RHODE ISLAND COASTAL MANAGEMENT PROGRAM

VOL. 2

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

COASTAL RESOURCES MANAGEMENT COUNCIL
Oliver H Stedman Government Center
Tower Hill Road
Wake Field, R I 02879

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SEP 17 1987

September 14, 1987

Mr James Burgess, Acting Chief
Coastal Programs Division, OCRM, NOAA
1825 Connecticut Avenue, NW
Washington, DC 20235

Dear Mr Burgess

Pursuant to 15 CFR 923 84 (b), I hereby notify you of the enclosed routine program implementations The Rhode Island Coastal Resources Management Council (CRMC) has determined that these actions do not meet the definition of "amendment" as set forth at 15 CFR 923 84 (c), and are, therefore, Routine Program Implementations of the federally approved Rhode Island Coastal Resources Management Program The enclosed initiatives further detail and make geographically specific the State's Coastal policies

If you have any questions, please contact me at (401)277-2476

Sincerely yours,

Grover J Fugate, Executive Director
Coastal Resources Management Council

TD/lam

Enclosure

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Washington, D.C. 20235

OCT 14 1987

Mr. Grover Fugate
Executive Director
Coastal Resources Management
Council
Stedman Office Building
Tower Hill Road
Wakefield, Rhode Island 02879

Dear Mr. Fugate:

The Office of Ocean and Coastal Resource Management has completed its review of the following changes to the Rhode Island Coastal Management Program, and concurs that these changes are routine program implementation changes:

1. Establishment of Water Use Type Designations for the Great Salt Pond, Trims Pond, and Harbor Pond, Town of New Shoreham, September 28, 1984.

2. CRMP Standards, Additions, and Changes: January 2, 1985.

3. Water Use Type Designations for Sakonnet Harbor, January 2, 1985.

4. Emergency Assents. July 12, 1985.

5. Narrow River Special Area Management Plan, December 10, 1986.

6. Westerly Extension to the Salt Ponds SAMP, March 1986.

Our office received no comments from the public on whether or not these should be considered routine modifications.

In accordance with the Coastal Management Regulations 15 CFR §923.84, Federal Consistency will apply to these changes after you publish notice of our approval.

Sincerely,

Peter L. Tweedt
Director

FINDINGS AND RECOMMENDATIONS FOR ACTION RELATIVE TO WATER USE DESIGNATIONS FOR THE BLOCK ISLAND SALT PONDS

*Note that the three barrier ponds at the north end of the island (Sachem, Middle, and Wash Ponds) are already designated Type 1 and are not considered in these recommendations.

Findings

1. Great Salt Pond and the smaller Trim's and Harbor Ponds are similar to the lagoons along the south shore of the mainland. They are very beautiful coastal features and support high concentrations of fin and shellfish. Poor flushing, especially in sections more distant to breachways, makes them valuable in retaining and protecting fish and shellfish eggs and larvae, but also prone to eutrophication and bacterial contamination. As on the mainland, there is enormous and growing pressure on the ponds from a variety of uses including fishing, boating, and shoreline development. There have been continual increases in the summertime use of the ponds by boats during the last several years. This has led to an increase in the number of shoreside boating facilities as well. Although the Hog Pen area of Trim's Pond has been utilized as a temporary haven for recreational and fishing boats for years, the area now possesses two existing small marinas, a commercial oil dock, numerous moorings, and significant shoreline bulkheading. Another small marina is situated on the southern shore of Trim's Pond.

2. A major issue is the designation of those waters where the boat mooring and anchoring activity is most concentrated. The choices are Type 2 Low Intensity Use (no new marinas or commercial docks are permitted; existing facilities are considered nonconforming uses), Type 3 High Intensity Boating Use (dedicated to recreational boating facilities and ancillary services), or Type 5 Commercial and Recreational Harbors (managed as a mixed use port such as Bristol or Newport waterfront).

3. Arthur Ganz, DEM senior fisheries biologist, has confirmed the significance of Great Salt Pond and the Trim's/Harbor Pond complex as productive habitat for shellfish. Although the southern section of Great Salt Pond (south of buoy #5) and all of Trim's and Harbor Ponds are closed to shellfishing by the local Shellfish Commission during the summer months, these areas provide winter shellfishing grounds for the Block Island fishermen.

4. In March 1984 Dr. Richard Crawford, the fisheries biologist who conducted extensive fisheries studies for the URI Salt Ponds Project, sampled for winter flounder eggs and larvae and found that spawning occurs at a number of locations in both Great

Salt Pond and in Trim's/Harbor Pond. These locations include the Hog Pen, the west basin of Trim's, the channel to Harbor Pond, and the northern section of Great Salt Pond.

5. Boating use is seasonal in the Hog Pen and along residential shorelines. Winter flounder spawning activity occurs primarily during late winter and early spring when boats are not present in large numbers. Although pilings per se do not have a detrimental impact on fish or shellfish growth or reproduction, the substances with which pilings are frequently treated in order to prevent premature rot or decay can be highly toxic to marine organisms, especially when used in poorly flushed embayments such as Trim's and Harbor Ponds.

6. Portions of the long entrance channel to Harbor Pond from Trim's is rapidly filling in with sediment. The primary source appears to be wind blown sands from the adjacent barrier beach and dunes, not the incoming channel currents. Harbor Pond shows symptoms of eutrophication during summer months, and a gradual accumulation of organic sediments is probably also occurring. Spot dredging may be required in the future to maintain adequate flushing.

7. Small residential houselots predominate around Trim's and Harbor Pond shoreline, and along portions of Great Salt Pond as well. Small private docks have been constructed along much of the shoreline next to developed lots. Numerous letters from area residents indicate a strong interest in maintaining and expanding private docks in this area.

Recommendations

1. The northern and eastern portions of Great Salt Pond should be designated Type 1 (Conservation Use) due primarily to open space qualities of the shoreline (much of which is wetland and barrier beach) and the shallow waters in these areas. The Block Island Shellfish Commission and other municipal agencies support restricting development in these areas. A Type 1 designation will prohibit docks, shoreline stabilization and dredging.

2. The central area of the pond should be designated Type 2 waters (Low Intensity). This is consistent with the central area of all other navigable coastal ponds.

3. The shoreline between Champlin's Dock and the channel to Trim's Pond should be designated Type 3 (High Intensity Boating) to reflect ongoing commercial commitments there. This designation extends 500 feet outward from the shore.

4. The Hog Pen area should be designated for Type 3 (High Intensity Boating) use. This is consistent with existing use levels in this sector during the summer months, and its

historical use as a temporary shelter for recreational boats. The Type 3 designation should include all of Rat Island and extend to the Swienton (Twin Maples) property on the southern shore on which a small marina is present. A number of stipulations are recommended on future marina and commercial activity in the Hog Pen:

- All new marina facilities in the Hog Pen below mean high water should be seasonal floating structures held in place by a minimum number of non-creosoted pilings.

- All floating docks should be removed from the Hog Pen for winter storage.

- No shipyard facility should be allowed in order to prevent scrapings from bottom painting activity from entering sediments.

5. The remainder of Trim's and Harbor Ponds should be designated Type 2 (Low Intensity) use. This will permit individual residential docks and piers as requested by several shoreline landowners and will also permit spot maintenance dredging where necessary to provide for small boat access and navigation. Docks and pilings in these areas should not be treated with preservatives.

BLOCK ISLAND QUADRANGLE

A. Straight line extensions of the outsides of each of the two jetties at the breachway entrance to Great Salt Pond.

B. A straight line starting from the point of land on the northeast side of the Great Salt Pond breachway and running generally southeasterly to Harris (Breezy) Point.

C. A straight line starting at Harris (Breezy) Point and running generally southwesterly to Can Buoy #5.

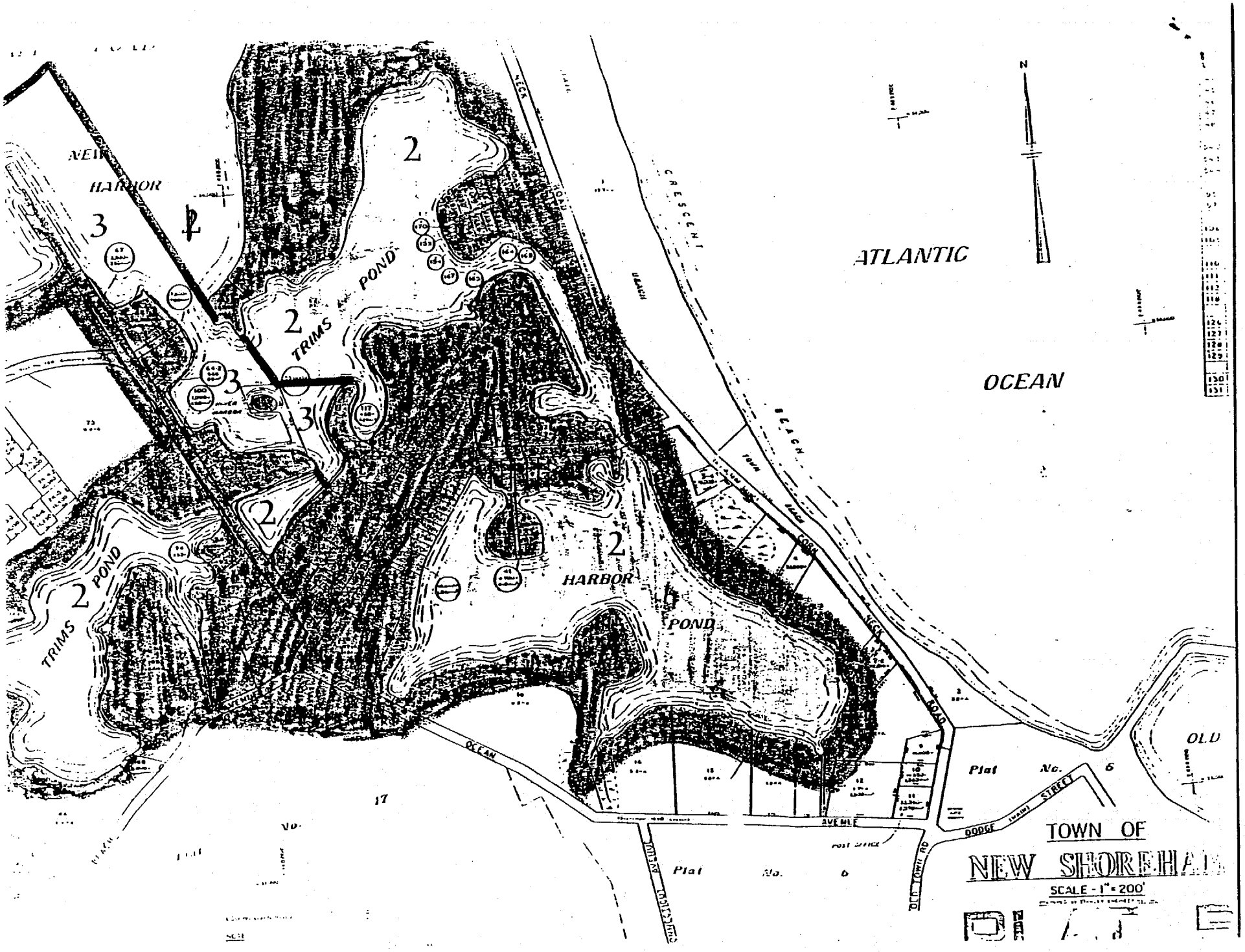
D. A straight line (500 feet) extension of the boundary between the commercial/low residential zone area west of Champlin's Dock, thence turning generally easterly and running to Can Buoy #5, then turning generally south-southeasterly and running to the point of land on the eastern shore of the channel to Trim's Pond.

E. A straight line starting at the point of land on the inside of the breachway to Trim's Pond and running generally south-southeasterly to the east shore of Rat Island, thence generally easterly to a point of land commonly called the Toothlike Point on property now or formerly of Matthew Swienton.

F. A straight line starting at the point of land on the east side of Fort Island running generally south-southeasterly to the South shore of Trim's Pond to the stonewall separating land now or formerly of Matthew Swienton and property now or formerly known as the Weather Bureau.

G. A line alone the outside of the west breakwater.

H. A line along the outside of the east breakwater.

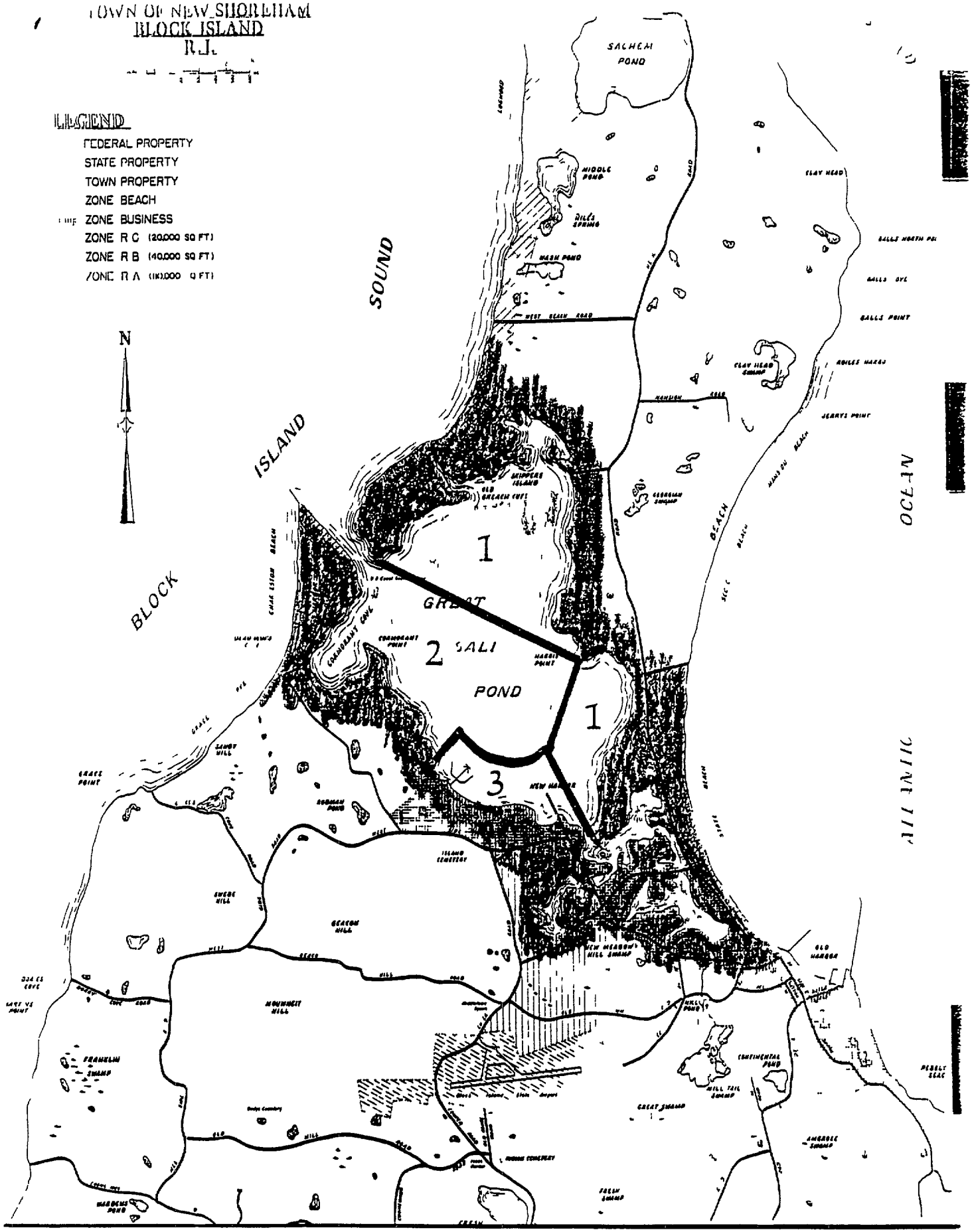


NEW HARBOR
TRIMS POND
TRIMS POND
HARBOR POND
ATLANTIC OCEAN
CRESCENT BEACH
OCEAN AVENUE
DODGE STREET
OLD TOWN RD
OLD
Plat No. 6
Plat No. 6
POST OFFICE
TOWN OF
NEW SHOREHAM
SCALE - 1" = 200'

ZONING MAP
TOWN OF NEW SHOREHAM
BLOCK ISLAND
R.I.

LEGEND

- FEDERAL PROPERTY
- STATE PROPERTY
- TOWN PROPERTY
- ZONE BEACH
- ZONE BUSINESS
- ZONE R C (20,000 SQ FT)
- ZONE R B (40,000 SQ FT)
- ZONE R A (80,000 SQ FT)



P. 72 - Section 300.4 E (3) e:

This standard shall be changed to read "All wooden portions of the structure coming in contact with water shall have been commercially pressure treated with a wood preservative. No creosote shall be applied to any portion of the structure."

P. 105 - Narragansett Pier Quadrangle Map:

The portion of the Bonnet Shores barrier beach east of the tidal creek shall be changed from "moderately developed" to "developed" to more accurately portray existing conditions.

P. 105 - Narragansett Pier Quadrangle Map:

Lake Canonchet (Pier Pond) and Little Neck Pond, situated adjacent to Narragansett Beach, shall be designated Type 1, Conservation Use.

P. 114 - Bristol Quadrangle, boundary cc:

This boundary designation shall be changed to read "A straight line extension of Lippitt Avenue."

P. 127 - Block Island Quadrangle Map:

The portion of the Crescent Beach barrier beach south of Pole 528 shall be changed from "moderately developed" to "developed."

P. 69 - Section 300.3 D (2) a:

Reference in parentheses shall be changed to read "(see Section 300.2)".

P. 72 - Section 300.4 E (3) b:

This standard shall be changed to read "All residential piers and floating docks shall be built with pile bents spaced 10 to 15 feet apart."

P. 113 - East Providence Quadrangle, boundary e:

Add boundary e which shall state "A straight line extension of George Finnerty Road."

P. 84 - Section 300.14 Definition A (1):

This definition shall be changed to read "Maintenance of structures includes rebuilding, reconstruction, or re-establishing to pre-existing conditions and dimensions damaged structure or facility. With the exception of marinas (see Section 300.4), maintenance includes only those activities that do not alter the approved design, purpose and size of structure. However, reconstruction or remodeling of existing malfunctioning individual sewerage disposal systems to meet OEM recommended design standards shall also be considered a maintenance activity.

P. 67 - Section 300.2 c Standards a - 4:

Insert word maximum before 3.1 slope and remove 4.1.

P. 69 - Section 300.3 D Standards 2 (b):

Remove "when feasible and" from line 5.

P. 70 - Section 300.3 D Standards 3 (i):

This standard shall be changed to read. "All plans submitted to the CRMC for buildings proposed for V zones shall be stamped by a registered professional engineer or architect and shall certify that the building is to be adequately anchored to adequately anchored pilings or columns in order to withstand velocity waters and hurricane wave wash."

P. 70 - Section 300.3 D Standards H:

This section will be revised as follows:

4. Construction in coastal stillwater flood (A) zones.

   a. Standards (d), (e), (f), and (g) for residential building in V zones apply.

   b. Lowest floor elevation including basements of new or substantially improved residential buildings in A zones shall be elevated to the 100 year level as established on flood insurance rate maps.

   c. Parallel concrete walls or pilings rather than fill shall be used to elevate habitable residential strucutres when six (6) feet or more clearance exists between the existing grade and the flood plain elevation."

   d. New construction or substantial improvement of any non-residential structure shall either have the lowest floor, including basement, elevated to the level of the base flood elevation or, together with attendant utility and sanitary facilities, be floodproofed so that below the base flood level the structure is watertight, with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall certify that these standards will be met.

P. 70 - Section 300.3 D Standards 4:

A new section (e) is to be added and will read (e) "Discontinuous reinforced - concrete foundation wall which allow sufficient free flow of flood waters may be substituted for parallel walls in cases where the A zone is subject to minimal wave action in a 100-year storm event, provided that they facilitate the unimpeded movement of flood waters."

P. 72 - Section 300.4 E Standards 2 (C):

This standard shall be changed to read: "Where a form of pavement is necessary in areas of unconsolidated sediment, ramps will be constructed using 6 inch by 6 inch or equivalent by a maximum of 12 feet reinforced concrete ties, connected with galvanized steel rods....."

P. 72 - Section 300.4 E Standards 3 (c):

This section shall be changed to read "Where possible, piles shall penetrate a minimum of 10 feet into the sediment. Piles in low wave energy areas, (coastal ponds, protected coves, etc.), shall have a minimum 5 inch tip diameter. Piles in stronger wave energy areas shall have a minimum 8 inch tip diameter. Pier bent cross members....."

P. 73 - Section 300.4 E Standards 3 (p):

This section shall be changed to read "Residential boating facilities shall not intrude into the area within 10 feet of an extension of abutting property lines or intrude into an abuttor's riparian area, unless (1) it is ....."

P. 76 - Section 300.6 E Standards 4 (F):

This standard shall be changed to read "Riprap shall be compact, hard, durable, angular stone with an approximate unit weight of 165 lbs./cubic foot.

P. 105 - Narragansett Pier Quadrangle Map:

The westerly portion of Wesguage Pond is classified Type I waters.

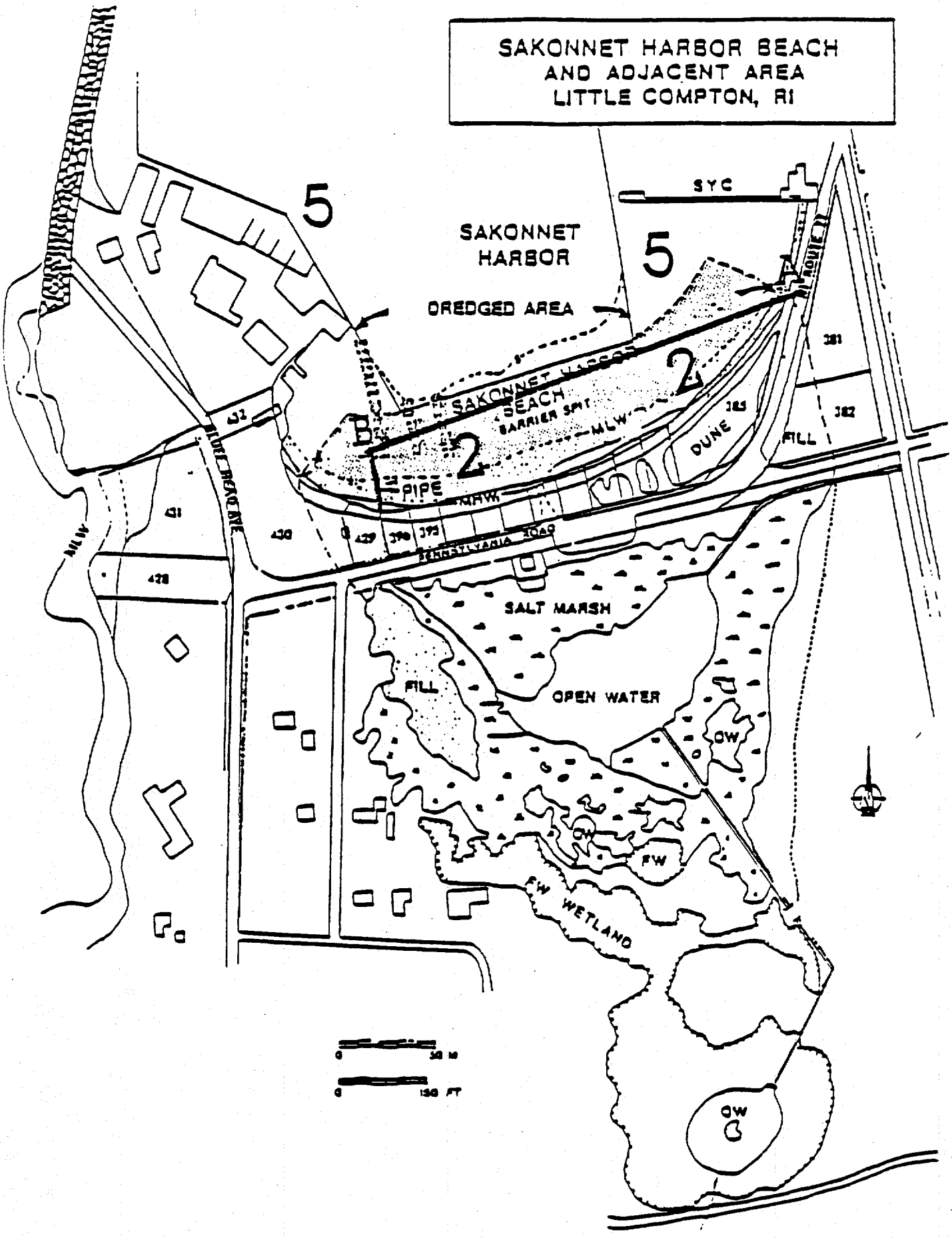
lmc

WATER USE DESIGNATIONS — SAKONNET HARBOR

1. The water area immediately adjacent to the barrier beach, starting at Point A (the northeast edge of Lot 385 where the eastern boundary of the barrier beach, identified by Dr. Boothroyd, intersects with the shore) then extending toward the western shore boundary of the barrier beach designated by Dr. Boothroyd to Point B (where a line drawn in a northerly direction as an extension of the eastern boundary of Lot 429 forms an intersect) be designated as Type 2 (see attached map).

2. The remainder of the water area in Sakonnet Harbor shall be designated Type 5.

lmc


SAKONNET HARBOR BEACH
AND ADJACENT AREA
LITTLE COMPTON, RI
SYC
5
SAKONNET
HARBOR
5
DREDGED AREA
SAKONNET HARBOR
BEACH
BARRIER SPIT
MLW
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PIPE
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DUNE
FILL
381
382
385
432
431
430
429
390
395
428
BLUFF HEAD AVE
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PENNSYLVANIA ROAD
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EMERGENCY ASSENTS

1. CATASTROPHIC STORMS ASSENT

A. The executive director may grant an Emergency Assent when catastrophic storms, flooding, and/or erosion has occurred at a site, under Council jurisdiction, and where, if immediate action is not taken, the existing conditions may cause one or more of the following:

(1) bodily harm or a threat to public health;
(2) significant adverse environmental impacts; or
(3) significant economic loss.

These Emergency Assents may permit only such action at the site that will correct conditions (1) through (3) above in a manner consistent with the policies of this Program. Emergency Assents shall not be granted to permit permanent structural alterations to coastal features or tidal waters and coastal ponds that are not fully consistent with the policies and prohibitions of this Program as they apply to conditions then existing at the site.

B. Where catastrophic storms, flooding, and/or erosion has significantly altered conditions at a site, the full Council, if necessary at an emergency meeting, may permit permanent structural measures to be taken that shall balance the following considerations:

(1) immediate and long-term environmental impacts at the site;
(2) economic impacts; and
(3) the impact on adjacent features, activities, and/or property.

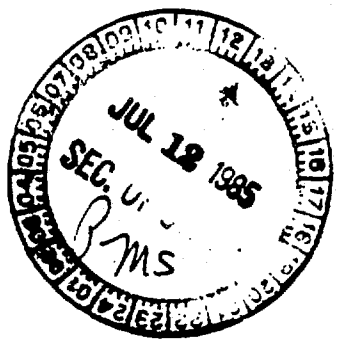
In cases involving structural shoreline protection facilities, full consideration shall be give to the requirements of Section 300.7 (E)2.

2. IMMINENT PERIL ASSENT

A. The Council may grant an Emergency Assent in circumstances where the Council determines that there is imminent peril and where, if immediate action is not taken, the existing conditions may cause one or more of the following:

(1) bodily harm or a threat to public health;
(2) significant adverse environmental impacts; or
(3) significant economic loss to the State.

B. The Council shall state its reasons for its findings on the record.



RHODE ISLAND'S SALT POND REGION: A SPECIAL AREA MANAGEMENT PLAN AMENDMENTS

These amendments to the Salt Pond Region Special Area Management Plan provide for the Plan to be extended to Quonochontaug, Winnapaug and Maschaug Ponds and their watersheds. The amended Plan complements and adds to the policies, regulations and standards of the State of Rhode Island Coastal Resources Management Program as amended.

TITLE PAGE

Amend (Ninigret to Point Judith Ponds) to (**Maschaug to Point Judith Ponds**).

ACKNOWLEDGMENTS

- Second page, second paragraph. Amend the first two sentences as follows: Special acknowledgment is due to the **four** towns in the salt pond region: Narragansett, South Kingstown, Charlestown and **Westerly**. **Each of the town councils supported the project from the beginning and members of the commissions, boards and offices within each town gave generously of their time for development and implementation of this plan.**

- Second page, last paragraph. Amend to read as follows: Financial support for the salt pond study and the plan was provided by URI Sea Grant, the Rhode Island Coastal Resources Manaagement Program, each of the **four** towns, and a planning grant from EPA through the Office of Statewide Planning.

CHAPTER ONE. THE OBJECTIVES OF THE SALT POND SPECIAL AREA MANAGEMENT PLAN

- Figure 1-1, page 3. Amend to portray housing trends for Quonochontaug, Winnapaug and Maschaug Ponds (see attached Figure 1-1).

- Section 120, page 4. Last paragraph. Add a sentence prior to the last sentence as follows: **Additional research and analyses were carried out during 1985 for the three salt ponds and their watersheds in the town of Westerly.**

- Section 130, page 5. Second paragraph, third and fourth sentences. Amend as follows: For regulating purposes, the region is defined as shown in Figure 1-2 and **1-2A** and includes **38** square miles. This region incorporates approximately 20 percent of Narragansett, 30 percent of South Kingstown, 40 percent of Charlestown, and **15 percent of Westerly**.

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- Section 130, page 5. Third paragraph, third sentence. Amend as follows: A recent survey indicates that some 60 percent of the residents of **Narragansett, South Kingstown and Charlestown** use the ponds as a recreational resource and that 70 percent of these users visit the ponds more than ten times a year.[6]

- Section 130, page 5. Third paragraph, sixth sentence. Amend as follows. **The** towns are considering increasing the size of house lots in the remaining sparcely developed areas, several parcels in the region are high on DEM's priority list for land acquisition, and the CRMC has designated all of the ponds, except for portions of Point Judith **Harbor** for conservation and low intensity use.

- Figure 1-2, page 6. Add a map incorporating the watershed boundaries of Quonochontaug, Winnapaug and Maschaug Ponds (see attached Figure 1-2 A).

- Section 140, page 7, goal 2. Amend as follows: **To prevent expansion near areas of the salt ponds that are susceptible to contamination by potentially harmful bacteria or eutrophic conditions.**

- Section 140, page 7, goal 2, second sentence. Amend as follows: **However, recent surveys of the ponds have shown that bacterial contamination is becoming more widespread.**[2,4,7]

CHAPTER TWO. THE FRAMEWORK OF MANAGEMENT

- Figure 2-1, page 14. Amend to reflect land use in the watersheds of Quonochontaug, Winnapaug and Maschaug Ponds (see attached Figure 2-A).

- Section 210.1, page 15, paragraph C. Omit the last sentence.

- Section 270.4, page 18. Replace item 1. with the following: 1. **New residential or commercial developments of six dwelling units or more.**

- Section 220.5 A, page 19. Agencies Participating in the Coordinated Permit Review. Add: **6. The fire districts, where appropriate, for an activity proposed for the watershed in which they are situated.**

- Task 2.1, page 21. Municipal Governments. Change "the three municipalities in the region " to "**the** municipalities in the region..."

CHAPTER THREE. WATER QUALITY

- Section 310.2 A.2, page 26. Add a sentence to the end of the paragraph as follows: **The few bacteria samples that have been taken in Quonochontaug and Winnapaug Ponds indicate that water quality in these two ponds is still good, and safe for shellfishing.** 45 **Much of the northern shore and the watershed above these ponds is still largely undeveloped.**

- Section 310.2 B.1, page 26. Amend the last two sentences of the paragraph to read as follows: **Trustom, Cards and Maschaug Ponds are host to dense flocks of waterfowl which are likely to be a major source of bacterial contamination. However, in Trustom Pond, since it is a National Fish and Wildlife Refuge, boating, swimming and shellfishing are prohibited.**

- Section 310.2 B.2, page 26. Change "5,502 ISDS" to **7,600 ISDS** to reflect the numbers of ISDS in the Quonochontaug, Winnapaug and Maschaug watersheds.

- Figure 3-1, page 27. Add a map of the watershed boundaries of Maschaug, Winnapaug and Quonochontaug Ponds (see attached Figure 3-1B).

- Section 310.2 B.2, page 28. Add to the bottom of the table:

Watershed	% Houses (1980) Built Before 1964
Quonochontaug	50
Winnapaug and Maschaug	69

- Section 310.3, page 29, paragraph 2. Third sentence. Amend as follows: Thus, nitrogen is limiting growth throughout most of the more saline **Quonochontaug, Winnapaug,** Ninigret and Point Judith Ponds, while both nitrogen and phosphorus limit growth in Green Hill, Potters, Trustom, Cards and **Maschaug.** 20

- Section 310.3, page 32, B. 4. Second sentence. Amend as follows: These calculations (see Table 3-3) indicate that **residential development accounts for more than 80 percent of the total nitrogen loadings to Winnapaug and Point Judith Ponds and more than 70 percent of the total nitrogen loadings to Potter, Green Hill, and Quonochontaug Ponds.** 11,46

- Table 3-3, page 33. Add the following to the top of the table:

Watershed	Residential Use	Agricultural Use	Precipitation
Maschaug	**8,787 (93%)**	**241 (2%)**	**5,213 (24%)**
Winnapaug	**43,346 (86%)**	**2,516 (5%)**	**4,312 (9%)**
Quonochontaug	**15,449 (70%)**	**1,000 (5%)**	**433 (5%)**

- Table 3-4, page 36. Add the following to the top of the table:

Watershed	Houses in 1980	Houses Projected at Saturation	Increase Factor
Maschaug	**260**	**521**	**2.0**
Winnapaug	**1,509**	**3,526**	**2.3**
Quonochontaug	**625**	**1,999**	**3.2**
Ninigret	1,228	4,816	3.9
	.	.	.
	.	.	.
Total Region	7,910	23,005	2.9

- Table 3-5, page 37. Add to the table:

Source	Maschaug Pond	Winnapaug Pond	Quonochontaug Pond
Residential			
Septic	**8,596**	**58,179**	**28,995**
Lawns	**8,619**	**41,196**	**22,032**
Pets	**704**	**4,964**	**2,478**
Total	**17,919**	**104,339**	**53,505**
Agricultural			
Fertilizers	**0**	**0**	**0**
Precipitation	**433**	**4,312**	**5,213**
Total Loading	**18,352**	**108,381**	**58,718**

- Section 320, page 42. Add a map of land use classification for water quality protection in the watersheds of Maschaug, Winnapaug and Quonochontaug Ponds (see attached Figure 3-7A).

- Figure 3-10, page 47. Add a map indicating direct discharges of stormwater runoff from roads and highways to Quonochontaug, Winnapaug and Maschaug Ponds (see attached Figure 3-10B).

- Section 320.2 F, page 49. Add the following·

4. Quonochontaug Pond. Every effort should be made to deflect an offshore oil spill from the breachway of the pond, and toward the ocean beaches. The fast currents in the breachway and the boulders off the mouth make it a difficult place to deploy booms. If oil cannot be kept out of the breachway, containment booms and mops may be deployed in the dogleg of the breach or where the breachway empties into the pond and currents start to dissipate. Oil should be deflected toward the tidal creeks in nearby salt marshes instead of being allowed to spread throughout the pond. Launching facilities for small boats and access for heavy equipment are available on the eastern side of the breachway.

5. Winnapaug Pond. Every effort should be made to deflect an offshore oil spill from the breachway of the pond, and toward the ocean beaches. The fast currents in the breachway (4 knots) make it a difficult place to deploy booms for containment and cleanup. If oil cannot be kept out of the breachway, efforts should be made to use booms or barriers to protect the large salt marsh along the pond's southern shoreline and to prevent the oil from spreading westward into the large basin of the pond.

CHAPTER FOUR. BREACHWAYS, EROSION AND SEDIMENTATION

- Section 420. p. 66. Add the following

420.3 Breachways and Dredging in Trustom, Cards and Maschaug Ponds.

C. It is compatible with this plan to manage the pond level and to remove excess stormwater from Maschaug Pond in a manner which does not threaten the stability of the beach.

420.4 Breachways and Dredging in Quonochontaug Pond.

A. Dredging should be limited to habitat restoration and enhancement.

B. Dredging a sediment catch basin on the northern end of the breachway may become necessary to halt the flow of sand into the pond for habitat improvement. Dredging projects may be undertaken only after an evaluation of the impacts

has been made by a competent coastal geologist and it is demonstrated that the project conforms to the objectives of this plan.

C. Dredged sand shall be used to nourish Quonochontaug barrier beach and shall be placed on the beach according to the configuration shown in Figure 4-4.

420.5 Breachways and Dredging in Winnapaug Pond.

A. A narrow channel may be maintained as the main channel from the northern end of the breachway through the terminal lobe of the flood tidal delta. Natural sedimentation processes should be allowed to continue elsewhere on the tidal delta.[17] Other channels should not be opened which would increase sedimentation inside the pond.

B. Dredging in the pond basin shall be limited to habitat improvement and restoration. Sand may be dredged from storm surge platforms and used for beach nourishment. Dredged sand must be placed on the beach face in conformance with Figure 4-4.

C. Dredging projects may be undertaken only after an evaluation of the impacts has been made by a competent coastal geologist and it is demonstrated that the project conforms to the objectives of this plan.

420.6 Beach Restoration

A. Mechanical removal or redistribution of sand from the intertidal zone of the beach to increase the profile of the beach scarp or to construct artificial dunes is prohibited. Such practices destabilize the beach, increase erosion along the beach and eventually increase sedimentation in the ponds.

B. Sand used for beach nourishment projects shall be placed on the beach in conformance with Figure 4-4 and in consultation with a competent coastal geologist.

CHAPTER FIVE. FISH AND FISHERIES

No amendments proposed.

CHAPTER SIX. STORM HAZARDS

- Section 610.1 C, page 84. Second sentence Change all three of the region's towns to all **four** of the region's towns.

- Section 610.2 A, page 84. Change 2,000 houses and 6,000 residents to **3,200** houses and **9,600** residents.

- Figure 6.1, page 85. Add Figure 6-2. Zones of severe flood hazard as designated by the Federal Emergency Management Agency for Quonochontaug, Winnapaug and Maschaug Ponds (see attached Figure 6-2)

- Section 610, page 88. Add the following

610.6. Findings of Fact for Winnapaug and Maschaug Ponds

1. Due to the low elevation of the land around these ponds, the sand starved, erosional nature of the coast line and the dense development of both residential and commercial structures on the land surrounding these two ponds, they are particularly vulnerable to coastal flooding. Recently updated FEMA flood maps clearly show how extensive the highest hazard flood zones are. (Figure 6-2)

2. Of the many hurricanes that have hit Rhode Island's coast, comparative damage estimates were made for only the two most recent major ones and in each case, the Misquamicut/ Winnapaug area sustained heavy damages, more than anywhere else along the south shore. Many lives were lost and property damages were excessive in the hurricane of 1938. The area was rebuilt and destroyed again in 1954 during Hurricane Carol. In less than half an hour's time, the storm surge reduced 200 cottages, inns and businesses to rubble. Although no lives were lost, property damage was estimated to have been several million. Damages were increased by high contents of sewage and petroleum in the flood waters.

3. Natural and man-made debris will be a serious problem in the next hurricane. During the hurricanes of 1938 and 1954, pieces of houses which had been on the barrier and on the Misquamicut headland, were washed across the ponds or swept through neighborhoods and acted as battering rams on houses which would have otherwise stayed intact. Much of the wreckage from Misquamicut was swept by flood waters across a mile of field and deposited at the base of Shore Road. It took weeks for emergency crews to haul away the rubble. In 1938 fallen trees delayed access to the shore after the storm. On Atlantic

Avenue, where sand swept from the beaches piled on the road burying the cars, cleanup crews worked for days with heavy machinery to make the road suitable for public access.

4. Cleanup after the next major hurricane will be a much more costly operation than it was in the past. Development has more than doubled since 1954 in the flood hazard zones around these ponds. Much of the new construction is on the barrier beach. When the structures are broken and hurled along by storm waves, they batter structures further inland. This includes so-called "breakaway walls" which have been shown to cause damage to other structures during severe storms, including winter storms and hurricanes. More public utilities have been built in high flood danger zones in recent years adding greatly to the cost of reconstruction. In addition to roads and power lines, there are now water mains, cable T.V. lines and phone lines that cross the barrier in places where surge channels broke through in past hurricanes.

5. Construction along the shore in Weekapaug and Misquamicut is more vulnerable than before to erosion. The Misquamicut headland and western end of the barrier have been eroding at an average rate of 2 feet per year since 1940, and the structures in these areas are therefore more vulnerable to the extreme erosion that accompanies a hurricane. During the hurricane of 1938 the high cliff at Watch Hill receded some 35 feet and the large dunes at Weekapaug receded 50 feet all within a few hours. With the exception of the eastern end of the barrier, most of the shore and the barrier spit are much lower than the predicted wave heights of another hurricane the magnitude of 1938 or Hurricane Carol, and so provide little protection to communities on Misquamicut or around the pond shore. The height of the dune crest by little Maschaug Pond is only 8 feet above mean sea level and at Atlantic Beach is 10 feet above mean sea level. The hurricane storm surge is predicted to be 15 to 18 feet above mean sea level along along the Misquamicut headland and Atlantic Avenue.

6. As in the past the next hurricane can be expected to bring major changes to the pond. Sand will be washed over the barrier into the pond, old breachways may close and new ones form. Surge channels will cut through the beach and the inlet that formed cutting through Misquamicut Beach in the last two hurricanes can be expected to do so again. Hurricane-driven waves and currents are major forces for carrying sediment and creating shoals farther in the ponds.

610.7. Findings of Fact for Quonochontaug Pond

1. Quonochontaug Pond is separated from the waters of Block Island Sound by a barrier spit stretching between the headlands of Weekapaug Pond and Quonochontaug Neck. The pond and the low lands around it are very susceptible to coastal flooding (Figure 6-2).[6]

2. There has been a long history of damage to lives and property due to coastal flooding from hurricanes. In the hurricane of 1938 and again in 1954 substantial houses, roads, and power lines were demolished as the storm surge swept across the barrier and headlands, depositing tons of debris in the fields along the northern shore of the pond. In 1938 and again in 1954 approximately a million dollars of damage was done to construction in the high hazard zones around this pond. (See Figure 6-2).[7]

3. In recognition of the importance of a healthy barrier, a civic group of private citizens have purchased the barrier, have restricted development, and are actively managing it to promote rebuilding of the dunes. Still, the barrier is sand starved and susceptible to future storm damage. In the years since 1930, the west end of the barrier has been eroding at an average rate of about two feet per year.[8] Predicted flood heights for a hurricane like 1938 Hurricane Carol exceed the height of existing dunes. Dune heights on the western end of the barrier range from 8.9 to 17.3 feet above mean sea level; and 22 feet on the west end; yet hurricane flood heights are expected to reach 15 to 18 feet above mean sea level on the east end and 23 feet above mean sea level on the west end.[7] [6]

- Section 620.1. p. 89. Construction Standards in Flood Zones. Amend regulation No. 8 for construction in V Zones to read as follows· 8. The space below the lowest floor and between pilings shall be kept free of obstruction. Break away walls are prohibited in V Zones. The space below the lowerst floor shall not be used for human habitation, utility items or permanent storage.

- Section 620.2 B, p. 91. Add: New inlet channels cut across the beach to Quonochontaug, Winnapaug or Maschaug Ponds may be immediately filled in with sand or gravel by the local municipality.

- Section 620.2 D, p 91 Add· and Misquamicut State Beach.

CHAPTER SEVEN. INTENSIFYING USE

No amendments are proposed.

REFERENCES

- page 109

  47. Biweekly bacteria data for the salt ponds, 1985-1986. Pond Watcher report to the CRMC and DEM.

  48. Collins, C. 1985. A water quality element for the extension of the salt ponds special area management plan to Quonochontaug, Winnapaug, and Maschaug Ponds. M.S. Thesis. Geography and Marine Affairs, URI, Kingston, RI. 53 pp.

- page 110

  17. Boothroyd, J.C., Dacy, M. Rosenberg, M. 1985. A geological survey of sedimentation in Quonochontaug, Winnapaug and Maschaug Ponds. Report to CRMC and the town of Westerly. Geology Dept., URI.

- page 112. 6. line 2. Maps for the towns of Charlestown, South Kingstown, Narragansett and Westerly.

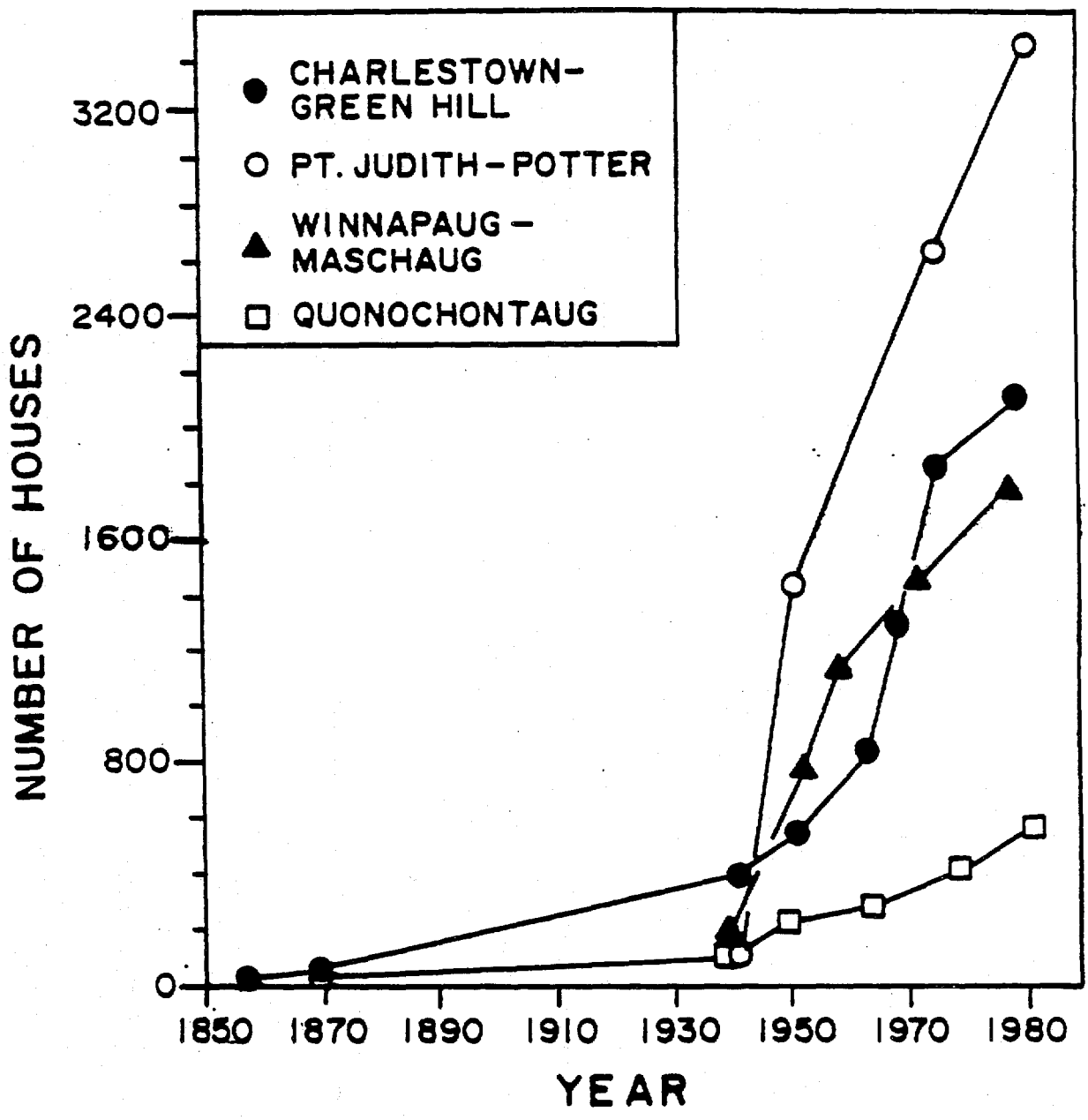


Figure 1-1. The increase of residential development within the salt pond watersheds south of Route 1.

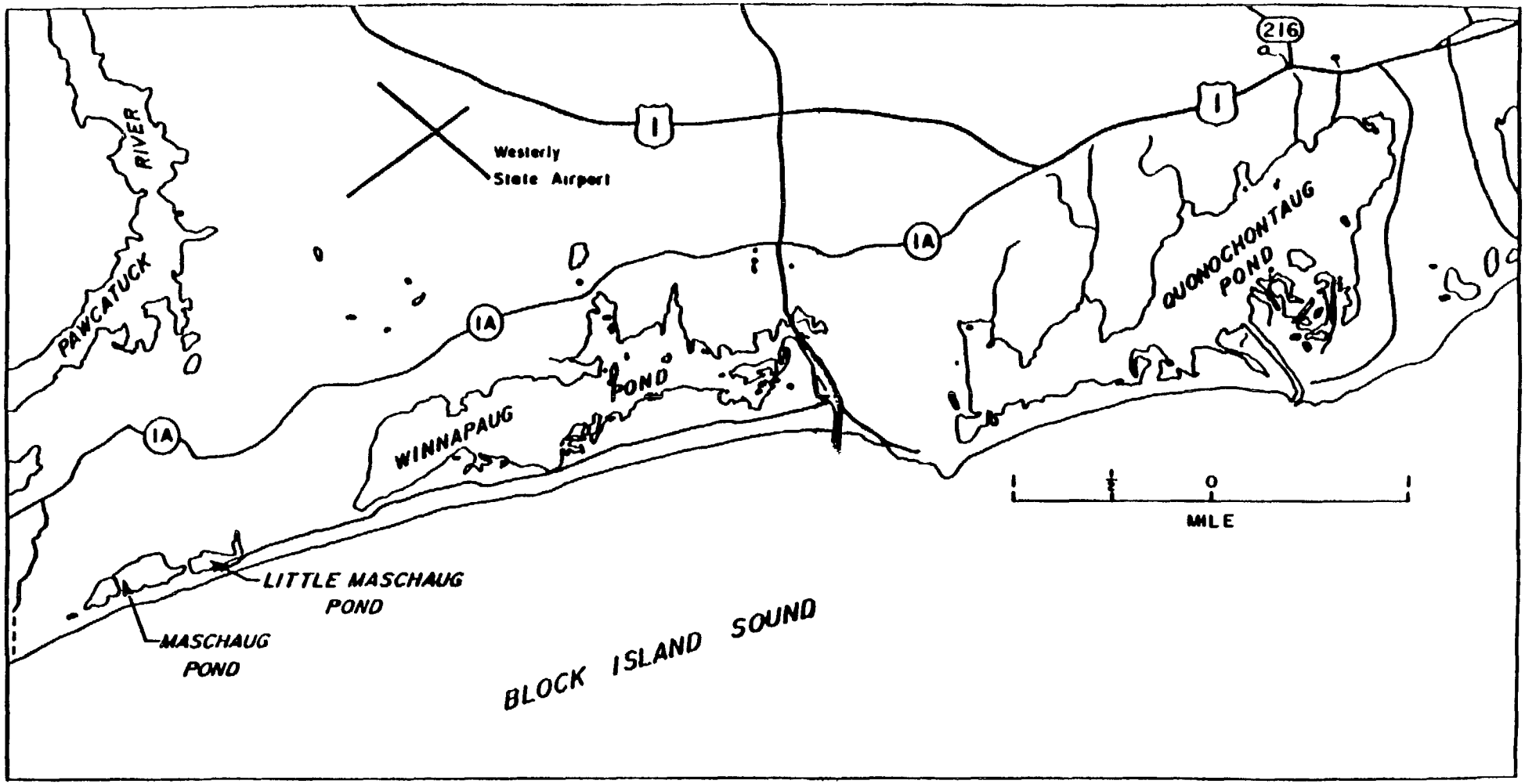


Figure 1-2 A The Western Portion of the Salt Pond Region For administrative purposes, the boundaries of the Salt Pond Region follow the roadways that most closely correspond to the watershed boundaries of the salt ponds The region is bounded on the south by Block Island Sound, on the north by Rte 1 and Rte 1A, on the east by East Beach Road, and on the west by Montego Road

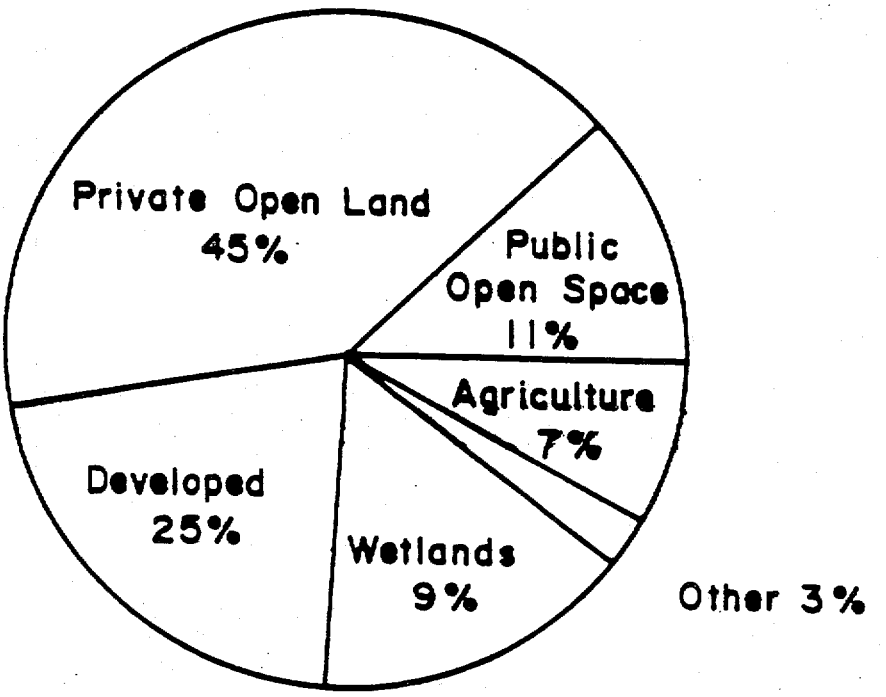


Figure 2-1. Land use in the salt pond region. A large proportion of the watersheds is in private ownership and is as yet undeveloped.

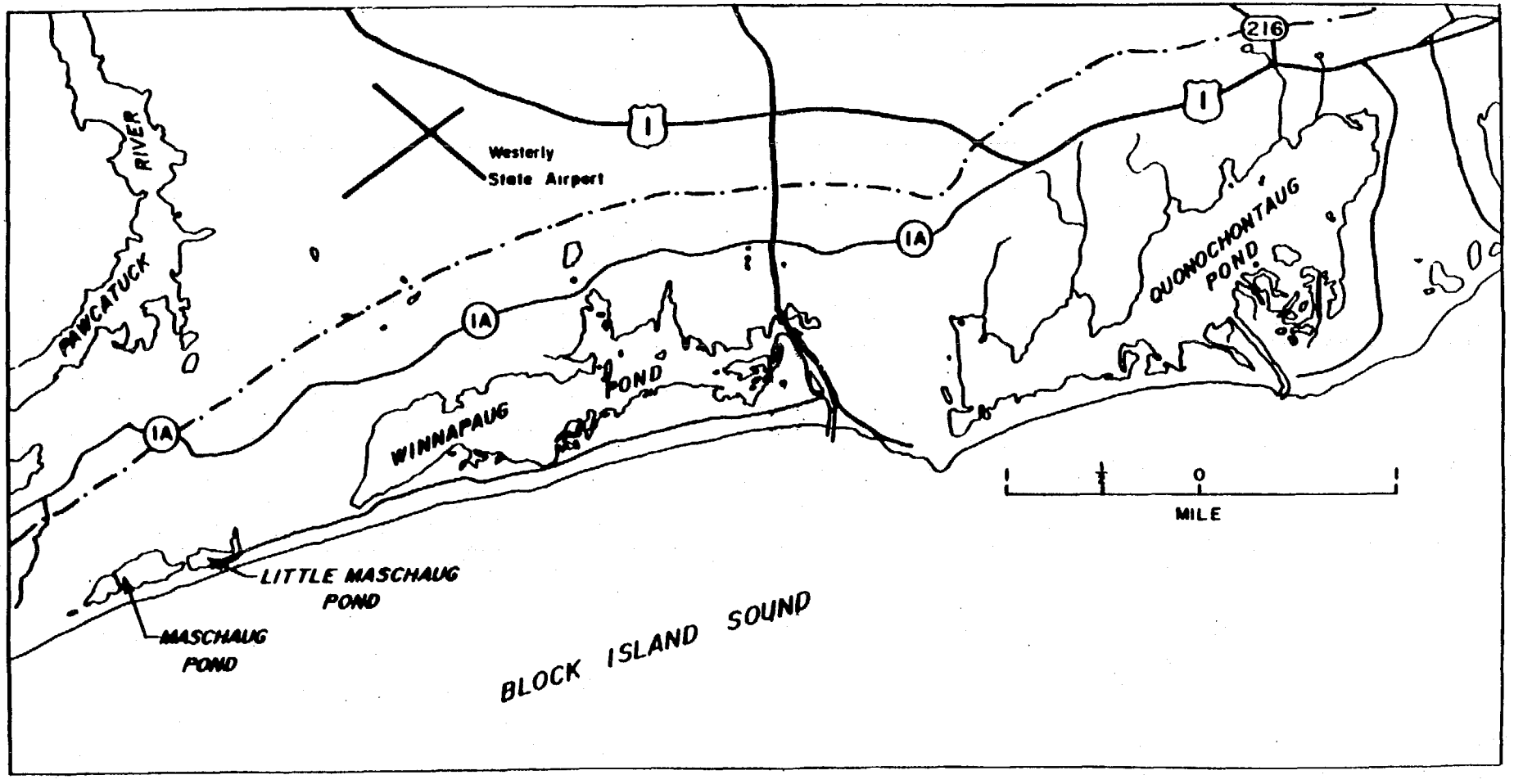


Figure 3-1B. Watershed boundary for Quonochontaug, Winnapaug and Maschaug Ponds. Groundwater flows south from the dashed lines to the salt ponds where it surfaces and mixes with the sea water in ponds.

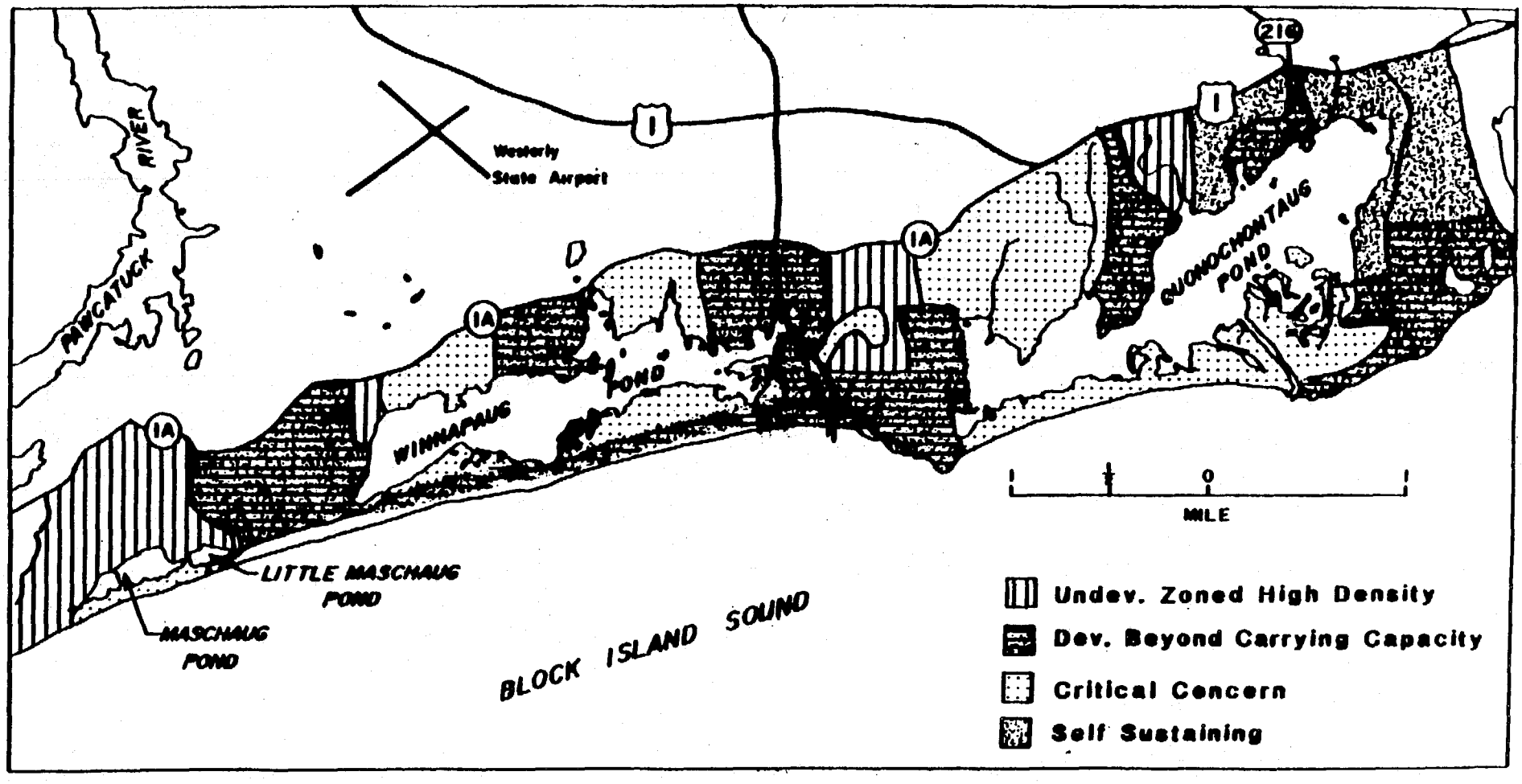


Figure 3-7 A. Land use classification for water quality protection in the Towns of Westerly and Charlestown.

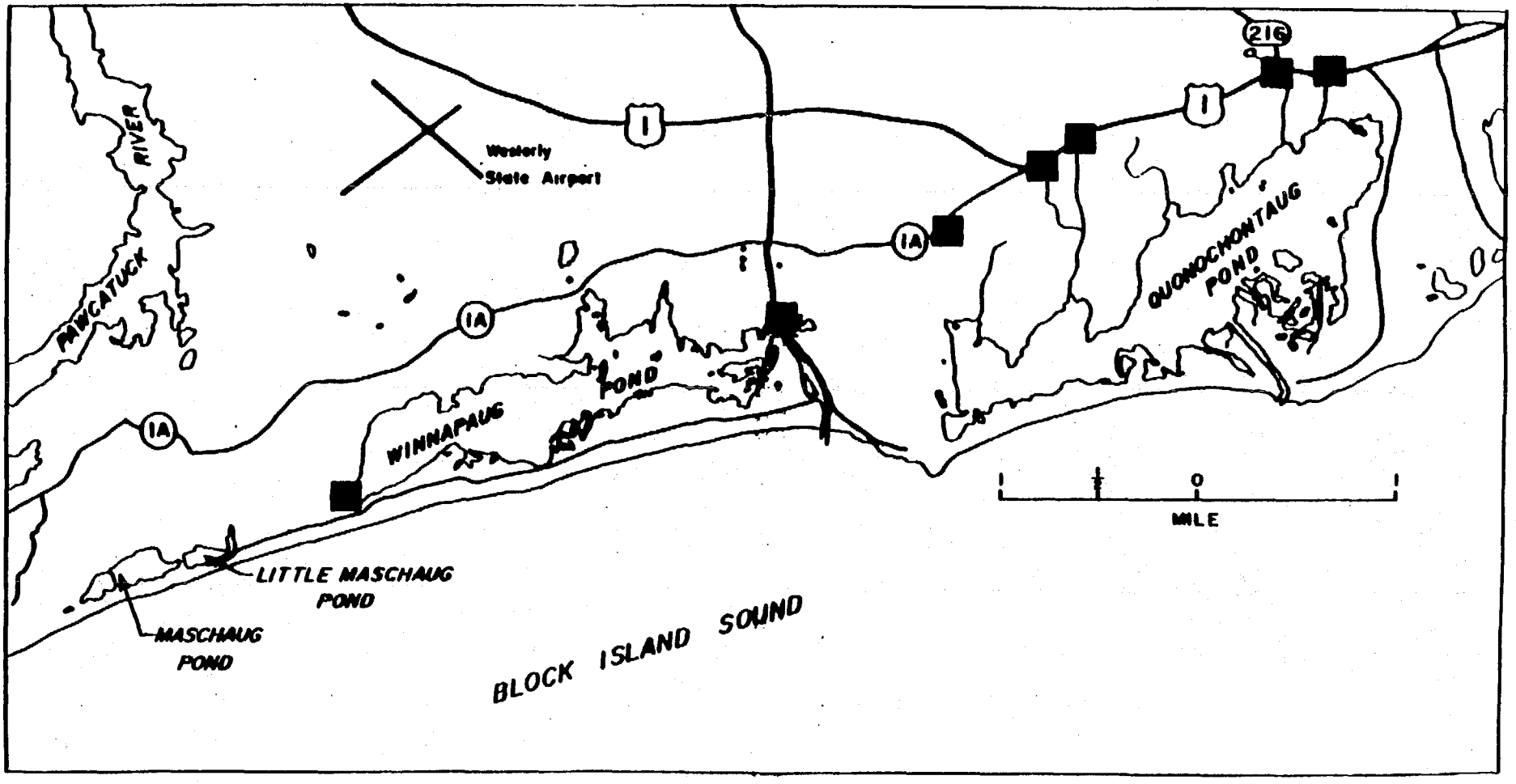


Figure 3-10 B. Direct Discharges of Stormwater Runoff From Roads and Highways in the Salt Pond Region.

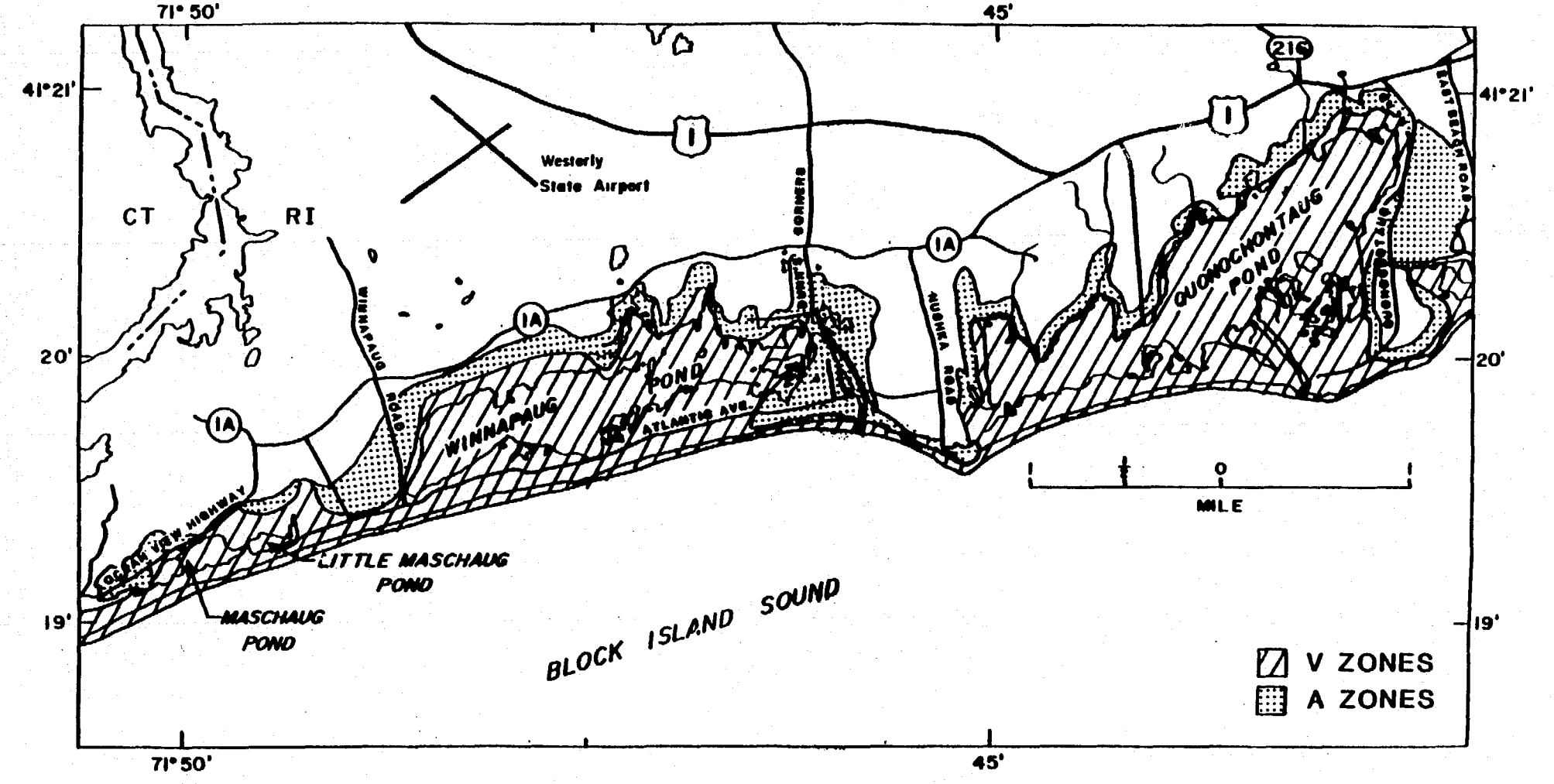


Figure 6-2. Zones of Severe Flood Hazard. Adopted from Federal Emergency Management Agency Maps. Prepared for the Region in 1984.

ADDENDUM

TO

"THE STATE OF RHODE ISLAND COASTAL RESOURCES MANAGEMENT PROGRAM"

AS AMENDED

AMENDMENTS TO THE STATE OF RHODE ISLAND

COASTAL RESOURCES MANAGEMENT PROGRAM

AS AMENDED

Boundary Line Descriptions for the Block Island Quadrangle and Water Use Categories for Block Island coastal ponds:

1. The northern and eastern portions of Great Salt Pond shall be designated Type 1 (Conservation Use) due primarily to open space qualities of the shoreline (much of which is wetland and barrier beach) and the shallow waters in these areas. The Block Island Shellfish Commission and other municipal agencies support restricting development in these areas. A Type 1 designation will prohibit docks, shoreline stabilization and dredging.

2. The central area of the pond shall be designated Type 2 waters (Low Intensity). This is consistent with the central area of all other navigable coastal ponds.

3. The shoreline between Champlin's Dock and the channel to Trim's Pond shall be designated Type 3 (High Intensity Boating) to reflect ongoing commercial commitments there. This designation extends 500 feet outward from the shore.

4. The Hog Pen and the remainder of Trim's and Harbor Ponds shall be designated Type 2 (Low Intensity) use. This will permit individual residential docks and piers as requested by several shoreline landowners and will also permit spot maintenance dredging where necessary to provide for small boat access and navigation. Docks and pilings in these areas shall not be treated with preservatives.

- Any marina facility which expands within allowable limits, under the present management plan, below mean high water shall be seasonal floating structures held in place by a minimum number of noncreosoted pilings.

- All floating docks shall be removed from the Hog Pen for winter storage.

- No shipyard facility shall be allowed in order to prevent scrapings from bottom painting activity from entering sediments.

BLOCK ISLAND QUADRANGLE

A. Straight line extensions of the outside of each of the two jetties at the breachway entrance to Great Salt Pond.

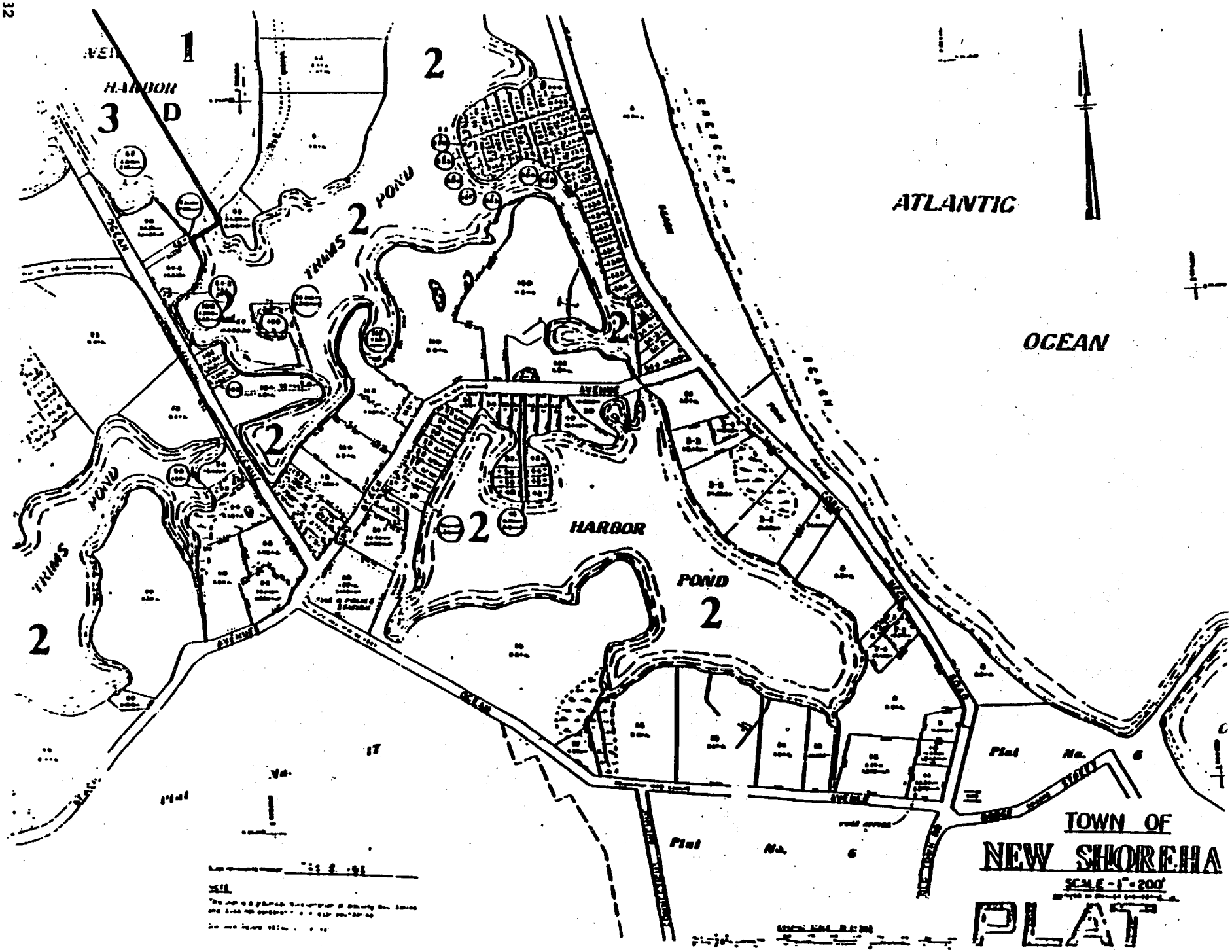
B. A straight line starting from the point of land on the northeast side of the Great Salt Pond breachway and running generally southeasterly to Harris (Breezy) Point.

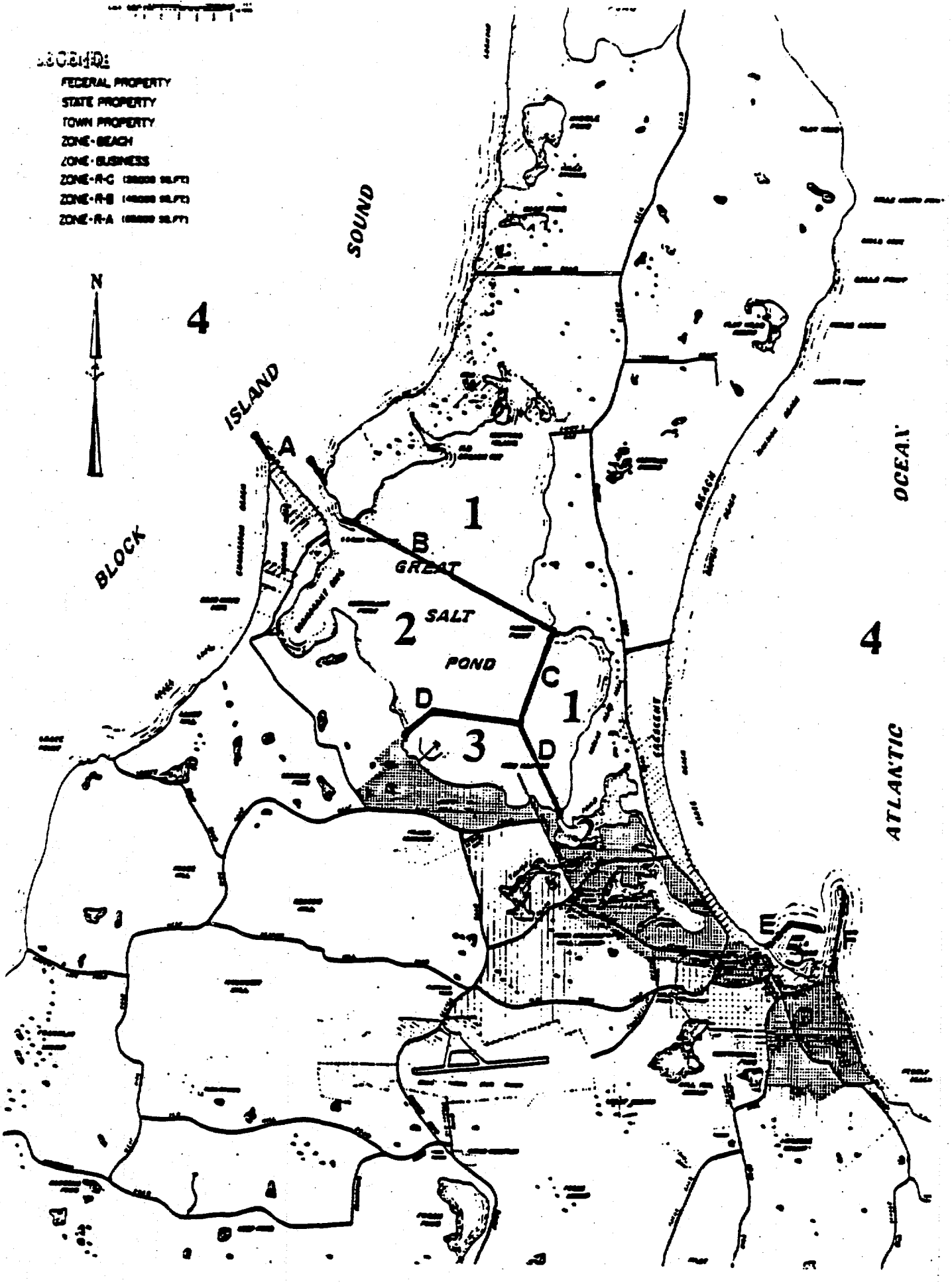
C. A straight line starting at Harris (Breezy) Point and running generally southwesterly to Can Buoy #5.

D. A straight line (500 feet) extension of the boundary between the commercial/low residential zone area west of Champlin's Dock, thence turning generally easterly and running to Can Buoy #5, then turning generally south-southeasterly and running to the point of land on the eastern shore of the channel to Trim's Pond, thence turning 90 degrees and running west to land on the western side of the Trim's Pond Channel.

E. A line along the outside of the west breakwater.

F. A line alonag the outside of the east breakwater.


ATLANTIC
OCEAN
HARBOR
POND
TRIMS POND
TRIMS POND
HARBOR
POND
AVENUE
OCEAN
Plat No. 6
Plat No. 6
TOWN OF
NEW SHOREHA
SCALE - 1" = 200'
PLAT


FEDERAL PROPERTY
STATE PROPERTY
TOWN PROPERTY
ZONE - BEACH
ZONE - BUSINESS
ZONE - R-C
ZONE - R-B
ZONE - R-A
N
SOUND
ISLAND
BLOCK
OCEAN
ATLANTIC
GREAT
SALT
POND
A
B
C
D
E
1
2
3
4

AMENDMENTS TO THE COASTAL RESOURCES MANAGEMENT PROGRAM

ADOPTED ON DECEMBER 11, 1984

WATER USE DESIGNATIONS — SAKONNET HARBOR

1. The water area immediately adjacent to the barrier beach, starting at Point A (the northeast edge of Lot 385 where the eastern boundary of the barrier beach, identified by Dr. Boothroyd, intersects with the shore) then extending toward the western shore boundary of the barrier beach designated by Dr. Boothroyd to Point B (where a line drawn in a northerly direction as an extension of the eastern boundary of Lot 429 forms an intersect) be designated as Type 2 (see attached map).

2. The remainder of the water area in Sakonnet Harbor shall be designated Type 5.

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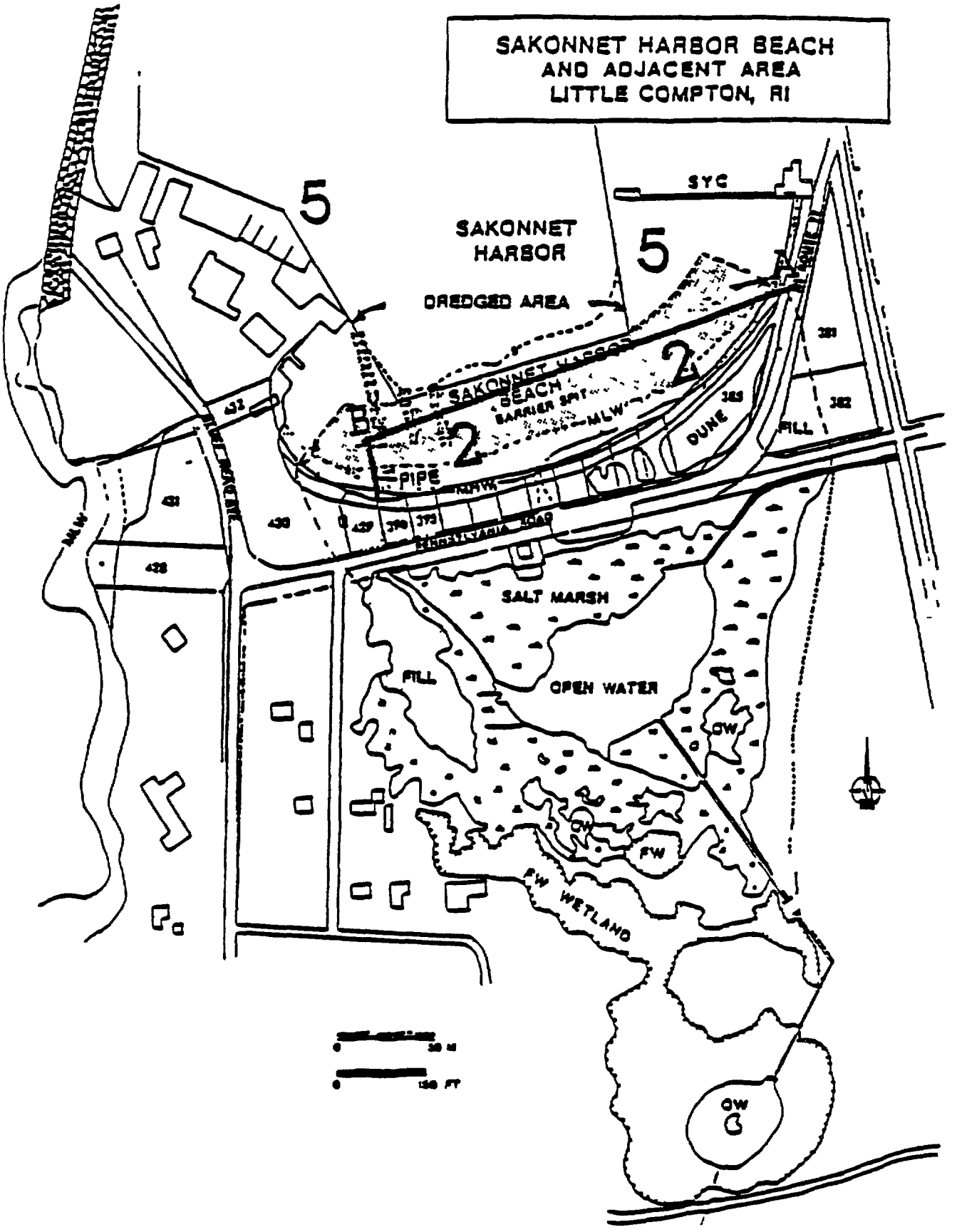
SAKONNET HARBOR BEACH
AND ADJACENT AREA
LITTLE COMPTON, RI
SYC
5
SAKONNET
HARBOR
5
DREDGED AREA
2
SAKONNET HARBOR
BEACH
BARRIER SPIT
MLW
2
DUNE
FILL
PIPE
RIPRAP
PENNSYLVANIA ROAD
MLW
SALT MARSH
FILL
OPEN WATER
OW
OW
FW
FW WETLAND
OW

AMENDMENTS TO THE COASTAL RESOURCES MANAGEMENT PROGRAM

ADOPTED ON DECEMBER 18, 1984

P. 72 - Section 300.4 E (3) a:

This standard shall be changed to read "All wooden portions of the structure coming in contact with water shall have been commercially pressure treated with a wood preservative. No creosote shall be applied to any portion of the structure."

P. 105 - Narragansett Pier Quadrangle Map:

The portion of the Bonnet Shores barrier beach east of the tidal creek shall be changed from "moderately developed" to "developed" to more accurately portray existing conditions.

P. 105 - Narragansett Pier Quadrangle Map:

Lake Canonchet (Pier Pond) and Little Neck Pond, situated adjacent to Narragansett Beach, shall be designated Type 1, Conservation Use.

P. 114 - Bristol Quadrangle, boundary cc:

This boundary designation shall be changed to read "A straight line extension of Lippitt Avenue."

P. 127 - Block Island Quadrangle Map:

The portion of the Crescent Beach barrier beach south of Pole S28 shall be changed from "moderately developed" to "developed."

P. 69 - Section 300.3 D (2) a:

Reference in parentheses shall be changed to read "(see Section 300.2)".

P. 72 - Section 300.4 E (3) b:

This standard shall be changed to read "All residential piers and floating docks shall be built with pile bents spaced 10 to 15 feet apart."

P. 113 - East Providence Quadrangle, boundary e:

Add boundary e which shall state "A straight line extension of George Finnerty Road."

P. 84 - Section 300.14 Definition A (1):

This definition shall be changed to read "Maintenance of structures includes rebuilding, reconstruction, or re-establishing to pre-existing conditions and dimensions damaged structure or facility. With the exception of marinas (see Section 300.4), maintenance includes only those activities that do not alter the approved design, purpose and size of structure. However, reconstruction or remodeling of existing malfunctioning individual sewerage disposal systems to meet DEM recommended design standards shall also be considered a maintenance activity.

P. 67 - Section 300.2 c Standards a - 4:

Insert word maximum before 3.1 slope and remove 4.1.

P. 69 - Section 300.3 D Standards 2 (b):

Remove "when feasible and" from line 5.

P. 70 - Section 300.3 D Standards 3 (i):

This standard shall be changed to read. "All plans submitted to the CRMC for buildings proposed for V zones shall be stamped by a registered professional engineer or architect and shall certify that the building is to be adequately anchored to adequately anchored pilings or columns in order to withstand velocity waters and hurricane wave wash."

P. 70 - Section 300.3 D Standards H:

This section will be revised as follows:

4. Construction in coastal stillwater flood (A) zones.

   a. Standards (d). (e). (f). and (g) for residential building in V zones apply.

   b. Lowest floor elevation including basements of new or substantially improved residential buildings in A zones shall be elevated to the 100 year level as established on flood insurance rate maps.

   c. Parallel concrete walls or pilings rather than fill shall be used to elevate habitable residential strucutres when six (6) feet or more clearance exists between the existing grade and the flood plain elevation."

   d. New construction or substantial improvement of any non-residential structure shall either have the lowest floor, including basement, elevated to the level of the base flood elevation or, together with attendant utility and sanitary facilities, be floodproofed so that below the base flood level the structure is watertight, with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy. A registered professional engineer or architect shall certify that these standards will be met.

P. 70 - Section 300.3 D Standards 4:

A new section (e) is to be added and will read (e) "Discontinuous reinforced - concrete foundation wall which allow sufficient free flow of flood waters may be substituted for parallel walls in cases where the A zone is subject to minimal wave action in a 100-year storm event, provided that they facilitate the unimpeded movement of flood waters."

P. 72 - Section 300.4 E Standards 2 (C):

This standard shall be changed to read" "Where a form of pavement is necessary in areas of unconsolidated sediment, ramps will be constructed using 6 inch by 6 inch or equivalent by a maximum of 12 feet reinforced concrete ties, connected with galvanized steel rods ....."

P. 72 - Section 300.4 E Standards 3 (c):

This section shall be changed to read "Where possible, piles shall penetrate a minimum of 10 feet into the sediment. Piles in low wave energy areas. (coastal ponds, protected coves, etc.), shall have a minimum 5 inch tip diameter. Piles in stronger wave energy areas shall have a minimum 8 inch tip diameter. Pier bent cross members....."

P. 73 - Section 300.4 E Standards 3 (p):

This section shall be changed to read "Residential boating facilities shall not intrude into the area within 10 feet of an extension of abutting property lines or intrude into an abuttor's riparian area, unless (1) it is ....."

P. 78 - Section 300.6 E Standards 4 (F):

This standard shall be changed to read "Riprap shall be compact, hard, durable, angular stone with an approximate unit weight of 165 lbs./cubic foot.

P. 105 - Narragansett Pier Quadrangle Map:

The westerly portion of Wesquage Pond is classified Type 1 waters.

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SECTION I - URBAN PORTS AND HARBORS SUBCOMMITTEE

SECTION II - PRELIMINARY PROJECT REVIEW PROCEDURES

SECTION III - PERMIT PROCEDURES

SECTION I: CRMC URBAN PORTS AND HARBORS SUBCOMMITTEE:

The CRMC Urban Ports and Harbor Subcommittee has the following responsibilities relative to Newport Harbor and the adjacent waterfront planning area.

A. Review of all applications for contested Category B Assents (those requiring a public hearing) within the Harbor and planning area and preparation of recommendations on permitting decisions for the full Council's consideration and action.

B. In accordance with GLRI 46-23-6C(1) that empowers the Council to coordinate actions "with local, state, regional and federal agencies and private interests" the Subcommittee (a) shall direct its staff in coordinating local, state, and federal project review procedures in the Harbor area and (b) coordinate with municipal and state agencies in implementing the nonregulatory management of initiatives set forth in any adopted Special Area Management plans for Newport Harbor.

C. In accordance with GLRI 46-23-6C(c) of the General Laws, the Council Subcommittee shall make recommendations to the full Council, which shall serve as an abitrator in any dispute involving the management of the Newport Harbor waterfront and its environs, and the interests of two or more municipal or state agencies. The Subcommittee's recommendation shall be referred to the full Council for a binding decision.

D. The Subcommittee shall, in accordance with GLRI 23-6(c) sponsor research as necessary on management issues in the Newport Harbor area and advise the public on such matters.

E. In order to carry out the responsibilities of the preliminary project review policies, the Subcommittee shall designate a project review coordinator for Newport Harbor.

SECTION II: PRELIMINARY PROJECT REVIEW PROCEDURES:

A. A preliminary project review is desirable for all activities listed in Table 1 that would require a Category B application if submitted to the CRMC. Parties proposing one of these activities shall notify the project review coordinator, and may participate in any subsequent project review meetings. The project review coordinator shall consult with the designated contact for the City of Newport in making a determination as to whether a project review shall be held. The project review coordinator

AMENDMENTS TO THE COASTAL RESOURCES MANAGEMENT PROGRAM

ADOPTED ON DECEMBER 18, 1984

SECTION 230.3 "NEWPORT HARBOR SPECIAL AREA MANAGEMENT PLAN"

will notify the agencies in Table 2 and arrange a meeting for the purpose of conducting said review. The meeting shall be held in the City of Newport. Notice of meeting will be posted in the Newport City Hall.

B. In accordance with section 320 (d) (2) of the Coastal Resources Management Program, as amended, project proposers should submit the following applicable information to the Project Review Coordinator no less than three weeks before the preliminary project review conference is to be held.

1. A site plan (suggested scale 1:200) showing proposed facilities and uses; physical characteristics of the site, including soils, vegetation, significant natural features identified by the Department of Environmental Management's Natural Heritage Program; the location of any features protected by CRMC through its Coastal Program, and the relationship of the development to adjacent properties and their uses. Public and private access to and through the site shall be shown.

2. A description of the historic value and designations of the site and adjacent properties.

3. A narrative description of proposed alterations of uses from present conditions.

4. The legal status of ownership of the property.

C. All agencies having authority to issue permits for the proposed alteration should in accordance with agreements negotiated by the CRMC with participating agencies (listed in Table 2) review these materials and attend the preliminary project review conference. The purpose of the conference is to:

1. Identify and discuss the design proposal (s) and the likely impacts of such proposals with respect to municipal and state policies and regulations and any adopted special area plan.

2. Make available to all parties pertinent information generated through research on the region and the technical expertise of all involved agencies in a timely and coordinated fashion.

3. Advise the project proposer of major issues and concerns before further private and public monies are committed.

The project review coordinator shall distribute a summary of the meeting including the comments of those participating in the review to the agencies listed in Table 2 and project proposer. A copy will be entered into the file when an application for an Assent to the CRMC is made.

SECTION III - PERMIT PROCEDURES:

A. Local approval is required before the CRMC will act on an application for an Assent. The City Engineer shall certify the project's compliance with all applicable local statues, ordinances and regulations. This certification shall be provided in writing. In the event an applicant causes the city to issue a building permit before obtaining a CRMC assent, the time limit stated in the permit shall not be construed as a constraint upon normal CRMC procedures.

B. Except for the role of the Urban Ports and Harbors Subcommittee in reviewing contested cases, all applications will be handled according to the procedures in the Coastal Resources Management Program document as amended June 28, 1983.

C. The City of Newport is entitled and encouraged to participate in CRMC proceedings on any application for an assent following the rules on substantive objections in Section 110.3 of the Rhode Island Coastal Resources Management Program.

TABLE 1

MAJOR ACTIVITIES IN THE NEWPORT HARBOR PLANNING AREA

REQUIRING NOTIFICATION OF THE PROJECT COORDINATOR

1. All proposals which are captured by existing City of Newport project review procedures.

2. Construction or reconstruction of residential, commercial or industrial units including condominiums, townhouses, and transient guest facilities as defined by the City of Newport Zoning Ordinance.
3. Construction or extension of sewage facilities or systems, conduits or interceptors.
4. New roadway construction and upgrading projects, or pavement of one acre or more of surface area.
5. Dredging and dredged material disposal.
6. Water distribution and supply line replacement or extensions.
7. Construction or reconstruction of commercial or industrial piers, docks, wharves, and/or shoreline devices.
8. Filling of tidal waters.
9. Processing, transfer or storage of hazardous materials defined by the Department of Environmental Management.
10. Electrical generating facilities of more than 10 megawatts capacity and petroleum processing, storage and transfer facilities.

TABLE 2

AGENCIES PARTICIPATING IN THE COORDINATED PERMIT REVIEW

The following agencies of local, state and federal government shall be supplied with the materials prepared by the project proposal listed in Section 11 E and notified of the date of the preliminary project review conference. These agencies, divisions, or boards from when a permit is necessary will be encouraged to attend.

1. The Department of Environmental Management's Office of Environmental Coordination, which shall notify appropriate divisions.
2. The City of Newport Departments of Inspection and Engineering and Planning and Zoning.
3. The City of Newport Waterfront Commission.
4. The Historic Preservation Commission.
5. The Statewide Planning Commission.
6. The Army Corps of Engineers.
7. Coastal Resources Management Council.
8. Potential Applicants.

RHODE ISLAND COASTAL RESOURCES MANAGEMENT PROGRAM

CHANGES AS OF JUNE 11, 1987

1. Section 320.D.2:

"Residential sub-division shall mean the division of a lot, tract or parcel of land into two (2) or more lots, tracts, parcels or other divisions of land for sale, lease or other conveyance or for development simultaneously or at separate times.

It also includes re-subdivision and when appropriate to the context, shall relate to the process of subdividing or to land subdivided."

(Effective April 14, 1987)

2. Rhode Island's Salt Pond Region: A Special Area Management Plan and The Narrow River Special Area Management Plan, Section 320.1.B.3:

The definition and regulations pertaining to areas of critical concern apply to those properties platted after the adoption date of this plan. Alterations, to coastal features or within 200 feet of a coastal feature on properties platted prior to the adoption of this plan will, where possible, conform to the regulations of this section.

In cases where, due to the size or configuration of a lot that was platted prior to the adoption of this plan it is not possible to provide a 200 foot buffer, then the determination of the boundaries of a buffer zone must balance the property owner's rights to enjoy their property with Council's responsibility to preserve, and where possible, restore ecological systems. Recommended Buffer Zones shall be established according to the environmental values and sensitivities of the site as assessed by the Council's staff engineer and biologist.

(Effective June 21, 1987)

RHODE ISLAND COASTAL RESOURCES MANAGEMENT PROGRAM

CHANGES AS OF SEPTEMBER 14, 1987

1 The Rhode Island Coastal Resources Management Program, Section 120 C,

Prior to requesting approval for a CRMC variance, in those instances where a variance would be obviated if a variance for a setback were acquired from the local municipality, then the applicant must first exhaust his remedies before the local municipality

2 The Rhode Island Coastal Resources Management Program, Table 1A Review Categories in the 200-foot Area Contiguous to Shoreline features, page 29

Table 1A Review Categories in the 200-foot Area Contiguous to Shoreline Features

Alteration or Activity	Review Category
Filling, Removal, and Grading of Shoreline Features	A/B1
Residential Buildings and Associated Structures	A2
Commercial and Industrial Structures	A/B3
Public Recreational Structures	A/B3
Municipal Sewage Treatments Facilities	A/B3

Notes

1 Section 300 2(A)2 for differentiation between Category A and B reviews.

2 See Section 320 D 2

3. Note 3 For commercial and industrial structures, public recreational structures, and municipal sewage treatment facilities, a Category "A" review may be permitted provided that the Executive Director determines that

(1) All criteria in Section 110.1A are met,

(2) The proposed activity is determined to be a minor alteration with respect to potential impacts to the waterway, coastal feature, and areas within RICRMP jurisdiction·

(3) The proposed activity conforms with any and all applicable adopted CRMC special area management plans,

(4) The proposed activity will not significantly conflict with existing used and activities in the waterway, on the coastal feature, and in areas with RICRMP jurisdiciton,

(5) The proposed activity does not represent new development of a site within RICRMP jurisdiction along a type 1, 2, or 4 waterway

3. Section 320.D.2, page 88:

"Persons proposing residential subdivisions, co-operatives, and other multi-ownership facilities, of six (6) units or more, or facilities requiring one acre or more of parking, any portion of which extends onto a shoreline feature or its contiguous area, or within the watershed of the poorly flushed estuaries delineated on the maps accompanying this program, are required to apply for a Council Assent."

State Regulations Submitted as

Amendments to the Rhode Island

Coastal Management Program

1. Snorefront Access and Protection Regulations
2. Shoreline Erosion Mitigation Planning Regulations
3. Findings, Policies and Regulations on Energy

Office of Coastal Zone Management
National Oceanic and Atmospheric
Administration
U.S. Department of Commerce
3300 Whitehaven Street, N.W.
Washington, D.C. 20235

ADDENDUM TO APPENDIX "C",
COASTAL MANAGEMENT PROGRAM

C.6 SHOREFRONT ACCESS AND PROTECTION

6.1 Federal Requirements:

Sec. 923.25 of NOAA regulations published in the March 1, 1978 issue of the Federal Register address the requirements of Sec. 305(b)(7) of the 1976 amendments to the Coastal Zone Management Act. They require the state to develop a procedure for identifying areas requiring access or protection, to define the term "beach" and identify public beaches, to adopt policies on access and protection and to demonstrate the legal authority to enforce these policies.

6.2 Criteria and Procedures for Identifying Public Access Areas

Council Findings and Policies on public access to the shore are contained in Chapter 4 of the Coastal Management Program. The following specific types of access areas are identified and evaluated:

Ch. 410 Public access including rights-of-way, scenic view points and launch ramps

Ch. 420 Public beaches and parks

Ch. 430 Conservation and management areas

Ch. 440 Recreational boating and boating facilities

Ch. 450 Historic sites

Ch. 470 The Bay Islands Park

Council Findings include inventories of these areas and and evaluation of present and projected future supply and demand. As noted, there exists a general surplus of recreational facilities on a statewide basis, although localized deficiencies exist in the upper Narragansett Bay metropolitan area. These localized deficiencies are created by the uneven distribution of access areas in the coastal region. Policies to address these deficiencies including expansion of substitute inland facilities, especially for swimming and continuation of a bussing program from metropolitan areas to state beaches on the South Shore are presently being implemented by the Department of Environmental Management. It is CRMC policy to support development of additional access and recreational facilities in the upper bay region in the near and long term, an example of which is the potential for recreational and access facilities in conjunction with the redevelopment of the Port of Providence and the East Providence waterfront.

Findings and Policies on public access areas were developed after careful evaluation of the supply, demand and qualitative assessments contained in the State Comprehensive Outdoor Recreation Plan (SCORP) and after extensive consultation with staff in the Statewide Planning Program and Department of Environmental Management responsible for producing the SCORP. In order to ensure that Council Findings and Policies remain consistent with the latest SCORP update (June 1978), this evaluation and consultation was repeated and uncovered no significant changes in the information on which present Council policies are based. As noted below, considerable progress towards the realization of goals described

in the SCORP and endorsed by the Council was found however.

6.3 Criteria and Procedures for Identifying Coastal Areas Requiring Protection

Council Findings and Policies on the protection of coastal natural systems and features are contained in Chapter 1 of the Coastal Management Program. The varying management considerations and protection requirements of the following systems and areas are identified:

Ch. 110.1 Block Island and Rhode Island Sounds

Ch. 110.2 Estuaries and coastal ponds including those suitable for conservation and low intensity use multiple recreational use, high intensity recreational use, general and urban uses

Ch. 120.2 Barrier beaches and sand dunes

Ch. 120.3 Cliffs, ledges and bluffs

Ch. 120.4 Coastal wetlands

Findings include inventories and assessments of specific geographic areas as well as data on generic systems. These are based on exhaustive reviews of existing literature on the state's coastal resources, much of it produced at the University of Rhode Island's Graduate School of Oceanography. Literature review was augmented by site visits and surveys

undertaken by Council staff and the URI Coastal Resources Center.

Additional coastal areas requiring some form or level of protection, are identified and evaluated throughout the Program. These include flood hazard areas (Ch. 130) and erosion prone areas (Ch. 140). The protective requirements of coastal access areas identified in Chapter 4 are also addressed in Council Findings and Policies relative to these areas.

6.4 Designation of Access and Protection Areas as Geographic Areas of Particular Concern

As indicated in Ch. 2.4 of Appendix C, GAPC s are designated on the basis of two principal criteria:

(1) Existing or proposed uses of the area or contiguous areas are inconsistent with resource characteristics, capability or potential.

(2) As a result; either or both of the following are likely to result, loss of a damage to a natural or manmade coastal resource or inappropriate, wasteful or preemptive use of a coastal resource.

On the basis of these criteria as reflected in Council Findings in Ch.'s 120.2, 120.3 and 470 respectively, the following areas have been designated and are managed as GAPC's:

- Developed barrier beaches
- Erosion prone bluffs
- The Bay Islands Park

6.5 Designation of Access and Protection Areas as Areas to be Preserved or Restored:

Also as indicated in Appendix 'C' (Ch. 2.5), APR's are Geographic Areas of Particular Concern which have been found to be of significant value for purposes of recreation, conservation, or habitat preservation and are subject to pressures inconsistent with preservation of these values.

The following coastal access and protection areas have been designated APR's:

- Undeveloped barrier beaches (120.2)
- Coastal ponds (110.2)
- Coastal wetlands (120.4)
- Conservation/low intensity use estuaries (110.2)
- Sea cliffs (120.3)
- Public beaches and parks (420)
- Conservation and management areas (430)
- Public rights-of-way to the shore (410)
- Historic sites (450)

6.6 Definition of "Beach"; Identification of Public Beaches:

Council Findings relative to beaches and barrier beaches (Ch.'s 120.1 and 120.2) define these fea-

ADDENDUM TO APPENDIX "C"
RHODE ISLAND COASTAL MANAGEMENT PROGRAM

C.7 SHORELINE EROSION MITIGATION PLANNING

7.1 Federal Requirements:

Section 923.26 of NOAA regulations promulgated under 305(b)(8) of the 1976 amendments to the Coastal Zone Management Act requires the state to develop a method for assessing the effects of coastal erosion, to develop procedures and policies for managing the effects of erosion and to demonstrate the legal capability to implement these procedures and policies. Particularly valuable or vulnerable areas are to be considered for special management attention as Geographic Areas of Particular Concern or Areas for Preservation and Restoration.

7.2 Erosion Assessment Methods

Council Findings on the nature and causes of coastal erosion in Rhode Island and the various factors which must be considered in assessing erosion problems are set forth in Ch. 140.0-1 of the Coastal Management Program. They are based upon The National Shoreline Study Regional Inventory Report North Atlantic Region Vol. 1 compiled by the Army Corps of Engineers in 1971 and on a shoreline land form survey at a scale of 1 12,000 compiled by the Coastal

Resources Center at the University of Rhode Island in 1975. Additional URI research on erosion-accretion patterns on a number of South Shore beaches consisting of bi weekly beach profiles taken over a twenty year period were used to identify critical erosion areas These studies and surveys were augmented by inter views with local officials to identify additional areas of erosion/accretion, existing and proposed shoreline protection facilities, and to solicit recommendations for the development of Council Policies and Regulations.

While the above studies and surveys have provided an excellent data base for the assessment of erosion areas and effects, the Council found a need for additional up-to date information particularly for the Narragansett Bay shoreline An aerial shoreline survey was consequently initiated in May 1978 and is slated for completion in September. A series of aerial photographs taken at an altitude of 600 feet will be used to produce a series of detailed erosion management guide maps at a scale of 1:24 000 a complete photo atlas of the shoreline and a separate photo atlas of areas of particular concern in regards to erosion. The survey maps will identify such relevant factors as prevailing wind and wave direction

and exposure, shoreline geology (e.g., sediment or rock type) and the location and condition of bulk heads and other shoreline stabilization devices. The maps will categorize each coastal area according to its erosional/accretional characteristics. The shoreline erosion management guide will be utilized by the Council and its staff in considering permits for erosion control projects.

7.3 Erosion Management Procedures and Solutions

As noted above, the Coastal Management Program contains detailed Findings on the various factors which contribute to coastal erosion in Rhode Island. In addition the considerations which determine the relative suitability of various mitigating strategies, both structural and nonstructural are identified. These factors and considerations provide the basis for an articulated Council policy stating a preference for non-structural control methods, and regulations affecting the siting and construction of structural responses.

Council Coastal Erosion Findings and Policies will be augmented by an applicant s pamphlet to be published in late 1979. This will be one in a series to explain to prospective applicants the why's and how's of Council regulations. The erosion control pamphlet will provide individuals with necessary information

to determine the best means to resolve their erosion problems, will explain why the Council prefers non structural solutions, and will set forth the various criteria on which the Council will evaluate their proposals.

7.4 Coastal Erosion and the Designation of Geographic Areas of Particular Concern, Areas for Preservation and Restoration

A number of coastal areas have been identified by the Council as of particular concern because of erosion related problems (see Ch. 140 0 2C). These include 18 of the state's developed barrier beaches (140.0 2C-2), the Cliff Walk in Newport and Mohegan Bluffs on Block Island. These areas were designated for special management attention on the basis of the following concerns and criteria

(1) They are designated flood hazard areas of particular concern to the Council;

(2) They are in an essentially altered or developed condition.

(3) They are subject to severe storm wave action;

(4) They are prone to storm enduced erosion.

(5) They lack safe egress during storms;

(6) They have been identified as areas of criti cal erosion by the Corps of Engineers.

Fifteen other barrier beaches have been identified as erosion prone areas of environmental concern

(see Ch. 140.0-2D) because they remain in an essentially undeveloped and natural condition and consequently have high preservation and conservation significance.

7.5 Policies Re Structural and Non Structural Approaches to Erosion Control:

As noted above the Council indicated in its Policies and Regulations that non-structural approaches to erosion control will be given highest priority (see Ch. 140.0-2A). Proponents of any control project must, in fact, demonstrate first that non structural solutions have been considered. Proponents of structural erosion control projects must then meet a numbe of other tests stipulated by regulation (140.0-2B). Structural solutions are specifically prohibited in areas identified as erosion prone areas of environmental concern.

7.6 Implementing Authorities and Funding Programs

The various management procedures stipulated in the Coastal Management Program are undertaken through Council Policies and Regulations adopted on March 14, 1978. Erosion control regulations are authorized by Title 46, Chapter 23-6B and D of the General Laws of Rhode Island.

Funding of ongoing erosion related studies and projects by the Council is provided by appropriation from the Rhode Island General Assembly and the Office of Coastal Zone Management under Section 305(b)(8) of the Coastal Zone Management Act Amendments of 1976.

FINDINGS

I. The Governor's policy in the area of energy facility siting has been articulated by a number of gubernatorial statements, the latest entitled "The Governor's Statement of Energy Policy", released on August 31, 1975. In addition, siting legislation was introduced before the 1978 session of the General Assembly.

A. In his January 1977 inaugural message to the General Assembly, Governor Garrahy set forth the following state energy objectives:

- To develop a conservation program that is fair to all users;
- To undertake a vigorous search for alternative energy sources such as solar energy and an imaginative use of older sources such as hydropower;
- To improve regulation of utilities in order to foster stabilized rates and greater efficiency;
- To safely develop the outer continental shelf in a manner which fully considers all legitimate concerns including energy use, employment benefits, environmental impacts and the state's fishing industry;
- To site energy facilities in light of state plans rather than private industry decisions.

B. Further policy direction was provided by the Governor's 1978 Annual Message to the Assembly at which time he stated: "An energy policy for Rhode Island requires examination of all sources of energy to determine the best available mix for both present and future, and we must analyze each source as to availability, cost, efficiency, safety, environmental impact, and overall effect upon our economy."

C. Siting authority for energy facilities located in or likely to affect the coastal region is vested in the Coastal Resources Management Council under Title 46, Chapter 23 of the General Laws. The

"Energy Facility Siting Act" introduced by the Governor as House Bill 8106 in April, 1978 and currently under consideration as H8106 Substitute "A" by a legislative study commission would effectuate gubernatorial energy goals and policies as they relate to the state as a whole. It would address the siting of major energy facilities for which there presently exists no siting authority comparable to that exercised by the Coastal Resources Management Council over facilities located in or likely to effect the coastal region.

It would impose a more formal system of interrelationships and shared responsibilities among those agencies presently participating in energy facility siting both within and without the coastal region. The concurrent, cooperative, but under existing law statutorily independent and parallel review of various siting actions by state agencies participating in implementation of the Coastal Management Program would be enhanced upon passage of H8106 as presently drafted by the increased structure it would provide. H8106 would provide for a single permit incorporating the various regulatory requirements and information needs of existing reviewing agencies. This would be issued by a newly created Energy Facility Siting Council on which the CRMC would be represented. H8106 would specifically require that the Coastal Management Program be reflected in Siting Council decisions.

H8106 calls for the creation of minimum new bureaucracy. Existing state agency jurisdictions would not be disturbed and existing agency expertise is fully utilized. Passage of this legislation would facilitate implementation of state policies as these are reflected in this and other chapters of the Coastal Management Program.

II. Six other agencies and bodies of state government are directly involved in the formulation or implementation of state energy facility siting policies. In addition, the state's cities and towns exercise comprehensive planning, zoning and subdivision responsibilities under enabling legislation passed by the General Assembly. State level involvement in energy facility siting is summarized below:

A. The Rhode Island Energy Office was created by Executive Order No. 25 on May 1, 1975 and restructured by Executive Order No. 9 on May 19, 1977. The Energy Office consists of an Energy Conservation Program responsible for the preparation and implementation of the State Conservation Plan prepared under the provisions of the federal Energy Policy and Conservation Act of 1975, and the Energy Capability Program responsible for energy research and for development of new and alternative energy sources.

The Energy Office is also responsible for administration of the various grant provisions of the Coastal Energy Impact Program created by amendment to the Federal Coastal Zone Management Act in 1976. Some $74,000 in federal funds are being distributed to state and local government during fiscal 1978 to plan for and mitigate the impacts of energy facilities affecting the state's coastal region. An additional $128,000 is slated for distribution in fiscal 1979.

B. The Public Utilities Commission and the Division of Public Utilities under Title 39 of the General Laws have the responsibility of ensuring that gas (including LNG), electric and pipeline public utilities provide abundant, reliable and economical energy to the state's citizens and, further, that they do so "with due regard for the preservation of natural resources including scenic, historic and recreational assets, and the strengthening of long range land use planning" (39-1-1(3)). To this end, the Commission (PUC) has the following authorities:

> Before any utility granted access to the power of eminent domain by legislative charter can condemn land, it must obtain authorization in the form of a certificate from PUC (39-1-31). It must describe the land, right-of-way or easement it proposes to acquire and why it must do so by eminent domain. PUC may issue a certificate only if it finds after public hearing:
>
> > That the proposed condemnation serves the public benefit;
> >
> > That it is necessary so that adequate service may be rendered to the public;

That the proposed use will not unduly interfere with orderly and scenic development of the region.

- Parties aggrieved by decisions or orders of a municipal zoning board or of building, gas, water, health or electrical inspectors affecting companies under PUC's supervision may appeal those decisions or orders to the commission within 10 days (39-1-30). After hearing, PUC may affirm, overrule or modify the municipal decision or order upon weighing it against consideration of public convenience, necessity and safety. Similar procedures apply to the promulgation of municipal ordinances and regulations affecting the operation of PUC supervised utilities.

- Public utilities may not issue bonds or notes payable more than 12 months from date of issue to acquire property, build or expand facilities without authorization from the Division of Public Utilities (39-3-15).

D. The Department of Environmental Management has regulatory and operational authority to implement various state and federal resource programs applicable to energy facility siting and related impacts. The Department may set standards and criteria to ensure activities do not adversely affect the environment and resources. The scope of DEM activity includes the following:

- Under Title 23, Chapter 25 of the General Laws, the Department promulgates ambient air quality standards, regulates new stationary sources of air pollution and enforces non-degradation criteria applicable to areas where air quality exceeds ambient standards. It may require new stationary sources of air pollution to install a variety of pollution control devices or may prohibit air emissions altogether where applicable standards would be violated (see Section 330.0).

- Under Section 401 of the Federal Clean Water Act, the Department acts as the certifying body for discharges into the state's waters. No such discharge may be permitted by any state or federal license or permit issuing body until an applicant obtains DEM certification of compliance with applicable water

quality standards and schedules (see Section 310.7). Conditions and limitations attached to the DEM certification must be reflected in subsequent actions by other regulatory bodies.

- Under Title 2, Chapter 1 of the General Laws, the Department regulates the alteration of freshwater wetlands with the objectives of preserving their purity and integrity and preventing loss of flood water retention capacity, reduction of ground water quality or levels, and destruction of wildlife habitat and recreational value. A DEM permit must be obtained before any freshwater pond, stream, river, swamp, marsh or bog may be filled, drained or otherwise altered (see Section 250.3).

- DEM also regulates the disposal of solid and hazardous wastes and the installation of individual septic systems.

D. The Statewide Planning Program in the Department of Administration performs several functions which, while not regulatory in themselves, affect the regulatory activity of other state agencies involved in energy facility siting.

- The Program has principal responsibility for preparation of the state Guide Plan which identifies long range goals and plans for the physical, economic and social development of the state. Conformance with the State Guide Plan is required of state agencies such as CRMC, Port Authority and Economic Development Corporation and the Department of Environmental Management.

- The Program serves as the state clearinghouse for the Project Notification and Review System established by Office of Management and Budget Circular A-95. In this capacity it notifies responsible state agencies of proposed federal actions, grants and license applications affecting their responsibilities and serves as a focus for state comment and reaction to these proposals. The clearinghouse function is a vital link in state implementation of the Federal consistency provisions of the Coastal Zone Management Act of 1972 (see Appendix C5).

E. The Coastal Resources Management Council under Title 46, Chapter 23 of the General Laws as amended exercises regulatory responsibilities affecting energy facility siting in two broad areas.

- The Council enforces regulations and carries out permit programs governing alteration and use of a variety of coastal land and water areas and features (see Chapter 1). These regulations and programs apply equally to all uses of these areas including the construction and operation of energy facilities and many of the activities associated with construction and operation including, but not limited to, marine construction, dredging, filling and site alteration.

- The Council enforces similar regulations and implements permit programs governing "the design, location, construction, alteration and operation of specified activities or land uses when these are related to a water area under the agency's jurisdiction, regardless of their actual location" (46-23-6B). Two considerations apply in establishing the required relationship. These include "a reasonable probability of conflict with a plan or program for resources management or damage to the coastal environment". Power generating plants and petrochemical processing, transfer or storage facilities are among the land uses regulated under this provision of the General Laws.

- All Council regulations and permit programs, including those affecting energy facility siting, must be developed around basic standards and criteria established by law. These include:

  . Need and demand for activities;

  . Impact of activities on ecological systems;

  . Compatability of activities;

  . The capability of coastal resources to support activities;

- State water quality standards;
- Consideration of other plans, studies, surveys, and inventories;
- Consideration of contiguous land uses;
- Consideration of transportation facilities;
- Consistency with the State Guide Plan.

F. The General Assembly pursuant to Section 42-64-14.1 of the General Laws as amended has reserved to itself final and exclusive authority to make the determinative state level decision regarding "project plans" for nuclear power plants and oil refineries.

- As repeatedly used elsewhere in Chapter 64 and as defined under 42-64-3(r), "project plans" refers specifically and only to projects in which the Port Authority and Economic Development Corporation has an interest through financing or ownership.

G. In addition, the Rhode Island Port Authority and Economic Development Corporation is a quasi-public body created by act of the General Assembly (42-64;GLRI), but "having an existence separate and apart from the state". The Port Authority is authorized to assume a financial interest in or otherwise promote a variety of projects. These can include facilities for the generation, manufacture, production, storage, transportation, distribution, delivery or furnishing of natural or manufactured gas, steam, electrical or nuclear energy, heat, light or power directly or indirectly to or for any project, project user or for the public.

III. Coordination and cooperation among those state agencies and bodies of government involved in the formulation and implementation of energy facility siting policies for purposes of implementing the objectives of the Rhode Island Coastal Management Program is mandated by Title 46, Chapter 23 and 42-64 of the General Laws, as amended and by Executive Order No. 17, dated November 16, 1977.

A. Title 46, Chapter 23 sets forth basic coordinating responsibilities of the Coastal Resources Management Council necessary to implement its "primary responsibility (for) the continued planning for and management of the resources of the state's coastal region". These include authority to:

- Carry out resources management programs through implementing authority and coordination of state, federal, local, and private activities (46-23-6A(f)).

- Function as a binding arbitrator in any matter of dispute involving both the resources of the state's coastal region and the interests of two or more municipalities or state agencies (46-23-6C(a)).

- Initiate consulting and coordinating actions with local, state, regional, and federal agencies (46-23-6C(b)).

B. Title 46, Chapter 23-10 further "authorizes and directs all other departments, agencies, and bodies of state government to cooperate with and furnish such information as the Coastal Resources Management Council shall require".

C. Title 42, Chapter 64-14(b) requires that in planning and carrying out projects (including those related to nuclear power plants and oil refineries), the Port Authority and Economic Development Corporation must "conform to applicable provisions of Chapter 46-23 of the General Laws", thereby insuring that in making its final and exclusive decision regarding such facilities, the General Assembly may be assured that issues related to coastal management plans and programs have already been considered by the Coastal Resources Management Council.

D. Executive Order No. 17 specifically recognizes that "the Coastal Resources Management Council is established by law as the principal agency to administer and implement the state's Coastal Resources Management Program." It further directs the Council, the Departments of Environmental Management and Health, the Statewide Planning Program and "all appropriate agencies of state government" to "act in accordance with the policies and objectives of the Management Program to the extent consistent with State statutes and regulations".

IV. The Coastal Resources Management Council recognizes its responsibility in cooperation with other state agencies to assist in the effective and expeditious implementation of state energy policies and goals as articulated by the Governor. Sections V through XIII below constitute the Council's principal findings on energy facility siting in or affecting the Rhode Island coastal region. These sections are fully consistent with the Governor's Statement of Energy Policy, dated August 31, 1978 and are an elaboration and application of gubernatorial goals and principals to the coastal region. These Findings serve to substantiate the Council's Policies and Regulations on Energy Facility Siting.

V. The Council finds the following underlying considerations to be crucial to the development of a responsible energy facility siting policy.

A. The availability of energy resources, particularly petroleum, upon which the State of Rhode Island presently depends is highly sensitive to numerous external factors and trends including many that are global in scope.

B. These same factors and trends will continue to affect energy resource availability in Rhode Island in the forseeable future, and are likely to bring a decrease in the available supply and an increase in the end cost of petroleum - the energy source on which this state is most dependent.

C. Many, if not most, of these external factors and trends are beyond the state's ability to influence or control and they thereby impose numerous and severe constraints on the options available to the state to assure that its energy needs are met.

D. Given all of the above, uncertainty as to the availability and costs of traditional energy sources will be a central issue affecting Rhode Island's energy future. The ability to come to grips with and accommodate this uncertainty without severe social and economic disruptions will be the single most important measurement of the success or failure of this state's energy plans, policies and programs.

VI. The most influential trend affecting the availability of energy resources for Rhode Island consumption is the growing competition for non-renewable energy sources and supplies. Increased competition is a global phenomenon, is growing in momentum and will have wide-ranging international, domestic, and regional implications. The scope and complexity of this problem has been explored in a variety of responsible sources including the Central Intelligence Agency's Report on the International Energy Situation - 1985; World Energy Outlook, an Exxon Background Study of April, 1978; Energy: Global Prospects 1985-2000, a product of the Workshop on Alternative Energy Strategies; and Geopolitics of Energy, a report to the United States Senate Committee on Interior and Insular Affairs.

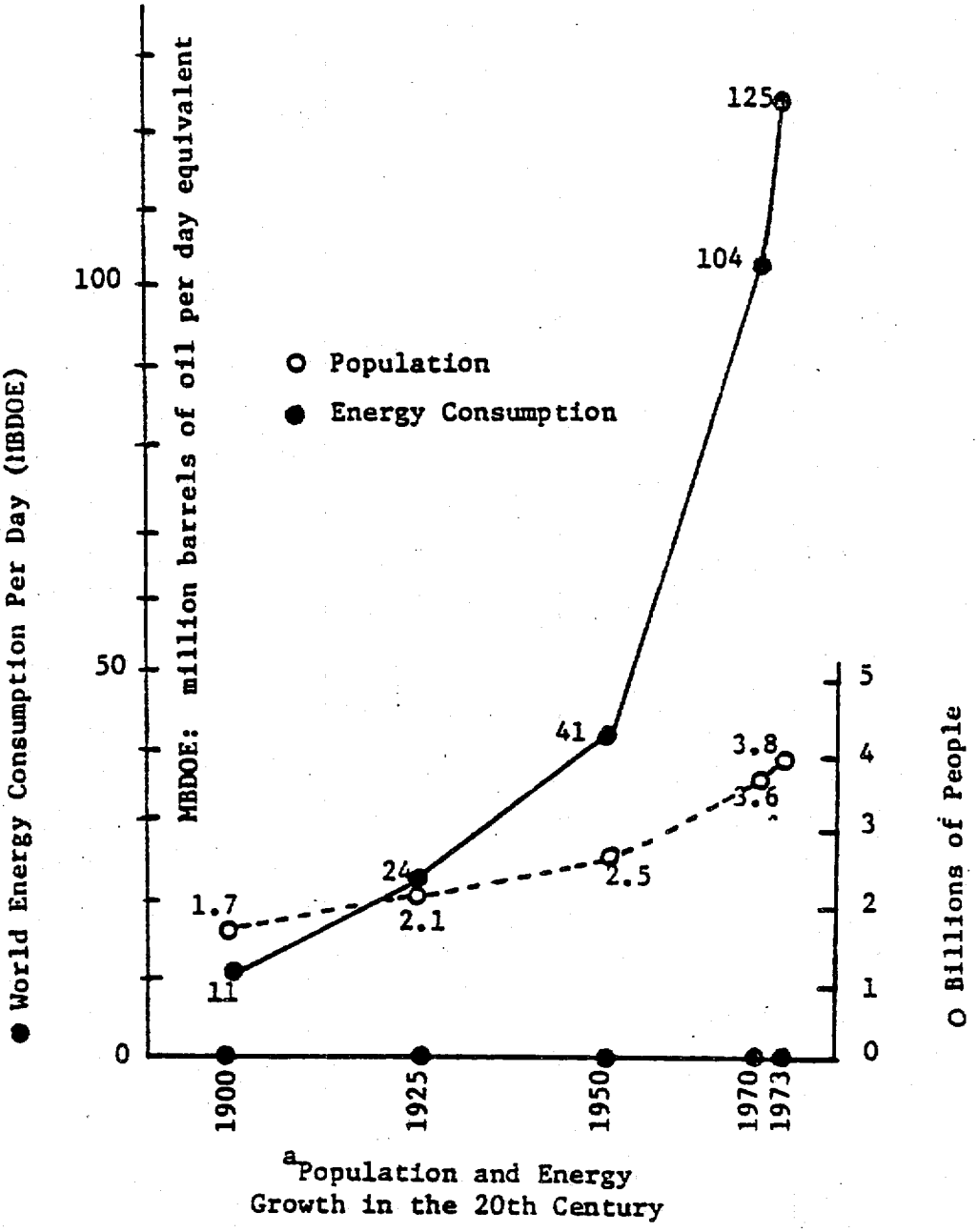
These and other studies all point to the same driving forces in a developing world energy crisis.

A. World population is expanding exponentially from 1.7 billion at the turn of this century to a projected 6-7 billion by the year 2000. A growing population brings increased demand and competition for finite supplies of non-renewable energy resources (Figure 1).

B. As developed countries continue to grow and less developed nations struggle to modernize and expand their economies, per capita energy consumption increases. In the United States, the per capita energy consumption rose 250 percent between 1900 and 1975; this accompanied a 280 percent increase in population and a 950 percent rise in the Gross National Product (GNP) (U.S. Department of Commerce, 1976).

C. The combination of world-wide trends of increasing population and economic development are of particular concern to heavy energy consumers such as the United States where maintenance of a high "standard of living" has historically been associated with high energy consumption.

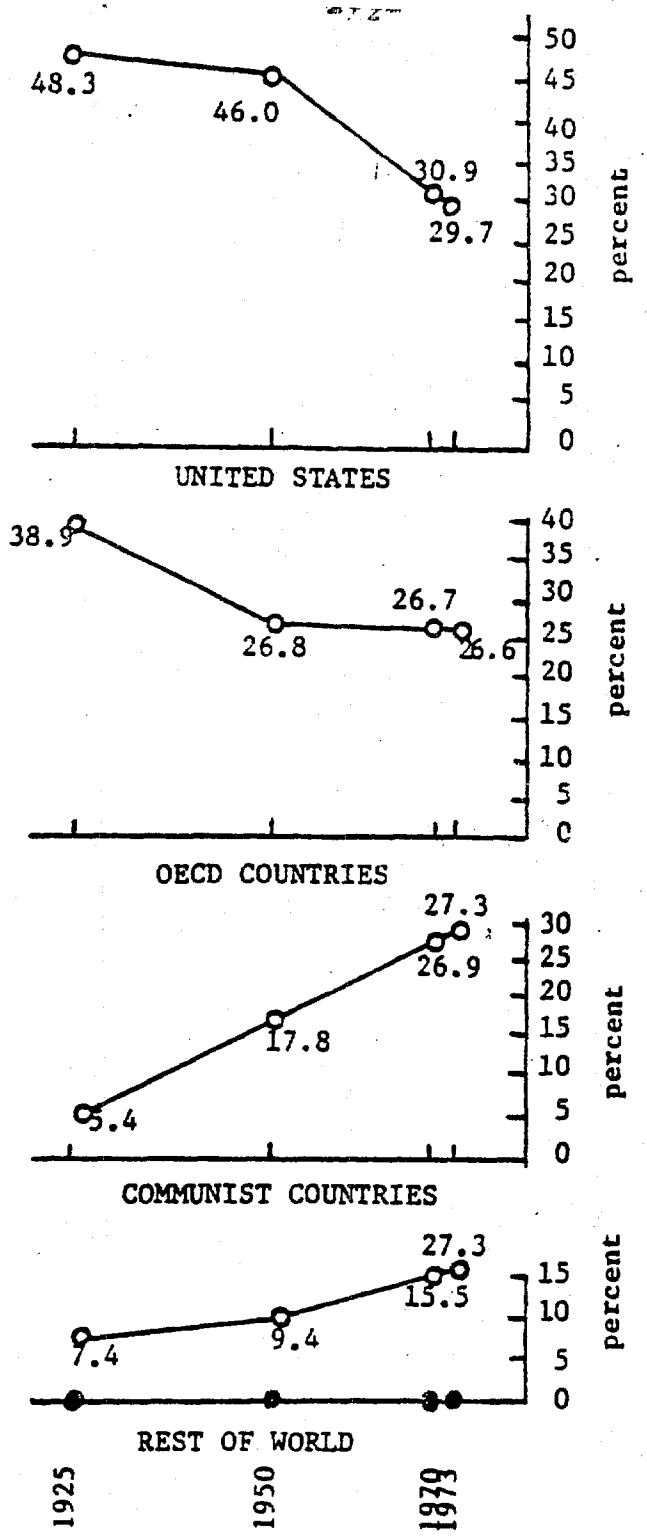
D. With its ever growing dependence on foreign oil imports, (see Figure 2) the United States is becoming increasingly vulnerable to energy related economic disruptions over which it has little direct control -witness the 1973 Arab oil embargo. Even absent such disruptions, increasing oil imports have created a severe dollar drain that contributes to domestic inflation. As more and more bidders enter the market for foreign oil, the United States position becomes increasingly precarious.



[a]Population and Energy Growth in the 20th Century

Figure 1 World Population Growth and Consumption of Energy Resources

Sources: Harry Perry and Hans Landsberg, "Projected World Energy Consumption", Resources for the Future, Inc.; Bureau of the Census, Department of Commerce, The Statistical Abstract of the U.S., 1977



[b]Share of World Consumption
of Conventional Energy Sources

Figure 1 World Population Growth and Consumption of Energy Resources

Sources: Harry Perry and Hans Landsberg, "Projected World Energy Consumption", Resources for the Future, Inc.; Bureau of the Census, Department of Commerce, The Statistical Abstract of the U.S., 1977.

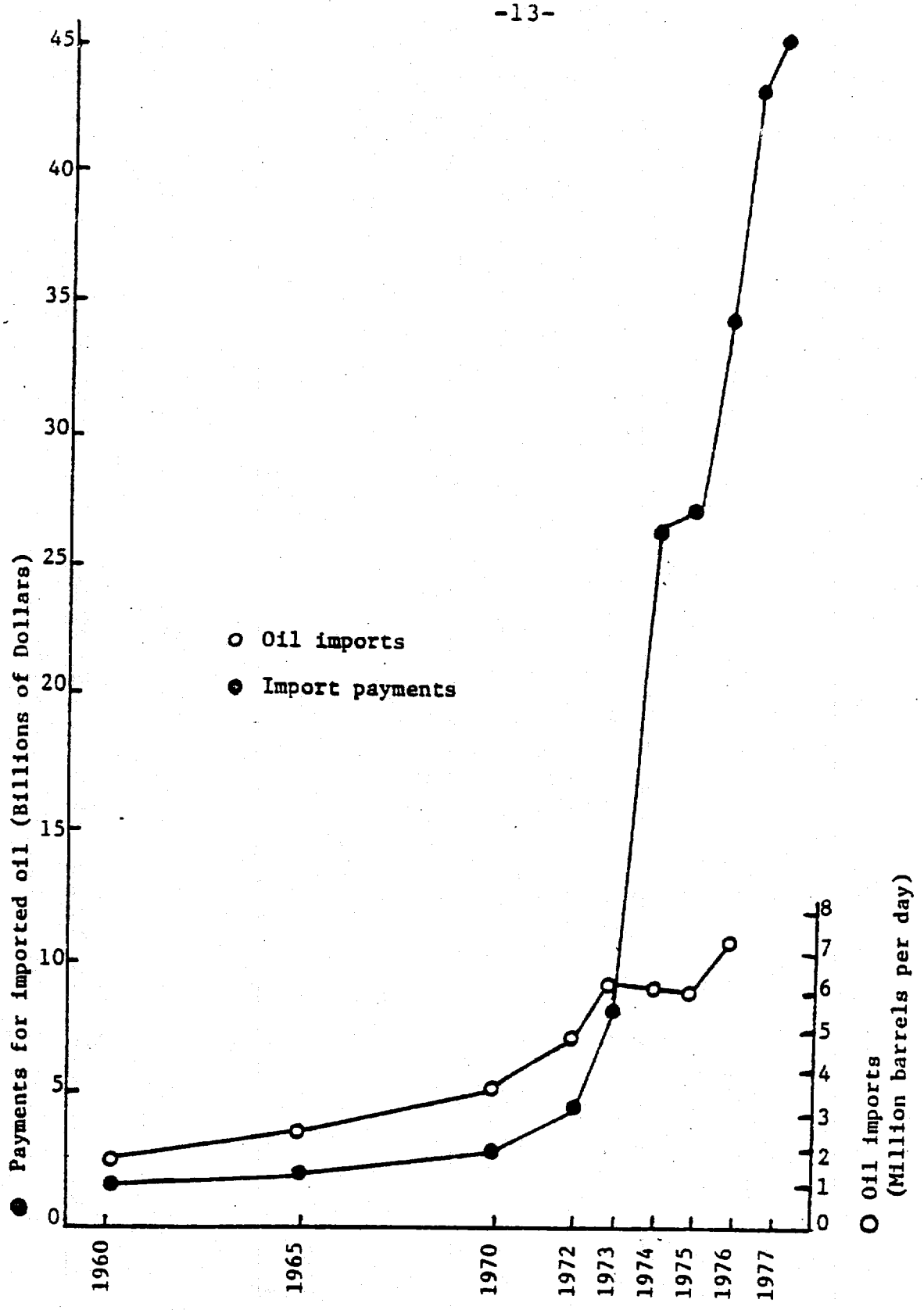


Figure 2 Quantity and Cost of U.S. Oil Imports

Source: Department of Commerce, (payments); Bureau of Mines, Department of Interior, (imports)

E. The availability of other energy resources which now fuel the United States economy is also threatened by growing dependence on foreign sources and increased competition in the international market. Eighty-six percent of the world's known reserves of oil, 86 percent of its natural gas, 81 percent of its coal, and 77 percent of its uranium are located outside United States borders (Conant, 1977).

VII. While untapped domestic supplies of energy resources remain, Rhode Islanders should not expect that exploitation of these resources will provide any immediate or low cost solutions to our energy needs. We remain at the end of most supply routes and will continue to pay the penalties this position entails.

A. Presently untapped domestic reserves of oil, coal and uranium will be exploited as increasing demand justifies the development of more sophisticated extraction methods. Development of such methods will likely be time consuming, potentially controversial and increasingly expensive. We should not expect new reserves to come on line quickly, cheaply or without environmental penalties.

B. Costs and environmental impacts in particular will become ever more important considerations as more easily exploited reserves are depleted. Until other, preferably renewable, energy sources are developed as an alternative to the sources on which we now rely, we should as a society anticipate confronting increasingly difficult energy related economic and environmental decisions.

C. The total depletion of conventional energy reserves is difficult to forecast, but shortfalls in petroleum, natural gas, and uranium as early as the mid to late 1980's have been suggested by a number of experts (Central Intelligence Agency, 1977; Conant, 1977; Wilson, 1977; Yergin, 1978). The exploitation of less productive or accessible energy reserves will extend existing supplies of all fuel sources. However, economic, environmental and safety considerations as noted above may serve to constrain such exploitation.

VIII. Rhode Island and New England as a whole are particularly vulnerable to energy supply disruptions caused by international competition and dependence on foreign sources.

PER CAPITA ENERGY CONSUMPTION, MILLIONS OF BTUs (10^6) (1976 DATA)

	Residential/ Commercial	Industrial	Transportation	Total
ode Island	75 5	37.6	64.5	177 6
ew England	75 4	39 7	69 9	185 0
Jnited States	57 9	102.9	91 9	251 5

TOTAL ENERGY CONSUMPTION IN RHODE ISLAND, TRILLIONS OF BTUs (10^{12})

	Oil	Gas	Coal	Electricity
1962	124 7	14 1	15.0	7.5
1965	133 3	10 7	9 0	9 1
1970	155.0	25 8	0	13.3
1972	167 7	22 4	0	15 3
1973	159 1	23 5	0	16 4
1974	126 1	24 1	0	15 5
1975	142 8	23 1	0	15 1
1976	143.3	27.7	0	16.4
1977	na	na	na	16 4

ENERGY CONSUMPTION BY SECTOR AND FUEL IN RHODE ISLAND, 1976
TRILLIONS OF BTUs (10^{12})

	Oil	Gas	Coal	Electricity
Residential/commercial	49.4	20 6	--	11 8
Industrial	28.9	6.0	--	4 6
Utility	5.7	6	--	--
Transportation	59.3	.5	--	--
TOTAL	143.3	27.7	--	16 4

COMPARATIVE PRICES FOR ENERGY, DOLLARS PER MILLION BTUs (1976 DATA)

	New England	United States	Difference in NE (%)
Heavy oil	2 02	1 85	+9 1
Gasoline	3.66	3.80	-3 5
Fuel oil	3 08	2.94	+4 8
Gas	3 31	1 60	+107.0
Electricity	12 25	8.47	+44.6
AVERAGE	4 06	3 22	26.0

Table 1 Energy Consumption and Energy Price Date in New England and Rhode Island

Sources Geoffrey Bentley, New England Energy Factbook, New England Congressional Caucus, 1978, Electric Council of New England, Electric Utility Industry in New England, Statistical Bulletin, 1976, Rhode Island Public Utilities Commission, Annual Reports of gas and electric utilities, Rhode Island Fuel Allocation Office, records kept for fuel allocation program, Arthur D Little, Inc , Historical Data on New England's Energy Requirements, New England Regional Commission, 1974, Intermetrics, The Petroleum Distribution Network for New England, New England Regional Commission, 1974

A. New England is heavily dependent on petroleum products as the principal fuels for transportation, home heating, and power generation. Sixty-three percent of the residential/commercial energy and 77 percent of the industrial energy consumed in the region is oil-derived, as opposed to 27 percent and 38 percent respectively for the nation (Bentley, 1978).

B. Only one-fifth of the oil consumed in the region is from domestic sources (Bentley, 1978).

C. The vulnerability of Rhode Island's oil supply and its heavy reliance on oil as a home heating fuel are exacerbated by New England's inclement weather. As a result, per capita annual residential/commercial consumption of 75.5 million BTUs exceeds the national average of 57.9 million BTUs (1976 data). This contrasts to consumption in other sectors, where Rhode Island falls below national averages (see Table 1).

D. Rhode Islanders pay a heavy economic penalty for the New England region's dependence on foreign sources of energy and its distance from domestic sources. New Englanders use considerably less energy per capita than the country as a whole, yet we pay its hiest prices for energy.

- Total energy consumption per capita in Rhode Island is only 70 percent of that for the nation as a whole and is also less than the New England average of 185 million BTUs (1976 data)(Data from Table 1).

- However, New Englanders pay some 26 percent more for energy than the national average. Gasoline is the only fuel that is cheaper in New England than in the nation as a whole (Table 1).

V. Rhode Island and New England are not endowed with the readily accessible fossil fuel resources upon which our society has become dependent. However, untapped "native" energy sources do exist and their potential to contribute to the region's energy needs requires careful examination and consideration.

A. An attractive attribute of such native energy sources as wood, hydropower, wind, solar power, and solid waste is that they are "renewable". Peat is another, albeit non-renewable potential native energy source. If properly managed, the

supply of renewable sources will continue indefinitely in constrast to fossil fuels of which there is a finite amount which once depleted cannot be replenished.

B. Development of viable native energy sources, if accomplished in an environmentally and economically sound manner, is desirable as it will reduce the state and regional vulnerability to supply and price factors beyond our control.

C. Present technology and energy consumption habits suggest, however, that native energy resources can fill only a small portion of present demand. (Assessments of native energy resources are discussed in Sections 240.0-1 and 540.2-1, A).

X. Energy conservation in all its various forms must be recognized as a major domestic energy resource in its own right, a resource in which New Englanders should be particularly interested for the enhanced opportunities it offers them to assume a greater level of control over their energy future. However, energy conservation offers no panacea. It will involve behavioral changes and expenditures which only become attractive in light of the alternative. In this regard, it is similar to most other existing and potential energy resources.

A. Two principal strategies for conserving energy are available. These may be categorized as structural/technological approaches (e.g., improving insulation) and behavioral modification (e.g., turning down thermostats).

B. Structural/technological solutions appear to provide the greatest immediate potential for reducing energy consumption. They are attractive for a number of reasons:

- They address an area where the potential for savings is particularly great; Rhode Island's residential and commercial use of energy.

- They are amenable to government influence through mandatory standard setting such as building code modifications and through voluntary programs such as tax relief for improving insulation.

- Technology is available to implement them.

- Rising fuel prices make structural/technological investments which reduce fuel consumption increasingly attractive.

- They often require only relatively minor changes in life style.

C. Behavioral modification, while more difficult to implement, is absoluted crucial to long term and continued reduction of energy consumption. Several factors must be considered in assessing the potential for behavioral change:

- Historically abundant and cheap energy has led to consumption patterns which in retrospect we must now consider wasteful.

- Education of the public as to the need for changes in behavior and of the economic and social consequences of continuing to live beyond our energy means is critical if we are to move beyond reacting to changes that have already occurred to preventing changes we believe to be undesirable.

D. The area of consumption where the greatest short term savings can be made is in the residential/ commercial sector. Nearly half the state's energy consumption is by this sector and 70 percent of this energy is for space heating (Chan, 1975). Retrofitting of existing structures and improved construction techniques for new structures could reduce energy consumption considerably.

- Retrofitting of existing buildings to improve heating efficiency could reduce their individual energy consumption by 25 percent (Hirst and Moyers, 1973).

- Building energy saving into new buildings is typically cheaper than retrofitting and provides greater long term savings in consumption (up to 40 percent per unit)(Freeman, 1974).

- As the cost of heating fuel continues to rise, the pay back period for structural improvements (presently 2-10 years) becomes less, thereby making them more attractive financially. In addition, behavioral changes such as the lowering of thermostats pay ever increasing financial dividends.

E. Savings in energy consumption can also be made in the industrial sector by retrofitting and building improvements into new structures. However, because industry only accounts for some 21 percent of total Rhode Island consumption (see Table 1), these will not be of a magnitude comparable to those possible in the residential/commercial sector.

F. Long term improvements in the efficiency of fuel use, although not necessarily the amount of fuel used, for electric power generating can be realized by building appropriate features into new power plants.

- Two-thirds of the energy consumed to generate electricity is lost as waste heat which is discharged up smoke stacks and removed by cooling water. About 9 percent of Rhode Island's energy consumption (16.4 trillion BTUs) was in the form of electricity in 1976 (see Table 1). Three times as much primary energy was needed to make that electricity.

- Proven technology exists and is widely employed in Scandinavia to make economic use of "waste" heat. Swedish power plants, for instance, use 24 percent of what would otherwise be wasted energy to heat buildings and run industrial processes (Schipper and Lichtenberg, 1976).

- New power plants can be designed and sited to take maximum advantage of cogeneration and district heating possibilities. The former of these technologies involves the use of "waste" heat to drive industrial processes, the latter to heat buildings.

- While cogeneration and district heating technologies involve additional expenditures during plant construction, they generate revenue over the life of the facility.

G. Transportation accounts for some 36 percent of total Rhode Island energy consumption (1976). Sixty percent of this is consumed by private automobiles, while only 25 percent is used by trucking and mass transit. However, rising gas prices, smaller cars, and the expansion and improvement of mass transit systems and car pools may bring a significant reduction in the energy consumed for transportation purposes.

H. The State of Rhode Island through the Governor's Energy Office has taken action to implement a state level conservation policy.

- A State Energy Conservation Plan was submitted to the federal Department of Energy in April, 1977.

- Some fourteen programs including four mandatory structural/technical programs and ten educational/promotional programs were proposed.

- Reductions in state energy consumption as a result of program implementation are projected at 6.7 percent of the anticipated growth in energy use by 1980 (Rhode Island Energy Conservation Plan, 1977).

- Procedures for annual evaluation and improvement of each program are in place.

XI. Projecting future demands for energy in general and for specific sources (oil, gas, electricity) in particular has become increasingly difficult, complex and uncertain. This has greatly complicated the formulation of public energy policy, particularly as it relates to the development of energy resources and the siting of energy related facilities.

A. For a number of reasons not clearly understood at this time, but certainly including the disruption of oil supplies caused by the 1973 Arab oil embargo and the rapidly rising price of petroleum products since then, Rhode Island energy consumption patterns as well as those of the nation as a whole have begun to fluctuate and well established trends have been broken.

- The relatively regular increase in consumption typical of the post World War II decades is

- After dropping precipitously in 1973 and 1974, oil consumption had not recovered to 1972 levels by 1976 (see Table 1).

- Gas consumption has grown somewhat, although sporatically (see Table 1).

- Electric power consumption has also grown, but at a slower rate and more unevenly than gas (see Table 1).

B. Controversy surrounds the exercise of projecting demand.

- Depending on the methods used and the assumptions made, projections can differ sharply. For example, assessments by Exxon Corporation and the Council on Environmental Quality on the future mix of energy supply have developed significantly different forecasts on the importance of solar energy. Exxon sees less than one percent of United States energy demand being met by solar in 1990 while CEQ suggests a 25 percent contribution is possible by 2000 (Energy User's Report, #244, 1978).

- Environmental considerations and political factors (many of them international in scope) complicate the historic correlation between population, economic activity and energy consumption. The old equations are faring poorly at the hands of the new realities.

- Models from which demand projections are developed are based on historic patterns and trends. The disruptions and fluctuations of the last few years render the applicability of historical data to the forecast of future demand suspect.

- Future prices of various types of energy are a key variable in econometric forecasting. The uncertainty surrounding the availability and price of these fuels can produce a wide range of projections.

C. The distinction between a good and a bad projection is a subjective judgement and one with important policy implications. It is critical, therefore, that demand and supply projections and the methods and assumptions upon which they are based be subjected to careful and regular scrutiny and criticism. It is equally critical that those bodies of government charged to implement public energy policy have access to a variety of projections based on a variety of updated assumptions prior to making the important decisions that confront them.

XII. The ability to project with confidence the types and numbers of energy related facilities that might be sited in the Rhode Island coastal region or in areas likely to affect the coastal region in the foreseeable future is central to developing and implementing energy facility siting policies.

While as noted above, the uncertainties of demand projection complicate the effort to identify likely siting pressures, there is sufficient evidence in the form of ongoing developments to identify a number of siting decisions that are likely to confront the state in the future.

Additional predictive capability is obtained by application of the Resources and Land Investigation Program (RALI) methodology developed jointly by the U.S. Geological Survey and the New England River Basins Commission.

A. A high probability exists that the following projects will be proposed within the next five years:

- Construction of two 1150 megawatt nuclear powered electric generating units in the Ninigret Pond area of Charlestown.

- Construction of a solid waste resource recovery/waste heat recovery facility with an electric power generating capacity of 25 megawatts.

- Retrofitting of two existing dams to generate electricity for onsite consumption.

- Installation of a 200 kilowatt windmill as a federal Department of Energy demonstration/ feasibility project on Block Island.

- Construction of an LNG regassification plant, tank storage and pipeline terminal on the southern end of Prudence Island nas been considered by the Economic Regulatory Administration.

- The deactivated naval fuel storage depot at Melville on the east shore of Narragansett Bay is being examined for possible restoration and reuse under the auspices of the Emergency Fuel Supply Storage Program.

- The former Quonset Point/Davisville Navy base is already the major support base for OCS oil and gas exploration in the Baltimore Canyon area and is likely to serve the same function for exploration on Georges Bank.

- Individual solar and wood appliances for space and water heating of homes and small buildings are spreading rapidly. Photovoltaic electrical generating systems may be available on a cost competitive basis for individual commercial installations in the very near term.

B. Project proposals with a moderate to high probability for the mid term (5-15 years) include:

- Expansion of OCS support facilities at Quonset Point/Davisville to service OCS oil and gas development during the late 1980's; this could include platform fabrication, pipe coating and laydown yards and related facilities (see Section 540.2).

- Construction of a gas pipeline from OCS frontier areas to a landfall along the southern or sourtheastern Rhode Island coastline, construction of two 600 million cubic feet per day gas processing and fractionation plants in a rural coastal site along the pipeline right-of-way.

- Continued expansion of individual, residential solar and wood space and water heating systems; photovoltaic systems for residential use by the 1990's.

- Continued expansion of small scale wind powered generating systems and retro-fitting of additional dam sites for onsite hydropower operation.

- Expansion of the Charlestown nuclear power facility (if built) to include two additional nuclear generating units of 1150 megawatts each on the same site.

C. Project proposals with a moderate to high probability for the long term (beyond 15 years) include:

- Decommissioning and securing of the Charlestown nuclear plants some 30 to 40 years after operation commences (assuming a construction go ahead).

- Decommissioning and reuse of Quonset Point/ Davisville facilities some 20 to 25 years after production begins in the late 1980's/early 1990's.

- Development of large scale solar, wood biomass, and wind powered technologies for the commercial generation of electricity.

D. Low probability project proposals in light of resource constraints and/or lack of anticipated demand include:

- Nuclear fuel cycle facilities including processing, reprocessing, and long term waste storage/disposal.

- Additional tank storage facilities for petroleum products.

- Oil refineries

- Deepwater ports and/or monobuoy emplacement.

- Construction of OCS oil pipelines across Rhode Island lands or waters.

E. Proposals whose probability is difficult to assess on the basis of present knowledge of resource, availability and projected demand include:

- Mining and processing of in-state coal reserves.

- Construction of coal fired electric power plants.

XIII. Decisions on what energy related facilities will be sited in Rhode Island, where, when, and under what conditions must be made with a clear appreciation that they provide the most direct, forceful and meaningful vehicle for implementing public energy policy and directing the state's energy future. They cannot, therefore, be made on an ad hoc basis. More than the direct and immediate impacts, whether social, economic or environmental, of a particular siting proposal must be considered. While excessive or needless use of energy is a luxury we can no longer afford, energy remains a vital social necessity. The availability and reliability of energy supplies and their cost are critical factors influencing every stratum and sector of society. Energy facility siting decision making criteria must address not only site specific impacts, but wider ranging and cumulative impacts as well. Tradeoffs must be made with an understanding of their many implications.

A. It is critical to the reasoned evaluation of an energy facility siting proposal to appreciate that in every important respect the impacts that may result, both good and bad, will be generated by a complex interaction between facility and site. In this regard energy facility siting is no different in nature, although certainly in significance, from any other siting action.

- Lines of cause and effect, action and reaction between facility and site are rarely, if ever, unidirectional.

- The site by its characteristics and resources whether these be physical, biotic or social, offers opportunities and imposes constraints which define both its attractiveness to the potential developer and the changes he must make to render it suitable to his purposes.

- These same characteristics and resources influence the manner in which the site will react to development. Reaction in the form of change is inevitable, but whether it is beneficial or detrimental depends largely on the unique combination of factors that define the site and their individual and collective tolerance to particular changes.

- The wide range of considerations that go into identifying a desirable site for an energy facility from the perspectives both of their proponents and those charged with regulating them suggests that in the majority of cases the affected "site" extends far beyond the facility perimeter and may, in fact, incorporate the state as a whole or even the entire New England region.

- This vastly complicates the job of identifying and evaluating its impacts. These may affect a wide variety of environmental and social interests and it becomes extremely unlikely that any consistent pattern of "good" or "bad" impacts will emerge. An overall assessment which accommodates the full range of interests affected and impacts anticipated must be undertaken and tradeoffs between conflicting interests are inevitable.

- No hard and fast method exists to make these tradeoffs and making them will remain a subjective exercise the adequacy of which will be measurable only in reference to articulated energy policies and objectives.

- Tradeoffs can and should, however, be identified on the basis of a consistent and uniformly applicable methodology which addresses the interactions described above.

B. On the broadest level a basic concern regarding the evaluation of energy facility siting proposals is the cumulative impacts that separate decisions made over time may have on broad development patterns and on the quality of life available to Rhode Island's citizens.

- Each individual siting decision although of potentially minor consequence in and of itself contributes to one pattern of development and/or detracts from another.

- Implementation of any set of coherent policy objectives over time requires that incremental siting decisions be made with a clear appreciation for their impacts on the pattern desired. Long range planning and development policy must consequently be a primary siting consideration.

C. Reasoned evaluation of an energy facility siting proposal must also address the spread and phasing of various positive and negative impacts over time. An appreciation of the "life cycle" characteristics of a particular facility is a critical siting consideration.

The fact that some impacts will only be generated or felt far into the future does not make them any less important in determining the overall desirability of a facility throughout its life time.

- Energy facilities generate impacts over the entire course of their lives beginning with planning and site identification, continuing through construction and operation and extending into decommissioning.

- These impacts may be ecological, in that the functioning of the environment is altered thereby affecting man, other organisms, and their habitats, economic in the form of employment and construction related expenditures; and social in the form of potential changes in population size and the demand placed on municipal services.

- Each of these phases in the facility life cycle has predictable characteristics and identifiable impacts which must be considered in evaluating the desirability of a given siting action.

- A comprehensive evaluation must, moreover, weigh the full range of impacts throughout the duration of the life cycle because the distribution over time of positive and negative impacts may be uneven.

- Decommissioning impacts, such as long term commitments of valuable real estate and the cost of securing hazardous materials should be given particularly careful scrutiny.

D. Evaluation must further address questions of reliability, adequacy, and need in an age of growing uncertainty.

- Maintenance of reliable and adequate supplies of energy within the region and the nation as a whole is critical to the public's welfare. Given the growing uncertainties regarding recoverable reserves, cost and political interference with the delivery of many conventional fuel sources, the continued availability over time of the fuels upon which new facilities such as electric generation plants will depend cannot be taken for granted.

- It may become increasingly desirable, therefore, to build facilities capable of utilizing a variety of fuel sources, especially those fuels indigenous to the region.

- It may further become desirable to decrease reliance on one or two fuel sources to meet basic needs. Recent history has provided several examples of the dangers of overdependence; the 1973 OPEC oil embargo, and the natural gas shortages in the mid-West during the winter of 1976-77, to name two. Diversity tempered by considerations of efficiency, cost and proven capability is a desirable energy objective. Maintenance of reserve margins of supply and capacity to provide for supply disruption and unanticipated demand surges is an important consideration in facility development. However, given present uncertainties as to future demand in light of recent developments, considerable debate exists as to just how much capacity must be maintained in order safe reserve margins.

- It may become desirable to this context to look to smaller facilities which can be placed on line relatively quickly as an alternative to large centralized facilities with their long lead times.

- The basis upon which the need for a new facility is determined, including the methodology and assumptions supporting that determination, are essential ingredients in making a facility siting decision. The need for and feasibility of a particular proposal is important in examining the range of feasibile site and project alternatives and making benefit-cost determinations.

POLICIES AND REGULATIONS

POLICY OBJECTIVES - The Council finds the following policy objectives to be consistent with its own findings and with expressions of state energy policy articulated by the Governor and other agencies and bodies of state government.

The Council finds also that implementation of these policies will add to existing stores of knowledge on the state's energy options, will open up new options, and will contribute to the continued availability of a variety of safe, reliable and economical energy sources; and further that by so doing, it will contribute to the long term benefit of all Rhode Islanders as the state enters an era of growing energy uncertainties.

A. Alternatives to each energy facility siting commitment must be vigorously explored; not on the basis of any prior presumption that such commitments are undesirable per se, but rather in the belief that only through such exploration will existing options be retained, new options opened, and the best option chosen.

B. The full range of issues associated with each energy facility siting commitment must be vigorously explored and the relative economic and environmental implications of every siting commitment must be carefully considered and balanced. Maintenance of a high quality of life and of reliable and reasonably priced sources of energy are related, not conflicting goals.

C. Diversification of sources, technologies, size and distribution of facilities should all be encouraged.

1. Native energy sources such as wood, hydropower, wind, solar energy, solid waste and coal and technologies to utilize them should be developed to the maximum extent consistent with environmental preservation and economic realities; not as a short term substitute for, but rather as a supplement to existing sources.

2. The capability to use a variety of fuels to produce heat, electricity or industrial products should be encouraged in new developments;

3. Dependence on a relatively limited number of fuel sources and generating technologies by the electric industry should be discouraged. Alternative technologies, reductions in scale and decentralization all require careful consideration.

D. Conservation programs both as they relate to structural and technological improvements in the efficiency with which energy is consumed and to changes in behavior which reduce demand should be vigorously pursued.

Conservation should not be seen as an alternative to energy resource development, but rather as an indigenous source of increased energy supply in itself.

E. Anticipating and developing strategies to mitigate undesirable consequences of energy facility developments in or affecting the state's coastal region by and at all levels of government is critical to successful implementation of the Rhode Island Coastal Management Program. The Council shall, therefore, wherever possible assist all bodies of state and local government participating in the Coastal Energy Impact Program (CEIP). CRMC shall ensure that CEIP projects are consistent with applicable provisions of the Coastal Management Program.

F. Systematic implementation of comprehensive energy facility siting policies and regulations on a statewide basis and from a statewide perspective would enhance the effectiveness of policies and regulations contained in this chapter of the Coastal Management Program as they relate to energy facility siting actions in or affecting the state's coastal region. Such balanced, orderly and expeditious implementation will be evaluated by a legislative study commission established to consider the Governor's Energy Facility Siting Bill submitted to the House of Representatives as H8106 in April, 1978.

SCOPE AND APPLICABILITY

A. The following categories and classes of facilities demonstrate a reasonable probability of affecting the environment of the coastal region including its many physical, biological, social and economic resources. They demonstrate a similar probability of affecting or being affected by resources management plans and programs as these are reflected in the Findings and Policies contained elsewhere in the Coastal Management Program.

1. Facilities for the generation of electricity for wholesale and retail sale and transmission lines related thereto;

2. Petroleum processing, transfer or storage facilities including facilities for conversion, regassification, fractionation, treatment, transfer or storage of petroleum gases including natural gas, liquified natural gas (LNG) and liquified propane gas (LPG); facilities for the refining, transfer or storage of oil and other petroleum products such as gasoline, heating oil and kerosene; pipelines for the transportation of petroleum products and gases in, under or over the state's tidal waters or across or through the coastal region.

B. In order, therefore, to properly and effectively discharge legislatively delegated responsibilities related to the location, construction, alteration and/or operation of such facilities, the Council shall require a permit for such location, construction, alteration and/or operation anywhere within the State of Rhode Island subject to the following conditions.

1. This requirement will be waived upon a clear and convincing demonstration before the Council that (1) the environment of the coastal region will not be affected by the proposed action in any manner that is of recognized concern to the Council as indicated in Findings contained in the Coastal Management Program; and (2) upon further demonstration that this action is not subject to any Council Policy or Regulation pertaining to any coastal resource, area or use.

2. Actions as set forth under (A-1) and (A-2) above which are proposed to be located within the coastal region or which propose to withdraw water from or discharge water into any water body emptying into tidal waters in such quantities or fashion that the quantity, quality or chemistry of waters entering tidal waters is measurably changed shall for purposes of these regulations be conclusively presumed to have a reasonable probability of affecting the environment of the coastal region and petitions for waiver will not be entertained.

3. For purposes of these regulations, the term "effect on the environment of the coastal region" shall be broadly construed to include effects on the social as well as natural environment including, but not limited to effects on public services, development patterns and the economy.

4. The Council shall make all determinations on petitions for waiver of these requirements subject to rules of procedure, notice and hearing as set forth in Appendix B, Management Procedures.

C. The Council may at its sole discretion waive the requirements of this section as they apply to facilities for the generation of electricity of less than 10 megawatts gross capacity.

D. The Council may at its sole discretion waive the requirements of this section except for those set forth under subsection IV-D (need for shorefront sites) as these relate to facilities for the storage of oil and other petroleum products of less than 2,400 barrels gross capacity.

POLICY IMPLEMENTATION

A. The Council finds that an obstacle to effective implementation of energy facility siting policies in the Rhode Island coastal region is the incremental issuance of permits and licenses at all levels of government relating to various aspects or impacts of a given proposal, but short of review and approval of the proposal as a whole.

B. The Council further finds that such incremental and independent decision making may cause unnecessary and undesirable delays in the processing, consideration and issuance or denial of energy facility siting permits. Such delays, to the extent that they are not related to the careful and measured consideration of energy facility siting proposals, are contrary to the public interest.

C. In order to ensure that such incremental decision making and related delays do not impede the orderly implementation of policies affecting the Rhode Island coastal region while at the same time making maximum effective use of the superior expertise of sister agencies in their areas of jurisdiction, the Council shall discharge its regulatory responsibilities regarding energy facility siting, construction and operation in the below described manner.

D. Concurrent Review: The Council shall, to the maximum extent consistent with its own statutory responsibilities and those of other regulatory bodies, review and consider applications before it concurrently with those bodies. Such concurrent review shall include exchange of information, utilization of staff expertise in other agencies, solicitation of official comment and participation in hearings and other formal proceedings.

The Council reserves the right in all instances to intervene, or otherwise participate, in such other federal, state and/or local application processes as the Council, in its sole discretion, deems appropriate.

E. Direct Council Actions:

1. The Council shall issue a single permit for the location, construction, alteration and/or operation of a facility subject to these regulations.

2. The Council shall issue no separate or independent permits under its authority regarding any discrete aspect or impact of, or alteration required by, or activity associated with the construction or operation of a facility subject to these regulations including, but not limited to, permits to alter tidal waters, coastal ponds, and shoreline systems.

3. The issuance of such permits shall only be considered as part of and in relation to the issuance of the required Council permit for the proposed facility as a whole.

4. The above prohibition shall not apply to permits for activities or alterations necessary to conduct tests, surveys or other investigations of a site by an applicant; provided that such tests, surveys or investigations shall be subject to all applicable policies and regulations set forth elsewhere in the Coastal Management Program.

5. The above prohibitions and conditions shall apply also to the issuance of separate and independent Council permits or determinations of consistency regarding actions for which the Army Corps of Engineers requires an applicant to obtain state authorization before issuing a federal permit. More particularly these include dredging or filling of coastal wetlands and navigable waters, transportation and disposal of dredged material and construction in navigable waters.

F. Other Applications for Authorization Required: Applicants for a Council permit subject to these regulations shall demonstrate conclusively that they have duly applied for the below described local, state and federal authorizations and further, that such applications have been accepted

for consideration and action by the authorizing body. The sole exception to this requirement shall be upon demonstration that statutory or regulatory conditions attached to the processing of a given authorization preclude such prior application and acceptance. In such situations the applicant shall provide the Council current estimates of the likely filing dates for such applications.

1. Local Authorizations: All required authorizations including, but not limited to zoning variances, exceptions or other special relief, building permits;

2. State Authorizations: All required authorizations from other bodies and agencies of state government including, but not limited to:

   a. Certification of compliance with water quality standards by the Department of Environmental Management (DEM) subject to the requirements of the Federal Clean Water Act;

   b. Certification of compliance with air quality standards and applicable pollution abatement requirements of the Clean Air Act Amendments of 1977, also by DEM;

   c. Permit to alter freshwater wetlands (if applicable) from DEM;

   d. Permit for onsite treatment and/or disposal of sewage from DEM;

   e. Certificates or other authorizations required of the Public Utilities Commission under Title 39 of the General Laws.

3. Federal Authorizations: All required authorizations including, but not limited to those required by the Environmental Protection Agency, the Army Corps of Engineers, the Federal Economic Regulatory Commission, the Coast Guard, the Department of Interior, the Department of Commerce and/or the Nuclear Regulatory Commission.

G. Participation by Other Agencies of Government in Council Proceedings:

1. As provided for in Appendix B, "Management Procedures" of the Rhode Island Coastal Management Program, the Council shall in all cases notify interested agencies of local, state, regional, and federal government of the receipt of applications for any facility subject to regulation under this section.

2. Said agencies shall be provided an opportunity to comment in writing on the proposed action under consideration before the Council. This opportunity shall be in addition to any actions taken or determinations made by these agencies pursuant to other authorities, ordinances, or statutes. All such comments shall be matters of public record and subject to cross examination and challenge.

3. Said agencies shall further be accorded the status of parties to any formal proceeding before the Council required under these regulations and shall have all associated rights and privileges.

H. Other Permits Required: Not withstanding the provisions of paragraph D above, prior to its final decision on an application made pursuant to this chapter the Council shall require that the applicant have received the final approvals and/or authorizations of state agencies and municipalities as described in subparagraph F-1 and F-2 above; provided, however, that in the event that the approval and/or authorization of a municipality described in subparagraph F-1 shall have been denied or withheld:

1. If such denial or withholding is subject to appeal to the Public Utilities Commission pursuant to Section 39-1-30 of the General Laws, the Council shall accept in lieu of the approval or authorization of the municipality the final decision of the Public Utilities Commission reversing such denial or withholding;

2. If such denial or withholding is not subject to appeal to the Public Utilities Commission pursuant to Section 39-1-30 of the General Laws, and concerns a nuclear power plant or oil refinery which is a "project plan" of the Port Authority and Economic Development Corporation, the Council shall provide the applicant the opportunity at a public hearing to prove that the determination of the municipality:

   a. Conflicts with the adopted municipal master plan; and/or

   b. Conflicts with the State Guide Plan or any of its elements; and/or

   c. Fails to consider and is inconsistent with state and national energy policies and priorities as these are reflected in executive orders, laws and regulations and as they are applicable to a specific proposal on a particular site.

If after such hearing, the Council shall find and conclude that such proof has been made, the Council shall pursuant to paragraph I below recommend to the General Assembly that such municipal determination be overturned or modified.

In any event, the Council shall render such final decision or recommendation on an application within the 180 day period following the receipt by the applicant of the last of such final state and local approvals.

In reaching such final decision, the Council shall consider the determination of the Statewide Planning Program as to the consistency of the proposed action with the State Guide Plan.

I. Regulation of Economic Development Corporation Projects: The siting, construction, alteration or operation of nuclear power plants and/or oil refineries which meet the criteria for "projects" or "project plans" of the Port Authority and Economic Development Corporation as these are set forth under 42-64-3(r) of the General Laws shall be regulated as prescribed elsewhere in this section; provided that the Council shall forward to the General Assembly for final deliberation and action the following:

1. A record of all evidence submitted to and evaluated by the Council;

2. Findings of fact on the proposed project or project plan;

3. Recommendations regarding the issuance, denial or modifications of a final permit based on the Council's evaluation of the record and findings.

IV. PERMIT REQUIREMENTS, CONTENTS AND REVIEW

A. Applicants for Council permits for those categories and classes of energy facilities identified in Section II of these regulations shall be required to submit the below described information:

1. Two copies of Application Form CRMC 8-1/74 shall be submitted with copies of authorizations required from other bodies of government identified in Section III of these regulations.

2. In completing Form CRMC 8-1/74, applicants shall comply with the following standards:

   a. The location of the proposed project shall be drawn on maps of appropriate scale showing the layout and distribution of buildings and other structures, connections with public utilities, sources of water and waste storage and disposal facilities. Such maps and drawings shall further identify planned expansions or modifications of the facility or site for which separate Council permits would be required at a future date.

   b. Engineering and architectural drawings including both plan views and elevations shall indicate existing topography and drainage patterns, soil and bottom sediment types, marine and terrestrial vegetation and fish and wildlife distribution, hydrology, meteorological characteristics, bathymetry, tidal flows and currents and changes which will occur to these and other physical characteristics of the site as a result of site preparation and facility operation.

   They shall also indicate the distribution of buildings and equipment, roads, water intakes and outfall structures, sewers, stacks; vents and other structures or developments associated with the proposal.

Drawings shall be accompanied by detailed technical descriptions of the functions and operating characteristics of the proposed facility including plant equipment; air and water use, treatment and pollution abatement equipment and techniques; solid waste handling, treatment and disposal equipment and techniques; maintenance schedules and techniques; and other equipment and techniques including those related to safety and emergencies associated with operation.

Descriptions and schedules as may be required by the Council of equipment and material movement on and off the proposed site; of the sequence, timing and magnitude of construction and site preparation activities; of projected noise levels at various times of the day and season; and of visual aspects of the proposal from offsite vantage points shall also be attached.

The above referenced drawings and descriptions shall clearly and separately address facility construction, operation, and decommissioning or retooling plans.

The Council, however, recognizes that decommissioning or retooling plans may be changed in the future in response to improved technologies or experience gained during the active life time of the proposed facility. Subsequent modification of such plans shall be judged according to the regulations and procedures set forth in this chapter.

Drawings and descriptions shall further address planned expansion or modification of the facility for which separate Council permits would subsequently be required.

3. Applicants shall describe the basis on which they have determined the proposed facility is needed. This description shall at a minimum consist of the following:

a. A description of the methodology used to analyze and forecast future demands and supplies within the area to be served by the proposed facility.

b. An identification and discussion of key variables affecting future demand and supply including specifically such factors as resource depletion, vulnerability to political interdiction, relative changes in the cost and availability of conventional energy reserves, technologies' impact on use patterns and cost, fluctuations in the economy of the state and region, changes in national energy policies and priorities, effects of ongoing conservation programs, increased development of renewable and native energy resources,

c. A description of how the forecasting methodology has considered these and other relevant factors and its sensitivity to unanticipated changes in them;

d. A description of those patterns and trends in demand and supply which have been identified including as appropriate those at the international, national, regional, and state levels;

e. An identification of the forecasting time frame including both the length of time over which data have been accumulated and the future time period covered by the forecast;

f. A discussion of the economic costs or benefits that would accrue to the consumer if building the proposed facility were to result in excess supplies of a particular form of energy and a comparable discussion of the relative costs or benefits that would accrue if not building the proposed facility were to result in disruption of supply or service.

4. Applicants shall demonstrate by reliable and probative evidence that they have fully described and adequately considered the full range of impacts associated with the proposed action including both those of a positive and negative nature; including those affecting the site itself, surrounding resources and areas and, as appropriate, the state and region as a whole. This description and demonstration shall at a minimum consist of a benefit cost analysis of the facility over its entire life cycle including decommissioning; such analysis to address, but not be limited to, a description and consideration of:

   a. Environmental impacts including those associated with site preparation, facility construction, operation, waste disposal and decommissioning or retooling and the costs of and ability to implement efforts to mitigate these impacts; more particularly:

      - Impacts related to the discharge of pollutants (as defined in Section 3 of the Coastal Management Program) into the state's air and waters and the disposal of solid wastes;

      - Impacts related to the generation of noise and visual intrusions;

      - Impacts related to the withdrawal of cooling and/or process waters from aquifers or surface waters and the disposal of such waters;

      - Impacts related to physical alteration of the marine or terrestrial environment;

   b. Social impacts during all phases of the proposed facility's life cycle including more particularly:

      - Impacts on broad and long term development patterns including changes in population distribution, industrial and/or urban development;

- Impacts on public services such as schools, highways, hospitals, police and fire protection, water and sewer service;

- Impacts on housing including availability and residential development patterns;

- Impacts on historic, cultural and aesthetic resources;

- Impacts on public safety through exposure to increased risk of fire, flood, explosion or environmental contamination whether as a result of normal operations, accidents or sabotage;

- Impacts on recreational facilities and the provision of recreational services, including public access to beachfront areas;

- Procedures, including emergency procedures, for the safe production, transportation, isolation, storage, containment and/or disposal of materials or wastes hazardous to man must be described;

- The Council, however, recognizes that pursuant to the Atomic Energy Act of 1954 and the Energy Reorganization Act of 1974, all issues related to radiological health and safety are reserved to the Nuclear Regulatory Commission and the Environmental Protection Agency. Where on the basis of evidence before it, the Council identifies concerns in this area regarding any proposed siting action in Rhode Island, it shall express those concerns through avenues provided it by the above referenced Acts.

c. Economic impacts during all phases of the proposed facility's life cycle including more particularly:

- Impacts on the price and availability of energy to consumers;

- Impacts on employment patterns and levels;

- Impacts on retail and wholesale sales and on other sectors of the economy.

d. Where plans exist to expand or modify the proposed facility or to further develop the proposed site such that a separate Council permit will be required, the impacts associated with this expansion or modification shall also be considered as required herein as part of any overall benefit/cost analysis.

e. Applicants must identify the means or sources by which they have determined impacts and the methods, assumptions and values they have applied to estimate net benefit/cost.

f. Where information or studies prepared for other agencies of government address any of the requirements of this section the applicant is encouraged to submit same to the Council; provided that the Council in its sole discretion shall determine whether information or studies so submitted are sufficient under these regulations.

5. Applicants shall demonstrate by reliable and probative evidence that they have fully described and adequately considered a reasonable number of alternatives to the proposed action. The reasonableness of those alternatives described shall be judged upon the basis of timeliness, cost and technological feasibility. The reasons for which each alternative has been rejected shall be described. Demonstrations and descriptions shall at a minimum include:

a. Identification and description of at least two alternative sites for the proposed facility on maps of appropriate scale.

- At least one of these sites shall be located outside the coastal region.

- Alternative sites shall be compared in essential characteristics to the site chosen; including particularly those identified pursuant to Section IV-A-2-b of these regulations.

- The specific reasons for rejecting each alternative site in favor of the proposed site must be set forth. These reasons must include, but need not be limited to, a comparison of projected impacts and benefit/cost ratios as required by Section IV-A-4 of these regulations.

b. Identification and description of reasonable alternative means to meet the demands that would otherwise be met by the proposed facility.

- At least one of these shall include conservation or other techniques or programs to increase the efficiency of energy use or otherwise reduce consumption.

- At least one shall include another technology; including for instance, small scale, decentralized or renewable source technologies.

- Alternatives shall be compared in essential characteristics to the facility proposed and the specific reason for rejecting each in favor of this facility must be set forth as in 5-a above.

- Assertions that no reasonable alternative means exists to meet the demands that would otherwise be met by the proposed facility shall be supported by reliable and probative evidence.

B. On the basis of the above required submissions, applicants shall demonstrate to the Council by reliable and probative evidence that the proposed action:

1. Will not conflict with any Council Policies and Regulations regarding use or alteration of the resources of the coastal region as these are set forth elsewhere in the Rhode Island Coastal Management Program; particularly as said Policies and Regulations relate to impacts upon ecological systems, compatibility of various activities, the capability of coastal resources to support various activities, state water quality standards, and contiguous land uses and transportation facilities;

2. Will not either directly or through its impacts on surrounding development patterns conflict with the State Guide Plan;

3. Is consistent with state and national energy policies and priorities as reflected in executive orders, laws and regulations.

4. Is needed to meet demonstrable future demands for energy both within the state and within the market area for the source in question, and/or to replace inefficient or obsolete facilities.

C. Applicants shall be further required to demonstrate to the Council by reliable and probative evidence that no superior site or alternative has been identified during the course of proceedings before the Council; such demonstration to be made with reference to the considerations and requirements enumerated under B, above.

D. Applicants for shorefront sites shall demonstrate by reliable and probative evidence that the proposed facility has a unique combination of requirements including need for access to navigable waters for purposes of transportation or transfer of materials, or for industrial cooling or processing water and, further, that these requirements cannot be met at another site or utilizing other technologies because of substantial technological difficulties, environmental or economic penalties.

E. Where on the basis of evidence before it, the Council finds that any of the above required demonstrations have not been satisfactorily made, it shall require appropriate modification of or shall deny the application in question; or in the case of nuclear power plants or oil refineries which are "project plans" of the Port Authority and Economic Development Corporation, it shall forward its recommendations to this effect to the General Assembly.

F. Recipients of Council permits shall maintain such records as may be necessary to monitor and ensure compliance of facility operations with permit conditions and shall further allow designated Council representatives to inspect facilities and records upon reasonable notice.

G. The Council shall review all applications upon submission for completeness. Where any of the information required under IV A, 1-5 inclusive is not provided, the application shall be deemed incomplete and shall be returned to the applicant for completion together with a concise statement of the specific reasons for rejection.

The applicant may petition the Council to initiate review of an incomplete application and the Council may grant such a petition upon finding that deficiencies are of such a minor nature as to permit review of the application to proceed uncompromised. However, if identified deficiencies in the application are not remedied to the Council's satisfaction within thirty days of granting of the above petition, review of the application shall cease forthwith and shall not resume until said deficiencies are remedied.

The Council shall provide public notice of all findings and determinations regarding the completeness of applications at the time it notifies the applicant.

H. Records - The Council shall maintain and grant free access to records and reports in its files to members of the public during normal working hours and shall permit copies of such records and reports to be made by interested members of the public at

their expense. However, upon a petition by any person, the Council shall, by a written decision setting forth its reasons, make a determination whether specific information requested by or submitted to it is a marketing or trade secret or is entitled to protection in the interest of facility security and should not be publicly disclosed for this reason. The Council shall not consider information to be a marketing or trade secret if it has been knowingly made available to any competitor of the petitioner or revealed to the public at large.

240 NATIVE ENERGY RESOURCES

240.0-1 Findings

A. Rhode Island at present makes no significant use of energy resources from within the state's boundaries (see Section 610.0-1). Native energy resources do exist, however, and may become of great significance in the future. (These resources include direct and indirect use of the sun, solid waste, water power, wind, and coal.)

B. Solar energy is presently regarded as a potentially important source of energy that could provide a significant proportion of our energy needs.

1. The total (direct) solar energy received by the state each year is many times our total annual energy consumption. The problem is that solar energy is diffused and must be collected to be usable as an energy source.

2. Studies suggest that the most practical uses of solar energy are presently home water heating (for domestic and commercial use) and space heating. These two energy uses presently account for some 40 percent of Rhode Island's total annual energy consumption.

3. Current studies indicate that heating water with solar power is presently competitive with electrical water heating.

4. The federal government has recently proposed a series of incentives which would encourage the installation of solar water heaters.

5. Solar powered home heating by hot water or hot air has been proved feasible. The initial costs of installing such a system are high, but building designs that can take advantage of the sun without special equipment are readily available and life cycle costs are lower than for conventional systems.

C. As the cost of electricity, oil, and gas spiral upwards, more people are using wood stoves to help heat their homes. Highly efficient stoves are readily available and firewood is at present relatively inexpensive.

1. About 395,000 acres of Rhode Island is forested. Harvesting only the net annual growth of some 154,000 cords would yield a steady 4.1 trillion BTUs of energy annually which is 2.4 percent of 1976 total state energy consumption or 5.8 percent of residential/commercial use.

2. Technology to burn chipped forest wastes for heating and electrical generation is now in early stages of commercial development. Sound forestry and conservation practices are essential as wood use increases.

3. Peat deposits also may exist which have potential as a source of energy.

D. Solid waste, whose disposal is becoming a growing municipal problem, is also a potential energy resource. About 80 percent of typical residential/commercial waste is combustible.

1. The 675,000 people living within a 10-mile radius of Providence generate about 1700 tons of solid waste per day.

2. The energy value of this waste is 5.6 trillion BTUs annually, which is 3.2 percent of the 1976 residential/commercial consumption.

3. The state's Solid Waste Management Corporation is in the proposal review stage for a 1200 ton per day solid waste and sewage sludge handling and energy recovery system to provide all the steam and electric power for the State Institutional Complex in Cranston. It will also provide 25 megawatts of power generating capacity for electricity sale to Narragansett Electric, which would amount to 4.5 percent of present state electricity consumption. The entire project could begin operation late in 1981. The combustion residue may be used in road construction.

E. Water powered Rhode Island industries in the last century, but this energy source is presently almost entirely unutilized.

1. There were 460 water wheels in operation in 1875 but only 4 in 1972.

2. Water was used to power textile mills, saw mills, and grist mills. The Pawcatuck, Pawtuxet, Providence and Blackstone Rivers were the sites for most water powered industries.

3. Although the amount of power that can be produced in Rhode Island from water appears relatively small, water power could again be utilized to power some manufacturing plants and residential buildings.

4. The total capacity of hydroelectric facilities is 10,000 kilowatts, enough to generate 1.8 percent of Rhode Island's present electricity consumption. The Army Corps of Engineers has identified between 100 and 150 sites where existing dams could be retrofitted or new ones built.

F. Wind power may prove to be a significant supplemental source of power in the future, but problems remain to be solved before wind power will be feasible as a significant energy source.

1. No thorough analysis has been made of the possibility of utilizing wind power throughout Rhode Island. Providence, however, is one of the windiest cities in the United States with speeds averaging 10.7 mph over a year.

2. Small units ranging from 1 to 10 kilowatts are readily available from several manufacturers, suitable for home and experimental use. At present such units may be economical in remote areas where utility connections are expensive.

3. The federal government is installing a 200 kilowatt wind machine on Block Island at a cost of $2 million. To avoid television reception interference from such a large installation, project costs include cable television connections for a number of nearby homes. Mass production of such large wind machines would lower costs substantially.

G. As much as 135 million tons of coal is believed to be deposited in Rhode Island, principally under the towns of Portsmouth and Bristol.

1. Narragansett Basin coal has a very low sulfur content, making it a potentially desirable in terms of its limited impacts on air quality.

2. It is not known how much, if any, of this coal is recoverable by existing or unconventional techniques at acceptable environmental and economic costs.

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THE GOVERNOR'S STATEMENT

OF ENERGY POLICY

AUGUST 31, 1978

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I. The State's Energy Posture

A. Energy Policy Findings

1. Increased consumption by an expanding world economy has resulted in the depletion of reserves of many conventional resources and increasing costs for energy consumers.

2. In Rhode Island, a dependence on oil imported from outside the New England region as the major source of energy supply has contributed to a particularly severe impact on the State's economy by increasing costs to operate homes and businesses and reducing available capital. At the present time, 79% of the State's energy requirements are met by oil, and prices have more than doubled since 1973. The continued availability of oil is uncertain, but costs are likely to rise for the foreseeable future.

3. Production of energy within the State is limited and the State is heavily reliant on a regional power grid for it supply of electricity. Generation capacity in Rhode Island is presently limited to a 250 megawatt peaking plant in Providence and some very small scale generation plants scattered throughout the State. These account fo approximately 10% of the total amount of electricity consumed in the State.

4. In order to increase the capability of the State to meet its current and projected energy needs, the following options are available:

   a) exploration in the outer continental shelf which may result in significant finds of oil and natural gas;

   b) development and utilization of native energy sources including coal, solar, wind, water, solid waste, and biomass;

   c) development and utilization of new and improving tec nologies such as geothermal, tidal, wind, solar, and nuclear power.

   d) encouragement of more efficient use of energy resour through the adoption of energy conservation techniqu by all consumers.

5. Geographic and economic circumstances result in great interdependency among New England States in the meeting of energy needs and shared energy concerns which must be addressed from a regional perspective.

B. Policy Statement

In view of the findings expressed herein, it is desirable for the State of Rhode Island to take strides toward strengthening the State's tenuous energy position through the formulation and implementation of a comprehensive energy policy. This energy policy shall reflect the following goals:

1. The minimization of the State's vulnerability to supply interruptions;

2. The increase of the desirability of the State for economic development, the relief of economic hardships caused by high energy costs, and the decrease of economic disadvantages of the State relative to other regions;

3. The ensurance of adequate energy supplies for the future.

In order to achieve these goals, it shall be the policy of this State to:

1. Strive to diversify the State's energy mix and reduce the high degree to which imported oil meets our energy needs;

2. Strive to ameliorate the effects of unexpected shortfalls in oil supplies or sharp increases in oil prices.

C. Energy Policy Objectives

In order to carry out the State's energy policy the State has established the following objectives. The State will:

1. <u>Conservation</u>

- Reduce the State's projected 1980 energy consumption by 6.7% through vigorous implementation of the SECP.

- Extend the efforts of the SECP to realize long term energy reductions in the following manner by 1990:

  a) Reduce energy consumption in the residential end use sector by 15 percent by bringing 90 percent of the State's housing stock up to minimum thermal efficienc standards;

  b) Reduce energy consumption in the commercial/industria sector by 10 percent by bringing 75 percent of the structures up to minimum thermal efficiency standard

c) Reduce energy consumption in all State owned buildings by 20 percent by retrofitting all buildings and adhering to conscientious operation and maintenance procedures;

d) Reduce energy consumption in the transportation sector by increasing average auto occupancy and increasing the relative attractiveness of high occupancy vehicles through the aggressive implementation of Transportation Systems Management Plan.

2. Provide at least 10% of the State's energy requirements by the year 2000 through the use of native energy resources in the following manner:

a) Developing a small head hydroelectric capacity of 10 MW;

b) Retrofitting 25% of the State's housing stock for the utilization of solar energy;

c) Introducing utilization of solar energy to 15% of the commercial and industrial structures for domestic use;

d) Meeting 15% of residential space heating needs through the use of wood;

e) Undertaking initiatives which will result in the utilization of residuals such as solid waste and waste heat from industrial processes to help meet the State's energy requirements.

3. Establish the mechanisms and capabilities in the State for the review and adoption of new technologies which can be applied to assist the State in meeting energy requirements or to conserve energy in a safe, economical, and environmentally sound manner;

4. Seek to obtain and utilize conventional domestic energy resources that may become available to the State;

5. Encourage end users to adapt their facilities to accommodate fuels that are new to Rhode Island's energy mix and to develop the capability to utilize multiple fuel types to meet their energy needs;

6. Maintain and develop reserves of energy and power generation capacity consistent with forecasts of Rhode Island energy needs.

7. Develop emergency measures to be available for rapid deployment in the event of an energy supply crisis that affects the State.

C. Energy Policy Objectives (continued)

8. Monitor and evaluate activities on a regional and national level to insure that the interests of Rhode Island are adequately represented and accounted for in the development and implementation of energy policies.

Energy Facility Siting

A. Siting Facilities

1. The growth in energy consumption in Rhode Island, and the State's role relative to National and Regional energy needs results in increasing probability that Rhode Island will be faced with decisions regarding the siting of various energy related facilities.

2. The siting of energy facilities has the potential for a wide range of social, economic, and environmental impacts on Rhode Island and the New England Region for both the short and long term.

3. The State of Rhode Island currently lacks a comprehensive statewide mechanism to link land use policy with energy facility siting objectives so that siting proposals may be evaluated. Under existing state law and authority, CRMC has clear responsibility for siting major energy facilities in the coastal zone.

B. Siting Policy

It is the goal of the State of Rhode Island to insure that the siting of energy facilities within the state be planned and carried out in a balanced and coordinated manner with due regard for state policies and objectives.

It shall be the policy of this state therefore, in permitting a facility to be sited, to;

1. Assure that there is a convincing demonstration that forecasts of the State's and region's future energy composition indicate a need or desirability for the proposed facility;

2. Assure that the social, economic, and environmental impacts of a facility on the site, locality, state, and region are thoroughly evaluated and considered in each siting decision including examination of unique alternative uses for the site.

3. Assure that consistent criteria for assessing the need for and impacts of similar types of facilities are applied to each siting decision.

C. Siting Policy Objectives

In order to carry out the State's siting policy and attain its siting goal, the state has established the following objectives. The State will:

1. Identify and/or develop methodologies for forecasting the State's energy situation and employ these methodologies to produce a forecast from which an analysis of the State's overall energy needs and needs for specific energy facilities can be made.

2. Undertake the task of identifying particular sites suitable to energy interests of the State and which are coordinated with other State interests.

3. Develop methodologies and establish criteria to be available in making a siting decision for deployment in:

   a) determining the needs for proposed facilities;

   b) evaluating social, economic, and environmental impacts that the siting of a proposed facility can be expected to produce at the site, in the locality, state, and region;

   c) undertaking comparative assessment of two or more similar energy facilities and/or alternative sites with provision for qualitative as well as quantitative comparative assessments.

Energy Management

A. Management Findings

1. Energy responsibilities and functions are currently fragmented among several state agencies in Rhode Island.

2. Efforts to interface national energy initiatives with Rhode Island's energy needs and activities are resulting in increasing levels of responsibilities and concerns for state and local government.

B. Management Policy

It is the goal of state government to provide effective and efficient administration of the state's energy policy and to initiate and pursue a concerted effort towards the attainment of policy goals and objectives.

In order to achieve these goals it shall be the policy of the state to:

1. Reduce duplication of efforts and administrative confusion through clarification of responsibilities and delegation of necessary additional authority to appropriate state agencies;

2. Coordinate the activities of the state agencies having energy functions and authorities by providing on-going and comprehensive oversight.

C. Management Objectives

In order to carry out the management policies and attain the State's energy management goal, the State has established the following objectives. The State will:

1. Examine the capability of the State and its agencies to carry out energy programs which will attain energy policies and objectives in a unified manner. This examination will consist of:

   a) defining specific functional areas and areas of responsibility that must be assumed by the State to effectively implement State energy and siting policies

   b) reviewing mandates and activities of existing State agencies with energy responsibilities and identifying the functional areas and areas of responsibility that are currently within their purview.

2. Take measures to improve the State's capability to meet its energy responsibilities. These measures will consist of:

a) establishing guidelines which define the functional areas and areas of responsibility that are appropriate for incorporation under the purview of specific State agencies now and in the future;

b) obtain necessary additional authorities or changes in authorities required for State agencies to carry out their functions as defined above;

c) assign appropriate agencies the task of developing plans and work programs to attain the policy objectives that are encompassed by their purview.

d) obtaining legislation which establishes a process and procedures for the planning and siting of energy facilities including clear specification or the manner in which the review mechanism is set into motion, the requirements of the proposer, the nature and scope of technical proposal evaluation, the reviewers/decision makers and their roles, the opportunity for public comment, and the sequence and extent of various stages of the review process.

3. Establish a centralized statewide oversight function containing the capability to provide on-going unified management and coordination of state energy agencies and programs of these agencies, to monitor and evaluate progress toward achievement of energy goals and policies, to maintain the State's energy policy and to collect and analyze data that is required for this purpose, to provide periodic review of the capabilities of the State and its agencies to meet energy goals and policies, and to establish and maintain any mechanisms needed to carry out these oversight functions.