

**Phase II  
Manatee Protection Plan  
for Volusia County**

**Boat Facility Siting Plan and Implementation**

**Approved**

**10/19/05**

### **III. B. BOAT FACILITY SITING PLAN**

#### **Purpose Statement**

Phase II of the Manatee Protection Plan for Volusia County is designed to minimize watercraft-related manatee mortalities by establishing requirements for siting, developing, revitalizing, or expanding boat facilities. The combination of these required elements will enhance manatee protection and boater safety. The required elements are designed to be additive to permit requirements such that subsequent boating activity will be less likely to affect manatees or their habitat in the affected areas. The approach is to fairly balance manatee protection, habitat conservation, and boating safety with commercial and recreational marine interests.

#### **B. 1. BACKGROUND**

In 1972, the Marine Mammal Protection Act prohibited any harassment or harm of manatees. The Endangered Species Act of 1973 increased federal protection of manatees and made it a violation to harass, harm, pursue, hunt, shoot, wound, kill, capture, or collect an endangered species. The Florida Manatee Sanctuary Act of 1978 declared the entire state as a refuge for manatees.

Because endangered manatees are slow moving aquatic mammals that must surface to breathe, they are vulnerable to watercraft mortalities and injuries. Often found resting near the surface or on the bottom of waterways, manatees also suffer from human impacts such as entrapment in outfall pipes, gates and locks, entanglement in ropes and nets, and ingestion of fishing line or debris. Chemical, trash and waste pollution are also threats to manatees. Loss of warm water refuges due to the possible closure of power plants and reduced flows in natural warm water springs due to human usage are other potential threats. In addition to human related injuries, manatees face a host of other environmental threats such as infectious diseases, perinatal mortality, cold stress, and natural catastrophes (such as red tide poisoning).

Manatees have been known to populate certain regions of Florida and as the threats to their survival mounted, federal, state, and local protections increased. In 1989, the State listed Volusia County as one of the 13 counties key to manatee survival. Therefore, the County developed a plan to address boat speed limits and set speed zones.

During the 1990's, the County was awarded a grant to conduct a boating activity study. The study inventoried all marine facilities including boat ramps, marinas, dry storage, and private docks. In addition, the study analyzed boater access, destinations, habits, and vessels. The study has been used as supporting documentation for the Manatee Protection Plan for Volusia County (MPP) and portions of the study were updated in 2001. (See Attachment N.)

Between 1996 and 1999, Volusia County drafted a comprehensive Manatee Protection Plan. However, in order to accommodate lengthy comments from the State, stakeholder groups, and the public, staff divided the MPP into phases. Phase I deals with manatee/human interaction, habitat inventory, habitat protection, education, research and governmental coordination. It was designed to address current impacts to manatees, increase manatee conservation through discrete projects, public awareness initiatives and agency coordination, with the goal of achieving an optimal sustainable manatee population. In September 2000, County Council approved Phase I of the Volusia County MPP. It was subsequently approved by the Florida Fish and Wildlife Conservation Commission (FWC) in February of 2001.

Phase II, the Boat Facility Siting Plan, aims to minimize future watercraft-related injuries to manatees. Phase II sets out to influence boat facility siting and boating behavior such that appropriate dock density, speed zone management, and increased manatee protection will be achieved. It is designed to be compatible with local policies and ordinances while addressing manatee concerns.

In setting policies to safeguard manatees and their habitats, Phase II will also have the effects of increasing boater safety, facilitating recreation planning, and protecting estuarine habitat critical to many species. This plan is aimed at reducing manatee mortality. However, equally important is the protection of habitat to ensure the long-term viability of the species in balance with the economic and recreational needs of Volusia County residents.

Boat facilities have a significant economic, cultural, and ecological impact on Volusia County's waterways. To manage this impact, requirements for the placement, or siting of these facilities is crucial. Volusia County and affected cities already have criteria in place that must be met for new or expanding marine facilities. These criteria include land development codes, comprehensive plans, and zoning regulations. Additional criteria are found in: Manatee Sanctuary Regulations, Aquatic Preserve Management Plans, and State and Federal Land Management Plans.

Under the Boat Facility Siting Plan, marine facilities within the jurisdiction of this document are required to adhere to the above authorities, any other federal, state, and local management plans and rules, as well as the requirements listed below. All state and federally owned land will be subject to their respective agency's policies.

## **B. 2. INTRODUCTION**

Phase II of the Manatee Protection Plan for Volusia County (MPP) is the Boat Facility Siting Plan. This plan is designed to decrease the potential for watercraft to collide with manatees and minimize indirect impacts of marine facilities on

manatee populations. The plan will provide direction to those wishing to expand or construct new marine facilities, result in additional enforcement of existing manatee speed zones, promote human safety, and decrease threats to manatees.

In this document, a boat facility is a public or private structure or operation where boats are moored and/or launched, including commercial, recreational, industrial and residential marinas, dry storage, boat ramps, trailer parking, and private docks. For the purposes of this plan, "boat facility" shall be synonymous with "marine facility." The term "new or expanding boat facility" shall include operations that are revitalizing, refurbishing, or otherwise renovating an existing facility. All legal and properly permitted existing boating facilities shall be allowed to continue with the existing use but may not increase in the number of wet or dry slips (or the number of trailer parking spaces for boat ramps), unless the facility meets all the provisions of the Manatee Protection Plan for Volusia County.

According to *Schedule K*, Manatee Protection Plan Guidelines of the Governor and Cabinet's October 1989 Policy Directive, one of the objectives of a boat facility siting plan is to, "determine appropriate dock densities for particular areas." (See *also* Chapter 370.12(2)(t)(1) Florida Statutes.) Appropriate dock density should be achieved by incorporating a number of factors and approaches into boat facility siting plans. Phase II of the Manatee Protection Plan does this by incorporating funding for increased on-the-water law enforcement of manatee speed zones, area-specific slip to shoreline ratios established by a criteria-based evaluation of the manatee data and manatee habitat by the state and federal agencies, and specific siting criteria (including depth conditions, water quality specifications, best management practices, zoning/land use policies, among others). These factors, utilized together will result in dock density and boater operation that is appropriate to Volusia County.

In addition, Volusia County Environmental Management (VCEM) will actively pursue grant funding from various sources for the purpose of manatee awareness and education initiatives. In recent years, VCEM has received funding through the Volusia County General Fund, Florida Fish and Wildlife Conservation Commission's Advisory Council on Environmental Education, the Ponce de Leon Inlet and Port District, and the Florida Department of Environmental Protection's Bureau of Emergency Response, for such educational projects. Currently, grant requests have been submitted to various entities for both educational initiatives and for enhancement of law enforcement.

Both phases of the Manatee Protection Plan will require regular updating. Updates to the information in both MPP phases and any necessary minor revisions shall be made every 5 years and conducted in coordination with comprehensive plan revisions, if possible. Periodic changes will be made to attachments as new local, state, or federal policy is created. Annual Reports will also be generated, and will include an update for new or expanding marinas and

the number of slips approved. Other updates will involve the inclusion of new data regarding manatee mortality and abundance.

### **B. 3. BOAT FACILITY SITING**

Under the Volusia County Comprehensive Plan (VCCP) the County in coordination with the Florida Fish and Wildlife Conservation Commission (FWC) shall protect manatees and reduce the number of boat-related manatee mortalities by: enforcing boat speeds and water sport activities; utilizing the most current boat facilities permitting standards relating to manatee protection; monitoring manatee signs; protecting manatee habitat; and disseminating educational materials about manatees and boating safety at boat launch and marina facilities. (Chapter 12, Section 12.2.4. VCCP) (See Attachment C for data used to generate boat facility siting requirements.)

Following the specific requirements for marinas and ramps, the state and federal agencies will evaluate the project based on the provisions set forth in Section B.4. This evaluation will determine appropriate dock densities by geographic location based on an evaluation of manatee data and important manatee habitat features.

#### **B. 3. A. Jurisdiction**

Phase II of the Manatee Protection Plan applies to unincorporated Volusia County. Cities and municipalities within the County have three options that relate to boat facility siting. Cities may adopt Phase II provisions as written, referred to as the “as is” option, adopt a city specific refinement to Phase II’s provisions referred to as the “slip aggregation” option, or take no action.

If a city takes no action, the State may choose not to issue permits for new or expanding marine facilities within that jurisdiction. (See Cabinet Meeting Transcript, July 25, 2000.) If a city wishes to adopt its own plan or adopt city-specific provisions for the implementation of the MPP, the city should submit the plan to state and federal authorities for approval. Once approved, the city’s plan or city-specific provisions would be included into the Manatee Protection Plan for Volusia County as part of Attachment S, the Urban Supplement.

Those cities and municipalities that decide to adopt the Manatee Protection Plan and those cities that decide to create their own plan or that have city-specific provisions will, upon state and federal approval, be requested to sign a memorandum of understanding that outlines the City’s and County’s duties and responsibilities. This agreement would then be incorporated into the Manatee Protection Plan, along with their city’s plan or city-specific provisions under Attachment S.

### **B. 3. B. Speed Zones and Enforcement**

The FWC and the United States Fish and Wildlife Service (USFWS) have adopted manatee protection speed zones in Volusia County. Because watercraft-related mortality is the number one cause of human-related manatee deaths, and in accordance with USFWS guidance, Phase II of the MPP for Volusia County integrates the idea that manatee mortality due to watercraft collisions can be reduced through increased manatee speed zone enforcement. (See Final Interim Strategy on Section 7 Consultations under the Endangered Species Act for Watercraft Access Projects in Florida that may Indirectly Affect the Florida Manatee, U.S. Fish and Wildlife Service, August 13, 2001, p. 1.)

Studies have shown that law enforcement presence increases boater compliance within manatee speed zones (Gorzelany, J. 1996, 1998, 2001 and Shapiro, S, 2001). The enforcement study component of Shapiro's 2001, *Assessing Boater Compliance with Manatee Speed Zones in Florida*, concludes:

...the presence of law enforcement negated any dependence of compliance on any variables. When law enforcement was present, compliance significantly increased, and both forms of non-compliance [blatant and technical] significantly decreased. We recorded up to 89% compliance [New Smyrna] in the presence of law enforcement. Studies of roadway vehicle traffic have also found significant increases in compliance (and decreases in traffic speed) in the presence of law enforcement. They determined that stationary, marked patrol vehicles had the greatest effect.

Therefore, Volusia County believes that an increased presence of on-the-water speed zone enforcement is one of the most effective means to improve overall adult manatee survival rates. However, all protective strategies including habitat protection, proper marine facility placement, pollution control, and education programs should be utilized. In fact, the Florida Manatee Recovery Plan states that, "priority actions in manatee conservation and protection include boater education, enforcement, maintenance of signs and buoys, compliance assessment, and periodic re-evaluation of the effectiveness of the rules." (U.S. Fish and Wildlife Service. 2001. *Florida Manatee Recovery Plan*, (*Trichechus manatus latirostris*), Third Revision, U.S. Fish and Wildlife Service. Atlanta, Georgia. p. 34.)

The Volusia County Sheriff's Marine Unit has an exemplary record for enforcement of manatee speed zones and other manatee related laws. They have 4 dedicated on-the-water officers and 1 supervisor. The Sheriff's Marine Unit also has 8 boats, 5 of which are actively used for patrols. In 2004, they logged over 1,856 hours underway; issued 478 boating citations, 819 traffic citations, and gave out 829 warnings. They also recorded 105 misdemeanor arrests and 3 felony arrests. The marine unit also conducted 338 directed patrols.

The U.S. Fish and Wildlife Service also gave them special recognition in 2002, awarding both the Unit and an individual officer the “Manatee Protection Award of Appreciation.” The Marine Unit has consistently endeavored to provide manatee education to boaters on Volusia County waterways.

Additionally, some cities have pooled their resources and formed a marine patrol unit that includes approximately 20 police officers from New Smyrna Beach, Port Orange and Ponce Inlet. They will be utilizing a 21 foot boat for their on-water enforcement of speed zones and can respond to distress calls on the entire length of the river. Additionally, the City of Edgewater has one personal watercraft and a 16 foot, radar mounted patrol boat that may be used for on-the-water enforcement.

During the period of May 2004-March 2005, the FWC’s Division of Law Enforcement recorded that 1444 of 4637 vessels observed in Volusia County were in non-compliance. They issued 411 citations. Two FWC marine units, composed of up to 5 officers each, operate within Volusia County and surrounding areas. These officers dedicate at least 50% of their time to conducting on-water patrols.

Clearly, law enforcement presence is a critical factor in increasing boater compliance with manatee speed zones and subsequently decreasing boat related manatee mortality.

In order to further the protection of manatees within Volusia County, the USFWS established part of the eastern coastline of Volusia County as a Manatee Protection Area. These areas contain manatee speed zones intended to regulate boat speeds at appropriate levels in order to reduce the likelihood of manatee mortality from boat strikes.

Also, under this designation, four previously identified recreation (water sports) areas were eliminated. A section of the Tomoka River east of the I-95 bridge that had been used for skiing was re-designated as a seasonal slow speed zone. The northernmost water sports area in the Halifax River, formerly located along the southeast side of the Seabreeze Bridge in Daytona Beach, was eliminated totally, as was the recreation area located along the northwest side of the Dunlawton Bridge in Port Orange. A designated ski area located along the eastern shoreline of the Halifax River between the Ponce de Leon Inlet and the north causeway in New Smyrna Beach was also eliminated.

### **B. 3. C. Project Inconsistency with MPP Provisions**

Applications for new or expanding facilities in areas that are limited in powerboat density by the boat facility siting plan can request review for additional powerboat slips on an individual basis. However, full consultation with both Federal and

State wildlife agencies will be required, including section 7 consultations by the USFWS. A determination of whether an application should be approved will depend on a case-by-case review of the manatee data, existing manatee protections and the adequacy of manatee protections in relation to current and future development. The location and the activity must be approved by the FWC, the USFWS, the County, and municipality (if applicable) based on a finding that the facility will not have an adverse effect on manatees and that any offsetting measures must represent the same level of protection as what was required under the MPP recommendation.

#### **B. 4. BOAT FACILITY SITING SPECIFIC REQUIREMENTS**

New or expanding marine facilities shall meet all of the following requirements. Further, all new or expanding boat facilities must provide documentation to Volusia County Environmental Management (VCEM) describing how each site will satisfy these criteria. (See Attachment R.) Once it has been established that a prospective site meets the requirements in this section and in B.4.A through B.4.G, the site will be evaluated using the state and federal evaluation process specified in B.4.H. to determine appropriate dock density for the site. In addition:

1. The provisions of this plan shall not preempt or nullify any other more restrictive federal, state, or local regulations that apply.
2. For the purpose of the Manatee Protection Plan for Volusia County, existing boat facilities shall be defined as those facilities which have received all active and required permits and are legally authorized, constructed and in operation as of the effective date of this plan. All legally existing boat facilities shall be allowed to continue with the existing use, and may renovate according to permitting guidelines, provided there is no change in facility size, including no increase in the number of wet or dry slips, unless the facility meets the expansion criteria as provided in the Manatee Protection Plan for Volusia County.
3. The marine facility applicant must provide copies of the site plan, building permit (from either Volusia County or a city within the county) and the mitigation fees as required under section B.4.A., to VCEM's Manatee Protection Program, and must provide all required documents, including a letter of compliance from VCEM to the relevant permitting agencies.

Current elements of the Volusia County Comprehensive Plan (VCCP), relating to boat facility siting and manatees are included in this plan by reference, although some specific comprehensive plan policies are identified in this section to provide clear guidance for the appropriate siting of new marinas or the expansion of existing marinas. Any changes to the VCCP will be reflected in future attachments and the MPP shall be amended accordingly.

1. A priority shall be placed on the development of boat slip capacity at or south of Ponce DeLeon Inlet. (VCCP, Coastal Management Element, Policy 11.6.4.1; Recreation and Open Space Element, Policy 13.1.3.8)
2. Marinas shall be encouraged to include both wet slip and dry slip capacity. (VCCP, Coastal Management Element, Policy 11.6.4.2; Recreation and Open Space Element, Policy 13.1.3.9)
3. New or expanded marina facilities shall utilize dry storage to the fullest extent possible in addition to wet slips. (VCCP, Coastal Management Element, Policy 11.2.3.5)
4. Marinas shall be located in areas where the least amount of dredging and maintenance are required and where aquatic resources (seagrass, oyster bar, freshwater submerged vegetation, etc.) shall not be adversely affected. (VCCP, Coastal Management Element, Policy 11.2.3.3 (A))
5. Designated natural resource areas, significant environmental or ecological features, critical wildlife habitat, environmental system corridors or conservation areas shall be protected through a variety of mechanisms including buffer zones, restoration, limiting density and intensity, conservation easements, acquisition, density transfers, transfer of development rights (TDRs), purchase of development rights or land exchanges. (VCCP, Coastal Management Element, Policy 11.2.1.3)

Boat launching facilities greatly contribute to the number of boats entering Volusia County waters. These ramps shall meet the Specific Requirements, as well as other requirements specific to boat ramps as follows:

1. When feasible and when consistent with other manatee protection considerations, boat ramps should be sited to minimize the travel time to popular locations in order to reduce the impact to manatees from boating travel.
2. The expansion of existing publicly owned boat ramps should be considered before the development of new publicly owned boat ramps. (VCCP, Coastal Management Element, Policy 11.6.3.6)
3. The proposed boat ramp sites shall be compatible with existing land use and zoning regulations.

4. In conjunction with the Coastal Cities and the Ponce DeLeon Port Authority, provide for 1 ramp lane for every 7,500 residents of the County. (VCCP, Coastal Management Element, Objective 11.6.3)
5. Construction of future boat ramps shall include parking spaces of sufficient size and number to accommodate both trailer and towing vehicles. (VCCP, Coastal Management Element, Policy 11.6.3.1)
6. Future boat ramps shall, to the extent possible, be equitably distributed across the coastal area. (VCCP, Coastal Management Element, Policy 11.8.8.1)
7. Priority for new boat launching facilities should be in the area of Ponce Inlet. (VCCP, Coastal Management Element, Policy 11.6.3.4)
8. The Ponce DeLeon Port Authority (in coordination with the coastal cities or the County, as appropriate) shall provide new boat ramp facilities, where needed (VCCP, Coastal Management Element, Policy 11.6.3.5)

#### **B. 4. A. Manatee Conservation Fund**

In order to achieve an optimal sustainable manatee population in the context of a growing county, additional enforcement must be provided. Therefore, Phase II of the Manatee Protection Plan will provide additional funding for increased on-the-water enforcement through the collection of mitigation fees.

All applicants with new or expanding boat facilities must pay a one-time mitigation fee for each new or expanded: boat slip, ramp parking space, and/or dry storage space. The fee(s) shall be due and payable in full to the County of Volusia at the time of application. These fees shall be paid into a dedicated, interest bearing account named the Manatee Conservation Fund. This fund will be administered by the County of Volusia Manatee Protection Program. The Manatee Conservation Fund will provide funding for increased enforcement of manatee speed zones by marine law enforcement units, additional equipment for on-the-water law enforcement efforts, and manatee conservation and education programs. The County may also award grants to participating cities for the same types of program expenditures.

This funding also can provide high tech resources for marine units such as, but not limited to laser speed guns and hand held computers, enabling officers to track date, time, and location of citations and better document speed zone violations.

In addition to mitigation fees, other sources of revenue such as fines, penalties, donations, grants, or other contributions may be accepted for use in the Manatee

Conservation Fund. The first \$500,000 collected by the fund may be used in its entirety for enforcement, manatee conservation, and/or educational purposes. Thereafter, the County of Volusia will only utilize/disburse the interest accrued on the fund account.

In the event that manatees are delisted by the state and federal governments as protected species, the principle may be utilized by the County of Volusia for aquatic habitat conservation efforts, if the state and federal governments determine that law enforcement and education are adequate for the protection of the species.

All boat facilities (with the exception of docks for single family residences) will pay a one-time mitigation fee of \$1000 per wet slip, ramp parking space, or dry storage space. Single family boat docks (see definition) will pay a one-time mitigation fee of \$250. The Volusia County Council reserves the right to raise any future mitigation fee amounts as it sees fit. Various factors including watercraft-related manatee mortality may necessitate changes in mitigation fees. However, for the first five years of the plan, the mitigation fees and planning zone descriptions shall remain fixed.

All new or expanding boat facilities must submit the appropriate mitigation fee and documentation of compliance with the provisions of B.4. Boat Facility Siting Specific Requirements (See also Attachment R) to the County of Volusia. Upon successful remittance of the fee, the County of Volusia will issue a letter of compliance to the applicant, who may then submit this letter to any state or federal permitting agency as proof of compliance with this portion of the Manatee Protection Plan for Volusia County. A letter of compliance from the County of Volusia does not obligate permitting agencies to issue a permit.

Manatee Conservation Fund grants shall be awarded by the County of Volusia's Manatee Protection Program on an annual basis, according to criteria developed in cooperation with the Volusia County Sheriff and cities. These entities may be eligible to receive funding under this grant program.

#### **B. 4. B. Water Depth**

1. Water depth at the proposed mooring area of the site shall be at least four (4) feet mean low water (FDEP 62-312-430 (5), FAC, Permitting requirements for Marinas.)
2. Marina basins shall be located where there is an existing basin and access channel and adequate depths to accommodate the proposed use. A minimum of four feet below mean low water shall be required. (VCCP, Coastal Management Element, Policy 11.2.3.3(E))

3. The applicant shall affirmatively demonstrate that adequate depths exist for ingress and egress of boats to the mooring site, and in no case shall the depth of the access area be less than the minimum depths necessary to avoid damage to a seagrass bed community. (FDEP 62-312 -430 (6) FAC, Permitting requirements for Marinas.) The access area of the facility shall include all docks, access walkways, finger piers, mooring areas, turning basins, and ingress and egress pathways.

4. Existing water depth at the site must be adequate for the proposed vessel use such that there will be a minimum of one foot clearance between the deepest draft of the vessel (including engine) and the bottom of the waterbody at mean low water. (Chapter 18-20.004(5)(d)(1), Florida Aquatic Preserves, FAC.)

#### **B. 4. C. Water Quality**

1. All new and expanded marinas must provide treatment of stormwater runoff from upland areas to the extent necessary to ensure that State Water Quality Standards are met at the point of discharge to Waters of the State. In addition, all requirements for the Water Management Districts and the Florida Department of Environmental Protection shall be met. An environmental resource permit may be required from the above agencies for new stormwater systems or modified systems. (Title XXVIII, Part IV, Chapter 373, Florida Statutes.)

2. Boat maintenance activities in new or expanded marina sites shall be located as far as possible from open water bodies in order to reduce contamination of water bodies by toxic substances common to boat maintenance. Runoff from boat maintenance activities must be collected and treated prior to discharge.

3. National Pollution Discharge Elimination System industrial stormwater permits are required for marinas and boatyards that conduct boatyard activities over land that ultimately discharge to surface waters. These permits must be obtained from the United States Environmental Protection Agency and require that the facility use Best Management Practices and prepare a pollution prevention plan. (Title 40 Code of Federal Regulations Part 122.26)

4. No overboard discharges of trash, human or animal waste, or fuel shall occur from any structures. (FDEP 62-312.080 (7) (b) FAC, Standards for Issuance or Denial of a Permit.)

5. Facilities shall be designed to maximize or improve water circulation patterns and shall not adversely affect existing circulation patterns. (VCCP, Coastal Management Element, Policy 11.2.3.3 (F))

6. Any buffer zones established by Dept. of Agriculture's Shellfish Environmental Assessment Section shall be maintained and where necessary, enhanced or expanded (VCCP, Coastal Management Element, Policy 11.2.3.3 (G))

7. Marinas shall not be permitted in areas where approved or conditionally approved shellfish harvesting would be severely impacted and/or sections closed to shellfish harvesting. (VCCP, Coastal Management Element, Policy 11.2.3.3 (H))

8. Prior to the operation of any new marina fueling facility or expansion of an existing facility, fuel management/spill contingency issues shall be coordinated with the State. (VCCP, Coastal Management Element, Policy 11.2.3.3 (J))

9. Sewer pump-out service and facilities shall be available and accessible to all new boat slips constructed or renovated, inside marinas. (VCCP, Coastal Management Element, Policy 11.2.3.3 (K))

#### **B. 4. D. Dredging**

1. All dredged material shall be contained on an upland site.

2. Dredging shall not be permitted in or connected to Class II waters, OFW's, Aquatic Preserves, areas that contain ten percent (10%) seagrass or more, and conditionally approved shellfish harvesting waters unless the activity is a federal navigation project, in the best public interest, or is approved maintenance dredging of existing public or private navigational channels, or where dredging may improve water quality by removing accumulated silt or improving circulation, or for maintenance of existing structures and utility crossings.

3. The creation of new navigation canals or expansion (widening and/or deepening) of existing ditches, drainage right-of-ways, drainage easements and stormwater facilities connected to the Halifax River or Mosquito Lagoon to accommodate boat traffic shall be prohibited unless it is in the public's best interest and does not adversely impact water quality or natural habitat, or unless the activity is an approved maintenance dredging on existing public navigational channels and public canals, or an existing marina's maintenance dredging.

4. New and maintenance dredging projects on the Halifax and Indian Rivers, and their tributaries, should be performed during the period of November 15 through March 15, when feasible, to minimize potential impacts to manatees. Other dredging windows may be deemed appropriate on a project-by-project basis using the best available manatee data. Specific dredging windows will be recommended for inclusion at the state and federal permitting levels.

5. Aquatic resources such as seagrass, oyster bar, freshwater submerged vegetation, etc shall not be adversely affected. (See Volusia County Comprehensive Plan 11.2.3.3. A.)

6. The marina areas and navigation access channels shall not be dredged to depths greater than necessary to prevent prop dredging. (VCCP, Coastal Management Element, Policy 11.2.3.3 (D))

7. All dredging activities must be done with effective turbidity controls. Where turbidity screens or similar devices are used, they should be secured and regularly monitored to avoid manatee entrapment.

8. Dredging in areas of abundant seagrasses will be prohibited. (See Section B.4.E.)

#### **B. 4. E. Seagrass or Native Submerged Aquatic Vegetation (NSAV)**

According to fixed transect studies of seagrasses in the Indian River Lagoon, the major species occupying the northern portion of the lagoon, and that portion that lies within Volusia County, are: shoal grass (*Halodule wrightii*), manatee grass (*Syringodium filiforme*), widgeon grass (*Ruppia maritima*), and star grass (*Halophila engelmanni*.) (Seagrasses: Monitoring, Ecology, Physiology, and Management, Stephen A. Bortone ed., CRC Press 1999).

However, this does not imply that other seagrasses may not be present, and efforts should be made to protect all native submerged aquatic vegetation, including freshwater species, critical to manatee survival. If a proposed new facility or expansion of an existing facility will impact NSAV then the following provisions apply.

1. Any boat facility development or expansion plans must demonstrate no negative impacts to Native Submerged Aquatic Vegetation. NSAV species shall include, but not be limited to the following: shoal grass (*Halodule wrightii*), paddle grass (*Halophila decipiens*), star grass (*Halophila engelmanni*), sago pondweed (*Potamogeton pectinatus*), clasping-leaved pondweed (*Potamogeton perfoliatus*), widgeon grass (*Ruppia maritima*), manatee grass (*Syringodium filiforme*), turtle grass (*Thalassia testinudum*), tapegrass (*Vallisneria americana*), and horned pondweed (*Zannichellia palustris*.) (See Attachment L for seagrass coverage on the Halifax and Indian Rivers.)

2. Covered boat slips, covered walkways, covered terminal platforms or the boat mooring location shall not be located over submerged aquatic grass beds. However, the access walkway portion of the pier may traverse these resources provided it is elevated a minimum of five feet above mean high water or ordinary high water, contains handrails that are maintained in such a manner as to prevent use of the access walkways for boat mooring or access, and does not exceed a width of six feet, or a width of four feet in Aquatic Preserves. (FDEP 62-341.427 (2) (a) FAC General Permit for Piers and Associated Structures.)

3. Any wood planking used to construct the walkway surface of a facility shall be no more than eight inches wide and spaced no less than one-half inch apart after shrinkage. An alternative to wood planking would be the use of grating. Walkway surfaces constructed of material other than wood shall be designed to provide light penetration, which meets or exceeds the light penetration provided by wood construction. (Chapter 18-20.004 (5) (a) (4) Florida Aquatic Preserves, FAC.)

#### **B. 4. F. Best Management Practices for Marinas**

Below is a list of best management practices for marinas, some of which may be required as part of the State and/or Federal permit review processes:

1. In reviewing applications for new or expanded docking facilities, ways to improve, mitigate or restore adverse environmental impacts caused by previous activities shall be explored. This may include, *but not be limited to*, shallowing dredged areas, restoring wetland or submerged vegetation, or marking navigation channels. Such mitigation or restoration may be required as a condition of approval for new, renewed, or expanded facilities. (FDEP 62-312.330 FAC.)

2. Implement and maintain a manatee public awareness program which will include the posting of signs to advise boat users that manatees are an endangered species which frequent the waters of the region's estuaries and lagoons and which would also show the number to report an injured manatee (1-888-404-FWCC). In any areas with known manatee concentrations, manatee awareness signs or informational displays shall be specified as part of a wetland resource or environmental resource permit for the facility. (Chapter 18-20.004 (5)(d)(8) Florida Aquatic Preserves, FAC.)

3. Dock designs should not entrap manatees or otherwise prevent them from accessing forage areas.

4. Marine facilities should locate in previously disturbed areas and in areas that have historically been used for marine related activities.

5. Use of upland dry storage shall take precedence over the creation of new wet slips. (Chapter 18-20.004 (5)(d)(6), Florida Aquatic Preserves, FAC.)

6. Marinas shall not be sited within state designated manatee sanctuaries. (Chapter 18-20.004 (5)(d)(7), Florida Aquatic Preserves, FAC.)

7. Existing and new marinas are encouraged to obtain the Clean Marina designation. (Contact FDEP for more information.)

8. All construction activities shall adhere to FWC's Standard Manatee

Construction Conditions (Dated 2005).

9. To reduce the risk of entrapment and drowning of manatees, grates or bars shall be installed over pipes or culverts on site that are accessible to manatees and 8-inches or greater, but smaller than eight feet in diameter. Bars no more than 8-inches apart shall be placed on the accessible end(s) to restrict manatee access. Pipes or culverts accessible to manatees that are longer than 200 feet and are connected to water bodies may also require grating.

#### **B. 4. G. Zoning and Land Use Policies**

The Department of Community Affairs has designated two areas in Volusia County as Waterfronts Florida, Oak Hill and Daytona Beach. Since 1997, only 13 such communities have been awarded this designation and received the technical and financial assistance associated with this program. The Waterfronts Florida Partnership Program helps communities revitalize and renew interest in their waterfront district.

The program promotes environmental resource protection, public access, retention of viable traditional economies, and hazard mitigation. Oak Hill has had a tradition of being a fishing community, which was economically tied to a working waterfront. The City of Daytona Beach's downtown waterfront district has primarily been oriented towards a water-based recreational activity economy, with related commercial interests.

The following specific zoning and land use policies are also applicable to the MPP for Volusia County.

1. Proposed development sites shall be compatible with existing land use and zoning regulations. Marine facilities shall only be located in those areas that are zoned for their respective use.
2. Residential marinas will not be allowed to have boat slips that exceed the number of multi-family units that are approved and/or constructed.
3. Any alteration of native shoreline vegetation must comply with existing regulations as stated in the Volusia County Land Development Code, Article XI. (Wetland Alteration Permits.)

#### **B. 4. H. State and Federal Permitting Evaluation for projects in Volusia County**

The provisions of this plan shall not preempt or nullify any other more restrictive federal, state, or local rules, regulations, or requirements that apply. The boat facility siting guidance below applies to the unincorporated county (and within

cities that have adopted resolutions in support of the MPP) and shall not supersede more restrictive federal, state, local or municipal regulations. Any entity intending to develop or renovate a marina or boat ramp within a municipality's boundaries must consult that municipality's comprehensive plan and land development regulations. It is the applicant's responsibility to obtain all the necessary permits prior to construction, and compliance with the provisions of this plan does not imply approval of other permitting requirements.

Once it has been determined that the project satisfies all of the above-mentioned requirements and regulations found in the earlier sub-sections of B.4, the state and federal regulatory agencies will review new boat facility projects in Coastal Volusia County and determine appropriate dock densities as follows:

#### **B. 4. H. 1. Halifax River/Indian River (Coastal) Portion**

The boat facility siting approach for the Coastal portion of Volusia County is described below. In Coastal Volusia County, there are two boat facility siting options available for determining the allocation of future wet/dry slips or boat ramp trailer parking spaces. The first option is to accept the boat facility siting plan for Coastal Volusia County, referred to as the "as is" option. The second option is to create a "slip pool" to allow for powerboat slips to be aggregated at specific parcels within a local government's jurisdiction rather than evenly distributed, referred to as the "slip aggregation" option. For both options, riparian rights for single family residential uses would be maintained.

##### **"As Is" Option**

For those locations within unincorporated areas and city jurisdictions that have chosen the "as is" option of the plan, the following applies.

##### **Section 1:**

**Description:** Protected Areas. Generally prohibited for boat facility development that includes powerboats at facilities.

**Allows for:** Canoe/kayak launches (and facilities catering to non-motorized vessels). Exceptions may be considered on a case-by-case basis. In no case shall these exceptions allow powerboat-to-shoreline densities exceeding 1 powerboat or boat trailer parking space per 100 feet of shoreline.

**Locations:** Tomoka River and Basin including the areas within the Tomoka State Park and all tributaries of the Tomoka River (Strickland, Dodson, and Thompson Creeks), Spruce Creek and Turnbull Bay (all waters west of the US1 Bridge), Smyrna Dunes Park, Canaveral National Seashore (CNS), and Merritt

Island National Wildlife Refuge(MINWR). Please refer to the accompanying set of maps (See Map Series 1, Attachment H) for geographic locations.

**Section 2:**

**Description:** One powerboat slip per 100 feet of shoreline.

**Allows for:** Recommendations for powerboats in these areas would be at a density of 1 powerboat or boat trailer parking space per 100 feet of shoreline.

**Locations:** Southern section of Bulow Creek, Halifax Creek and the Northern Halifax River (Flagler County line south to just north of the Granada Bridge in Ormond Beach), Mosquito Lagoon generally from the northern boundary of the Mosquito Lagoon Aquatic Preserve south to the Volusia/Brevard County line (unless within the boundaries of CNS and MINWR already covered under Section 1 description). Please refer to the accompanying set of maps (See Map Series 1, Attachment H) for geographic locations.

**Section 3:**

**Description:** All other areas not in Sections 1, 2, or 4 are subject to the criteria-based evaluation. Limiting Habitat Feature points are added together, and Offsetting Feature points are subtracted to determine a project’s final score.

| Limiting Habitat Features                |  | Criteria   | Points   |
|--|--|--|----------|
| Manatee Abundance                        | July 2002-June 2004 aerial survey dataset  | 5 or more manatees observed within 5 mile radius   | 2 points |
| Manatee Mortality: 1 <sup>st</sup> level | January 1974-December 2004 (Data to be updated when next full year is available) | Number of watercraft mortalities within a 5 mile radius divided by the total number of watercraft-related deaths in Coastal Volusia County ( $\geq 0.125$ is significant)  | 1 point  |
| Manatee Mortality: 2 <sup>nd</sup> level | January 1974-December 2004 (Data to be updated when next full year is available) | Number of watercraft-related deaths within a 5 mile radius in the last 10 full years divided by the total number of watercraft-related deaths in Coastal Volusia County in the last 10 full years ( $\geq 0.125$ is significant) | 1 point  |
| Submerged Aquatic Vegetation             |  | 5% or more SAV on the project site is significant  | 1 point  |
| Class II, OFW, or Aquatic Preserves      |  | Projects located in Class II, OFW, or within an Aquatic Preserve   | 1 point  |
| Offsetting Features                      |  | Criteria   | Points   |
| Speed Zones                              |  | Site is located within a year-round “Slow Speed” or “Idle Speed” Zone  | 1 point  |
| Within 3 miles of Ponce Inlet            |  | The site is located within a 3-mile radius of Ponce Inlet  | 1 point  |

**Allows For:** The total score (Limiting Features minus the Offsetting Features) is then utilized in the following table to determine a final powerboat slip (or boat trailer parking space) to shoreline ratio for the proposed project.

| Manatee Habitat Feature Score | Existing | New   |
|-------------------------------|----------|-------|
| -1                            | 5:100    | 4:100 |
| 0                             | 5:100    | 4:100 |
| 1                             | 5:100    | 4:100 |
| 2                             | 3:100    | 2:100 |
| 3                             | 2:100    | 1:100 |
| 4                             | 1:100    | 1:100 |
| 5                             | 1:100    | 1:100 |
| 6                             | 1:100    | 1:100 |

**Locations:** Please refer to the accompanying set of maps (See Map Series 1, Attachment H) for geographic locations.

**Section 4:**

**Description:** Preferred (No slip to shoreline ratios applied)

**Allows for:** No powerboat or boat trailer parking space per 100 feet of shoreline ratios will be applied to proposed boat facility development in this preferred area.

**Locations:** The area of New Smyrna Beach between the North Causeway and the A1A Causeway and the two creek/canal systems on the west side of the Intracoastal Waterway that are immediately north of the North Causeway. Please refer to the accompanying set of maps (See Map Series 1, Attachment H) for geographic locations.

**“Slip Aggregation” Option**

In the coastal portion of the county for those locations within city jurisdictions that have chosen the “slip aggregation” option of the plan, the following refinement of the boat facility siting criteria applies. This option essentially creates a level of service for the number of powerboat slips in the municipality.

In order to establish this level of service, each city has counted the shoreline within their jurisdiction, with the exception of mosquito ditching, non-navigable waters and small single-family-type canal systems. Based on the “as is” siting plan described above, the number of slips that would be allowed within the city

limits was calculated. If the city's jurisdiction fell within more than one category, the allowable shoreline ratio for the applicable length of shoreline was counted. The existing number of slips (including single-family docks, single-family lots that could have a dock, marinas, and boat ramp trailer parking spaces) were then calculated as the number of slips "existing", and deducted from the total. The remaining number of slips is referred to as the "slip pool", or the number of available powerboat slips that may be considered for a specific project above what the "as is" option provides.

Each city pursuing the slip aggregation option shall adopt a resolution of support for the MPP and, within 1 year, execute a memorandum of understanding (MOU) with Volusia County specifying the city's and county's specific responsibilities under the city's plan. Additional city-specific information regarding future powerboat allocations and other pertinent information should also be submitted to VCEM and FWC when amending their local comprehensive plan. Each city's resolution to support the MPP, MOU, and amended comprehensive plan language will be incorporated in Attachment S of this document.

The state and federal agencies will review permits for Ormond Beach, Daytona Beach Shores, the Town of Ponce Inlet, Oak Hill, and the unincorporated county using the "as is" option (See Attachment S).

Permits for boat facilities in the cities of Holly Hill, Daytona Beach, South Daytona, Port Orange, and Edgewater will be reviewed using the "slip aggregation" option, because at the time of this writing, these were the only cities to formally request the "slip aggregation" option (See Attachment S). Local governments choosing the "as is" option may subsequently elect the aggregation option if they comply with all the provisions of that option and obtain approval for such election by the FWC.

In order to track the allocation of powerboat slips within a given slip pool, any facility requesting use of these powerboat slips must obtain a letter from the applicable city manager stating the project name, location, and the number of powerboat slips requested. A copy of this letter must be provided to the FWC, the Service, and the County when an application is submitted for review. In the annual report, the County will provide a summary of the various slip allocations, and a running total of the remaining, available slips per city.

In the event a parcel of land is further subdivided, (such as single-family replatted to a higher density, etc.), all additional available single-family lots (or docks, if not counted in original determination) shall be deducted from the available slip pool.

#### **B. 4. H. 2. St. Johns River Portion**

Due to the complexity of the lower St. Johns River, the following boat facility siting recommendations shall apply to all of Volusia County along the St. Johns River and affected portions of Putnam, Marion, Lake, and Seminole Counties. These recommendations were formulated in this manner after an investigation of manatee use, manatee watercraft-related deaths, existing boat facilities, boater destinations, conservation land boundaries, and conversations with some conservation land managers. The boat facility siting approach for the St. Johns River portion of Volusia County is described below. In all instances, riparian rights for single family residential uses would be maintained.

### **Section A:**

**Description:** Protected Areas. Generally prohibited for future boat facility development that includes powerboats at facilities.

**Allows for:** Canoe/kayak launches (and facilities catering to non-motorized vessels). Exceptions may be considered on a case-by-case basis. In no case shall these exceptions allow powerboat-to-shoreline densities exceeding 1 powerboat or trailer parking space per 100 feet of shoreline.

**Locations:** The general area from the northern boundary of Lake Dexter south to Coxetter's Bend including, but not limited to, the waters of the St. Johns River immediately adjacent to the Blue Spring Run, the Lake Woodruff National Wildlife Refuge, the DeLeon Springs State Recreation Area, the Hontoon Dead River, Hontoon Island State Park, Blue Spring State Park, and the rest of the waterbodies south of Blue Spring to Coxetter's Bend (including the portion of the Lower Wekiva River State Park). Please refer to the accompanying set of maps (See Map Series 2, Attachment I) for geographic locations.

### **Section B:**

**Description: Intermediate Areas**

**Allows for:** Recommendations for powerboats for publicly owned lands (which encompass large extents of shoreline) in these areas would be at a density of 1 powerboat or trailer parking space per 100 feet of shoreline. For any privately-owned parcels located in this designation, powerboat-to-shoreline or trailer parking space to shoreline densities shall not exceed 3:100.

**Locations:** All waters and adjacent waterfront of the Ocala National Forest, the western shore of Lake George, the Lake George Conservation Area and the Nine Mile Point Conservation Area (and all shoreline between these conservation areas), Lake George State Forest, Holiday Haven parcel, the area from the junction of the SJR with Lake George (known as Zinder Point) south to Lake Dexter, the area from Coxetter's Bend south to just north of the US 17/92 Bridge, Gemini Springs County Park, and the Lake Monroe Conservation Area, unless

the project is not already covered in Sections A or C. Please refer to the accompanying set of maps (See Map Series 2, Attachment I) for geographic locations.

### **Section C:**

#### **Description: Case-by-Case Review**

**Allows for:** Proposed projects will be subjected to a coordinated case-by-case review of the manatee death data, manatee telemetry data, boating traffic patterns, primary boater destinations in the vicinity of the project, and potential impacts to manatee habitat or other environmentally sensitive lands. This review will involve Volusia County staff, the FWC, and the USFWS.

**Locations:** The area south and east of the SR 415 Bridge extending to the Brevard County line. Please refer to the accompanying set of maps (See Map Series 2, Attachment I) for geographic locations.

### **Section D:**

#### **Description: Maximum of five powerboat slips or boat ramp trailer parking spaces per 100 feet of shoreline**

**Allows for:** Powerboat (or boat ramp trailer parking spaces)-to-shoreline ratios up to 5:100 may be applied to proposed boat facility development in the preferred areas.

**Locations:** All boat facilities in areas that are not in Section A, B, or C are eligible (See Map Series 2). Please refer to the accompanying set of maps (See Map Series 2, Attachment I) for geographic locations.

### **B. 4. I. Existing Florida Department of Environmental Protection and Federal Regulatory Requirements for Marinas. (See Attachment B.)**

### **B. 5 PLANNING ZONE DESCRIPTIONS**

The following area specific descriptions provide general natural resource, waterfront development, and boating traffic-related information for each zone. They also provide specific information on existing marinas and boat ramps, boating trends, manatee mortality, relative manatee abundance, and any unique characteristics that may be present in that zone.

For planning purposes, the county has been divided into 15 planning zones. There are seven zones on the Halifax and Indian Rivers, inclusive of all

tributaries. There are eight zones on the St. Johns River, which also include lakes and tributaries. Increased law enforcement, siting restrictions, and development conditions will work together, in an attempt to reduce risks to manatees in Volusia County.

### **B. 5. A. Halifax, Indian Rivers and Tributaries (H/IR)**

(See Attachment D for Maps)

#### **ZONE 1 – Tomoka River to just north of the confluence of Strickland Creek and Tributaries**

The waters in this zone are described as freshwater at the source of the river (west of I-95), becoming brackish as the river winds eastward, and eventually becoming a saltwater system as it approaches the Tomoka Basin and the Halifax River.

The Tomoka River is an important water body within the zone and has been designated as an Outstanding Florida Waterway (OFW) along with all of its tributaries. From its natural headwaters to the west, it flows generally north and easterly until its confluence with the Halifax River estuary at the Tomoka Basin. Upstream are four natural tributaries, Priest Branch, the Little Tomoka River, Groover Branch and Misner's Branch. To the east are three other tributaries, Thompson Creek, Dodson and Strickland Creeks, which along with the Tomoka River have been designated the Tomoka River Manatee Sanctuary.

This zone also falls within the boundaries of the Tomoka Marsh Aquatic Preserve and it encompasses the Tomoka River from the headwaters of the Tomoka Basin to US Highway 1. The water depth of the Tomoka River is 3 to 4 feet, Dodson and Thompson Creeks are shallower, at 1 to 3 feet. Strickland Creek, a manmade waterway, is 20 feet deep. This zone also contains part of the Tomoka State Park. The length of river from the park to the I-95 bridge is approximately 5 miles.

Tomoka State Park consists of over 1773.35 acres. All waters within the park have been designated as Outstanding Florida Waters (OFW) and surface waters within the park are also classified as Class III waters (See Attachment A Definitions) by DEP. The OFW protection of the estuarine reaches of the lower Tomoka River and tidewater tributaries in Tomoka State Park (Strickland Creek and Thompson Creek) was expanded to include all of the upper Tomoka River and major freshwater tributaries, from US1 in Ormond Beach to I-4 in Daytona Beach, by designation as *Special Waters OFW* (See Attachment A Definitions) in 1991, F.A.C 17-302.700(9)(i). In 1989 the state legislature amended Chapter 370 F.S. to include the Tomoka River (upstream to State Road 40) under the Florida Manatee Sanctuary Act. The tributaries including Strickland Creek, Thompson Creek, and Dodson Creek are now also within Tomoka State Park.

Habitats within the park include several types of flatwoods and hammocks, mixed forests, depression marshes and estuarine tidal swamp as well as ruderal areas that were dredged and filled at one time. The extensive waterways and tidal wetlands of Tomoka State Park provide habitat for a variety of state-listed species of wading birds, as well as the wood stork, bald eagle and peregrine falcon. Other listed species include the gopher tortoise, Eastern indigo snake, American alligator, Atlantic salt marsh snake as well as the Florida manatee.

Manatees inhabit the Tomoka River during the spring and summer months; generally from late March through October; although individuals have been observed by the park biologist in December and February. U.S. Fish and Wildlife Service aerial surveys (12/3/85-1/13/87), Florida Department of Natural Resources aerial surveys (3/11/91 to 11/30/93), Florida Fish and Wildlife Conservation Commission surveys (7/10/02 to 6/24/04), and park shoreline surveys have documented manatees feeding, resting, and mating in the Tomoka River. The sanctuary is particularly recognized, however, as calving and nursing habitat. Both manatee biologists and local shoreline residents commonly observe female-calf pairs in the main river and tributary canals.

The primary boating activities in this zone are recreational fishing, cruising, skiing, and canoeing. The City of Ormond Beach has banned personal watercraft and airboats in this area, except for those people who live on the river.

The reader is directed to the Tomoka Marsh Aquatic Preserve Management Plan, the Tomoka State Park Management Plan, and the City of Ormond Beach's Development Code for complete regulations regarding boat facilities within this zone.

### **Marinas**

There is only one marina in this zone; the Tomoka Boat Club. This is a small boat marina catering to Class A and Class 1 boats (See Attachment A Definitions.) All boats in this facility are powerboats. There are no residential marinas in this zone.

### **Boat Ramps**

In this zone, there are three (3) public boat ramps with four (4) lanes and one (1) private homeowners' association ramp with one (1) lane.

Based upon the boat study and local knowledge, the only ramp with any type of activity (limited) is the Sanchez Park ramp located on Strickland Creek.

Please refer to the corresponding Zone 1 map and the Boating Activity Study update for marina and ramp names and details. (See Attachments D and N)

**ZONE 2** – Halifax River and Tomoka Basin from the Volusia/Flagler County line to Red ICW Marker 22 (just north of the Holly Hill/City of Daytona Beach city limits line.)

This zone contains part of the Tomoka Marsh Aquatic Preserve. The waterway in this zone consists of the Halifax River, which is a long, wide, shallow estuarine water body; the Tomoka Basin, which is 376 acres of shallow estuarine bay; and several small creeks, the most significant one being Bulow Creek. The Halifax River narrows toward the northern county boundary and becomes Halifax Creek with the ICW following this course. The headwaters of Bulow Creek are to the west and it meanders, for the most part parallel and to the west of the Intracoastal Waterway (ICW), with its confluence with the Halifax River being just south of the Flagler/Volusia county line.

The maximum water depth in Bulow Creek is 8 feet although the average depth is much shallower. Water depths throughout most of the basin are 3 feet or less. Depending upon the tide, there are however several deep holes, particularly at the point of the Tomoka State Park. Water depths in the ICW, which is part of the Halifax River, are maintained at ten feet, although the portion of the ICW through the Aquatic Preserve is approximately 3.7 feet. The waters outside the ICW are relatively shallow.

The waterfront land in the cities of Ormond Beach and Holly Hill is built out with single-family residences and multi-family facilities. North of Ormond Beach, the land to the west of the Halifax River is undeveloped public and undeveloped private. To the east of the Halifax River, the land is undeveloped public, a small portion of undeveloped private and medium density residential.

The Tomoka Marsh Aquatic Preserve is a valuable nursery area for fish, shrimp and crabs, which are important commercially but also important as part of the biological food chain for many species. Habitats include high and low marshes, salt marshes, tidal flats, beds of NSAV, algal beds, black mangrove and some deeper water areas. The preserve is utilized by over 50 species of fish, marine turtles, bottlenose dolphin, wading birds, wood storks, bald eagles and many other species of wildlife.

This area has been identified as primarily a manatee travel corridor through the Halifax River and Smith Creek. Aerial data indicates moderate use of the Halifax River/ICW and limited use of the Tomoka Basin. Sightings occur during the warmer months; no sightings were recorded from October to February probably due to cold water temperatures.

Boating activity in this area is characterized by recreational fishing, especially in the Tomoka Basin, and traveling along the ICW. The reader is directed to the Tomoka Marsh Aquatic Preserve Management Plan, the Tomoka State Park

Management Plan, and the City of Ormond Beach's Development Code for additional regulations regarding boat facilities.

## **Marinas**

At this time, there are no marinas in this zone. There does not appear to be any additional land available, outside of the Tomoka Marsh Aquatic Preserve, for marina development. All parcels are built out as single-family residences.

## **Boat Ramps**

There are currently three (3) boat ramps that service this area: Highbridge Park (one ramp, two lanes), Granada Riverfront Park (two ramps, four lanes), and the Tomoka Geo Park (one ramp, two lanes.) The Tomoka State Park ramp, although having adequate parking, is not used extensively. The ramp at the park has been renovated but apparently the primary drawback with this ramp is that there is a fee to access the park where it is located.

Future boat ramp expansion at the Granada Bridge should be evaluated carefully, based upon the scope of the project.

Please refer to the corresponding Zone 2 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments D and N)

**ZONE 3** – Red ICW Marker 22 (just north of the Holly Hill/Daytona Beach city limits line) to Red ICW Marker 2 (Town of Ponce Inlet.)

This zone does not contain any significant levels of vegetation. The waterway is characterized by the deep ICW, with shallow depths immediately outside the channel. This zone is heavily developed and any future activity in this area will most likely be the expansion of existing marinas, with both wet and dry storage.

Zone 3 has been characterized as both a manatee travel corridor and an area for a limited amount of mating, cavorting and birthing. Satellite telemetry data show manatee use throughout the Halifax River, with a concentration in the downtown Daytona Beach marinas area.

Boating activity in this zone is characterized by large vessels both in marinas and those traveling the ICW from origins north and south of Volusia County. The major boating activity involves accessing the ocean through Ponce de Leon Inlet and traversing the ICW either north or south.

Smaller craft utilize the regional boat ramp at the Port Orange Causeway to access the ocean for recreational fishing, traveling to Disappearing Island at the Inlet, or recreational fishing and shrimping along the ICW. Boating activity in this zone can be characterized as heavy.

The reader is also directed to the City of Holly Hill, Daytona Beach, South Daytona, Daytona Beach Shores and Port Orange Comprehensive Plans for complete regulations regarding boat facilities.

## **Marinas**

There are 18 marinas located within Zone 3 with either cities or private developments desiring to either expand or create new facilities. The Port Orange Marina currently is used exclusively for sailboats.

This zone is heavily developed and any future activity in this area will most likely be the expansion of existing marinas, with both wet and dry storage. Expansion of existing marinas and dry storage would be recommended over new marina construction.

## **Boat Ramps**

There are currently eight (8) public access ramps in this zone, and 17 lanes. Halifax Harbor Marina also has eight (8) lanes, with two other marinas having one (1) lane each, for a total of 10 lanes. Counting both ramps and marinas there are 27 lanes within this zone. These figures include the opening of the new ramp at the Port Orange Causeway which helped to relieve some of the congestion at this highly active ramp. The inclusion of a Slow Speed zone around the Dunlawton Bridge may also help to reduce manatee mortality in this area. This ramp is used primarily by boaters accessing the Ponce de Leon Inlet area.

Please refer to the corresponding Zone 3 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments D and N)

**ZONE 4** – West Side of the ICW (west of Ponce Cut) through Strickland Creek, Rose Bay, and Turnbull Bay; Spruce Creek.

This zone consists of three shallow bays and Spruce Creek. Spruce Creek runs from Ponce de Leon Cut, where it is a saltwater waterway, through Strickland Bay, to its headwaters west of I-95, where it is a freshwater creek. Spruce Creek is a relatively shallow creek with occasional deep pockets. The entrance to Spruce Creek is restricted by a very narrow channel which becomes very shallow and difficult to traverse during low tides. This zone contains dense shoreline vegetation. Spruce Creek, Rose Bay, Turnbull Bay and all tributaries are considered Outstanding Florida Waters.

Land use in this zone consists of limited commercial, single family residential, private undeveloped, public limited development, and public undeveloped. In addition, the County has several parcels in this area that they are trying to acquire to add to acreage already owned, known as the Spruce Creek Preserve.

Manatee use of this area is not well understood. Aerial data documented one sighting of two animals in Strickland Bay during the 1991-1993 dataset, and 9 total manatee sightings in Spruce Creek during the 2002-2004 dataset. The narrow channel and overall shallowness of the bay and mouth of Spruce Creek may make it difficult for manatees to travel into the creek. However, observations of manatees have been made at Gamble Place, west of I- 95 approximately 7 miles up Spruce Creek. It is believed that manatees may travel up Spruce Creek to access the fresh water, although this has not been formally documented. There is also emergent vegetation available along the shorelines for foraging.

Boating activity in this zone is characterized by recreational fishing, commercial crabbing, and canoeing, primarily in Class A boats (See Attachment A, Definitions), due to the shallow waters. Personal watercraft use of Spruce Creek has also been identified through people with local knowledge of the area.

The reader is also directed to the City of Port Orange for complete regulations regarding boat facilities.

### **Marinas**

There was one (1) marina in this zone, Brigadoon Fish Camp, but this facility was sold and then finally closed due to construction activities on the Rose Bay Bridge. Recently, a restaurant at this location has reopened. Any future commercial development in this area is projected to be extremely limited.

Currently there are no slips at Spruce Creek Park primarily due to the shallowness of waterbody, but there is an accessible canoe launch. There is also a kayak rental business located in the “three bridges” area. There are tentative land management plans for the public lands to possibly build some more canoe launches. There may also be plans for the distant future for courtesy slips at the proposed Spruce Creek Preserve visitor center.

### **Boat Ramps**

The only public boat ramp located on Spruce Creek has been closed. This ramp was in extremely poor condition being an unimproved single lane dirt ramp with three parking spaces. There are two (2) private ramps located in housing developments with access limited to the residents. There is also an extremely narrow ramp which is currently unused, due to construction, located on the northwest side of the Rose Bay Bridge. Just south of the three bridges crossing Strickland Bay and Turnbull Bay there is a heavily used unimproved area, primarily serving small boats. Please refer to the corresponding Zone 4 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments D and N)

**ZONE 5** – Red ICW Marker 2 to the North Causeway in New Smyrna Beach, including Ponce DeLeon Cut, Cook Creek, Hunter Creek, Inlet Creek, and Smyrna Creek.

This zone is characterized by several unique characteristics: Ponce de Leon Inlet with access to the Atlantic Ocean, the ICW through the “backside” of the inlet, which is maintained to a depth of 12 feet, a large flats area between the spoil islands that separate the cut from the inlet, two large tidally-influenced sandbars on either side of Rockhouse Creek (one is locally known as Disappearing Island), and several creeks leading off the cut into tidal marsh land. In addition, there are two parks on either side of the inlet; Lighthouse Park to the north and Smyrna Dunes Park to the south. This is also the northern-most boundary for seagrasses, with seagrasses sparsely found along the flats. No significant NSAV have been documented in the Ponce de Leon cut. Because of the inlet, this area experiences significant tidal fluctuation and currents.

Manatee use of this zone is characterized as a travel corridor, with aerial data documenting numerous sightings.

Boating activity in this zone is considered heavy, with boats of all class sizes traveling the ICW between the town of Ponce Inlet and the city of New Smyrna Beach. Boats accessing the ocean through the inlet include large watercraft traveling from origins north and south of Volusia County, large craft originating within the county, and recreational boats either heading out to the ocean or accessing Disappearing Island, Lighthouse Park ramp or Smyrna Dunes Park for land activities.

The reader is also directed to the City of New Smyrna Beach and the City of Ponce Inlet Comprehensive Plans for complete regulations regarding boat facilities.

### **Marinas**

There are a total of 14 marinas in this zone, with one large 140 slip condominium facility.

This zone has been identified as the most conditionally suitable for future development of marine facilities. The features of this area that make it a viable candidate for development are the following:

1. Nearby ocean access that excludes viable designated manatee habitats.
2. Access to a deep water channel (the ICW).
3. The area currently has marinas.
4. The area is a boater destination zone and because of the inlet, experiences excellent flushing.

For the area to the east of Ponce Cut, the most likely marina development activity will be the expansion of the existing facilities on the north side of the inlet. The land to the south of the inlet is built up with single- and multi-family residences, is public park land, or government-owned (US Coast Guard station). The most likely area for new residential, commercial, or industrial marina development is the Ponce DeLeon Cut area; particularly the Swoope Power Plant property.

## **Boat Ramps**

There is currently one (1) boat ramp located in this zone, Lighthouse Park. This ramp, which was renovated in September, 1996, is a single ramp, with a single lane.

Please refer to the corresponding Zone 5 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments D and N)

**ZONE 6** - North Causeway New Smyrna Beach to Marker 65, including the backwaters of Mosquito Lagoon.

The northern end of Zone 6 encompasses the North Indian River through the City of New Smyrna Beach and the backwaters of the city east of the ICW, including the relatively shallow Callalisa Creek. The waters are characterized as shallow on either side of the ICW, which is maintained to a depth of 12 feet. Seagrass begins to be abundant in this area, primarily in the backwaters to the west of the ICW (See Attachments D and L.); the waters of the North Indian River between the two causeways are relatively non-translucent, thus inhibiting abundant seagrass growth. This zone is close enough to Ponce de Leon Inlet to be tidally influenced.

Manatee use of this area is characterized as a travel corridor, and aerial data indicates use of this zone.

Boating activity in this area consists primarily of boats traveling both north to access Ponce Inlet and south to access Mosquito Lagoon, including the backwaters. There is a limited amount of recreational fishing that takes place in this zone.

The southern end of this zone is relatively constricted in areas with the ICW running down the middle of the North Indian River, with shallow bars on either side of the channel. The western shore is the mainland, while the eastern side of the ICW consists of natural and man-made spoil islands. East of the spoil islands are numerous shallow creeks and bays, with depths less than three feet. Seagrass beds abound on either side of the ICW and the islands contain some mangroves. The Mosquito Lagoon Aquatic Preserve encompasses most of the waters within this zone.

The lagoon itself is relatively shallow, with extensive seagrass coverage, particularly in the southern half. Due to limited freshwater input and a large shallow surface area, high evaporation rates are experienced, producing high salinities, particularly in the summer. There is very little change in water levels and also very little current, so the lagoon is poorly flushed. Low marsh and high marsh habitats are extensive within the preserve, occurring mostly on the tidal islands. There are also 60 species of red, brown and green algae, some of which may form large drifting mats, providing forage and refuge for many species. This zone also falls within the boundaries of the Merritt Island National Wildlife Refuge and Canaveral National Seashore.

Canaveral National Seashore habitats include a barrier island, ocean, beach, dune, hammock, lagoon, salt marsh and pine flatlands. It is also home to a diverse number of species, 1,045 species of plants and 310 species of birds can be found within the park. Endangered and threatened species include loggerhead, green and leatherback turtles, southern bald eagle, wood stork, peregrine falcon, eastern indigo snake, Florida scrub jay as well as the Florida manatee.

Aerial data shows significant manatee use of this area as a travel zone, with fewer sightings in the backwaters. Observations indicate that the animals generally travel north and south along the edge of the ICW.

Boating activity in this area consists of all sizes of boats using the ICW as a travel corridor, with many larger vessels traversing south through the zone in the fall, and returning to the north in the spring. Recreational fishing and commercial crabbing in Class A and Class 1 powerboats (See Attachment A, Definitions) are popular activities in the backwaters.

The reader is also directed to the City of New Smyrna Beach Comprehensive Plan, City of Edgewater Comprehensive Plan, the Mosquito Lagoon Aquatic Preserve Management Plan, the Canaveral National Seashore Management Plan, and the Merritt Island National Wildlife Refuge Management Plan for other regulations regarding boat facilities.

### **Marinas**

There are 12 marinas within the northern portion of this zone, two of which are private yacht clubs. There is one commercial fish facility.

There is very little, if any, land available for any new development in the northern section of this zone; therefore, future development will most likely involve the expansion of existing facilities.

There are two (2) marinas within the southern portion of this area, one of which is a commercial/recreational facility. According to interviews with the manager, their

clients are primarily recreational fishermen accessing Mosquito Lagoon to the south. Although there is land available for new marina development, the majority of the current zoning in this area is single-family residential. There is no suitable land along the barrier island for any development.

## **Boat Ramps**

The northern portion of this zone has two (2) regional boat launching facilities. These are the North Causeway Boat Ramp Park facility, which consists of two (2) ramps with eight (8) lanes, and a city park at the southeast side of the North Causeway, which has one (1) ramp with one (1) lane. Boating activity at both these facilities is characterized as heavy, especially on summer weekends.

There are two (2) boat ramps in the southern end of this zone that allow public access, Kennedy Memorial Park with six (6) lanes, and Menard May Park with one (1) lane. Cameron's Marina also allows public access and has one (1) lane. The Menard May ramp is a beach ramp that receives very little activity. Kennedy Memorial Park receives the most activity. Combined, these facilities have four (4) ramps and nine (9) lanes.

Please refer to the corresponding Zone 6 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments D and N)

**ZONE 7** – Marker 65, Mosquito Lagoon (includes Canaveral National Seashore, Oak Hill, Mosquito Lagoon Aquatic Preserve) to the Volusia/Brevard County Line.

This zone consists of the constricted North Indian River through the Oak Hill area, with shallow waters on either side of the channel, the wide shallow expanse of Mosquito Lagoon through Canaveral National Seashore (CNS), and the deep ICW (dredged to 12 feet). To the west of the ICW are spoil islands that the Army Corps of Engineers (ACOE) use when maintaining the ICW. To the west of these spoil islands is shallow water with abundant seagrass. The waters to the east of the ICW are also relatively shallow with abundant seagrass. Just to the south of the city of Oak Hill, the old ICW channel runs to the east and north through "shotgun pass," Eldora, Turtle Mound, Government Cut, and eventually meeting up with the present ICW in Edgewater. This channel averages 4 feet in depth. This zone experiences very little tidal influence. There is abundant seagrass throughout most of this zone. (See Attachments D and L.)

This zone also falls within the boundaries of the Merritt Island National Wildlife Refuge. Approximately half of the refuge's 140,000 acres consist of brackish estuaries and marshes. The remaining lands consist of coastal dunes, pine forests and flatwoods, and palm and oak hammocks. It is also an important wintering area for migratory birds. Over 500 species of wildlife inhabit the refuge with 15 being listed as federally threatened or endangered, including the Florida

manatee. There are several wading bird rookeries and active osprey and bald eagle nests. There are also Florida scrub jays.

Land development regulations placed upon this area from Canaveral National Seashore, Merritt Island National Wildlife Refuge, and the Mosquito Lagoon Aquatic Preserve may limit new development in these areas.

Manatee use is characterized as frequented by animals traveling through this zone, depending upon the seasons. Aerial survey data shows extensive use of the ICW with additional use of the old channel along the barrier island. Manatee use of the open waters of the lagoon below Oak Hill is limited, most likely due to the shallow waters.

Boating activity consists of all sizes of boats using the ICW as a travel corridor, with many larger vessels traversing south through the zone in the fall, and returning to the north in the spring. Recreational fishing and commercial crabbing in Class A and Class 1 powerboats (See Attachment A, Definitions) are very popular activities in the backwaters, with several hundred boats plying the backwaters of the lagoon on a summer weekend.

The reader is also directed to the City of Oak Hill Comprehensive Plan, Mosquito Lagoon Aquatic Preserve Management Plan, Canaveral National Seashore Management Plan, and the Merritt Island National Wildlife Refuge Management Plan for other regulations regarding boat facilities.

### **Marinas**

There are various commercial/recreational marinas or fish camps in this zone. These are all small boat facilities serving Class A and Class 1 boats. (See Attachment A, Definitions.) Two of the facilities, Indian Mound Fish Camp and Bissitt Bay Fish Camp, are seasonal, closing in the summer months. Goodrich, a commercial fish house whose clients were commercial netters and clambers, has closed its operations, as has Lefil's Fish Camp, although the ramp at this facility is still in use. There are no existing facilities south of Oak Hill. In addition, there is a Boston Whaler Boat Works plant in this zone.

### **Boat Ramps**

Currently, there are eight (8) boat ramps in this zone, two (2) of the ramps are associated with marinas. There are a total of 12 lanes. In addition, there are two Brevard County boat ramps, Haulover Canal and Shiloh Camp (Beacon 43) Ramp, that also serve this area. These two facilities have two ramps, and two lanes. Both of these ramps see heavy usage year round with recreational fishermen accessing the lower part of Mosquito Lagoon.

Please refer to the corresponding Zone 8 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments D and N)

### **B. 5. B. St. Johns River and Tributaries (SJR)**

(See Attachment E for Maps)

**ZONE 1** – Lake George from the Volusia/Putnam County line to the mouth of the St. Johns River

This zone encompasses all of Lake George within Volusia County, Lake County, and a portion of Marion County. Lake George is a large, open body of water, with three distinct creeks on its western shore: Salt Springs Creek, Silver Glen Spring Creek, and Juniper Creek. The land on the west shore of the lake is public land in the form of the Ocala National Forest, while the land on the east shore consists of a large area of undeveloped land, a small area of residential homes, one commercial development, and public land in the form of the Lake George Wildlife Management Area. Submergent, emergent, and floating vegetation is abundant in this zone.

No manatee sighting aerial data is available, however, VHF telemetry data from Bengston, 1979-1980, and also Sjotel 1981-1983 (unpublished data), shows use of Lake George by manatees. (See John Bengston, University of Minnesota, "Ecology of Manatees (*Trichechus manatus*) in the St. Johns River, Florida," July 1981.) It is believed that manatees use the lake as part of a travel corridor from Blue Spring north through Putnam County.

Boating activity in this area is characterized by heavy boat traffic traveling from the Astor area to Silver Glen Springs. On summer weekends, there can be over 100 boats in the spring run. During the winter months, there is also recreational fishing in Class A and Class 1 boats (See Attachment A, Definitions) taking place on the eastern shore.

#### **Marinas**

There is one (1) commercial marina within this zone. It is a small boat marina. Due to the vast amount of land in public ownership, future marina development in this zone appears to be limited, with the most likely development coming from the expansion of existing facilities. In addition, there are two fish camps in the city of Georgetown, Putnam County, that have gone out of business, and the property is for sale.

Silver Glen Springs has been documented as a major boater destination and a facility closer to that area would reduce the likelihood of striking a manatee while traversing the southern portions of the river.

#### **Boat Ramps**

There are three (3) public boat ramps within the Volusia county portion of this zone. Pine Island Marina also has one (1) ramp, for a total of four (4) ramps and five (5) lanes in Volusia County. There are another three (3) on the east side of Lake George outside of Volusia County. There are also three (3) ramps on the west side of Lake George. During the boating activity study, all of these ramps experienced minimal use. For this reason, and the public lands issue above, future boat ramp demand can be satisfied with existing facilities.

During the boating activity study, all of these ramps experienced minimal use.

Please refer to the corresponding Zone 1 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments E and N)

**ZONE 2** – Lake George at the mouth of the St. Johns River (Zinder Point) to Channel Marker 13, just above Lake Dexter.

This zone of the SJR is characterized by the sparsely developed area around the mouth of Lake George, the well-developed area of the city of Astor, and an undeveloped area south to Lake Dexter. The Lake County side of the river below Astor is primarily undeveloped land, residential, and small commercial land. The Volusia County side of the river is single-family residential in the northern section of the zone, single and multi-family residential in the Astor area, and undeveloped land south of Astor to Lake Dexter. There are many man-made canals in Astor. Submergent, emergent, and floating vegetation is abundant in this zone.

Manatee use in this area has been documented through VHF telemetry studies in 1979-1980. (Bengston)

Boating activity in this zone is characterized as a heavy travel corridor, especially in the Astor area. Many boaters use this area as their starting point to access Silver Glen Spring.

### **Marinas**

There are currently seven (7) active commercial/recreational marinas in this zone. In addition, there are two (2) fish camps on the Lake County side of the SJR, Dexter Palms and Holmar that were closed when the boating activity study was conducted.

### **Boat Ramps**

There are four (4) public access boat ramp facilities in this zone, with five (5) lanes. There are also ramps at six (6) of the marinas with six (6) lanes. This makes a total of 10 ramps and 11 lanes in this zone. In addition, as mentioned above, the two closed facilities, Dexter Palms and Holmar Fish Camp, each have one (1) ramp, one (1) lane. There is a large discrepancy in the usage of the ramps in this zone, due to the condition and maintenance of the facilities, with some ramps constantly busy and others experiencing no boating activity at all. By far, the most active boat ramp is the Astor at Butler Street ramp. On a summer weekend day, there is a queue for launching and retrieving boats. This ramp is a favorite launching facility for boaters accessing Silver Glen Spring. This is also a county ramp with no launch fee associated with it. There does not appear to be any land available for new boat ramp construction in the Astor area. The majority of the other ramps in the Astor vicinity are privately owned.

There is congestion at the Astor at Butler Street ramp, but any consideration of construction of a new facility south of SR 40 should be analyzed very carefully.

Please refer to the corresponding Zone 2 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments E and N)

**ZONE 3** – SJR from Channel Marker 13 at Lake Dexter to the confluence of the SJR and Highland Park Canal, including all lakes, creeks and dead rivers to the west of the SJR channel.

This zone encompasses the SJR channel from Lake Dexter to just north of the Whitehair Bridge (SR 44) in DeLand. Although the channel is deep, many of the creeks and lakes off the river are relatively shallow, and some are clogged with invasive vegetation. Submergent, emergent, and floating vegetation is abundant in this zone. The lands surrounding the river in this zone are all in public ownership, with the Ocala National Forest on the west of the river, and the Lake Woodruff National Wildlife Refuge to the east.

Manatee use is similar to Zone 1 (SJR); telemetry data from 1979-1980 indicate frequent use of the river and lakes.

Boating activity in this zone is characterized by significant traveling, with recreational fishing along the shores of the SJR and in the lakes, creeks and dead rivers. Boats using the waterway in this zone constitute all classes and types. However, there are no marine facilities in this zone.

### **Marinas**

There are no marinas within this zone.

### **Boat Ramps**

There are no boat ramps within this zone.

Please refer to the corresponding Zone 3 Map and the Boating Activity Study update for details. (See Attachments E and N)

**ZONE 4** – Lake Dexter, Lake Woodruff, Norris Dead River, Ziegler Dead River, all waters east of these two rivers, and all waterways west to the SJR proper.

This zone is characterized by the large, relatively shallow water bodies of Lakes Dexter and Woodruff; the narrow and winding Norris Dead and Ziegler Dead rivers; and the narrow Spring Garden Creek, leading to DeLeon Springs, a warmwater natural spring. The surrounding uplands are primarily public lands in the form of Lake Woodruff National Wildlife Refuge and DeLeon Spring State Park, single-family residential, and small commercial lots. Submergent, emergent, and floating vegetation is abundant throughout the dead rivers and along the perimeters of Lakes Dexter and Woodruff. Several of the creeks and lakes in this area are clogged with invasive vegetation, severely restricting passage.

The Lake Woodruff National Wildlife Refuge contains more than 21,500 acres and is comprised of 12,100 acres of freshwater marsh, 5,800 acres of hardwood swamp, 2,400 acres of upland, and more than 1,000 acres of lakes, streams and canals. The St. Johns River forms the western boundary of the refuge. It also surrounds the 2,200 acre Lake Woodruff. Lake Dexter covers over 2,000 acres and ties directly into the St. Johns River. The refuge also functions as a wildlife corridor along the St. Johns River extending from the Wekiva River to Lake George.

The refuge provides habitat for concentrations of ducks, wading birds, raptors and deer along with many other species of wildlife. Protected species include the snail kite, wood stork, bald eagle, limpkin, Eastern indigo snake, gopher tortoise, American alligator, Florida scrub jay and the Florida manatee.

Manatee use is similar to Zone 1 (SJR); telemetry data from 1979-1980 indicate frequent use of the Norris Dead and Ziegler Dead rivers and along the perimeter of Lakes Dexter and Woodruff.

Boating activity in this zone is characterized by recreational fishing year-round, with an increase during the winter and spring months, in Class A and Class 1 boats (See Attachment A, Definitions). No boats larger than Class 1, and no sailboats were observed in this zone. Recreational fishing in the winter and spring on Lakes Dexter and Woodruff is significant, with over 100 boats counted during weekend aerial flights.

The reader is directed to the Lake Woodruff National Wildlife Refuge

Management Plan and the DeLeon Spring State Park Management Plan for other regulations regarding boat facilities.

### **Marinas**

There are three (3) small-boat commercial/recreational marinas in this zone. The largest of the three facilities is Highland Park Fish Camp. The two areas with land available for new marina development are Spring Garden Lake, where Tedder's Fish Camp is located, and the Daisy Lake area off the Ziegler Dead River, where the North Shell Fish Camp is located.

### **Boat Ramps**

There are six (6) public access boat launch facilities in this zone, with six (6) ramps, and seven (7) lanes. This area is fairly remote.

Please refer to the corresponding Zone 4 Map and the Boating Activity Study update for marina and ramp names and details. (See Attachments E and N)

**ZONE 5** – The confluence of the SJR and Highland Park Canal to Channel Marker 81, including all of Lake Beresford and the Hontoon Dead River.

The northern portion of this zone flows through areas of urban and commercial development (the SR 44 area and Beresford Peninsular), through patches of undeveloped land, and into areas of single-family residential. The uplands to the west of the SJR are public land in the form of the Hontoon Island State Park, as well as other undeveloped lands. Submergent, emergent, and floating vegetation is abundant in this zone. The northernmost boundary of the Wekiva River Aquatic Preserve lies within this zone. Approximately 15 miles of the middle St. Johns River basin, from Interstate 4, just north of Lake Monroe to State Road 44 in Volusia County are included in the aquatic preserve.

Habitats within the preserve include mixed hardwood swamp, cypress swamp, hardwood hammock, pine flatwoods scrub, scrubby flatwoods, freshwater marsh and bayheads. The river and its tributaries provide food, shelter and breeding sites for many species of wildlife. Protected species include Florida black bear, Sherman's fox squirrel, Florida scrub jay, Florida sandhill crane, red-cockaded woodpecker, limpkin, southeastern kestrel, bald eagle, wood stork, osprey, gopher tortoise, Florida pine snake, American alligator and the Florida manatee. There are also numerous protected species of plants, wading birds, amphibians, reptiles and invertebrates.

Manatee use is similar to Zone 1 (SJR); telemetry data from Bengston, 1979-1980 indicate frequent use of Lake Beresford. In addition, the rangers at Blue

Spring indicate that manatees use Lake Beresford, especially in the winter for foraging, although their use is dependent upon the degree of vegetation available.

Boating activity in this area consists of boats of all sizes cruising the SJR channel north and south. Boaters use the northern end of this zone to access Silver Glen Spring and recreational fishermen fish the edges of the river and Lake Beresford. There is also water skiing on Lake Beresford. In addition, there are two marinas that rent large houseboats, so these types of vessels are found in this zone in concentrations.

The southern portion of this zone contains Blue Spring and Hontoon Island State Park. Blue Spring State Park comprises 3,842 acres and has a diverse range of habitats. These habitats include sand pine scrub, pine flatwoods, depression marshes, hardwood hammocks and riverine forests. At least 21 species of mammals, 137 species of birds, 42 species of reptiles, 16 species of amphibians and 71 species of fish have been identified within the park. Some of the protected species include black bear, white pelican, wood stork, osprey, bald eagle, limpkin, sandhill crane, American alligator, gopher tortoise, Eastern indigo snake, and many raptors, ducks, wading birds and owls as well as the Florida manatee. Submergent, emergent, and floating vegetation is abundant in this zone.

Blue Spring is one of the most important warm water refuges for manatees on the east coast of Florida. The animals use this spring to rest in the colder months, venturing out into the SJR to forage during the warmer periods of the day. Manatee usage of the spring has been steadily increasing over the years. The overwintering manatee population has grown at about 7-8% per year over the past 28 years. Motorboats are prohibited in the Blue Spring run from the confluence of the SJR to the boil.

Boating activity is best described as traveling, recreational fishing, and picnicking at the park. The park is a boating destination for many boaters. In the summer boaters visit Blue Spring to swim in the run, and in the winter to observe the manatees.

The reader is directed to the Wekiva River Aquatic Preserve Management Plan and the Blue Spring and Hontoon Island State Park Management Plan for other regulations regarding boat facilities.

## **Marinas**

In the northern section of this zone there are 10 commercial/recreational marinas and one (1) private marina. Kyp's Fish Camp is currently closed. Hontoon Island State Park also has wet slips for boaters who want to access the park via the water; there is no long-term storage at this facility.

There is very little land that is available or zoned for marinas, so the development of additional slip space most likely will come from the expansion of existing facilities.

## **Boat Ramps**

In the northern portion of this zone, there are currently 12 public access boat launch facilities, with 17 open lanes. Two facilities, the Boat Show Marina and Pier 44 Marina, have large yards that could potentially be used by boaters for extra trailer parking. Lake Beresford is a popular boating destination and there are no public ramps on the lake itself; there are two private ramps and two fish camp ramps that allow public access for a fee. These two ramps are small and not very well maintained. The County also owns land on this lake.

As previously mentioned, boat ramp supply exceeds demand on the SJR, and from observations made during the boat study, the ramps on the SJR proper in this zone are sufficient to meet demand. Building a ramp in this area should only be explored, if demand requires, and it can be shown to be not a risk to manatees.

In the southern section there is one (1) boat ramp, the French Avenue ramp. This dirt ramp has one (1) lane, which is located just north of Blue Spring. The ramp is poorly maintained and not very popular with boaters. It is, however, a popular swimming area, with families observed swimming in the river off the end of the ramp.

Please refer to the corresponding Zone 5 Map and the Boating Activity Study update for ramp details. (See Attachments E and N)

## **ZONE 6 – Channel Marker 81 to the I-4 Overpass.**

This zone is characterized by a winding SJR with numerous oxbows and dead rivers flowing from it. In addition, the Wekiva River flows into the SJR in this zone. Most of the uplands surrounding the SJR are either undeveloped or residential, with only three commercial areas, Highbanks Marina, the FPL power plant, and the Port of Sanford. In addition, much of the land bordering the river is wetlands, and is flooded during periods of high water. The Wekiva River Aquatic Preserve encompasses the river leading into the Wekiva River and runs through the entire length of this zone. This preserve has the same development and construction guidelines that the Tomoka Marsh and Mosquito Lagoon Aquatic Preserves have. Submergent, emergent, and floating vegetation is abundant in this zone.

Manatee use of this area has been documented via VHS telemetry studies done in 1979-1980. (Bengston)

Boating activity is best described as cruising, recreational fishing, waterskiing, and use of personal watercraft. The Florida Power and Light (FPL) plant is also the terminus point for barges bringing fuel from Jacksonville, although the activity level of barge transportation has been sharply curtailed in the past year.

The reader is directed to the Wekiva River Aquatic Preserve Management Plan for other regulations regarding boat facilities.

### **Marinas**

There are two (2) commercial/recreational marinas in this zone; Highbanks Marina on the Volusia County side of the SJR, and Hidden Harbor Marina on the Seminole County side of the SJR. There are also three (3) residential marinas. There is very little land available for development of new marinas, and very little land available for the expansion of the two facilities in this zone.

The undeveloped land in this zone is heavily influenced by wetlands, making permitting and the economic justification, difficult. Therefore, future development is severely limited.

### **Boat Ramps**

There are three (3) boat launch facilities that service this area, Highbanks and Lake Monroe Park in Volusia County, and Lake Monroe Wayside Park in Seminole County. These three facilities have a total of four (4) ramps and six (6) lanes. The boat study indicated that all three of these facilities experience heavy usage. Four of the marinas also have boat launching facilities, which total four (4) ramps and four (4) lanes. The total number of ramps in Volusia County within this zone totals eight (8) with ten (10) lanes. Due to the land issues mentioned above for marinas, new construction seems unlikely.

Expansion of existing facilities is the most likely scenario for meeting future demand.

Please refer to the corresponding Zone 6 Map and the Boating Activity Study update for marina and ramp details. (See Attachments E and N)

### **ZONE 7 – Lake Monroe from the I-4 Overpass to SR 415.**

This zone encompasses all of Lake Monroe, a large water body that is relatively shallow, especially on the north side. Submergent, emergent, and floating vegetation is abundant in this zone.

Manatee use of this zone is not well documented. VHS telemetry data from 1979-

1980 (Bengston) indicates sporadic use of the southern and western ends of the lake during July through September. Again, the exact number of animals in this data is unknown.

Boating on Lake Monroe is extensive, with traveling and recreational fishing occurring on these waters. Sailing is also an important boating activity, as the lake is large and open. Several sailing regattas take place annually on Lake Monroe. In addition, there is a large (Class 3) dinner boat (See Attachment A, Definitions) that cruises from Monroe Harbor to the Wekiva River confluence and back.

### **Marinas**

There are two (2) commercial/recreational marinas in this zone, Monroe Harbor Marina and Sanford Boat Works and Marina. Interviews with the marina managers indicate that many of the boats berthed in wet storage never leave their slips. Regarding new marina development, land availability is limited. The City of Sanford, on the west side of the lake, is developed, while the land on the southern and northern end is marshland. The land on the east side is also developed with single family residences, with the exception of the Florida Power Corporation plant. This plant is currently closed down, and the future use of this site is unknown at this time.

Therefore, new marina construction appears to be limited in this area.

### **Boat Ramps**

There are currently three (3) public access boat launching facilities in this zone, with three (3) ramps and three (3) lanes. Mariner's Cove Park ramp, a county park, has enough open grass area to park approximately 86 trailers, but the boating activity study showed limited use of this ramp. Land for future boat ramp construction in this area is limited.

Please refer to the corresponding Zone 7 Map and the Boating Activity Study update for marina and ramp details. (See Attachments E and N)

### **ZONE 8 – SJR from SR 415 to Lake Harney.**

This zone is more remote than any of the other zones in the county. The river is winding, with many lakes coming from it. In addition, in periods of high water, it can become difficult to follow the river channel. Marked navigational aids cease in this area, thus ending the commercial aspects of the St. Johns River. Submergent, emergent, and floating vegetation is abundant in this zone.

The uplands in this zone consist of large parcels of undeveloped land interspersed with single-family residential areas. There is no commercial zoning in this area. This area experiences problems with flooding during high water events, and most of the land adjacent to the river is wetlands.

Manatee use of this zone is relatively unknown; there is no telemetry or aerial data.

Boating activity is characterized as recreational and commercial fishing, cruising, water-skiing, and personal watercraft use, all in almost exclusively Class A and Class 1 powerboats (See Attachment A, Definitions.)

### **Marinas**

There is one (1) commercial/recreational marina in this area, JJ's Marina Isle, located in Seminole County. This facility is a small-boat fish camp. Based upon the waterway and the upland lands and wetlands situation mentioned above, future marina development in this area seems highly unlikely.

### **Boat Ramps**

There a total of three (3) public access boat launching facilities in this zone, with three (3) ramps and four (4) lanes. Boat study survey data indicates that these ramps experience light usage. In addition, during periods of extremely high water, several of them flood and are closed to boat traffic.

Please refer to the corresponding Zone 8 Map and the Boating Activity Study update for marina and ramp details. (See Attachments E and N)

## **B.6. IMPLEMENTATION**

### **Future Actions Required for Implementation**

Once Phase II of the Manatee Protection Plan has been adopted by County Council, it will be submitted to the FWC and USFWS for approval. Upon approval by these agencies, the MPP can then be used by the state and federal wildlife agencies in their permit review processes.

Upon adoption of the MPP by the County, FWC, and USFWS, city specific provisions as outlined in city council-passed resolutions (Attachment S) can then be used by the state and federal wildlife agencies in their permit review processes along with the other boat facility siting provisions in the MPP.

Those cities and municipalities that decide to adopt the MPP and have city-specific provisions will, upon state and federal approval, be requested to sign a memorandum of understanding that outlines the City's and County's duties and responsibilities. This agreement would then be incorporated into the Volusia County Plan, along with their city's plan or city-specific provisions under Attachment S.

### **Development of Objectives and Policies**

Objectives and policies need to be developed that can be incorporated into the County's Comprehensive Plan. These policies will be developed after the final approvals of this plan and included as an addendum at a later date.

Within two years of state approval of the MPP for Volusia County, the participating municipalities shall amend their comprehensive plans to reflect their participation. Comprehensive plan amendments will be required in order for the cities to continue participation.

Objectives, policies or references must be approved by the DCA, FWC, and County.

### **Periodic Review and Revision**

New initiatives outlined in the MPP will further the cause of manatee protection beyond what currently exists. There is always room for improvement and reevaluation is necessary as conditions or our knowledge base changes. As such, Volusia County will continue to evaluate all elements of the MPP and related Comprehensive Plan elements at regular intervals to ensure that the best possible protection for manatees is being afforded.

The Manatee Protection Plan will be reviewed five years after it is formally approved by the County Council and the FWC. Thereafter, a routine evaluation of the plan will be scheduled every five years.

An Annual Report will also be written by the County, updating the MPP as needed, such as a running total of the slips used from the city slip pools.

In the event that an exceptional review is required, the next routine review will be scheduled five years from that revision date. The following is a list of such exceptions. Any failure to conduct the review and revisions according to the stated schedule shall not invalidate the plan nor any provisions of the county code associated with it. Thus, failure to conduct the update on schedule in no way affects the enforceability of this plan.

- 1) State delisting of the West Indian Manatee
- 2) Significant change in legal requirements

### **Implementation Process**

Attachment R outlines the project application process for applicants interested in developing boat facilities within Volusia County. Applicants must receive a letter of compliance with the MPP from VCEM in order to move forward with permitting a project. Copies of permit applications and all associated documentation (including the mitigation fee as required under section B.4.A) must be provided to Volusia County Environmental Management's Manatee Protection Program for review and approval. If an applicant is interested in increasing the number of powerboat slips over which is allowed by the plan, and the project is located in a city that has opted for the "slip aggregation" option, a letter of concurrence with use of the powerboat slip pool must be obtained. This letter should be provided to the County, FWC and USFWS. Once a letter of compliance from VCEM is provided to the applicant, the applicant must provide this letter to the relevant state and federal wildlife agencies for their review.