

# Coastal Features

INFORMATION  
ABOUT THE RHODE  
ISLAND COASTAL  
RESOURCES  
MANAGEMENT  
PROGRAM

SPECIAL EDITION

VOLUME VII, NO. 4

## Special Edition:

*The Narrow River  
and  
Salt Pond Region  
Special Area  
Management Plans:  
A Practical Guide  
to CRMC  
Regulations  
for Development  
in the  
Narrow River  
and  
Salt Pond Region  
Watersheds*

This Special Edition of Coastal Features is intended to serve as a guide to CRMC's Narrow River and Salt Pond Region SAMPs, which were revised on April 12, 1999. The following information represents a summation of current regulations that may be of particular interest to individuals planning development or other activities in either SAMP watershed.

### A Watershed-Based Management Strategy

The Narrow River and Salt Pond Region SAMPs provide regulatory and management strategies that respond to a diversity of issues on a watershed scale. This means more than managing activities that occur directly within the waters confined by the banks of a tidally influenced river or the shores of a salt or coastal pond.

Webster's Dictionary defines a watershed as a "region draining into a river, river system, or body of water." A watershed is distinguished by hydrodynamic pathways that lead to a common destination: tributaries that cut through it, stormwater that flows across it, and groundwater that seeps beneath it, eventually drains into a watershed's basin, which may be a river, pond, or other surface water body.

In effect, a watershed is an ecosystem that strongly connects land and water. This linkage facilitates the transport of pollutants produced by activities in one part of a watershed - in either its land or water component - to other parts via its water transport pathways. As a result, even apparently minor amounts of pollutants from routine activities such as residential or road construction projects can reach a watershed's drainage basin. This is the case in both the Narrow River and coastal salt ponds. Water quality in the Narrow River and coastal salt ponds is threatened by the cumulative impact of pollutants produced by numerous development projects in their watersheds. When the additive effect of seemingly minor pollution inputs from individual development projects is considered, the cumulative impact of development is the most significant cause of declining water quality in the Narrow River and coastal salt ponds.

Despite more than a decade of management, water quality continues to decline in both the Narrow River and salt pond watersheds. Recognizing that cumulative impacts of development have led to these conditions, the revised Narrow River and Salt Pond Region SAMPs focus on managing the following development related activities on a watershed-wide scale:

- Individual Sewage Disposal
- Impervious Areas
- Stormwater Runoff
- Vegetation Removal and Soil Erosion
- Dredging
- Barrier Beach and Flood Zone
- Residential Activities
- Marinas, Docks, and Recreational
- Public Water and Sewer
- Wetland
- Noise and Lighting Impacts on Habitat

*(continued on next page)*

### *Special Edition*

*"A Guide to CRMC's  
Narrow River and  
Salt Pond Region  
SAMPs"*

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The following maps (pages 3 and 4) illustrate the Narrow River and Salt Pond Region watersheds according to CRMC land use classifications.

## Land Use Classifications for Watershed Protection

1. Self-Sustaining Lands: undeveloped or developed at a density of not more than one residential unit per 80,000 square feet. Within these areas, the nutrients discharged to groundwater by septic systems, fertilizers and other sources associated with residential activities may be sufficiently diluted to maintain on-site potable groundwater. However, the one residential unit per two acre standard is not considered sufficient to reduce groundwater nitrogen concentrations to levels that will prevent eutrophication, or mitigate for dense development in other portions of the watershed.

2. Lands of Critical Concern: presently undeveloped or developed at densities of one residential unit per 120,000 square feet. These lands may be adjacent to or include one or more of the following:

- sensitive areas of the salt ponds that are particularly susceptible to eutrophication and bacterial contamination
- overlie wellhead protection zones or aquifer recharge areas for existing or potential water supply wells
- areas designated as historic/archaeologic sites
- open space
- areas where there is high erosion and runoff potential
- habitat for flora and fauna as identified through the Natural Heritage Program, large emergent wetland complexes, and U.S. Fish & Wildlife lands
- fisheries habitat

3. Lands Developed Beyond Carrying Capacity: developed at densities of one residential or commercial unit on parcels of less than 80,000 square feet, and frequently at higher densities of 10,000 square feet or 20,000 square feet. Intense development associated with Lands Developed Beyond Carrying Capacity is the result of poor land use planning and predates the formation of the Council. High nutrient loadings and contaminated runoff waters from dense development have resulted in a high incidence of polluted wells and increased evidence of eutrophic conditions and bacterial contamination in the salt ponds. Most of the ISDS in these areas predate RIDEM regulations pertaining to design and siting standards, and have exceeded their expected life span.

The following diagrams (page 6) illustrate the Narrow River and Salt Pond Region buffer zone and setback requirements. Please note that Lands Developed Beyond Carrying Capacity, which are not represented on the diagrams, have variable buffer zone requirements depending upon lot size and water type. Refer to section 150 of the CRMP (Redbook) for specific buffer zone requirements, and sections 200.1 through 200.6 for descriptions of CRMC water types. Quadrangle maps included in the Redbook show Rhode Island's coastal waters according to water type.

## Nitrogen Reducing Technology

In addition to variable buffer zone requirements, nitrogen reducing technology is required for new ISDS installations or alterations in Lands Developed Beyond Carrying Capacity. Nitrogen reducing technologies are alternative ISDS which reduce total nitrogen concentrations by at least 50%. At the time of this writing, the RUCK system and a recirculating sand filter design have been approved by RIDEM. The sand filter system will require a RIDEM variance until the agency's regulatory revisions incorporate the associated design manual currently being developed at the University of Rhode Island. After that time, a variance will not be required. In addition, RIDEM *Rules and Regulations Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Individual Sewage Disposal Systems*, allow nitrogen removal systems which are approved through the variance process or as an experimental system or technology.

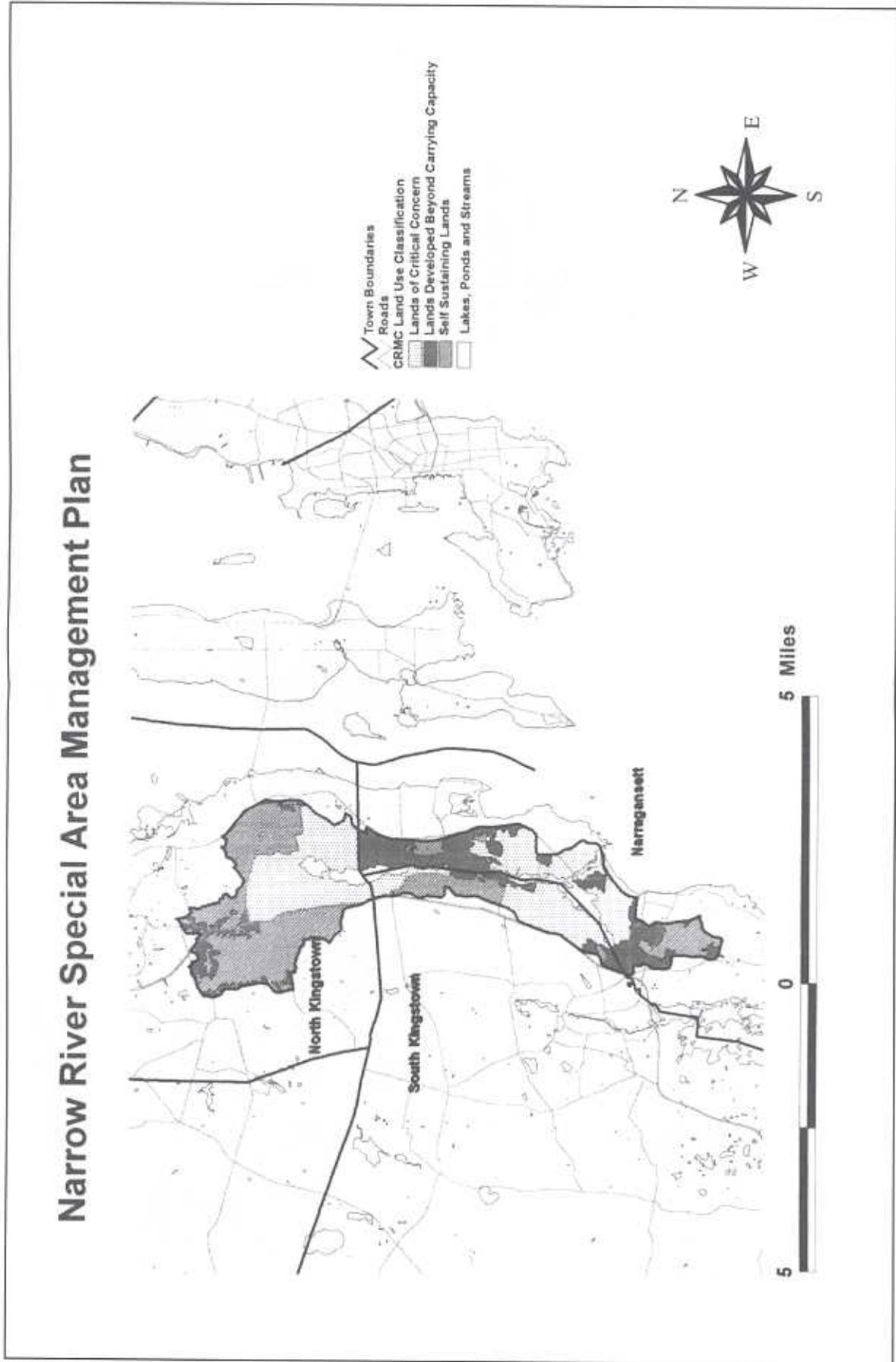
### Coastal Features

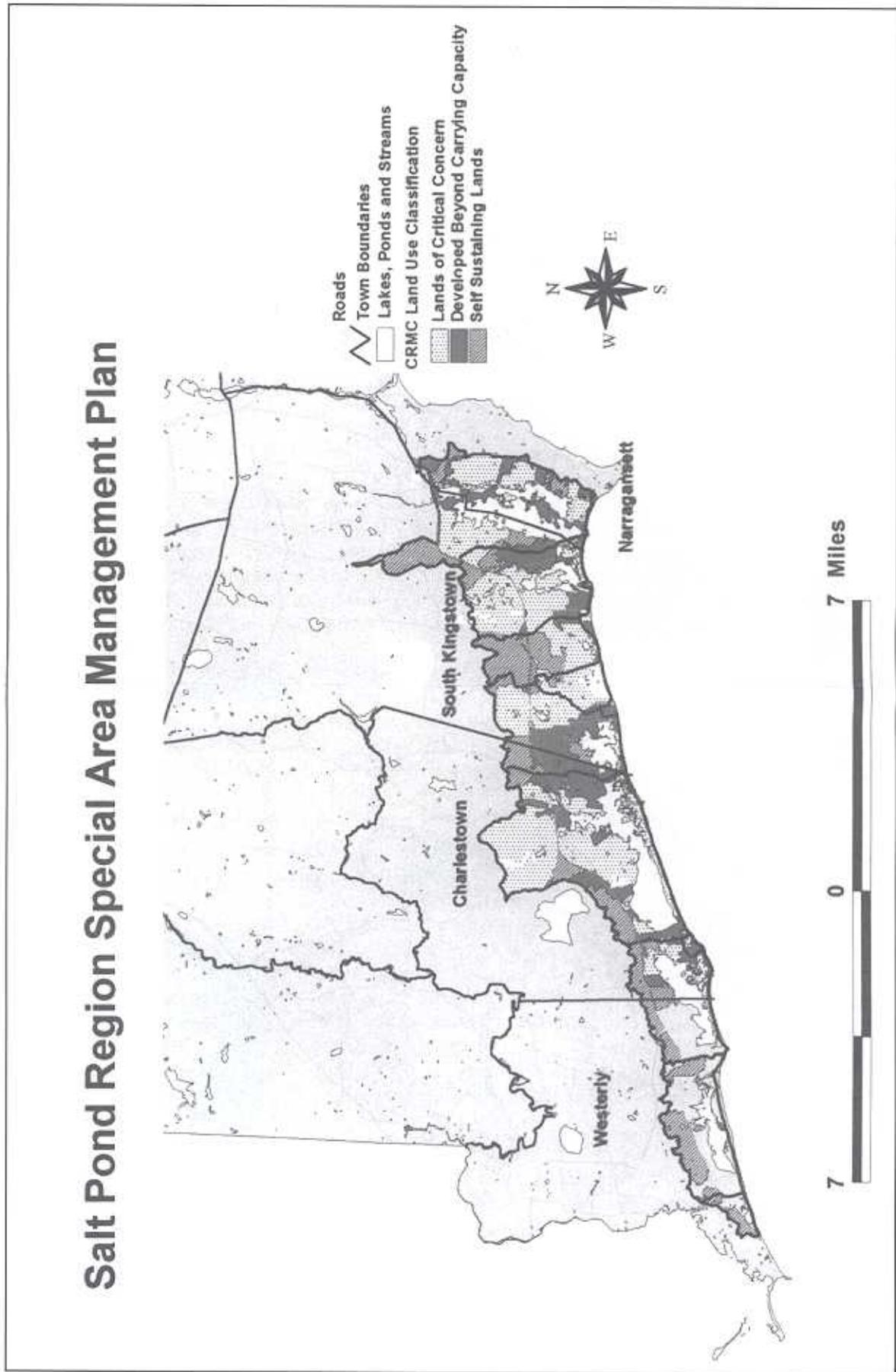
Coastal Features is a publication of the Rhode Island Coastal Resources Management Council. Its preparation was financed in part by a grant from the National Oceanic and Atmospheric Administration pursuant to the Coastal Zone Management Act, as amended. This issue of Coastal Features was edited by Kevin R. Cute. To comment on any article or to make address changes, write the CRMC at the Oliver Stedman Government Center, 4808 Tower Hill Road, Wakefield, RI 02879 or contact us on-line at [ricrmc@ricconnect.com](mailto:ricrmc@ricconnect.com).

## Nonpoint Source Pollution

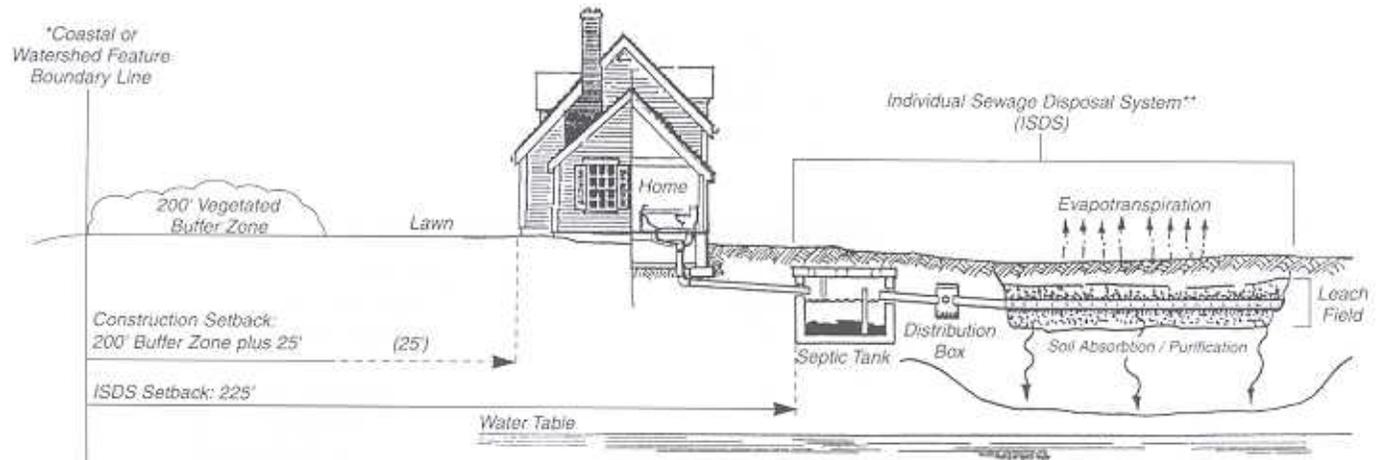
The pollution produced by the cumulative impacts discussed above is known as nonpoint source pollution. It is distinguished from point source pollution such as untreated sewage overflows that enter water bodies directly from a discrete point such as a drainage pipe. Nonpoint source pollution typically enters a water body through the various water transport pathways of its watershed. Fertilizers applied to farms, golf courses, lawns, and home gardens, can travel overland in stormwater, below the surface through groundwater, or via tributaries. Domestic pet waste can also travel by these routes. Even ISDS effluent, which typically moves through groundwater, can also travel along the surface in stormwater

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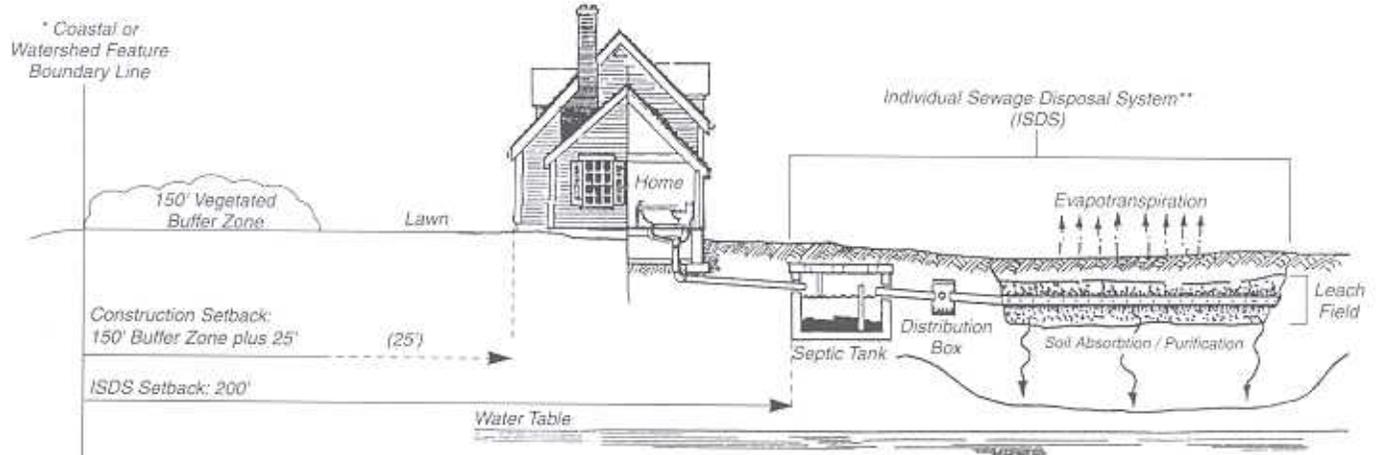
**Lands of Critical Concern: Not more than one residential unit per 120,000 square feet  
(not drawn to scale)**



- \* Coastal and Watershed features from which buffer zones, construction setbacks, and ISDS setbacks are measured include:
  - a) Narrow River SAMP: Narrow River, tributaries, tributary wetlands
  - b) Salt Pond Region SAMP: salt ponds, coastal wetlands, tributaries, tributary wetlands

\*\* ISDS consists of septic tank, distribution box, and leach field. ISDS setback is measured to the ISDS component that is closest to the coastal or watershed feature boundary line.

**Self Sustaining Lands: Not more than one residential unit per 80,000 square feet  
(not drawn to scale)**



- \* Coastal and Watershed features from which buffer zones, construction setbacks, and ISDS setbacks are measured include:
  - a) Narrow River SAMP: Narrow River, tributaries, tributary wetlands
  - b) Salt Pond Region SAMP: salt ponds, coastal wetlands, tributaries, tributary wetlands

\*\* ISDS consists of septic tank, distribution box, and leach field. ISDS setback is measured to the ISDS component that is closest to the coastal or watershed feature boundary line.

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when leach fields become saturated and the effluent percolates to the surface.

Nonpoint source pollution has severely impacted water quality in both the Narrow River and salt pond region. The entire Narrow River has been closed to shellfishing since 1994 when the concentration of coliform bacteria in the water exceeded the level safe for human consumption of shellfish. Nonpoint source pollution in the Narrow River is associated with ISDS, lawn fertilizers, domestic pets and atmospheric deposition. In the coastal pond region, the entirety of Green Hill Pond has been permanently closed to shellfishing since 1994, when coliform bacteria concentrations in the pond exceeded the level safe for human consumption. In 1996, this closure was extended into the eastern portions of Ninigret Pond where it connects to Green Hill Pond. In addition, Point Judith Pond is closed to shellfishing in the upper pond, in the vicinity of marinas, and at the Port of Galilee.

## Regulated Activities under the Narrow River and Salt Pond Region SAMPs

The Rhode Island Coastal Resources Management Program (RICRMP) should be referred to for specific regulatory requirements on buffers, setbacks, subdivisions, recreational docks, barrier beach development, beach replenishment and *any other activities which occur within the Narrow River or Salt Pond Region SAMP watersheds*. The RICRMP has four categories of applications: Findings of No Significant Impact (FONSI), Category A, B and A\*:

- FONSI may apply to certain construction and alteration activities within 200 feet of a coastal feature if such activities are found to pose little impact or threat to coastal resources. These activities are often associated with existing residential, commercial and/or industrial sites, or previously assented structures or activities. These associated structures or activities, depending on the extent of alteration and proximity to the coastal feature, may, on a case by case basis, and after preliminary review of the proposed activity or upon staff recommendation, be determined by the Council's Executive Director as having an insignificant threat to coastal resources
- Category A activities are routine matters and activities of construction and maintenance work that do not require review of the full Council if four criteria are met: buffer zone compliance, abutter agreement, and proper state and local certifications
- Category A\* applications are put out to public notice for the benefit of the abutters to the affected property and local and state officials
- Category B applications are also put out to public notice and are reviewed by the full Council; the applicant must prepare in writing an environmental assessment of the proposal that addresses all of the items listed in Section 300.1 of the RICRMP and any additional requirements for Category B applications listed for the activity in question

A Category A review may be permitted for A\* activities provided that the Executive Director of CRMC determines that all criteria within Section 110.1 A of the RICRMP and the relevant SAMP requirements and prerequisites are met. The proposed activity shall not significantly conflict with the existing uses and activities and must be considered to be a minor alteration with respect to potential impacts to the waterway, coastal feature, and areas within RICRMP jurisdiction. The following activities which occur within the Narrow River and Salt Pond Region SAMP watersheds require a CRMC assent (application approval):

- Activities within 200 feet of a coastal feature (see RICRMP for specific category; Category A, A\*, B)
- Watershed Activities (specific activities taking place within the SAMP watershed)
  - (i) New subdivisions of 6 units or more, or re-subdivision for a sum total of 6 units or more on the property proposed after March 11, 1990 irrespective of ownership of the property or the length of time between when units are proposed (Category B)
  - (ii) Facilities requiring or creating more than 40,000 square feet of total impervious surface (Category A\*/B)
  - (iii) Construction or extension of municipal, private (individual lots where CRMC has already approved a main sewer line are excepted), or industrial sewage facilities, conduits, or interceptors (excluding onsite sewage disposal systems outside the 200' zone). Any activity or facility which generates or is designed, installed, or operated as a single unit to treat more than 2,000 gallons per day, or any combination of systems owned or controlled by a common owner and having a total design capacity of 2,000 gallons per day (Category A\*/B)
  - (iv) All roadway construction and upgrading projects (Category A\*/B)
  - (v) Water distribution systems and supply line extensions (excluding private residential hook-ups to existing lines; Category A\*/B)
  - (vi) Development affecting freshwater wetlands (Category A/B)

## SAMP Requirements and the RI Coastal Resources Management Program (RICRMP)

The regulated activities and permit procedures listed above represent only some of the issues addressed by the Narrow River and Salt Pond Region SAMPs. Some activities require the submission of a Stormwater Management Plan, an Erosion and Sediment Control Plan, an Existing Conditions Site Map, and a Proposed Final Site Map. Variances and Special Exceptions are also part of SAMP. These and other permit procedures are addressed in the RICRMP, commonly known as the "Redbook." Whether planning or proposing an activity in the Narrow River or Salt Pond Region watersheds, always refer to chapter nine,

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"Regulations," of the appropriate SAMP, and refer to the Redbook for information on permit requirements. Copies of both SAMPs and the Redbook are available to the public at CRMC's Providence and Wakefield offices.

## Buffer Zones

This final section focuses on buffer zones. While land use classifications, setbacks, and nitrogen reducing technologies generally address water quality problems, buffer zones serve many purposes in addition to protecting water quality.

### *What is a buffer zone?*

Generally, a buffer zone is a naturally vegetated area that serves as a transition zone between different land and/or water uses. Under the RICRMP, **coastal** buffer zones are defined as, "a land area adjacent to a shoreline (coastal) feature that is, or will be, vegetated with native shoreline species and which acts as a natural transition zone between the coast and upland development." In the case of the SAMP watersheds, buffer zones also apply to inland watershed features such as tributaries and tributary wetlands. Buffer zones have been widely accepted as a method for minimizing the impacts of forestry and agriculture on adjacent waterbodies since the 1950's. More recently, buffer zones have been used as a tool for mitigating nonpoint source pollution impacts to waterbodies. Buffer zones also provide variety of additional benefits for protecting coastal areas.

### *What benefits do buffer zones provide?*

- **Water quality:** As noted, coastal and freshwater wetland buffer zones are a valuable tool for protecting water quality and mitigating nonpoint source pollution caused by a variety of land uses by trapping sediments and other pollutants as well as removing nutrients.
- **Habitat Protection:** Coastal and freshwater wetland buffer zones contribute to habitat (both plant and animal) by providing: increased species diversity; protection from predation; breeding and nesting sites; hibernation sites; foraging sites for resident and migratory species; and, protection for rare and endangered species.
- **Protection of Scenic and Aesthetic Quality:** One of the primary goals of the Council is to preserve, protect, and where possible restore the scenic value of the coastal region in order to retain the visual diversity and unique visual character of the coast as seen by hundreds of thousands of residents and tourists each year from boats, bridges, and such vantage points as roadways, public parks and public beaches (RICRMP Section 330). Further, by providing habitat for a diversity of wildlife and plants, the aesthetic value and appeal of the coastline is enhanced. Coastal and freshwater wetland buffers also preserve the natural character of the shoreline while mitigating the visual impacts of development. Since tourism is currently the state's second largest industry, by providing a visually attractive coastline, coastal buffer zones can contribute indirectly to the economic well-being of the state.
- **Flood Control:** Coastal and freshwater wetland buffer zones aid in flood control by reducing the velocity of runoff and encouraging filtration of precipitation and runoff into the ground rather than allowing runoff to flow over land and flood low lying areas. In addition, coastal buffer zones often are located in flood plain areas and therefore provide additional protection from coastal flooding.
- **Erosion Control:** Since buffers slow the velocity of runoff flow, as well as dissipate the flow and reduce channelized flow, they reduce the probability of problems associated with erosion downstream of buffer areas.
- **Protection of Historic and Archeological Resources:** In states like Rhode Island, where many early settlements were located along the shoreline, buffer zones can help protect potentially important cultural and archeological resources by preventing disturbance associated with development.

### *What is the difference between a buffer and a setback?*

Buffer zones differ from setbacks (see RICRMP section 140) in that the setback establishes a minimum distance between a shoreline or freshwater wetland feature and construction activities, while a buffer establishes a natural area adjacent to a shoreline or wetland feature that must be retained in, or restored to a natural vegetative condition.

### *When are buffer zones required by SAMP?*

Buffer zones are required for any new development adjacent to a coastal or freshwater wetland feature. This includes residential, commercial and industrial development as well as energy facilities and roads, bridges and highways. For existing residential development, the CRMC will require a buffer for activities requiring Category A and Category B reviews when: RIDEM requires modification or expansion of the existing septic system; the footprint of the structure, as of August 8, 1995, is expanded 50% or more; or, the structure is demolished and when rebuilt, is expanded or results in a change of use.

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