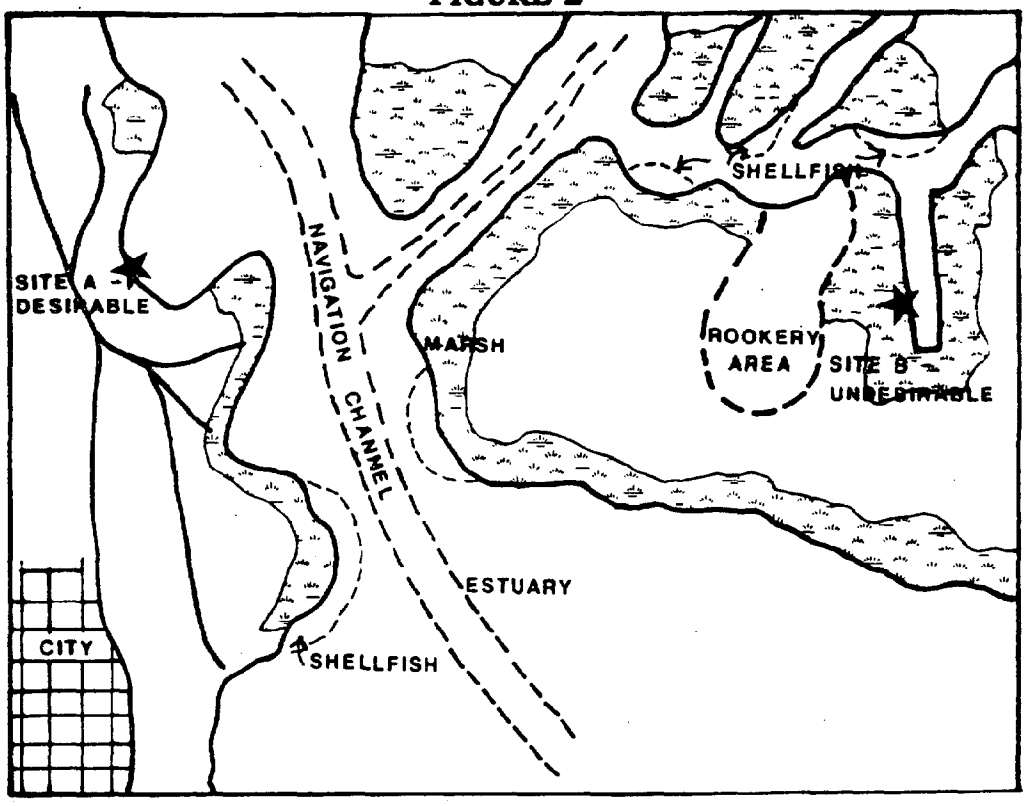
- o Dredging of access channels and basins should be kept to a minimum. Where channels and basins are necessary, dead-end canals and restricted inlets should be avoided and depths of basins and channels should not exceed depth of receiving waters.

- o Design of breakwaters should permit adequate water circulation within the facility.

- o Dry storage facilities are encouraged to minimize environmental impacts.

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

FIGURE 2



SITING AND DESIGN GUIDELINES
BOAT RAMPS

Location

- o Primary consideration should be given to site in waterbody areas where the demand for boat ramp facilities exceeds the supply.
- o Sites should be at least three to five acres in size with two or more acres suitable for parking. Peak day overflow parking could be grassed area or other permeable surface.
- o Water depth should be a minimum of two feet at the end of the ramp at mean low water.
- o Avoid sites with excessive siltation or erosion.
- o Sites requiring extensive dredging or filling should be avoided.
- o Site should be close to a public road to avoid the expense of access road construction.

Design

- o Avoid direct runoff from parking into tidal waters and wetlands.
- o Build ramps at a slope of eleven to thirteen percent with lane widths between twelve and sixteen feet.
- o Ramps constructed on flowing rivers should enter the river at an angle to facilitate boat launching and reduce siltation.
- o 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.
- o 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.
- o 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.
- o Support facilities should include litter receptacles, telephones and restrooms.

- o Provide a signage system and information center, especially for high use areas. These could include:
  - maps of fishing grounds and other special boating activity areas;
  - boating rules and regulations, including notice of posted speed limits, maps of restricted zones.
  - directories and fixed weather-proofed maps attached to information panels.
  - interpretive information which describes natural or historical features at the site or in the vicinity.
- o Provide an aesthetic buffer of the site from adjacent land uses, especially residential.
- o Maintain slope gradients and scale which are compatible with natural features.

Source: Virginia Department of Game and Inland Fisheries, 1986.
Maryland Department of Natural Resources, 1976.

LOCATION AND DESIGN GUIDELINES
CAR TOP - CANOE PUT-IN AREAS

Location

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

Design

- o 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.
- o Site should provide adequate and safe parking, preferably in an off-road location.
- o Site should have picnic tables, litter receptacles, restrooms, an information kiosk and signs which designate the site as a canoe access facility.
- o Design to maintain low capacity in wilderness preservation areas.

Source: Virginia Beach Scenic Waterway Plan, 1985.

LOCATION AND DESIGN GUIDELINES
FISHING AREAS

Location

- o Facility should be located on a water body with a productive fishery and acceptable water quality.
- o Consideration should be given to potential conflicts with adjacent land use and other water activities.
- o A shore fishing area should be free of obstructions such as steep banks, dense brush or low hanging tree limbs.
- o 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

- o 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.
- o Fishing structures should be of barrier-free design to afford fishing opportunities for the widest range of participants.
- o 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.

LOCATION AND DESIGN GUIDELINES
SHORELINE RECREATION AREAS

Location

- o Site should offer special qualities that will attract public use, such as scenic vistas or nature observation.

- o 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

- o 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.

- o 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.

- o On steep slopes or bluffs, site parking areas above and maintain or enhance natural vegetation on slopes to maintain water quality benefits.

Source: Southeastern Virginia Planning District Commission, 1988

Specific Recommendations

Piankatank River

Most of the recent waterfront development in Mathews County has occured in Cobbs Creek and Blakes areas where soils are most suitable for septic systems. This northern end of the county will be the first area in which a spill over from rapidly growing Gloucester County and the Middle Peninsula will be apparent. As land values appreciate and waterfront areas are developed, increasingly less land appropriate for development into water access points will be available.

The County should consider locating future public boat access and pedestrian access points on the Piankatank River with open space dedication when land is subdivided as a provision of site plan approval. These landing areas will need to be adequately screened from private residences, and traffic and road maintenance should be considered. Depending on the character of the shoreline, many areas have potential for development as beaches; perhaps a large county park should be considered here which will have a swimming and sunbathing beach, as well as improved facilities and parking. Such an area developed here is unlikely to suffer as much from erosion as on Haven or Bethel Beach.

Three county-owned sites currently exist on the Piankatank River: Roane's Point Landing, Warehouse Landing, and the Piankatank River or Hallieford Landing. The first two sites are small and parking is limited, but they serve as boat launch areas. Improvements at one or both of them, especially a boat ramp, should be explored. The beach at the Piankatank River Landing, although narrow by general park standards, is an attractive picnic and sunbathing site. The following site plans include suggestions for improving this site.

Chesapeake Bay

Existing water access to the Chesapeake Bay in Mathews County extends from Queen's Creek to Milford Haven, to New Point Comfort, and includes the best county beaches. These beaches are, however, subject to severe rates of erosion and are therefore, without costly stabilization, unsuitable for development. Access should be maintained, however, and actively sought for this important shoreline resource. The County may want to consider negotiating with Virginia Division of Parks and Recreation for a natural state park, which may increase tourism opportunities in the county, and help to protect this shoreline. Alternatively, lands held by the county should remain as undeveloped areas.

Much of the Bay shoreline has been surveyed by the Virginia Natural Heritage for rare, endangered and threatened plant and animal species. Where these or suitable habitats occur, areas should be designated for

protection, and management alternatives, which promote protection, should be investigated. Low level uses, such as passive recreation and nature observation may be very compatible with protection objectives. This may be especially true at New Point Comfort.

Vehicular access to Haven Beach should be blocked by posts set across the narrow roadway. While this area should be kept in county ownership, shoreline erosion protection to protect site improvements is costly and inconsistent with the natural attributes of the beach. A private firm continues to experiment with off-shore erosion control for this area. After cleaning up the remaining debris, the state should continue to investigate and test these alternative methods. Until these are proven however, and the shoreline better stabilizes, further improvements for this site should be postponed.

Behind the beaches, in Milford Haven, Stutts Creek and other protected anchorages, boat access points will become increasingly popular. Boat traffic at Grimstead Public Landing on Gwynn's Island, because of its location and road access, will probably increase beyond the capacity of the current parking area. An alternative site should be found in this area, as well as maintaining Grimstead and improving its parking lot.

Across the Narrows, lands have been proposed as an historic park by the Cricket Hill Chapter of the Daughters of the American Revolution. This is a 6 acre site at the approach to Gwynn's Island Bridge, which was the approximate location of the Revolutionary War battle which drove the last English governor from American soil. This site does fit the initial screening criteria for water access sites which should be considered for acquisition by the County. It is also located in an area which will be increasingly pressured for development. The County may wish to pursue an acquisition plan for this property, if facilities can be constructed which will adequately support a boat landing and ramp or ramps. With an extensive fringing marsh along the shoreline, however, environmental constraints do exist for shoreline access development on this parcel. A boat ramp may require extensive initial dredging and maintenance, which would be costly and impractical.

Also, under current review by Mathews County is the Horn Harbor Landing site. One of the former owners has requested that this site be returned. This landing is currently undeveloped, but offers an excellent access opportunity to the lower Chesapeake Bay and Horn Harbor shoreline and waters. Accessible from state route 698, it is only 0.9 acres. If developed for a boat ramp, which is needed in this area, sufficient vehicular and trailer parking should also be developed. This may require negotiating additional land, and investigating possible wetlands disturbance permits. Alternatively, depending on offshore water depths, a pier for permitted tie-up and mooring slips may be investigated. The spit of land extending to the north, and the adjacent wetlands are a natural asset for the site and offer opportunities for wildlife observation and study. These should not be disturbed by any proposed development.

Mobjack Bay

While the shoreline here is generally unsuitable for beaches, it is a popular area for fishing and boating, for residents and visitors to Mathews County. Davis Creek wharf is actively used by commercial watermen, and this could be expanded to a pier for watermen to tie up boats and store crab pots, and provide a separate boat launch ramp for recreational boaters. Suggested improvements for this wharf are included in the following site plans.

The abandoned steamship wharf owned by the State should be investigated as a park site, based on its possible historical signficance. It currently has no road access, and the State, as a first step, should secure this access.

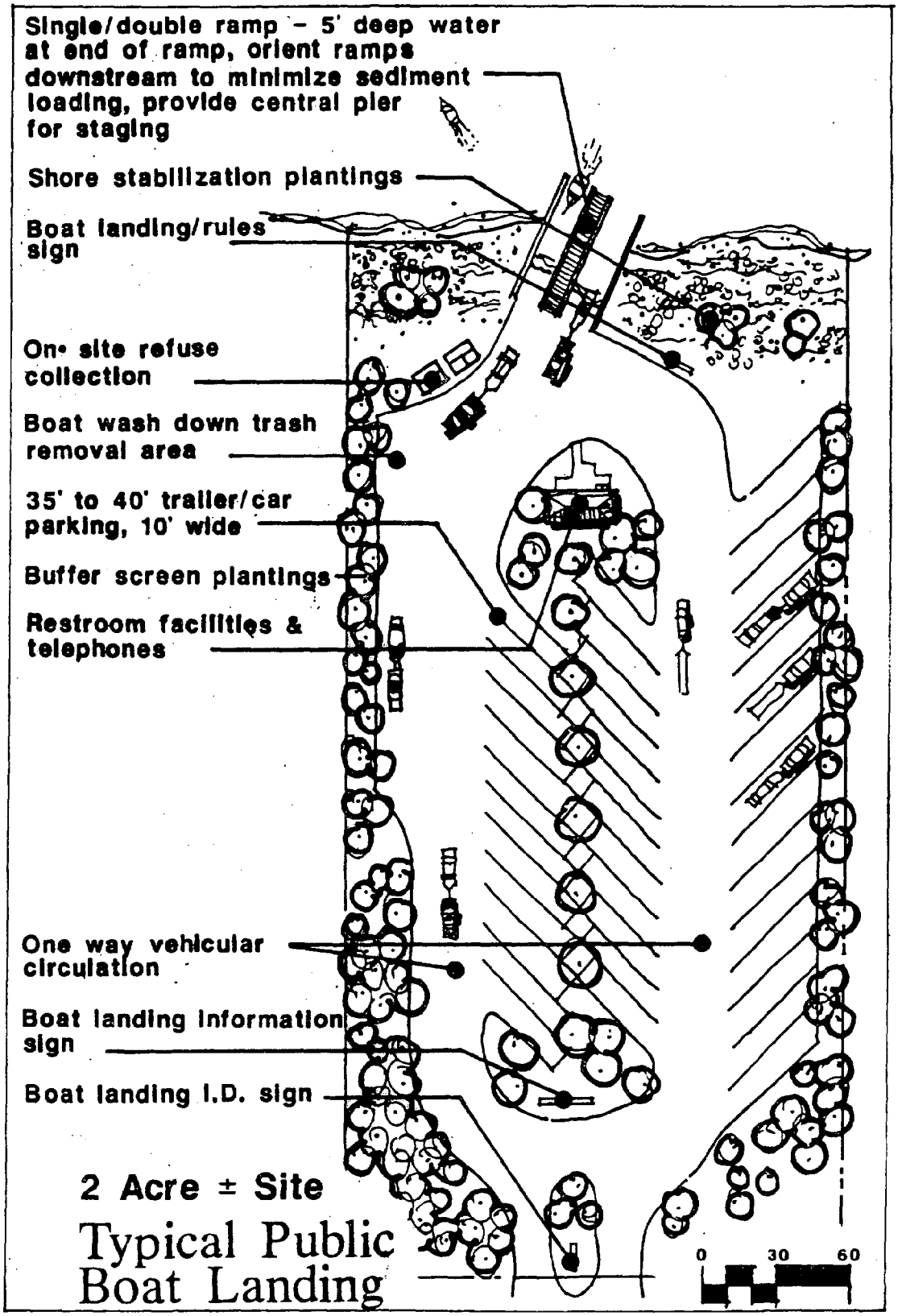
East River

Town Point Landing is the closest boat access point to the main population center of the county, Mathews Courthouse. This landing already has parking area for about 20 cars and trailers and an improved boat ramp and small pier. Increasing the capacity of this area, without land aquisition, may be possible through more efficient parking arrangements and active enforcement of posted operating regulations. The following site plans also contain recommendations for improving this site.

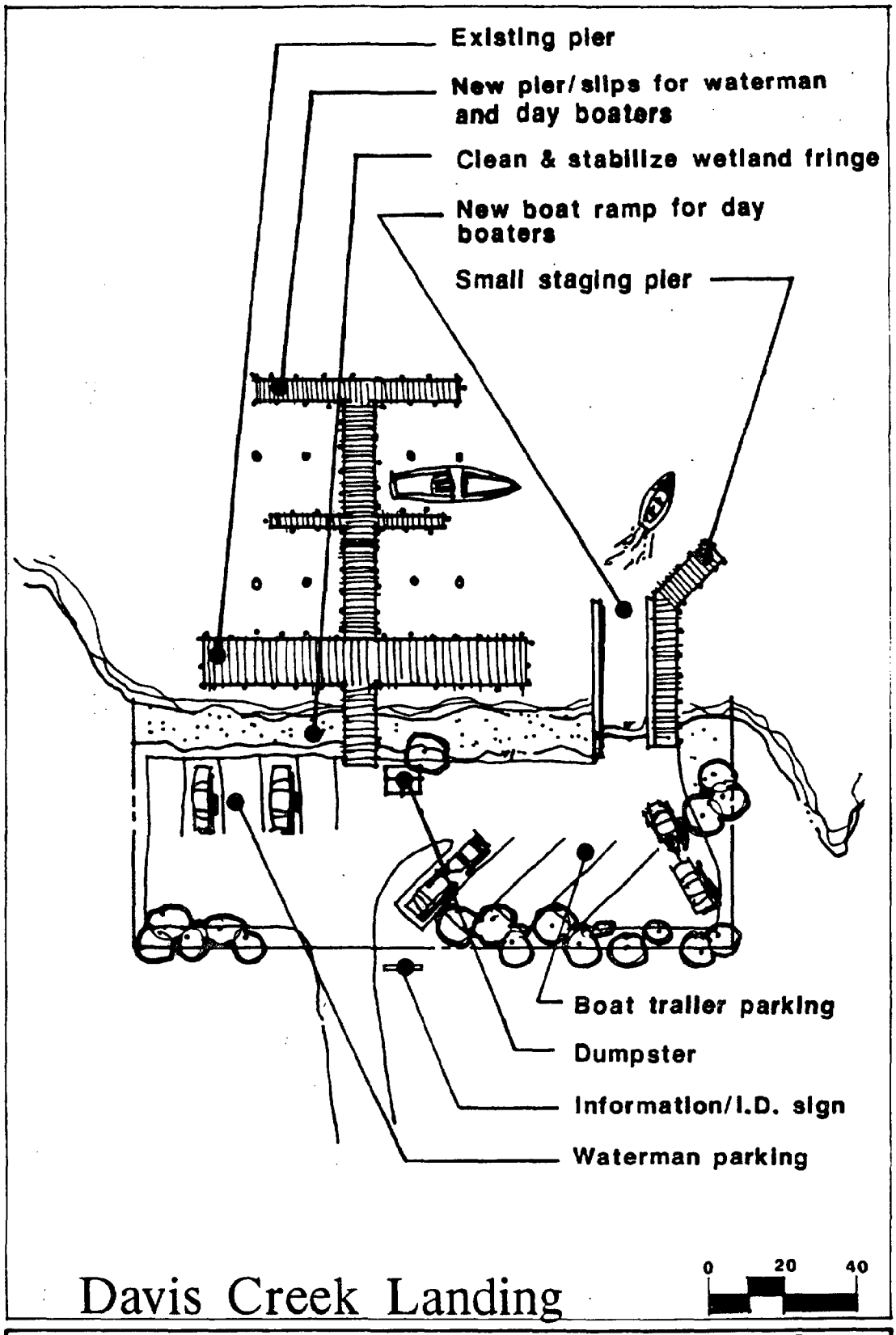
As population pressures and land prices dictate, another boat ramp on the east side of the East River should be investigated.

North River

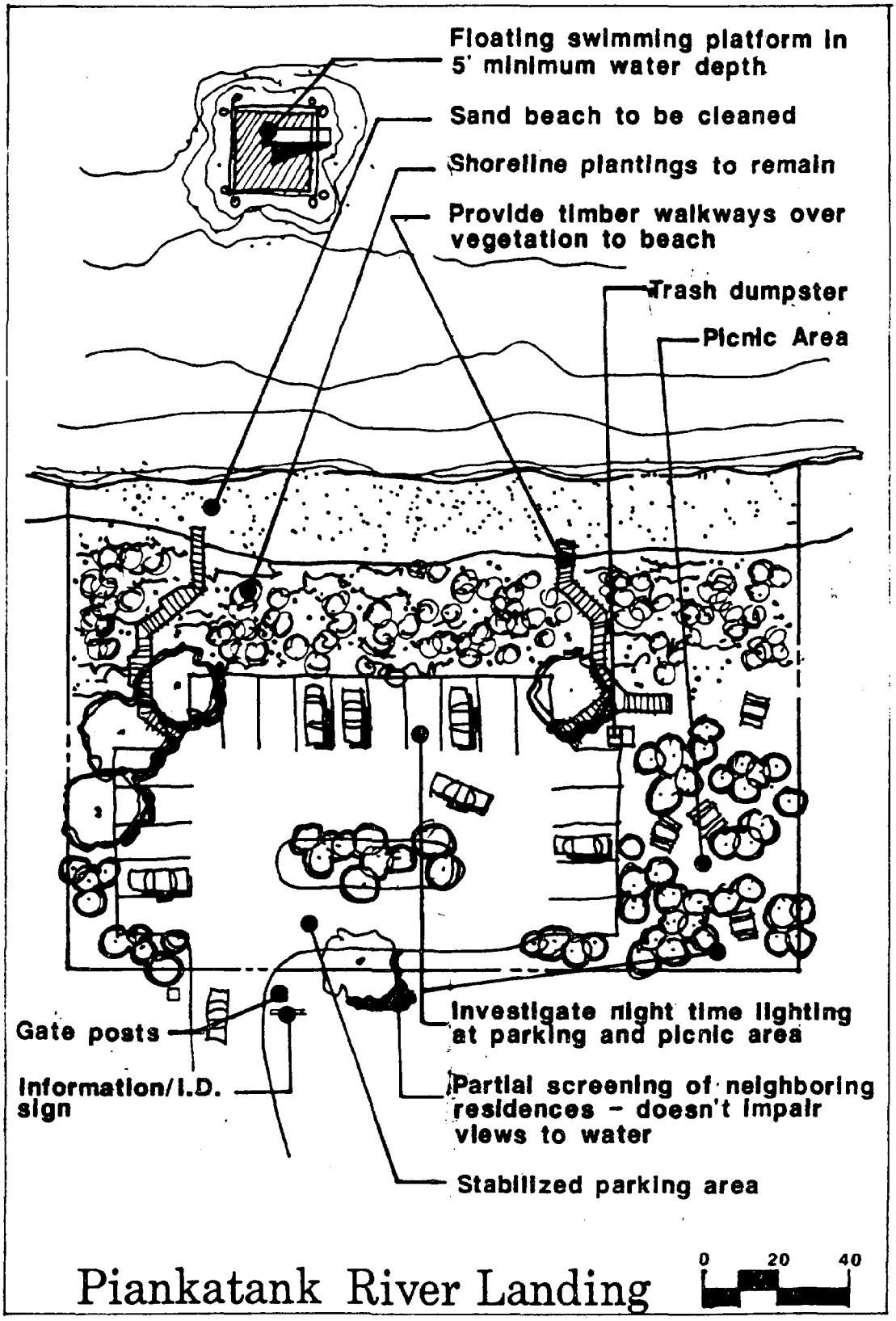
Auburn Public Landing is the only county-owned access point in the west portion of the county. It or another site with ample parking area should be developed with a boat ramp and may also include a fishing pier or swimming dock. This area of the county will be less developed than the Piankatank River shore, due to soil limitations, but boat access may be important to county visitors. If fishing waters are suitable for eventual high traffic in this area by fishermen, the County may investigate leasing bait or food concessions, which may offset the costs of development.



MATHEWS COUNTY WATER ACCESS PLAN

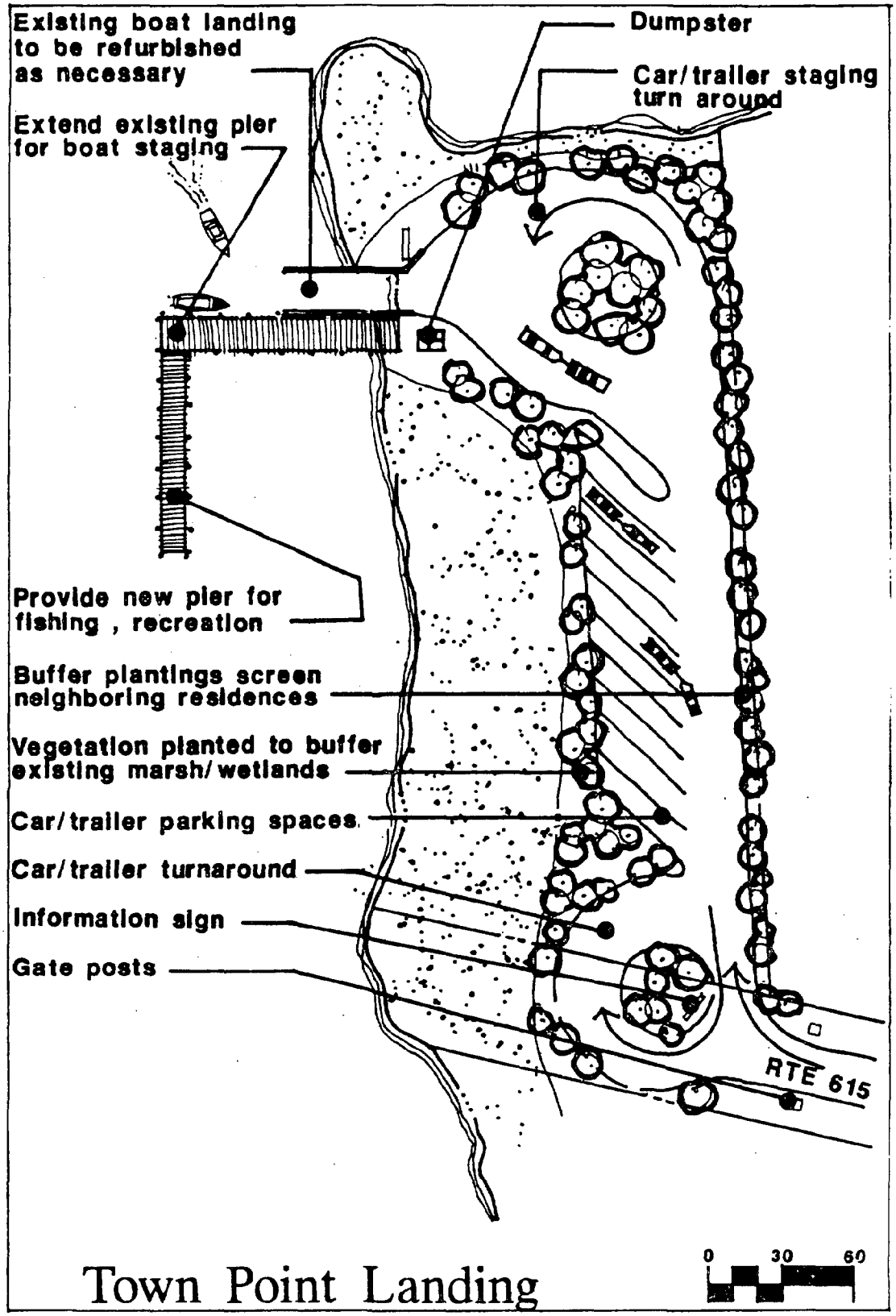


MATHEWS COUNTY WATER ACCESS PLAN



Piankatank River Landing

MATHEWS COUNTY WATER ACCESS PLAN



MATHEWS COUNTY WATER ACCESS PLAN

MATHEWS COUNTY

COST ESTIMATES

Davis Creek

• New Pier - 30 pilings @ $275	$ 8,250
Decking - 1360 sq. ft. @ $8/sq. ft.	$ 10,880
• Existing Pier Renovations	$ 1,500
• New Boat Ramp	$ 15,000±
• Gravel Parking - 750 sq. yds. @ $3/yd.	$ 2,250
• Site Preparation, Clearing, Grading	$ 2,000
• Signage	$ 500
• Wetland Plantings, Clearing	$ 1,200
SUBTOTAL	**$ 41,580**
10% contingency	$ 4,158
TOTAL	**$ 45,738**

Town Point

• New Boat Ramp	$ 15,000
• New Fishing Pier - 20 pilings @ $275.	$ 5,500
Decking - 640 sq. ft. @ $8/sq. ft.	$ 5,120
• Gravel Parking - 2530 sq. yds. @ $3/yd	$ 7,590
• Buffer/Screening Landscaping	$ 4,000
• Signs, Gate Posts	$ 1,000
• Site Preparation	$ 5,000
SUBTOTAL	**$ 43,210**
10% contingency	$ 4,321
TOTAL	**$ 47,531**

Piankatank River

• Gravel Parking - 1240 sq. yds. @ $3/yd.	$ 3,720
• Timber walkways over buffer vegetation - 150 ft. @ $10/ft.	$ 1,500
• Swimming Platform	$ 2,500
• Site Lighting	$ 1,200
• Picnic Tables - 6 @ $300/ea.	$ 1,800
• Landscaping	$ 750
• Site Preparation	$ 2,500
• Signage/Gates	$ 500
SUBTOTAL	**$ 14,470**
10% contingency	$ 1,447
TOTAL	**$ 15,917**

Typical Landing - 2 Acre Site

• New Boat Ramp (Double)	$ 30,000
• Gravel Parking - 7500 sq. ft. @ $3/yd.	$ 22,500
• Restrooms - 250 sq. ft. building @ $35/sq. ft.	$ 8,750
• Plumbing, septic and wells	$ 7,500
• Miscellaneous curbing, wheel stops	$ 1,500
• Landscaping - Shore buffer	$ 2,000
• Screening	$ 3,000
• Site Preparation	$ 7,500
• Signage	$ 1,000
SUBTOTAL	**$ 83,750**
10% contingency	$ 8,375
TOTAL	**$ 92,125**

IMPROVING WATER ACCESS: STRATEGIES AND FINANCING

Land Use Controls

Traditional Zoning for Private Lands

The Mathews County Comprehensive Plan (1989) states as specific environmental implementation methods:

> Develop a unified shoreline protection plan with emphasis on:
>
> A. the area between Gwynn's Island and New Point Comfort;
> B. Gwynn's Island;
> C. Piankatank River shoreline;
> D. Mobjack Bay shoreline;
> E. the tidal creeks and rivers; and
> F. property owner implementation.
>
> The plan shall include efforts to stabilize and replenish the shoreline and maintain or re-establish protective marsh grass fringes. Adoption of a shoreline protection plan should be accomplished within five years (from 1989).
>
> Revise all land control ordinances to increase the available means of protection for the environmentally significant areas such as shorelines, marshes and waterways. Revisions should be completed within five years.

In addition, the Comprehensive Plan states that:

> within three years of the adoption of this plan, the County will complete a comprehensive review of its zoning ordinance, giving particular attention to the possibility of incompatible uses developing within districts, either by right or through special exception/conditional use processes.

While these implementation measures were targeted specifically for the Chesapeake Bay Preservation Act, they may also be adapted in the future update of the zoning ordinance for providing water access opportunities, by protecting land uses and controlling the type and density of private development in waterfront areas. Design and location criteria appropriate to certain water-dependent uses could be established, and certain visual or physical access opportunities could be either maintained or created.

Because of the sensitivity of shoreline areas, many jurisdictions have adopted performance zoning techniques for development.

Overlay Zones

These zones are superimposed on existing zones, and follow the boundaries of features which require protection or specialized regulation. They therefore add an extra layer of regulations within the overlay zone, which can be cumbersome in enforcement review and administration. Proposed development in the overlay zone should conform to use and density restrictions applying in the base zone and to the added restrictions or performance standards such as extra setbacks, clustering or buffers.

The effectiveness of these overlay zones will depend on the restrictions or performance standards, and on the correct delineation of boundaries. Because development will probably not be absolutely restricted from these zones, but regulated in its location, form or quality, this alternative is usually highly acceptable to landowners. These regulations would be implemented by an addition to the current codes, instead of a revision or restructuring, and are therefore easier to adopt. In waterfront areas, overlay zoning is used to promote public access, improve scenic and aesthetic controls and encourage shoreline use compatibility.

Clustering

This technique controls the location of development, shifting overall permitted density on a parcel to a small portion of the parcel, leaving the remainder in open space. The open space would contain a shoreline resource which requires protection, or an area designated for public use, such as a community recreation area and marina.

The effectiveness of clustering as a protection technique depends on its use - if it is voluntary, what promotes its use - and on its design - what are the overall densities permitted that allocate sufficient area to open space and still make a development project viable? This can very effectively protect shorelines and water resources, steep slopes and other linear features because of the setbacks which can be achieved, as long as performance standards for open space activities are strictly adhered to.

Density Bonuses and Development Incentives

These provisions are voluntary incentives to developers to incorporate natural resource protection features into project location, as in clustering, and design. A developer who meets these criteria would be allowed densities above those permitted for the site. The design criteria may include: setbacks from sensitive shorelines, preservation of natural wetlands, and management of natural vegetation in buffer zones. These criteria may also include those which enhance use by the community at-large, such as community piers and dock facilities or parks.

The stringency and specification of design criteria which must be met to allow higher densities will determine the viability of this alternative. Percentage remaining in open space is easy to calculate and apply to increased densities. The more complex the criteria are, the more difficult this alternative will be to administer and enforce. If the market for the higher earned densities is not present, there will be no incentive for applying these criteria. Furthermore, the cost of providing specialized design or construction techniques must be met by the increased value of added density.

Open Space Dedication

As a condition of approval of a final subdivision plat, a local jurisdiction may require a developer to reserve or dedicate land for public parks, schools or similar public benefit 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.

Impact Fees

In Virginia, the lawfulness of exactions for public improvements has been challenged and subjected to judicial review. Four categories of land use approvals are relevant:

1. Uses permitted by right as principal uses under various zoning classifications of a zoning ordinance.

2. Uses permitted subject to special exceptions or conditions imposed by a local government as authorized by the zoning ordinance.

3. Uses subject to conditions proffered by the developer as authorized by Section 15.1-491.2 of the Code of Virginia, 1950.

4. Subdivision or site plan review procedures which ensure compliance with zoning regulations.

The courts ruled that local governments could not impose exactions not directly related to a development under all of these approval processes. There may be only two ways that a developer might lawfully be required to make public improvements not directly attributable to a development project. The first would be a state legislative authorization for local governments to impose such exactions by amendment of zoning enabling statutes, or second by a voluntary agreement by the developer as a condition for approval **of a site plan** (Witt, 1987).

Transfer of Publicly Owned Lands

If Mathews County decides to sell, lease or donate waterfront property to private owners, insurance that the property will maintain public access or views can be obtained by either a land transfer agreement, or stipulated as review criteria in a Request for Proposals. A land transfer agreement could include the amount, location and types of public access and any design criteria to be used in development.

Land Acquisition Techniques

Conservation Easements and Purchase of Development Rights

An increasingly popular approach to resource preservation is the purchase of less than fee simple interests in land or the acceptance of donations of these interests. These programs often involve a state or local plan, often administered by private non-profit agencies such as The Nature Conservancy, to acquire or accept these development rights to certain classes of land, allowing the owner to retain basic ownership but relinquishing the right to develop or intensify its use. An easement is signed and recorded like other deeds and is a covenant which runs 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, which enables private tax-exempt conservation organizations to acquire conservation easements.

Conservation easements can very effectively protect natural resources and public access along a shoreline for enjoyment by future generations, since the easement is attached to the land. When easements are purchased, the financial expense is high, particularly since speculative pressures are often intense where protection is most needed.

Fee Simple Acquisition

Land on which sensitive natural resources are located may be purchased by government or by a specialized organization which owns and manages this type of resource. Although this can be very effective in satisfying recreation and open space objectives, it is a very high cost alternative. Additionally, this land must be managed. Unless fee simple acquisition by government agencies is coupled with conservation easements and a management program, the land may represent a public burden and may be sold at any time to recoup losses.

A variation of a fee-simple acquisition is a purchase/leaseback arrangement, in which a local government will lease land to a private interest who will develop it. The advantages are that the local government may defray the acquisition costs through revenues from the lease arrangement; the costs of improvements are assumed by a developer; and, stipulations may be attached to the lease which provide public benefits, including physical and visual access.

Land Banks

Lands are publicly purchased and held in reserve for resale, as a hedge against inflation, or future public development. Large scale land banking is usually not feasible for local governments because it removes valuable property from taxation; however, on a smaller scale, it can provide specific sites for public water access and can allow localities to attach deed restrictions and covenants to the disposition for private development.

In Nantucket Island, Massachusetts, in response to extreme development pressure, residents created a Land Bank which aims to acquire up to 15% of the island shores and natural moors. The Bank actively manages these resources to ensure public access. It is funded mainly by a 2% transfer fee on the price of all property sold in the county. In 1986, these transfer fees generated $98,000 per week or $5.1 million for the year in revenue. In 1983, this was the first program of its kind in the U. S., and its institution was preceded by a year-long consensus building effort by local citizens.

Land Trusts

Similar to land banks, land trusts are lands acquired for conservation only, without the intention to resell or develop. Private land trusts often acquire conservation land for transfer to public agencies for management. The main problem is finding a dependable funding

source. Potential sources may be periodic bond authorizations, general funds, recreation user fees and rental fees from recreation properties.

Conservation Incentives

Transfer of Development Rights

This incentive, which usually operates on the open market, and has not yet been codified in Virginia's planning enabling legislation, can also be applied to shoreline protection. This alternative can either require or permit transfer of allowable densities from one location where development is undesirable to receiving locations where development is desirable. Features such as stream valleys and special habitats would be TDR sending areas. Landowners of these areas would be allowed to sell development rights to someone wishing to develop elsewhere. The receiving area for the transferred development rights would allow higher densities with proof of purchase of the rights and documentation that the seller had placed a conservation easement on the land from which the rights were sold. TDR mainly operates to offset the devaluation of land as a result of downzoning, whether it is used for agricultural protection, natural resource protection or other growth management objectives.

In Talbot County, Maryland, TDR is being utilized specifically for shoreline protection. Areas with sensitive resources are sending areas, while areas with severe erosion rates are receiving areas. These receiving areas will now be able to develop at densities which will make shoreline protection and enhancement measures practicable.

Implementation of a TDR program requires substantial public education since the concept is relatively untested, and applies with varying amounts of success in different communities. Detailed studies of sending and receiving areas and political and financial support for the increased densities and public services they require are also necessary.

State and Federal Programs

Federal Aid in Sport Fish Restoration Program

Federal excise taxes on fishing tackle, motorboat fuel and import duties on tackle and boats are diverted under this program to state fishery agencies for developing sport fisheries and boat access projects. The Sport Fish Restoration Program is administered at the federal level by U. S. Fish and Wildlife (FWS) and at the state level by the Virginia Department of Game and Inland Fisheries (VGIF). Federal funds are combined with state fishing license revenues, then grants

are made to eligible recipients for federally approved projects. As long as they promote state fishery management objectives, projects such as boat ramps, docking and marina facilities, breakwaters, restrooms, parking areas and maintaining existing facilities are funded.

These funds are provided as a 75% reimbursement for completed projects. If the local recipient can match the 25%, VGIF approval is more favorable to projects on sites which are readily available **for development** and do not require purchase by the State.

For a proposed boat ramp to be funded, it must meet VGIF location and design criteria, which are listed and illustrated in this plan. In addition, once a proposed boat ramp is accepted into the program, VGIF reserves the right to conduct all design and construction activities; Mathews County would be responsible for maintaining and operating the ramp.

Virginia Board on Conservation and Development of Public Beaches Grant Program

Created under the Public Beach Conservation and Development Act of 1980, this program conserves, protects, improves, maintains and develops public beaches for the benefit, use and enjoyment of the citizens of the Commonwealth. Up to 50% in funding assistance is granted to local jurisdictions for shoreline protection projects on public beaches. Defined by the Act, public beaches are sandy beaches located on a tidal shoreline, which are suitable for bathing and open to indefinite public use. To qualify, a local government must have an erosion advisory commission.

Projects which have been funded have often included public access to the water as well as shoreline protection. The City of Norfolk applied to construct elevated beach boardwalks over dunes. Other projects have ensured adequate beach width for recreational activities.

Virginia Outdoors Fund

This program is administered by the Virginia Division of Parks and Recreation (VDPR) in the Department of Conservation and Historic Resources, and is usually a source of supplemental funds. Funds allocated to the state from the federal National Park Services Land and Water Conservation Fund (LWCF) are combined with state funds appropriated by the General Assembly. For individual projects, the VDPR may allocate up to 50% in funding assistance; the remainder of costs is paid by local government.

Federal LWCF funds have decreased in recent years, therefore Virginia Outdoors Fund finances only a small portion of local needs. Projects should comply with VDPR policies and criteria.

Virginia Outdoors Foundation

This private foundation was chartered by the General Assembly and is housed in the Virginia Division of Historic Landmarks. It is authorized to solicit and accept gifts of money, securities, property and property easements in order to preserve open space. Conservation or water access objectives may be pursued by Mathews County by communicating water access acquisition opportunities to the Foundation.

Virginia Department of Transportation (VDOT)

Several VDOT programs may directly or indirectly provide increased water access.

VDOT, VDPR and VGIF screen potential bridge replacement and road realignment projects to assess the practicality of incorporating water access on rivers, streams and estuaries.

Under state enabling legislation, VDOT constructs fishing piers or attached fishing structures to bridges in conjunction with bridge construction projects. Costs for these structures is not paid by VDOT.

VDOT administers a Recreation Access Fund which can provide road or bikeway access to public recreation sites.

VDOT will allow development of water access facilities, such as boat ramps, on VDOT owned property. Mathews County must apply for and be granted a special use permit from VDOT.

Chesapeake Bay Youth Conservation Corps (YCC)

This program aims to improve the water and environment of the Bay through conservation projects that employ youth, especially those who are economically disadvantaged. Administered by the VDPR, the Youth Conservation Corps program annually funds hiring of workers on projects such as erosion control, shoreline stabilization and clearing of dumpsites. Consideration is given, however, to projects which provide water access facilities.

The Chesapeake Bay Agreement

As part of the ten year plan for cleaning up the Bay, signed by Virginia, Maryland, Pennsylvania, the District of Columbia and the Environmental Protection Agency, participating governments agreed to improve public water access. The initial step, an inventory of existing sites, has been completed and published. The second step is a strategy which will encourage state and federal governments to secure additional lands along the Bay and its tributaries. VDPR has been compiling an inventory of potential sites, although it is still incomplete. This inventory information has been presented in the inventory for Mathews County in this plan. VDPR has also proposed a public access grant program which will provide $5 million per year in grants to Tidewater localities for constructing or developing additional boat launching, fishing, swimming and sunbathing facilities. Local governments may be required to provide 25% of each project's costs.

Coastal Resources Management Grant Program (CRM)

Through the National Oceanic and Atmospheric Administration's Office of Coastal Resource Management, grants are made to state governments to provide coastal zone planning and technical assistance. The Virginia Coastal Resources Management Program (VCRMP) through the Virginia Council on the Environment (VCOE) manages these funds with a goal to provide and increase public recreational access to coastal waters and shorefront lands.

One-half of the funds will be allocated to local jurisdictions and planning district commissions in coastal areas. Competitive grants may be made to local governments for technical assistance.

Funding Options

The tools of public finance are designed to tap the principal source of revenue-personal wealth. The tools must be matched to the programs they finance in equitable, creative and efficient ways. Once the tools have been chosen and approved, a mechanism must be established to manage the flow of funds, and an institution for financial management should be created.

Accessing Funds

There are many ways to secure funds. These may be those programs stated above, or may be through taxes, user fees, other intergovernmental grants, and debt. A good rule of thumb is that property and sales taxes finance activities that benefit entire communities, while user fees raise funds from select groups of beneficiaries. Debt financing will raise large amounts of capital which may be repaid through taxes or user fees during a project's

useful life. More innovative capital programs attract private participation to joint ventures. Many secondary benefits from public financing, such as stimulating local economy and employment, and attracting monetary investment and people, may result.

Managing Funds

Starting and finishing a development project depends on the availability of funds at the right time. Many public access facilities may require operational budgets, as well as start-up capital. Provision must be made to accumulate and disburse funds.

To ensure program continuity, some jurisdictions have sought permanent financial management mechanisms outside annual budgeting. These may include enterprise funds, dedicated trust funds, bond banks, revolving loan funds, or the mechanism of land banks discussed above. Enterprise funds and dedicated trust funds earmark and control taxes or fees to finance a single self-supporting activity. Revolving loan funds, once capitalized, can lend money for local projects at below-market rates. As initial loans are repaid, the fund is replenished for new loans. Capitalization is sometimes found in private sources.

Some funding sources and management mechanisms worth exploring are:

- Property Tax Surcharge

  A surcharge is an additional, often temporary, levy to an established rate, which may help to raise funds for specific projects. These would be essentially one-time only projects which would not require regular replacement, although a surcharge may include measures for operation and maintenance. Property taxes may be an equitable source of funding for shoreline stabilization and protection, where it is assessed against beach front owners.

- Real Estate Transfer Tax

  Such a sales tax, assessed on beachfront property may help to provide a low cost funding program, such as revolving loan program, for shoreline stabilization and improvement of public access facilities such as beaches.

- Occupancy Taxes on Lodging, Marina Slips for Transients

  Although this may meet with initial opposition, it can help to defray costs for improvements which may benefit these visitors and the local economy. This was successfully instituted in Dare County, North Carolina, a popular tourist destination, for

constructing a new wastewater treatment plant, despite opposition. North Carolina, like Virginia, is not a home rule state; therefore, this tax required state legislation.

- User Fees

An annual permit or parking sticker for water access facilities would be the most practical application of this alternative. The County will need to monitor and enforce this program, and the costs of this enforcement should be built into the fee. Properly assessed, these fees could ensure a long-term source of funds to finance operations such as trash removal, strengthen the ability to issue low cost bonds, and contribute to retained capital for later investment in repairs.

SUMMARY

Mathews County is ideally located to provide its residents and visitors with a wealth of shorelands access opportunities. As the county develops, and development on the shoreline is scrutinized more carefully in order to protect water quality, these opportunities will expand. With this Plan and an implementation schedule, the County will be able to act in a timely and cost-effective manner to acquire and develop more shorelands access points.

Shorelands access is currently limited in Mathews County to approximately 21 publicly owned (Federal, State or County ownership) sites, many of which are undeveloped end of the road boat landings. At present, their use is limited by a shortage of parking space and by lack of developed boat ramps. The extensive Chesapeake Bay shoreline, most of which is natural beach, is currently privately owned, except for Haven Beach and New Point Comfort. Additional privately owned beaches which are accessible from road ends and are publicly used were identified in this inventory and may be nominated for future acquisition and development by the Virginia Division of Parks and Recreation.

This Plan proposes standards for park design, which require from one to two acres per boat ramp, and two to three acres for a swimming beach. These standards and design guidelines, also included, were adapted for a model for shorelands access acquisition and development. Specific recommendations and three sample site plans which illustrate development of existing sites for: 1) commercial watermen and permitted slips with a boat ramp for public use; 2) natural beach/picnic area with parking; 3) vehicular and boat trailer turnaround and parking, are proposed. A fourth site plan, which illustrates a boat ramp with adequate parking, is included.

Funds for development are available from state and federal sources, and include opportunities for boat ramps, swimming beaches, shoreline protection and public access through roads or bikeways. To pursue an aggressive acquisition and development program, however, Mathews County may wish to consider finance alternatives, such as permitted user fees, and address the shorelands access issue in a future update of the zoning ordinance.

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