

CONSERVATION ELEMENT

6.0 INTRODUCTION

The purpose of the conservation element is to promote the conservation, use and protection of natural resources located within Vero Beach. It is intended to identify those resources which are worthy of protection and determine if existing conditions may be impacting the resource.

6.1 WATER RESOURCES

6.1.0 Surface Waters

The most significant water resources in Vero Beach are the Indian River Lagoon and the Atlantic Ocean (see Figure 6.1). There are no lakes. A major drainage canal, the Main Canal, runs through the City, carrying stormwater and surface runoff to the Indian River.

The Indian River Lagoon, from the southern limits of Vero Beach to Ft. Pierce, is designated as an Aquatic Preserve. However, none of the lagoon within Vero Beach is designated as aquatic reserve.

The existing conditions within the Indian River Lagoon are described in Section 5.3 of the Coastal Management Element. It is important to note here the quality and resource values of the Lagoon as they relate to conservation efforts. Because it is in an urban area, the Lagoon is subject to impacts from urban stormwater runoff. However, it is also subject to the impacts of runoff from the agricultural lands in the interior of the County. These two types of runoff are the major sources of water quality degradation in the Lagoon, and because of its shallow, narrow configuration with limited flushing characteristics, the Lagoon is vulnerable to nutrient eutrophication.

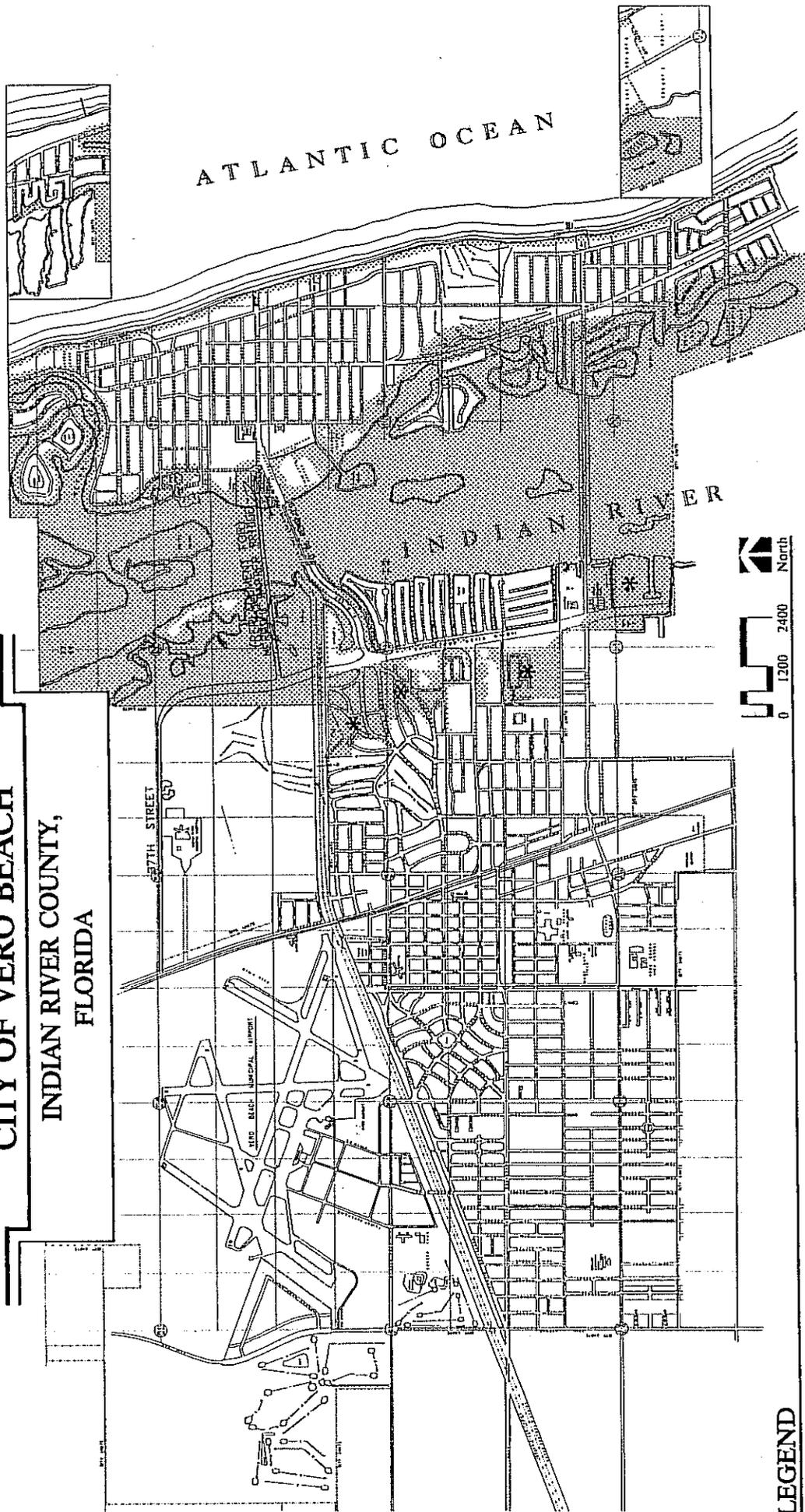
The Lagoon is an important recreational and commercial resource for the community. It is also a significant habitat area for fish and wildlife. As an aquatic preserve, it is accorded a high degree of protection, second only to drinking water supplies. The Lagoon must be managed and treated as a system by the entities which have jurisdiction relative to maintaining its quality.

Other surface water resources applicable to Vero Beach are the isolated wetlands that are associated with the Lagoon and those on the mainland (see Figure 5.2). Vestiges of the lagoonal wetland ecosystem remain on the western edge of the barrier island, the mainland shoreline and Fritz Island, Prang Island and the spoil islands. The quality of the wetlands has been compromised due to encroaching development. Those on the islands are more viable because they are isolated. The vegetation is generally dominated by exotics and only the shoreline fringes have native wetland vegetation (DNR, 1985, p. 42). Even under these conditions, the islands provide valuable habitat, especially for birds, and some for fish and wildlife. Indian River County has dedicated the spoil islands to recreation and waterbird roosting and nesting habitat.

6.1.1 Floodplains

The flood zone is defined as the area subject to flooding by hurricanes or storms on a statistical probability of at least once every 100 years (see Figure 6.1). The 100-year flood zone in the planning area was determined by using the Flood Insurance Rate Maps from the Federal Emergency Management Agency (December 15, 1982). Flooding within the 100-year flood zone may be caused by two types of action: waves along the Atlantic Ocean shoreline and rising water due to high tides or rainfall.

**CITY OF VERO BEACH
INDIAN RIVER COUNTY,
FLORIDA**



100 YEAR FLOOD ZONE

LEGEND

-  Areas of 100-year flood
-  * Includes areas of zone B - between 100-year and 500-year flood, see Flood Insurance Rate Map for detail

Figure 6.1

RS&H / PLANTEC

It is important to assure, through appropriate land use controls, that development in the 100-year floodplain does not jeopardize human life and welfare. The City of Vero Beach has adopted an ordinance pertaining to floodplain development. The intent of Chapter 73, "Flood Damage Prevention and Drainage" with respect to flood hazard areas is as follow:

- o Restrict or prohibit property uses which result in damaging increases in erosion hazards or which result in damaging increases in flood heights or velocities;
- o Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;
- o Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of floodwaters;
- o Control filling, grading, dredging, and other development which may increase erosion or flood damage; and,
- o Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards to other lands.

All new development in the 100-year flood zone should be protected by federal flood insurance and special building design features should be utilized. Public sewer should service all development in the flood zone. For buildings along the coastal flood zone, the CCCL protects property by prohibiting construction seaward of the line, unless specific criteria are met.

6.2 WILDLIFE INVENTORY

Urban development in Vero Beach has radically reduced the diversity of terrestrial and aquatic wildlife in and around the developed areas of the City. Although the U.S. Fish and Wildlife Service does not have a comprehensive list of wildlife species in the Vero Beach area, a listing of threatened and endangered species for Indian River County exists (see Table 6.1). A more detailed listing of wildlife species associated with the lagoonal system and barrier island is in Section 5.1.2.

The sand pine scrub community located at the municipal airport (see Section 6.3) supports a population of Florida scrub jays. These birds are a threatened species protected at the state and federal levels.

Table 6.1 Endangered Species in Indian River County

Common Name	Scientific Name	Status-FGFWFC	Status-USFWS
<u>Fishes</u>			
Common Snook	<i>Centropomus undecimalis</i>	SSC ¹	NL
<u>Reptiles</u>			
American alligator	<i>Alligator mississippiensis</i>	SSC	T(S/A)
Atlantic green turtle	<i>Chelonia mydas mydas</i>	E	E
Atlantic hawksbill turtle	<i>Eretmochelys imbricata imbricata</i>	E	E
Atlantic loggerhead turtle	<i>Caretta caretta caretta</i>	T	T
Atlantic ridley turtle	<i>Lepidochelys kempi</i>	E	E
Atlantic salt marsh water snake	<i>Nerodia fasciata taeniata</i>	T	T
Eastern indigo snake	<i>Drymarchon corais couperi</i>	T	T
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	SSC	UR ₂
Florida scrub lizard	<i>Sceloporus woodi</i>	--	UR ₂
Gopher frog	<i>Rana areolata</i>	SSC	UR ₂
Gopher tortoise	<i>Gopherus polyphemus</i>	SSC	NL
Leatherback turtle	<i>Dermochelys coriacea</i>	E	E
<u>Birds</u>			
American oystercatcher	<i>Haematopus palliatus</i>	SSC	NL
Arctic peregrine falcon	<i>Falco peregrinus tundrius</i>	E	T
Bald eagle	<i>Haliaeetus leucocephalus</i>	T	E
Brown pelican	<i>Pelecanus occidentalis</i>	SSC	NL
Burrowing owl	<i>Athene cunicularia</i>	SSC	NL
Florida scrub jay	<i>Aphelocoma coerulescens coerulescens</i>	T	UR ₁
Least tern	<i>Sterna antillarum</i>	T	NL
Little blue heron	<i>Egretta caerulea</i>	SSC	NL
Louisiana heron	<i>Egretta tricolor</i>	SSC	NL
Mangrove clapper rail	<i>Rallus longirostris insularum</i>	--	UR ₂
Migrant loggerhead shrike	<i>Lanius ludovicianus migrans</i>	--	UR ₂
Reddish egret	<i>Egretta rufescens</i>	SSC	UR ₂

Table 6.1 Endangered Species in Indian River County (Continued)

Common Name	Scientific Name	Status-FGFWFC	Status-USFWS
<u>Birds (Continued)</u>			
Roseate spoonbill	<i>Ajaia ajaja</i>	SSC	NL
Roseate tern	<i>Sterna dougallii</i>	--	UR ₁
Snowy egret	<i>Egretta thula</i>	SSC	NL
Southeastern kestrel	<i>Falco sparverius paulus</i>	T	UR ₂
Wood stork	<i>Mycteria americana</i>	E	E
<u>Mammals</u>			
Bobcat	<i>Lynx rufus</i>	NL	UR
Finback whale	<i>Balaenoptera physalus</i>	E	E
Florida mouse	<i>Peromyscus floridanus</i>	SSC	UR ₂
Humpback whale	<i>Megaptera novaeangliae</i>	E	E
Right whale	<i>Balaena glacialis</i>	E	E
River otter	<i>Lutra canadensis</i>	NL	UR
Sei whale	<i>Balaenoptera borealis</i>	E	E
Sperm whale	<i>Physeter catodon</i>	E	E
West Indian manatee	<i>Trichechus manatus latirostris</i>	E	E

E- Endangered; T- Threatened ; T(S/A)- Threatened due to similarity of appearance; SSC- Species of Special Concern; NL- Not Listed; UR₁- Under review for federal listing, with substantial evidence in existence indicating at least some degree of biological vulnerability and/or threat; UR₂- Under review for listing, but substantial evidence of biological vulnerability and/or threat is lacking.

Source: Florida Game and Freshwater Fish Commission, 1982 and 1988.

6.3 VEGETATIVE INVENTORY

As with the wildlife, the vegetative communities of Vero Beach have been severely impacted by urban development. The most prominent remaining community on the mainland is the pine flatwood which is dominated by the South Florida Slash Pine (Pinus elliotii). It is interspersed on the western edges of the City with small areas of pasture and citrus groves. The coastal vegetative communities are discussed in Section 5.1.0.

A sand pine scrub community is located on the municipal airport property (see Figure 6.2). This is considered an endangered upland habitat. The sand pine scrub is essentially a fire-maintained community found almost exclusively in Florida on well-drained and infertile sands of relict dunes, bars, and other marine or aeolian features. Typically, the vegetation is two- or three-layered, with a sand pine canopy (Pinus clausa), and an understory of scrubby oaks (Myrtle Oak, Quercus myrtifolia; Chapman's Oak, Quercus Chapmani; Sand Live Oak, Quercus virginiana var. germinata) and other shrubs (Rosemary, Certiola ericoides; Staggerbush, Lyonia mariana; Log-plum, Prunus umbellata; Prickly-Pear Cactus, Opuntia lumifusa), vines (Cat Greenbriar, Smilax glauca; Muscadine Grape, Vitus rotundifolia Michx), and other shrubs, vines and lichens. The ground cover is sparse with large open areas of sand often occurring (Florida Game and Fresh Water Fish commission, June 1988).

The only plant listed as endangered in Indian River County is Lakela's Mint (Dicercanda immaculata) which is so noted by the Fish and Wildlife Service (Personal Communication, November 9, 1987). Until an inventory is completed for Vero Beach, no accurate assessments can be made concerning the status of rare, threatened or endangered plant species which may be present in the City.

6.4 MINERALS

There are no known sources of commercially valuable minerals within Vero Beach.

6.5 AIR QUALITY

Vero Beach has no significant amounts of air pollution originating in, or being transported into the City. Indian River County is designated as an attainment area for all pollutants (George, 1987). The only data available for Vero Beach are for total suspended solids (dust) and sulfur dioxide (SO₂). No monitoring sites are located in or near Vero Beach that would provide data for other pollutants. The 1986 ALLSUM Report compiles statewide data to compare air quality in the state with the national ambient air quality standards. Three sites were sampled for TSS and two locations for SO₂. For TSS there are three different standards used and each standard has both federal and state guidelines. For SO₂, there are two different methods, each with federal and state guidelines. Table 6.2 compares Vero Beach data with federal and state standards. Vero Beach is at the low end of all the ranges.

The automobile is the primary source of air pollution in the planning area. Sources which may periodically affect air quality include building construction, open burning, concrete batch and block manufacturing facilities, boiler and incinerator facilities, odor producing industries and various service industries such as spray paint operations.

6.6 SOIL EROSION

According to the Soil Conservation Service in Indian River County, soil erosion is not a significant problem in the planning area. No agricultural activities exist within the City boundaries. Urban land uses typically promote erosion problems when sites are cleared for building and soils are not properly stabilized. The only serious areas of erosion are the beaches (see Section 5.4.0). Some erosion may occur along the river shoreline and drainage ditches but these are not extensive and have not been documented

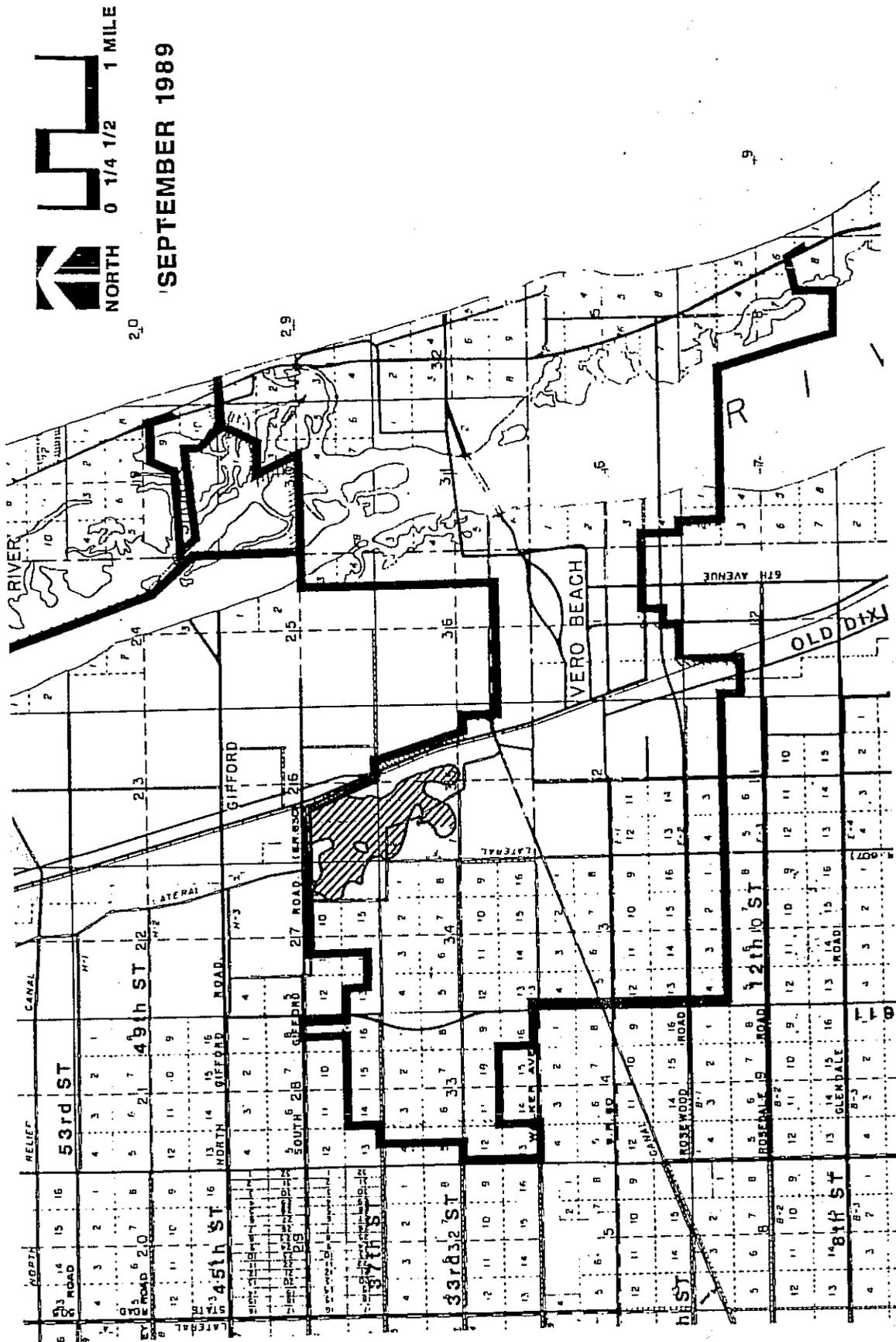
Table 6.2 Comparison of Vero Beach Air Quality Data with National and State Air Quality Standards

Sulfur Dioxide (SO ₂)				
Standard	Method			
	24-Hour*		Arithmetic* Mean	3-Hours*
	(1st)	(2nd)		
Federal	365		80	1,300
State	260		60	1,300
Vero Public Works	4	4	2	---
City Hall	4	3	2	---

* Units are in micrograms per cubic meter

Total Suspended Solids (TSS)			
Standard	Method		
	Geometric*		24-Hour*
	Mean		
Federal	Primary: 75 Secondary: 60		260 150
State	60		150
Vero Ranger Tower	28		72; 64; 58
Public Works	42		64; 44; 39
City Hall	37		40; 38; 36

*Units are in micrograms per cubic meter. Source: FDER, 1986.



SAND PINE SCRUB COMMUNITY

Figure 6.2

 Recommended Scrub Preserve

Source: Florida Game & Fresh Water Fish Commission

6.7 CONSERVATION, RECREATION AND COMMERCIAL USES OF NATURAL RESOURCES

The natural resources in the planning area which are used for recreational activities are the Indian River and the Atlantic Ocean. These are the most significant natural resources in the planning area and offer a variety of recreational activities for residents and visitors. Both resources are objects of continuing analysis, protection and management in order to maintain the quality of the resource. The Coastal Element provides more information concerning these two resources.

The intracoastal waterway which follows the Indian River through the study area is a major source of recreational and some commercial activities. Marinas associated with boating activities are the primary commercial use of the resource. The six marinas in the City offer a variety of services to boat owners who reside in the area as well as visitors who are traveling by boat on the Intracoastal Waterway.

Conservation areas are associated with the Indian River and beaches. Some wetlands on the Lagoon shorelines and others on spoil islands are designated as recreational open space and wildlife habitat areas. The portion of the Indian River which is an aquatic preserve is a conservation area and is given a highly protected status. Dunes along the beaches are not conservation areas but they are protected from intrusion and development.

6.8 POLLUTION PROBLEMS OF NATURAL RESOURCES

There are three known pollution problems in the planning area which are site specific and one which is more generalized. All the problems concern the water resources, both surface and groundwater.

Six of the City water wells (#15, 17, 18, 22, 23 and 24) at the airport wellfield are contaminated with trichloroethylene. These wells plus one other (#16), which is nearby, have been diverted from the water supply system. Another well (#28) is not being used because of nearby petroleum contamination.

The Department of Environmental Regulation has two Vero Beach locations on its "Site List" which summarizes hazardous waste sites (Summary Status Report, July 01 - December 31, 1986). The first site is the Piper Aircraft Corp. located at the Vero Airport. Activities at this site have contaminated the groundwater. Clean-up actions were initiated in 1983.

The second site on the "Site List" is the old abandoned stump dump. A City well was drilled in 1981 and in February 1985, contamination was suspected. Volatile organic carbons (VOCs) are suspected of being the contaminants. In September 1985, enforcement was initiated and remedial actions were started in October 1986. Currently, clean up actions are under way at all sites.

As discussed earlier in Section 5.3, there are problems with the quality of surface waters in the Main Canal. Agricultural and stormwater runoff comprise the majority of the Main Canal flow. This discharges into the Indian River and when combined with additional stormwater runoff, it impacts the water quality of the Lagoon. The City and Indian River County are involved in management plans to improve the water quality of the Lagoon.

6.9 DEVELOPMENT PRESSURES AND POTENTIAL FOR CONSERVATION, USE OR PROTECTION

Section 5.2.3 discusses the effects of future land uses on the natural resources in the coastal study area. The coastal area encompasses the Indian River Lagoon and the ocean system. Both of these resources are susceptible to the pressures and impacts of development. However, the fact that Vero Beach population projections show a very moderate increase in a City that is basically built out suggests that there will be little change in development pressure in the future. Facilities to promote the use of both resources are generally adequate to meet the demand. It becomes more an issue of better management and quality control of conditions which already exist than of controlling development increases.

6.10 CURRENT AND PROJECTED WATER NEEDS

6.10.0 Water Resources

The water supply for Vero Beach is a system of wells that tap into the shallow aquifer and deeper Floridan Aquifer. The existing system is described in Section 4.2.1.2, the Potable Water Subelement of the Utilities Element.

6.10.1 Current Demand

Current potable water demand in the study area is met by the City water system. The water treatment plant has a permitted capacity for a maximum daily flow of 12 MGD and an average daily flow of 7.5 MGD. During the first six months of 1988, the maximum daily flow was 9.30 MGD and the average daily flow was 8.13 MGD. This water system serves approximately 23,102 people at an average of 351 gallons/person/day.

There is no agricultural demand for water from the Vero Beach system. Irrigation water for residential uses is supplied by the potable supply or wells. Unless these wells are over six inches in diameter, they are not required to have a St. Johns River Water Management District permit.

According to the Vero Beach Planning Department and Water Department, there is only one industrial user in the City. This is Piper Aircraft at the airport. Based on actual meter readings from November 1986 through October 1987, the annual demand by Piper was 35,770,000 gallons. This averages to 99,300 gallons/day for the 12-month period.

6.10.2 Projected Demands

The projected demands and planned improvements for the City water system are outlined in Section 4.1.1.1. It has been noted that the per capita usage in Vero Beach is one of the highest in the water management district. Vero Beach has a conservation program in place to try and reduce this amount of water consumption. It is not expected that the demand by Piper Aircraft will increase appreciably.

6.11 GOALS, OBJECTIVES AND POLICIES

6.11.0 Goal: To conserve, protect and manage the natural resources of Vero Beach to ensure a high quality natural environment (balanced with the built environment).

6.11.0.0 Air Quality

Objective 1:

Air quality within Vero Beach shall meet or exceed the minimum air quality standards as adopted by the Florida Department of Environmental Regulation.

Policies:

- 1.1 Vero Beach shall cooperate with FDER and USEPA to enforce all standards and regulations pertaining to the maintenance of air quality standards.
- 1.2 As part of the Land Development Regulations, to be adopted September 1, 1990, the City shall set criteria based on type, location, design and density/intensity of development that will be used to determine whether the development will negatively impact City air quality standards.
- 1.3 Vero Beach should require all development projects which increase particulate matter disruptive to local populations to implement dust control techniques in accordance with regulatory standards.
- 1.4 The City shall reduce the potential for automobile emissions pollution by the following means:
 - 1.4.1 The City shall continue to enforce regulations for setback of buildings and outdoor activity areas from major traffic corridors and require green space buffers along street and parking areas to help filter, collect and absorb air pollutants.
 - 1.4.2 By September 1, 1990, the City shall adopt land development regulations such as new zoning designations for developments like multi-use centers that would reduce the need for automobiles.
 - 1.4.3 Promote alternative methods of transportation such as carpooling, bicycle and pedestrian paths by organizing car pools, constructing bicycle and pedestrian paths and requiring developers to provide for bicycle and pedestrian improvements.

6.11.0.1 Surface Water

Objective 2:

Surface water quality shall meet or exceed the minimum applicable standards as adopted by the Florida Department of Environmental Regulation.

Policies:

- 2.1 The City shall comply with EPA requirements for removal of wastewater treatment plant discharges into the Indian River Lagoon by implementing an effluent reuse system by 1995 which will be used for irrigation needs in the City.
- 2.2 The City shall adopt on or before September 1, 1990, land development regulations which would include performance standards for development which has the potential to negatively impact the surface waters within the City.
- 2.3 On or before September 1, 1990, land development regulations will be adopted that shall include, at a minimum, the following standards for development in and adjacent to Class III waters. These will be reviewed, and revised as necessary, upon adoption of the performance standards.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

Criteria:

- A. A shoreline protection buffer from the mean or ordinary high water line shall be established.
 - B. Within the shoreline protection buffer, no development shall be permitted
 - C. Shoreline alteration shall be prohibited unless necessary to prevent or repair erosion or provide access to the water. Such alteration shall not adversely impact water quality, natural habitat and adjacent shoreline uses.
 - D. No discharges below the ambient water quality shall be allowed.
- 2.4 The City shall adopt Land Development Regulations by September 1, 1990, which will prohibit any new point source discharges into the Indian River system.
- 2.5 New artificial canals connected to the Indian River Lagoon system are not permitted.
- 2.6 Septic tanks and drain fields shall be discouraged but in no case shall be closer than fifty (50) feet from the shorelines of the Indian River Lagoon for development that meets all locational criteria outlined in the Land Development Regulations (to be adopted September 1, 1990). In those cases where there is insufficient lot depth, the location of septic tank and drainfield shall be evaluated by the Planning Department during site plan review to determine if a variance will be granted.
- 2.7 The City shall adopt and implement a stormwater management program pursuant to the Drainage Subelement of this Plan.
- 2.8 Adopt Land Development Regulations on or before September 1, 1990, to regulate development of floodplains and stormwater management areas to prevent impairment of water storage and carrying functions.
- 2.9 Adopt Land Development Regulations on or before September 1, 1990, to develop and implement site stabilization requirements for construction sites to reduce the amount of erosion from disturbed soils.
- 2.10 The City shall promote the preservation and protection of the estuary system through education and management programs.
- 2.11 The City shall adopt, on or before September 1, 1990, Land Development Regulations which preserve the values and functions of the estuary system and balance those with private property rights.
- 2.12 The City shall implement a program by 1995 in use stormwater discharge in the drainage canals for irrigation supply.

6.11.0.2 Groundwater

Objective 3:

To conserve, appropriately use and protect the quality and quantity of groundwater in the City of Vero Beach for potable water supply uses and reduction of potential adverse impacts to the Indian River Lagoon.

Policies:

- 3.1 The City shall continue to coordinate with the St. Johns River Water Management District (SJRWMD) and the Florida Department of Environmental Protection (FDEP) to provide for wellhead protection areas consisting of a 500-foot radius from every public potable water production well. To protect the existing and future public water supply wells from contamination, new non-residential uses and activities shall be restricted within that wellhead protection area pursuant to Chapter 62-521, F.A.C.
- 3.2 The City shall ensure further protection of existing City-owned water production wells on private lands by acquiring by lease or easement a minimum of a 100-foot radius around each production well to protect public water supply wells from contamination.
- 3.3 By December 1, 2008, the City, shall adopt amendments to the Land Development Regulations to ensure that within the 500-foot radius of all wellhead protection areas of any existing or planned potable well that all non-residential applications for approval of new uses or change of use of properties be required to submit a detailed report of substances that may be stored, handled, produced or discharged at the proposed facility and certification that the non-residential use will be in compliance with this Plan and Chapter 62-521, F.A.C.
- 3.4 The City shall continue its programs for monitoring surficial aquifer quality and levels and, as necessary, evaluate the need to enact more stringent site development standards and controls for groundwater protection than provided for under Chapter 62-521, F.A.C.
- 3.5 The City shall protect the surficial aquifer from ground water quantity depletion by maintaining the quantity of recharge, in so far as possible, for the potable water wells on City-owned land. The City shall coordinate with the SJRWMD and FDEP before developing any public projects to assure that the aquifer recharge level is maintained if there are no alternatives to development.
- 3.6 The City shall adopt amendments to the Land Development Regulations to protect prime recharge areas for the surficial aquifer pursuant to Policy 21.3 of Chapter 4 of the Comprehensive Plan.
- 3.7 The City shall continue to cooperate with SJRWMD in locating and plugging any flowing artesian wells.
- 3.8 The City shall continue to implement the wastewater effluent reuse system for public and private properties.
- 3.9 The City shall coordinate with the SJRWMD and FDEP to develop a water wise landscaping outreach program for the residential community to encourage planting of drought tolerant species and shall continue to include requirements for drought tolerant species as a requirement of its landscaping and tree protection regulations.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

3.10 The City shall prepare and adopt an emergency water conservation program in accordance with the plans of the St. Johns River Water Management District

6.11.0.3 Wetlands

Objective 4:

To preserve and enhance the natural functions and values of wetlands in Vero Beach, a no-net-loss policy shall be instituted.

Policies:

4.1 Wetland policies of this plan and wetland regulations in the land development regulations shall include all wetlands, even those not specifically shown in the Wetlands Map in the Technical Addendum to this plan. Wetlands shall be as defined in Section 373.019, Florida Statutes, and delineated through the use of the unified State delineated methodology pursuant to Chapter 62-340, F.A.C., as may be amended by the Florida Statutes.

4.2 Wetlands in Vero Beach shall be classified as follows:

- Category I wetlands shall include mangroves, salt marsh, and other wetlands that have a hydrological connection to the Indian River Lagoon or other surface waters, any isolated wetland of 10 acres or larger, and/or wetlands providing habitat for threatened, endangered and species of special concern as identified by the U.S. Fish and Wildlife Service or the Florida Fish and Wildlife Conservation Commission.
- Category II wetlands shall include isolated wetlands that are less than 10 acres but larger than 5 acres in size and do not qualify as Category I.
- Category III wetlands shall include isolated wetlands of 5 acres or less in size that do not qualify as Category I or II.

4.3 A wetland buffer zone of native upland vegetation up to 50 feet in width shall be required and preserved adjacent to Category I and Category II wetlands to limit negative impacts on wetlands from new development.

4.4 A wetland buffer zone of native upland vegetation up to 50 feet in width shall be required and preserved adjacent to the Indian River Lagoon or natural surface waters connected to that water body. Parcels abutting man-made canals or developed parcels abutting the Indian River Lagoon are exempted from this policy, provided that:

- Any existing native upland vegetation adjacent to the mean high water line shall be maintained; and,
- Stormwater design standards of Policy 20.5 of Chapter 4 of this Plan shall apply.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

- 4.5 Development in Category I and Category II wetlands or wetland buffers shall be prohibited except for the following:
- Clearing and/or construction of walking trails.
 - Construction of elevated pile supported walkways, docks, piers and utility towers.
 - Clearing and construction of electric utility, storm water management, water or wastewater infrastructure, as needed, to provide public service and that does not permanently disrupt the natural functions of the wetland.
 - Bridges extending over wetlands that are required to provide automobile or pedestrian access to dwelling units located on upland areas of the same property for which there is no alternative means of access. Such bridges shall be elevated on pilings such that the natural movement of water, volume, rate and direction, are not altered. Bridges shall not be permitted to provide access to islands in the Indian River Lagoon.
 - No more than 1% of Category I and 15% of Category II wetlands may be impacted by permitted development unless it can be demonstrated that the project provides an overriding public benefit.
 - Mitigation shall be required to replace the habitat and functions performed by the wetland areas destroyed in conformance with the no-net-loss policy of the city.
- 4.6 Limited filling of Category III wetlands may be allowed, on a case by case basis, after review and approval by the City and the regulatory agencies; mitigation shall be required as a condition of approval to replace the wetland functions and provide habitat restoration.
- 4.7 All applications for development approval on properties containing wetlands shall be required to submit an environmental assessment, prepared by a professional, including a survey that identifies the distribution, classification and quality of the wetlands, a list of the native plants found in the survey, endangered species identified on site, a general description of the measures taken to minimize impacts to the wetlands and a site plan showing the boundary of all wetlands, wetland buffers, the extent, location and justification of any impacts to wetland areas and the location and extent of mitigation areas.
- 4.8 Any development approvals and activities shall comply with the requirements of all federal, state and regional agencies with jurisdiction over wetland alteration.
- 4.9 The City shall accept fee-in-lieu payments as an alternative of last resort for mitigation of wetlands alteration when on-site mitigation is not practicable. Fees paid shall be used for acquisition and restoration of wetlands in the City or in Indian River County.
- 4.10 Existing Comprehensive Land Use Map densities and intensities may be clustered out of the wetland areas of a development site onto the upland portion provided that all other requirements of this Plan and the Land Development Regulations are met.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

- 4.11 Category I and II wetlands of greater than 5 acres in size on properties proposed for Future Land Use Map amendments shall be designated Environmentally Significant and the density accrued to that classification shall be clustered on the upland portion of the site, if appropriate.
- 4.12 Wetlands that have been identified for preservation, constructed wetlands used for mitigation and buffer zones shall be placed under a conservation easement to ensure continuing protection and management.
- 4.13 By December 1, 2008, the City shall adopt amendments to its Land Development Regulations to implement the above policies for Objective 4.
- 4.14 The City shall establish in its Land Development Regulations specific vesting provisions for legally platted residential lots existing on (effective date of EAR-based Comprehensive Plan amendments) that allow for the development of at least one residential unit per platted plat, where the property owner may be deprived of all reasonable economic use by the application of the wetlands policies of the comprehensive plan. These vesting provisions shall:
- Allow the filling of up to 2 percent of wetlands or 5,000 square feet per lot, whichever is the lesser amount.
 - Allow the clustering of units and placement of fill to limit impacts on wetlands where adjoining lots may be combined.
 - Stipulate mitigation requirements for placement of fill as a condition of approval.
- 4.15 No platted lot shall be created that is unbuildable pursuant to the wetland policies of this comprehensive plan.

6.11.0. 4 Native Vegetation

Objective 5:

To conserve, appropriately use and protect native vegetative communities in Vero Beach by regulating land clearing and landscaping practices within the City.

Policies:

- 5.1 The City shall continue to implement and improve a Landscaping and Land clearing Ordinance.
- 5.2 The City shall develop a program to evaluate and protect remaining upland sand pine scrub areas within the City limits.
- 5.3 The City shall investigate development of a public educational-program in conjunction with state, regional and local agencies to promote the protection and preservation of sensitive environmental communities.
- 5.4 The City shall promote the use of native vegetation and require the removal of exotic species as specified in its ordinances in all new multifamily, commercial and industrial development.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

5.5 The City shall investigate creating a procedure to coordinate with adjacent local governments for the conservation, appropriate use and protection of unique vegetative communities located within more than one local jurisdiction.

6.11.0.5 Wildlife, Wildlife Habitat

Objective 6:

To protect endangered and threatened wildlife from adverse impacts due to loss of critical habitat.

Policies:

6.1 The City shall utilize information from Treasure Coast Regional Planning Council, Indian River County, the Florida Fish and Wildlife Conservation Commission, and other appropriate sources to identify critical habitat areas for endangered and threatened species.

6.2 By July 1, 2009, the City shall amend its Land Development Regulations to include a requirement that a critical habitat review be conducted at the pre-application stage of all projects requiring site plan or subdivision approval pursuant to the following criteria:

Criteria:

A. The Planning Department shall develop resource maps showing potential areas for critical wildlife habitat for threatened and endangered wildlife species.

B. The Planning Department shall develop use standards for the use of critical habitat. The City shall consult, as appropriate, the Florida Fish and Wildlife Conservation Commission (FFWCC) and the U.S. Fish and Wildlife Service in the development of these use standards.

C. This review shall be for each project greater than one (1) acre in size.

D. An environmental assessment shall be provided by project owner in areas identified as having potential as critical wildlife habitat for threatened endangered species.

E. If the endangered or threatened species is found on site or there is evidence that the species is on site, a management plan (including relocation, as appropriate) shall be developed by the project owner.

F. The management plan shall be approved by the Planning Department as part of site plan or subdivision approval.

6.3 The City shall develop standards for the use of critical habitat areas.

6.4 By 1993, the City shall develop a public educational program in conjunction with DNR and FFWCC to promote the protection and preservation of critical or sensitive environmental communities and threatened and endangered species of wildlife.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

- 6.5 On or before September 1, 1990, the City shall adopt Land Development Regulations to restrict unmitigated development and human encroachment in and around areas known to be potential habitat for endangered and threatened species of special concern.
- 6.6 The City shall fulfill the intent of the Recreation and Open Space Element and protect existing natural preservation areas as follows:
 - 6.6.1 Vero Beach should continue to protect against development of conservation areas, as identified in the Recreation and Open Space Element.
 - 6.6.2 The City of Vero Beach and the Vero Beach Power Squadron shall coordinate with the Marine Commission to develop a program, which shall address the following, at a minimum.

Criteria:

- A. Each marina operator shall maintain a permanent manatee educational display at a prominent location at their marina. Vero Beach shall establish and maintain a display at public boat launch facilities.
 - B. Those involved in the sale of boats and motors should provide manatee information to the buyer at the time of delivery of boats or motors.
 - C. Each marina operator shall maintain well-marked speed limit signs and Vero Beach shall do the same for public boat ramps.
 - D. Vero Beach, the Florida Marine Patrol and the Marine Commission shall develop a standardized information packet containing information regarding manatees and regulations protecting manatees for distribution by the above mentioned parties. This will include information concerning the existing manatee slow speed or idle zones, and any additional zones which may be deemed necessary within areas frequented by manatees.
 - E. Idle speed zone regulations shall be enforced by the Florida Marine Patrol, the Indian River County Sheriff's Department, and the Vero Beach Marine Patrol.
- 6.6.3 By September 1, 1990, Vero Beach shall adopt Land Development Regulations to enforce all state and federal regulations which pertain to endangered or threatened species and species of special concern.
 - 6.6.4 The City shall consult with the Florida Fish and Wildlife Conservation Commission and the U.S. Fish and Wildlife Service prior to the issuance of a development order that would result in an adverse impact to any endangered or threatened species or species of special concern.
 - 6.6.5 By 1993, the City shall develop an education program in conjunction with DNR and FFWCC to promote the preservation of endangered or threatened species and species of special concern.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

6.11.0.6 Hazardous Waste

Objective 7:

To participate in development of a regional hazardous waste management program for the proper storage, recycling, collection and disposal of hazardous waste.

Policies:

- 7.1 The City shall cooperate with the County to develop an emergency response plan to handle accidents involving hazardous wastes.
- 7.2 The City shall coordinate efforts with other local governments to designate recycling and collection centers or businesses.
- 7.3 The City shall promote educational programs for people working with hazardous wastes in order to properly inspect and identify wastes before they enter the landfill.

6.11.0.6 Soils

Objective 8:

Eliminate inappropriate land use practices which result in soil erosion.

Policies:

- 8.1 Vero Beach's adopted land clearing and landscaping regulations shall address revegetation and premature land clearing.

Criteria:

- A. Prior to any land clearing, the owner of the property proposed to be cleared, or the authorized agent, shall comply with all permitting requirements.
- B. Phased projects shall be cleared only in conjunction with construction of each phase. Clearing shall not occur more than 14 days prior to the initiation of site development as approved in the Development Order.
- C. Removal of trees or vegetation in conjunction with land surveying along property lines shall meet all permitting requirements.
- D. Areas cleared of vegetation should be revegetated with vegetation species listed and approved by the City, to prevent wind or water erosion, within sixty (60) days of initial land clearing activity where no approved landscape plan exists or no active Development Order has been issued.
- E. Single-family residential lots which are not on land designated environmentally significant of one acre or less in size, shall be exempt from the requirement of written notification to clear land, after the issuance of a Certificate of Occupancy for the single-family residential lot.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

F. Land clearing in conjunction with agricultural purposes or normal silviculture utilizing best management practices, or activities on a site, parcel or plat that is defined as having an agricultural or silvicultural purpose, and for which an active Development Order is not sought shall be exempt from the requirement of written notification to clear such land.

8.2 Where localized soil erosion is noted by the City Engineer, Code Enforcement or other City agency, the Indian River Soil and Water Conservation District.

6.11.0.8 Environmentally Sensitive Lands

Objective 9:

To designate environmentally sensitive lands for protection.

Policies:

9.1 By December 1, 2008, lands with environmentally significant natural resources within the City shall be inventoried and a map of these lands maintained within the City Planning and Development Department. The City's Land Development Regulations shall be amended by July 1, 2009, to include protection standards to maintain and enhance the function and value of identified environmentally sensitive lands. Environmentally sensitive lands shall include all lands identified by the City and those lands identified in the development review process herein. Review and evaluation of environmentally sensitive lands shall include, but are not necessarily limited to, the following:

- Endangered or threatened wildlife or marine life habitats.
- Threatened or endangered vegetative species.
- Seagrass beds.
- Wetlands.
- Prime Aquifer recharge.
- Beach and sand dunes.
- Upland native vegetation.

9.2 Properties annexed into the City with a Future Land Use Map designation of Conservation in Indian River County shall receive a Vero Beach Future Land Use Map designation of Environmentally Significant Lands or Conservation.

9.3 The Land Development Regulations shall be amended by December 1, 2008, to include the following development criteria for lands designated on the Future Land Use Map as Environmentally Significant lands:

- Site plan approval shall be required for any development proposal in the Environmentally Significant land use category.
- No fill or regrading of the property shall be allowed except to establish required road elevations and for driveways, unless the environmental assessment shows that fill or regrading will not adversely affect the environment and fill is available on site. Driveways shall not exceed road elevations.

Supplement 3; Adopted February 5, 2008; Ordinance #08-01.

- An environmental assessment shall be required to be prepared by a qualified professional. The assessment shall identify and address the extent, function and value of environmentally sensitive lands on the site proposed for development, including any rare, threatened or endangered plants and animals and their habitats. The environmental assessment shall be considered in the site plan review process.
- A minimum of 80% of the identified environmentally sensitive areas of the site shall be held in open space and landscaped with native and/or drought tolerant vegetation as outlined in the Landscape and Tree Protection Ordinance; except that open space requirements for wetlands shall be based on the criteria in Objective 4, Wetlands.
- Structures will be reviewed on a site-by-site basis. The location of any structure will be so as to minimize potential impacts on any surface or groundwater resources, wetlands and rare, threatened or endangered plants or animals and their habitats.
- Existing Future Land Use Map densities and intensities for Environmentally Sensitive designated lands may be clustered on the portion of the proposed development site that does not contain the environmentally sensitive lands provided that each lot is no smaller than the minimum lot size described below, and all other requirements of this Plan and LDRs are achieved.
- Minimum lot sizes will be two (2) acres with a reduction to one (1) acre on the mainland and five (5) acres with a reduction to one unit per two and one-half (2.5) acres on islands using Transfer Development Rights, provided that the lot size reduction does not create adverse environmental impacts and provided that the net density shall not be greater than 0.5 units per acre on the mainland and 0.2 units per acre on islands. Further, transfer of density from the mainland to an island shall not occur. All review criteria above will be applicable to sites where density is transferred.

6.12 REFERENCES CITED

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