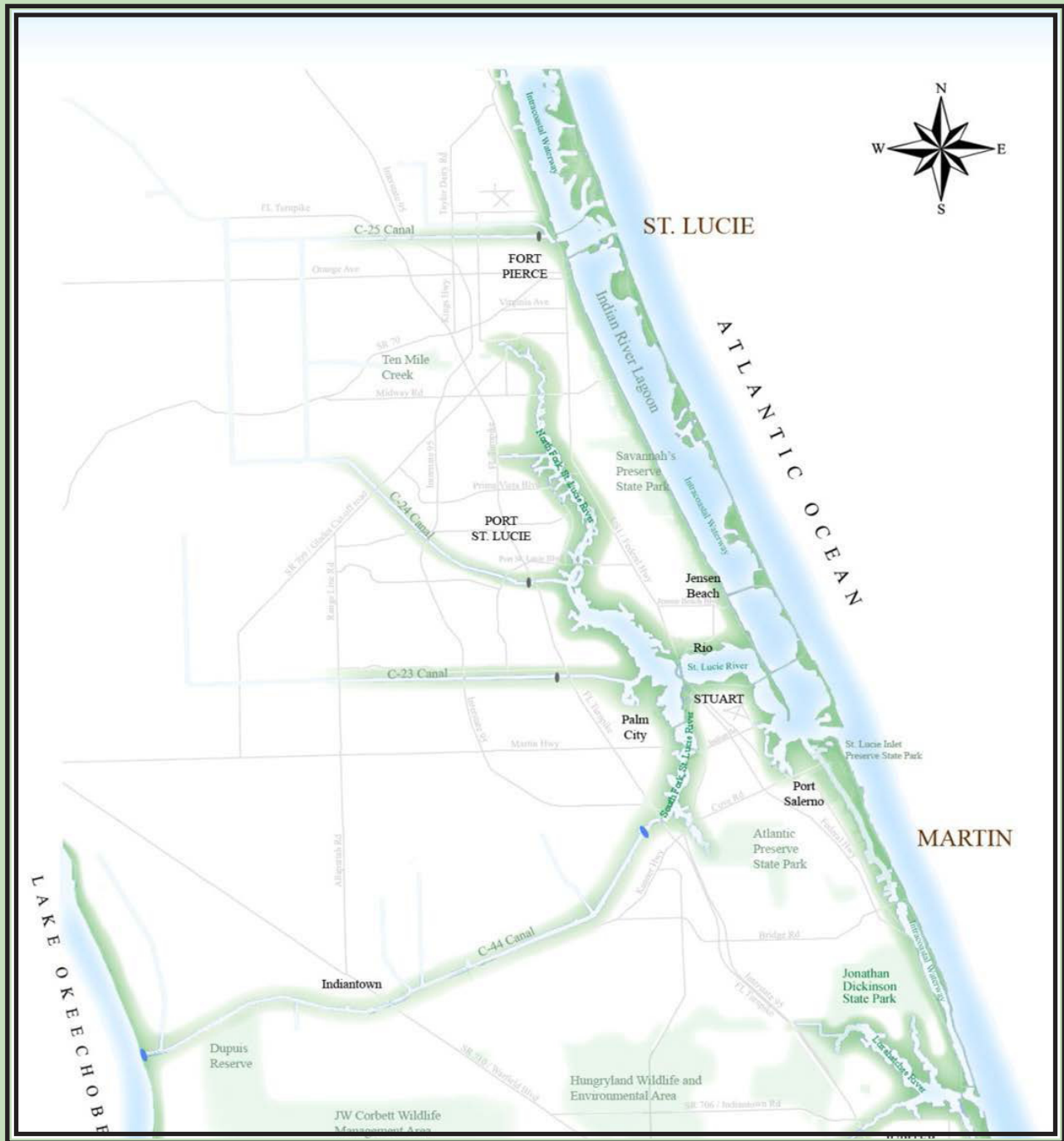


2014 Martin and St. Lucie Regional Waterways Plan



Prepared by Treasure Coast Regional Planning Council for
 Martin Metropolitan Planning Organization &
 St. Lucie Transportation Planning Organization



Final Report
 December 3, 2014

Note to Readers

This document is the Martin/St. Lucie Regional Waterways Plan, which has been developed at the initiative of the Martin Metropolitan Planning Organization (MPO) and St. Lucie Transportation Planning Organization (TPO), with funding from and participation by the Florida Inland Navigational District (FIND). The Waterways Plan was developed through a public process facilitated by the Treasure Coast Regional Planning Council (TCRPC). This plan was created with the guidance of a plan steering committee and with public input through a series of public forums, workshops, and a planning charrette, which were conducted from December 2013 through May 2014.

The report was accepted in final form by the Martin MPO, St. Lucie TPO, and Florida Inland Navigational District in December 2014.

Electronic copies of this report and supporting materials are available at:
www.tcrpc.org/special_projects/Martin-StLucie_Waterways/waterways.html

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Acknowledgments

Acknowledgments

The Waterways Plan for Martin and St. Lucie counties was funded by the Martin Metropolitan Planning Organization (MPO), St. Lucie Transportation Planning Organization (TPO), and Florida Inland Navigation District (FIND). Development of the Plan benefitted from the broad direction, oversight, and encouragement of the following members of the Project Steering Committee:

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This Plan benefitted from consultants W. Thomas Lavash of WTL+a, and Tom Moriarity of Retail and Development Strategies LLC contributions to the economic development sections; and Michael Williamson, Cambridge Systematics, Inc., contribution to the marine transportation section. Also, the public educational forums were a great source of information. Speakers at the public educational forums included:

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Acronyms

ACA	American Canoe Association
AIW	Atlantic Intracoastal Waterway
BEBR	Bureau of Economic and Business Research, University of Florida
BMAP	Basin Management Action Plan
CAGR	Compound Annual Growth Rate
CDA	Commercial Dock Authority
CDP	Census Designated Place
CEPP	Central Everglades Planning Project
CERP	Comprehensive Everglades Restoration Plan
CFDA	Port Salerno Commercial Fishing Dock Authority
CFR	Code of Federal Regulations
CRA	Community Redevelopment Agencies
EPA	U.S. Environmental Protection Agency
ESC	Environmental Studies Center
FAA	Federal Aviation Administration
FEC	Florida East Coast
FECI	Florida East Coast Industries
FECR	Florida East Coast Railroad
FDEO	Florida Department of Economic Opportunity
FDEP	Florida Department of Environmental Protection
FDOH	Florida Department of Health
FDOT	Florida Department of Transportation
FIND	Florida Inland Navigation District
FMRI	Florida Marine Research Institute
FOA	Florida Organic Aquaculture
FPRA	Fort Pierce Redevelopment Agency
FWC	Florida Fish and Wildlife Conservation Commission
FWHA	Federal Highway Administration
GDC	General Development Corporation
HH Dike	Herbert Hoover Dike (H.H. Dike)
ICW	Intracoastal Waterway
MIATC	Marine Industries of the Treasure Coast
MPO	Metropolitan Planning Organization
MSA	Metropolitan Statistical Area
NAICS	North American Industry Classification System
OWW	Okeechobee Waterway
RFP	Request for Proposal
S.F.	Square Feet
SFWMD	South Florida Water Management District
SIS	Strategic Intermodal System
SJRWMD	St. Johns River Water Management District
SKA	Southern Kingfish Association
SUP	Stand-up paddleboards
TCRC	Treasure Coast Rowing Club
TCRPC	Treasure Coast Regional Planning Council

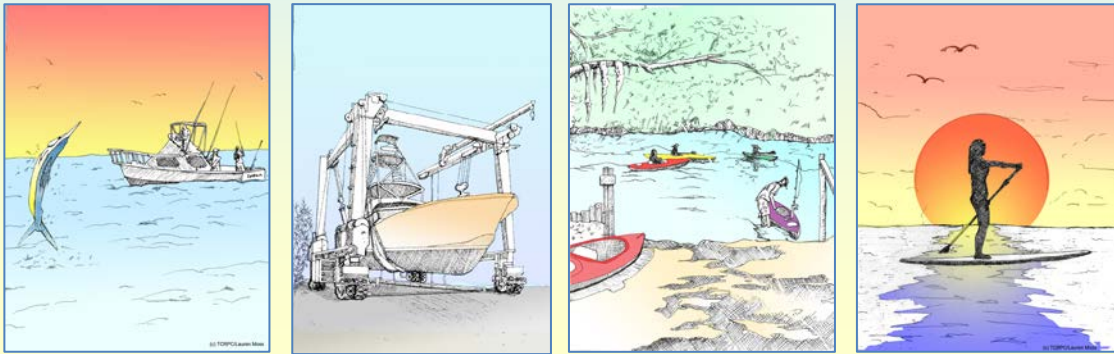
Acronyms

TCSC	Treasure Coast Sports Commission
TDC	Tourist Development Council
TEU	Twenty-foot equivalent unit
TMDL	Total Maximum Daily Load
TPO	Transportation Planning Organization
USACE	U.S. Army Corps of Engineers
USCG	United States Coast Guard
USFWS	U.S. Fish and Wildlife Service
USSCMC	U.S. Sailing Center of Martin County
WPA	Water Preserve Area

Martin/St. Lucie Regional Waterways Plan Executive Summary

December 3, 2014

The waterways of Martin and St. Lucie counties, including the Indian River Lagoon, St. Lucie River, ocean inlets, and creeks and tributaries are extremely important to the citizens of the region. In discussions about the waterways, citizens expressed a range of sentiments about these unique aquatic resources. Citizens love the waterways. They swim, fish, paddle, and snorkel. They travel the counties' waterways on shore and by boat, exploring the lagoon, rivers, and ocean. They enjoy sunrise and sunset views. The counties' residents are intrigued by the waterways' history and the rich marine life that inhabits the aquatic preserves, salty marshes, mangrove forests, and natural areas along the shoreline. In many ways, the waterways provide the primary identity for this portion of Florida's Treasure Coast. They are the region's passion, provide jobs and revenue, and are among the primary reasons people visit the region and choose to call it their home.

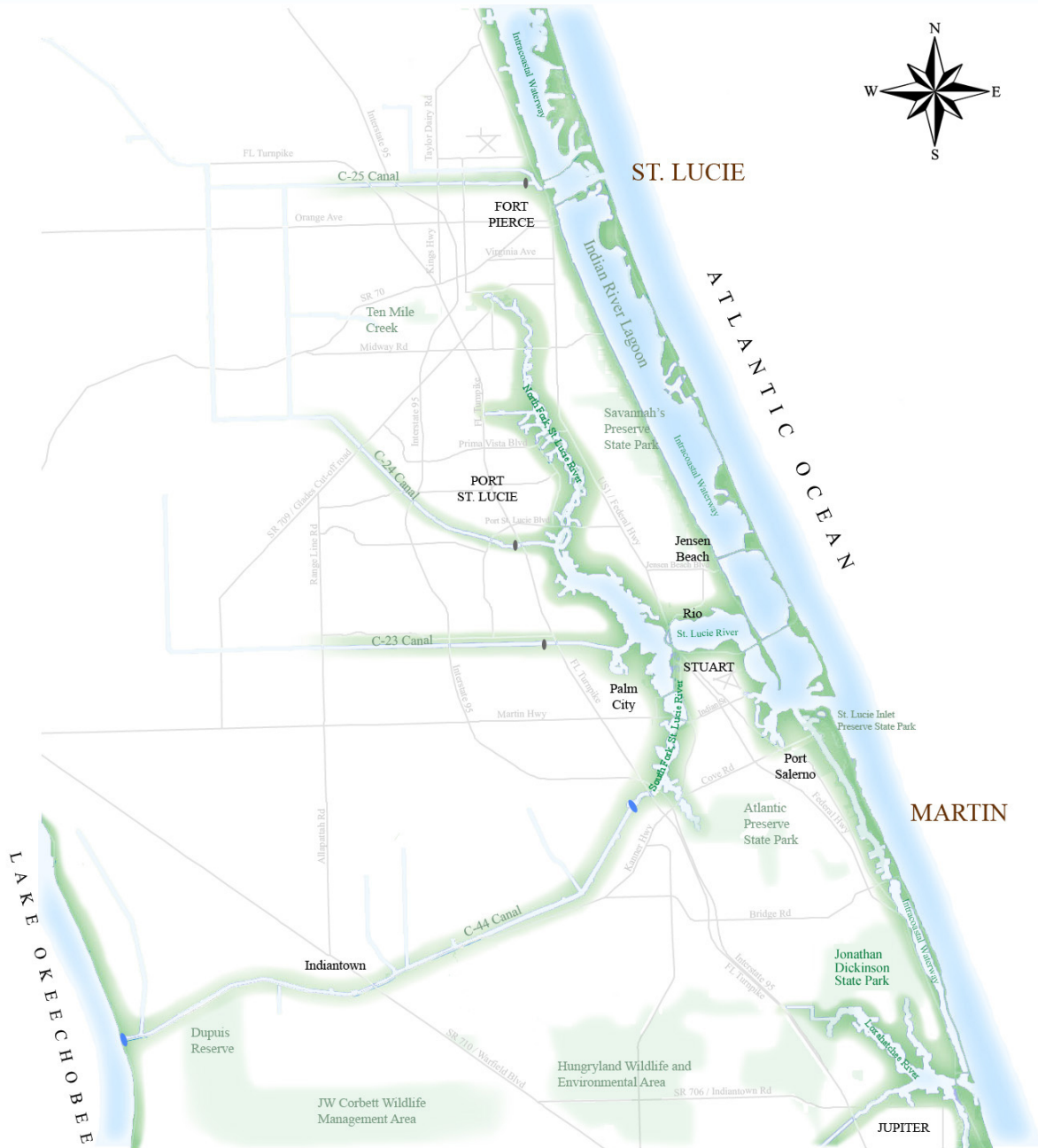


The Treasure Coast Regional Planning Council (TCRPC) was authorized by the Martin Metropolitan Planning Organization (MPO) and St. Lucie Transportation Planning Organization (TPO) to produce a Martin/St. Lucie Regional Waterways Plan. This effort was funded by the MPO and TPO, with matching funds provided by the Florida Inland Navigational District (FIND). The purpose of the Plan is to identify and prioritize waterway access needs and facilities of the regional waterways system to promote and maximize its economic vitality and public benefit. Consistent with the MPO and TPO work programs, the plan explores strategies to leverage the economic benefit of the waterways both as a recreation resource and as part of a multi-modal system for the movement of people and freight.

Martin and St. Lucie counties are characterized by extensive waterways that traverse the area. The Intracoastal Waterway (ICW), also known as the Atlantic Intracoastal Waterway (AIW), spans roughly 44 miles through the two counties and provides connections to both the Fort Pierce and St. Lucie Inlets. The St. Lucie River, including its north and south forks, provides connections to the ICW, water access inland, and a connection to Lake Okeechobee via the St. Lucie Canal (C-44). Additionally, the counties include a series of smaller creeks, canals, and tributaries, which provide additional waterway connections for residents, business owners, visitors, and marine life.

Martin & St. Lucie

WATERWAYS PLAN



Rev. 8/21/2014

LEGEND
 ■ Canal Control Structure preventing access to natural waterway system
 ■ Canal Control Structure and Lock

PROJECT STUDY AREA

All seven municipalities located in the two counties have waterfront properties. The municipalities include the City of Fort Pierce, Town of St. Lucie Village, and City of Port St. Lucie in St. Lucie County; and the City of Stuart, Town of Ocean Breeze, Town of Sewall's Point, and Town of Jupiter Island in Martin County. These communities have a broad range of uses adjacent to the waterways, including residential, commercial, industrial, recreational, conservation, and other uses. In addition, the waterways play a significant role in the movement of freight, which provides additional economic development potential. The future development patterns, access, protection, function, regulation, and maintenance of the waterways are critical to the counties' sustainability.

Public Participation

The planning process to develop the waterways plan included extensive public involvement, education, and master planning to address the broad range of issues and stakeholder interests. The project was initiated with the selection of a steering committee comprised of representatives appointed by the MPO and TPO. The steering committee met frequently throughout the planning process and provided valuable guidance in the development of the Plan.



North Fork, St. Lucie River. Photo by TCRPC

To inform the Plan, a formal public participation process was facilitated by TCRPC. This included a series of public educational forums conducted from December 2013 through May 2014. The educational forums were based on six broad themes selected by the steering committee, including: marine transportation; land use and upland transportation; natural resources; regulation and management; recreational, cultural, and educational resources; and economic development. The public educational forums were followed by three half-day public workshops, conducted in Port St. Lucie, Fort Pierce, and Jensen Beach, to obtain additional public input. Subsequently, a week-long public design studio was hosted in the TCRPC office to evaluate the ideas generated by the public and advance the development of planning concepts.

Additional public input was gathered through a series of interviews conducted by the TCRPC project team as well as interactive presentations of preliminary findings to the FIND Board, MPO and TPO Boards, their advisory committees, and local governments within the region.

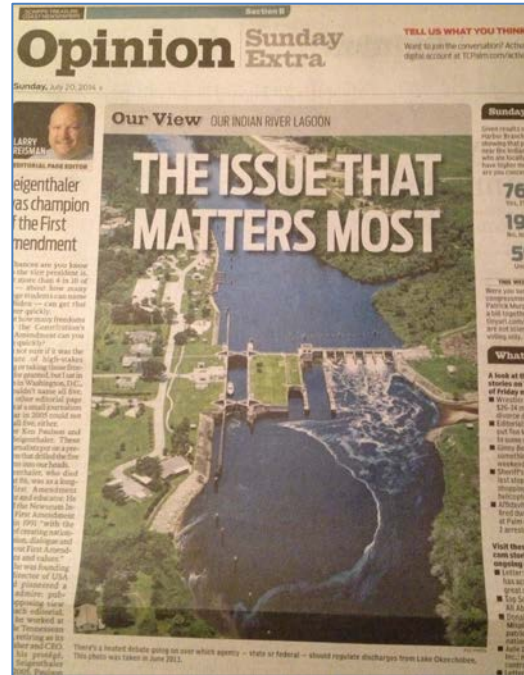
Summary of Chapters

Based on direction from the Project Steering Committee, the Waterways Plan is organized into six chapters, which generally reflect the educational forums described above and include a chapter regarding implementation. Each chapter is briefly summarized below.

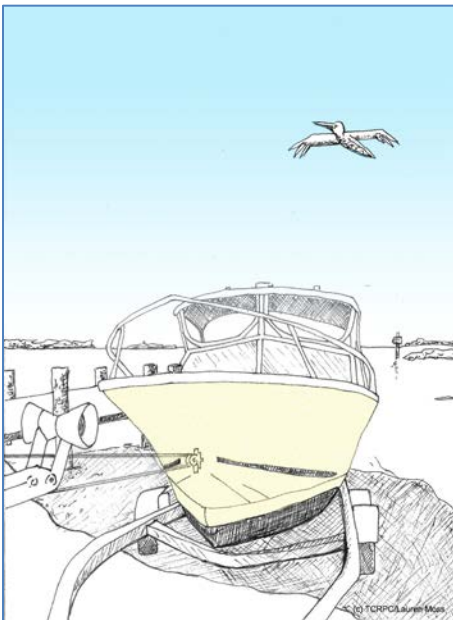
Chapter 2: Protection of Natural Resources:

Concerns over water quality are the paramount public concern in Martin and St. Lucie counties, and this issue was raised in every public input setting. Discharges from Lake Okeechobee and delays regarding the Everglades restoration are points of highly-charged dissatisfaction in the community, as poor water quality jeopardizes all aspects of the waterways.

Accordingly, Chapter 2 provides an overview of the major waterway systems in Martin and St. Lucie counties, including the Indian River Lagoon, St. Lucie River, Lake Okeechobee, ICW, and varied creeks and tributaries as well as man-made canals. Water quality impacts, including Lake Okeechobee discharges as well as land-based and in-water pollution are described along with projects and programs for their restoration and enhancement (e.g., Central Everglades Restoration Program, Ten Mile Creek Water Preserve Area, Loxahatchee River restoration). The chapter also addresses local ordinances (e.g., fertilizer regulations, stormwater management), protection of listed species, and sea level rise.



Stuart News Editorial, July 20, 2014



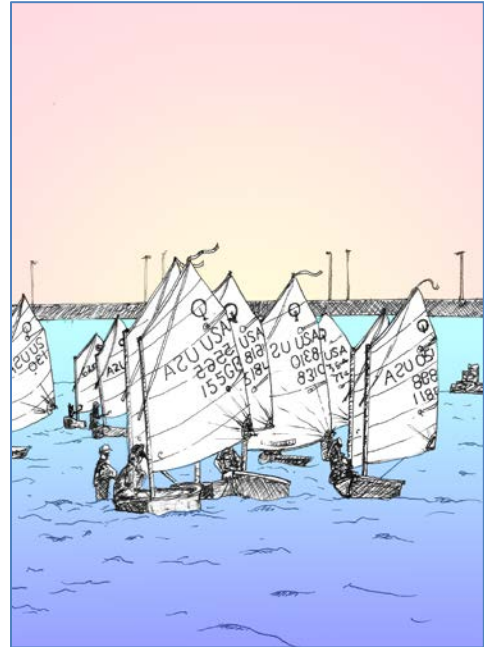
Key natural resource findings and recommendations focus on the continued and accelerated restoration efforts, stormwater management and the reduction of pollutants, expanded environmental education, enhanced regulatory enforcement, and plans for sea level rise.

Chapter 3: Marine Transportation:

Marine transportation is an invaluable benefit provided by the waterways in the region. This chapter provides a brief history of transportation on the waterways, including dredging, inlets, bridges, and navigational constraints. Waterborne passenger transportation options are evaluated, including water taxis, high-speed ferries, and seaplanes. There appears to be potential for the development of several water taxi networks, in Fort Pierce, Stuart, and Port Salerno, that could operate in

conjunction with special events and programming. Suggested water taxi station locations and routes are provided along with an inventory of annual waterside special events. The plan also includes an evaluation of high speed ferry service options from Fort Pierce and Stuart/Port Salerno, with potential routes and destinations. Further evaluation is recommended to determine viability of ferry service as well as community support for seaplanes.

Shallow depths constrain access for larger vessels, limiting the economic contributions otherwise available, and a dredging work group is recommended to annually evaluate depths and post-storm conditions to assist with dredging efficiency and priorities. Railroad bridge operations also constrain marine navigation, and considerable public concern over this issue. The plan recommends modifications to the Code of Federal Regulations be considered to protect the rights to navigation as well as safety, infrastructure, and communications improvements for the St. Lucie and Loxahatchee River railroad bridges.



The marine industrial uses along the waterways are also evaluated, including boat building and mega-yacht facilities, marine highways, cargo operations, the Port of Fort Pierce, and the potential for a marine/logistics facility, with recommendations for infrastructure improvements and programmatic activities to advance related projects.

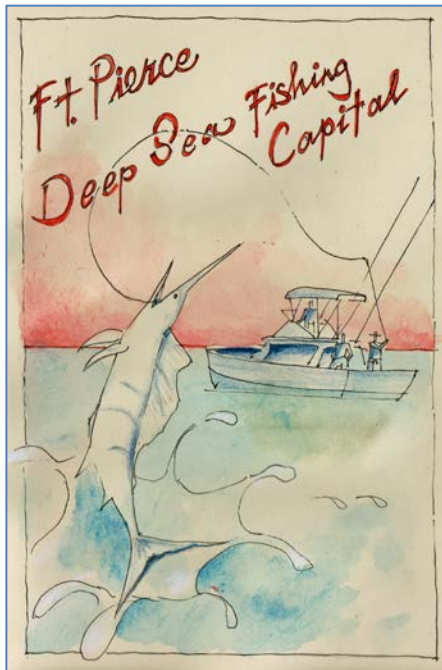


Chapter 4: Land Use and Upland Transportation:

The land use component of the waterways plan was focused on eight waterfront centers selected by the Project Steering Committee, and the public is highly supportive of these on-going redevelopment efforts. These include five Martin County Community Redevelopment Agencies (CRAs) in Port Salerno, Rio, Jensen Beach, Old Palm City, and Indiantown; the City of Stuart CRA; the Fort Pierce CRA; and the Port St. Lucie CRA. Each of these select waterfront centers is actively implementing a redevelopment program.

Brief histories of each waterfront center are provided in this chapter along with overviews of the redevelopment programs, current conditions, and noted redevelopment initiatives. In addition, the planning process identified special projects in several centers ~ a public fish market in Port Salerno, an expanded rowing club and water-focused amenities in

Old Palm City, a waterfront mixed-use redevelopment concept for the Port St. Lucie CRA, a Walton Road Scenic Overlook in Port St. Lucie, and a marine/logistics academy concept for Fort Pierce. Each is presented in Chapter 4. The plan notes that additional waterfront development



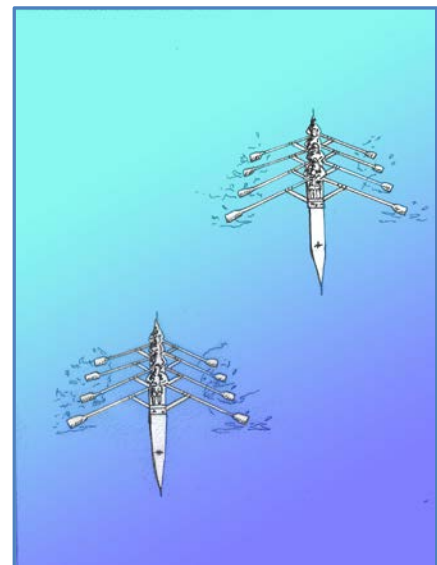
opportunities could be enhanced by water taxi service with connections to key commercial, cultural, recreational, and marine-oriented destinations.

Chapter 4 also provides an overview of upland transportation improvements to enhance and support waterways access and economic sustainability. The chapter addresses the regional multi-modal transportation network including greenways, trails, and the concept of a “waterways circulator” for enhanced public transit access to waterfront centers. Additional opportunities exist for the development of trails along the canal banks (e.g., C-23, C-24, C-25, C-44) to expand access to water frontage as well as create unique off-road transportation corridors. Chapter 4 also includes analysis and recommendations regarding the protection of marine transportation routes to transport boats to the water and improvements for last-mile connections of all forms to/from waterfront centers.

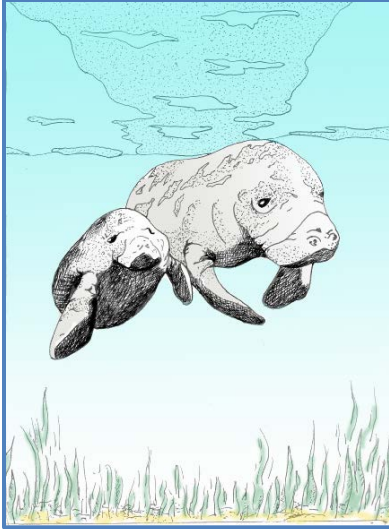
Chapter 5: Public Access & Recreation:

The waterways of Martin & St. Lucie counties provide an unparalleled amenity for residents, businesses, and visitors. The means of accessing the waterways is varied among the region. Boater registration data indicates that roughly 16% of the region’s residents have access to a motorized vessel, with 24% of Martin County residents and only 11% of St. Lucie County residents. The majority of residents in both counties are without access to a motorized vessel, requiring access to the waterways through other means.

Chapter 5 provides an overview of the various means of public access for all residents. Public access is provided through parks and preserves, street-end parks, campgrounds, riverwalks, promenades, fishing piers, bridges, and causeways. In addition, the waterways are accessible via marinas, anchorages, boat ramps, and “soft launches” for canoes and kayaks. This chapter includes assessments of these various facilities, provides location maps, identifies deficiencies, and presents recommendations to expand capacity, improve efficiency, and broaden public access across the region.



In addition to public access, Chapter 5 also includes an inventory of the different machine-powered, human-powered, and wind-powered recreational activities that can or do occur on the Martin/St. Lucie waterways, and they are extensive. This list includes motorboating, sailing,

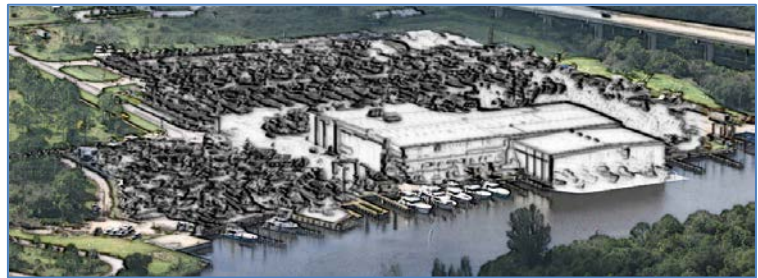


windsurfing, canoeing, kayaking, paddleboarding, rowing, and dragon boat racing among others. In addition, the waterways are home to extensive fishing, lobstering, snorkeling, and swimming. Both demand and opportunities exist for expanding water sports concessions in public parks. Each of these activities is described historically and currently, along with infrastructure needs and opportunities for special events programming. Together, these varied recreational activities create an opportunity for a more defined Treasure Coast Water Sports Cluster. With focused marketing and branding, this array of activities provides a unique destination quality and secondary benefits to tourism and the allure of visitors to “Splash It Up on the Treasure Coast.”

This chapter also addresses the need to expand access to swimming instruction, to improve safety among increased water-related activities. Further, to expand environmental stewardship, the chapter identifies the diverse educational and cultural organizations along the waterways with recommendations regarding efficiency improvements and sequential programming focused on the restoration and enhancement of the waterways.

Chapter 6: Economic Development:

Chapter 6 provides a demographic and economic overview of Martin and St. Lucie counties and their select waterfront centers regarding growth trends, land use mix, baseline conditions, and projected market demands and absorption. Employment trends and other workforce statistics are presented for each jurisdiction. Market and financial analyses are also presented for each of the waterfront centers, including the special projects as noted. The individual waterfront centers are significant contributors to economic growth, with diverse histories, scale, context, and mix of use. Maintaining the individuality and authenticity of these places will enhance their marketability and economic success.



In addition to real estate development potentials, the other focal industry sectors prioritized in the plan development process are hospitality and marine industries. There is limited data regarding



each of these industry sectors, and the chapter sets forth an assemblage of baseline data regarding these industries for their continued evaluation and expansion. Each industry is analyzed regarding current conditions, market forces, anticipated demand, and financial considerations.



There are significant constraints on the marine industries, especially related to navigational access for larger vessels, a lack of trained workforce, and constraints within the roadway network for boats to be transported. Career training at the high school and secondary school levels will reinforce the industry. There are additional constraints on the fishing industry, which are primarily related to water quality, the need for fish markets, and improved marketing. To advance the marine industries sector, a

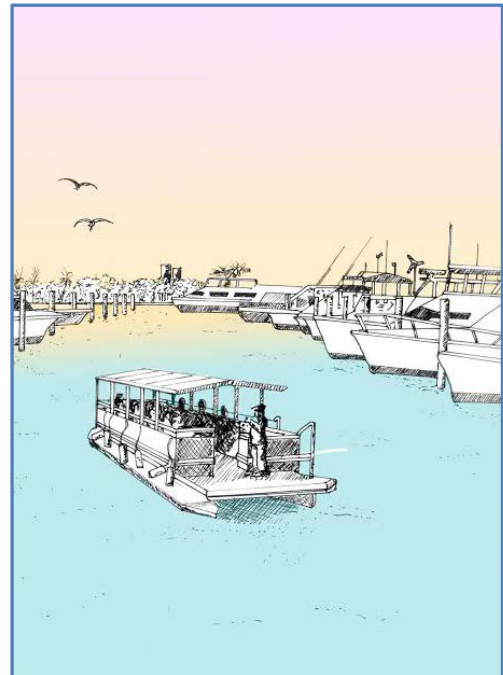
comprehensive industry-specific dataset should be defined, assembled, and maintained over time to measure conditions, performance, and trends. The Port of Fort Pierce is a related topic presented in this chapter, along with an evaluation of cargo transport and the potential for niche cargo.

The hospitality industry data is highly limited in the region, especially regarding visitor profiles, which reduces the region's ability to fine-tune marketing and branding. Consistent data collection is a critical component of tourism marketing. The water-focused activities evaluated in this plan ~ water taxi connections to waterfront centers and destinations, expanded and better organized water sports ~ can provide secondary benefits to the hospitality industry. The broad array of waterfront recreational uses and activities can also be packaged, marketed more specifically, and utilized to attract more extensive recreational and competitive events, building upon unique regional activities (e.g., collegiate rowing, Olympic paddling, Junior Olympic sailing).

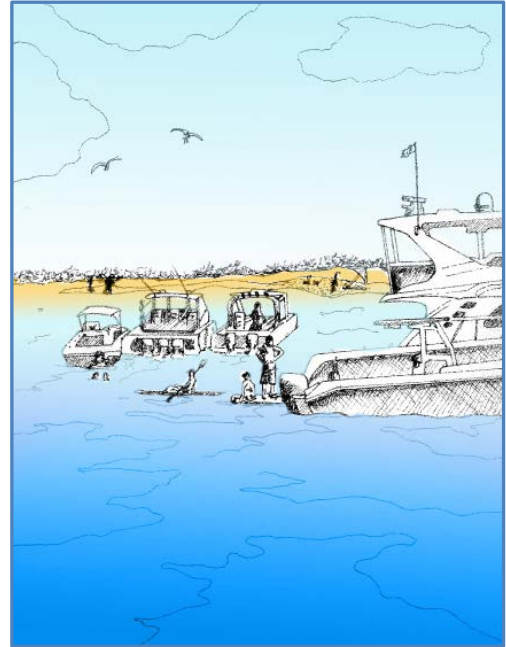
Chapter 7: Implementation

The Martin/St. Lucie Regional Waterways Plan is a long-range planning document that provides a broad array of recommendations regarding programs, projects, and inter-agency synchronization to expand economic health and improve quality of life for the residents of the region. Since there is not a single entity that can be appropriately tasked with two decades of implementation activities, Chapter 7 provides a detailed listing of the various recommendations, suggested lead and collaborating agencies, and timeframes. Key projects and programs include:

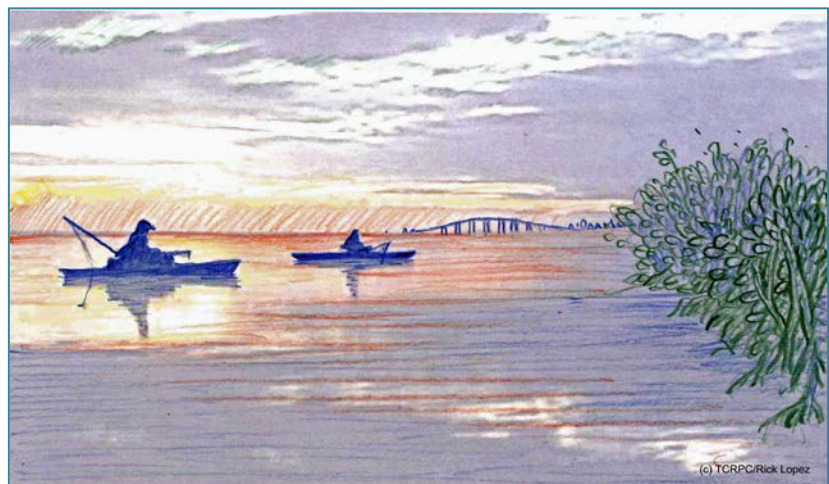
- Support on-going waterways restoration efforts.
- Establish Water Taxi Working Groups in each county to evaluate station locations and routes, refine special events inventory, facilitate public multi-use dock construction, and advance public/private water taxi operations.
- Expand launching capacity for all users with improved ramp facilities, including “soft launches” for paddlers, parking, restrooms, and related amenities.



- Adopt regulatory language to further protect marine transportation routes for transport of vessels to waterway.
- Identify and fund multi-modal “last mile” connections to/from marinas and waterfront centers.
- Seek funding to acquire Walton Road street-end and create Walton Road Scenic Overlook.
- Advance development of public fish market in Port Salerno.
- Advance development of water-focused amenities in Old Palm City, with rowing emphasis.
- Advance development of mixed-use Westmoreland Tract in Port St. Lucie, with riverwalk extension, paddling amenities, and watersports concessions as appropriate.
- Work with SFWMD to create canal-bank greenways where appropriate.
- Protect rights to marine navigation at railroad bridges by identifying appropriate revisions to CFR bridge regulations; safety, technology, and communications improvements; and physical bridge improvements to create wider, taller passage for vessels.
- Develop Treasure Coast Water Sports Industry Cluster concept with refined marketing, programming, athletic competitions, and defined marketing campaign to expand hospitality benefits.
- Support marine industries cluster with high school career track, improved infrastructure, and development of comprehensive marine industries dataset to further expand industry.
- Support hospitality industry cluster with development of comprehensive visitor profile data over time.
- Establish “Lagoon Partnership Network” to improve efficiencies regarding environmental programming and enhanced sequential curricula.



Continued inter-agency engagement will be critical for the Plan’s successful implementation, especially between local governments in partnership with the regulatory and permitting agencies, to achieve the highest economic yield from these activities along with greatest enhancement to quality of life factors for the region’s residents, business and property owners, and visitors.



Martin/St. Lucie Regional Waterways Plan

CHAPTER 1: INTRODUCTION



In 2013, the Treasure Coast Regional Planning Council (TCRPC) was authorized by the Martin Metropolitan Planning Organization (MPO) and St. Lucie Transportation Planning Organization (TPO) to produce a Martin/St. Lucie Regional Waterways Plan. This effort was funded by the MPO and TPO, with matching funds provided by the Florida Inland Navigational District (FIND). The purpose of the Plan is to identify and prioritize waterway access needs and facilities of the regional waterways system to promote and maximize its economic vitality and public benefit. Consistent with the MPO and TPO work programs, the plan explores strategies to leverage the economic benefit of the waterways both as a recreation resource and as part of a multi-modal system for the movement of people and freight.

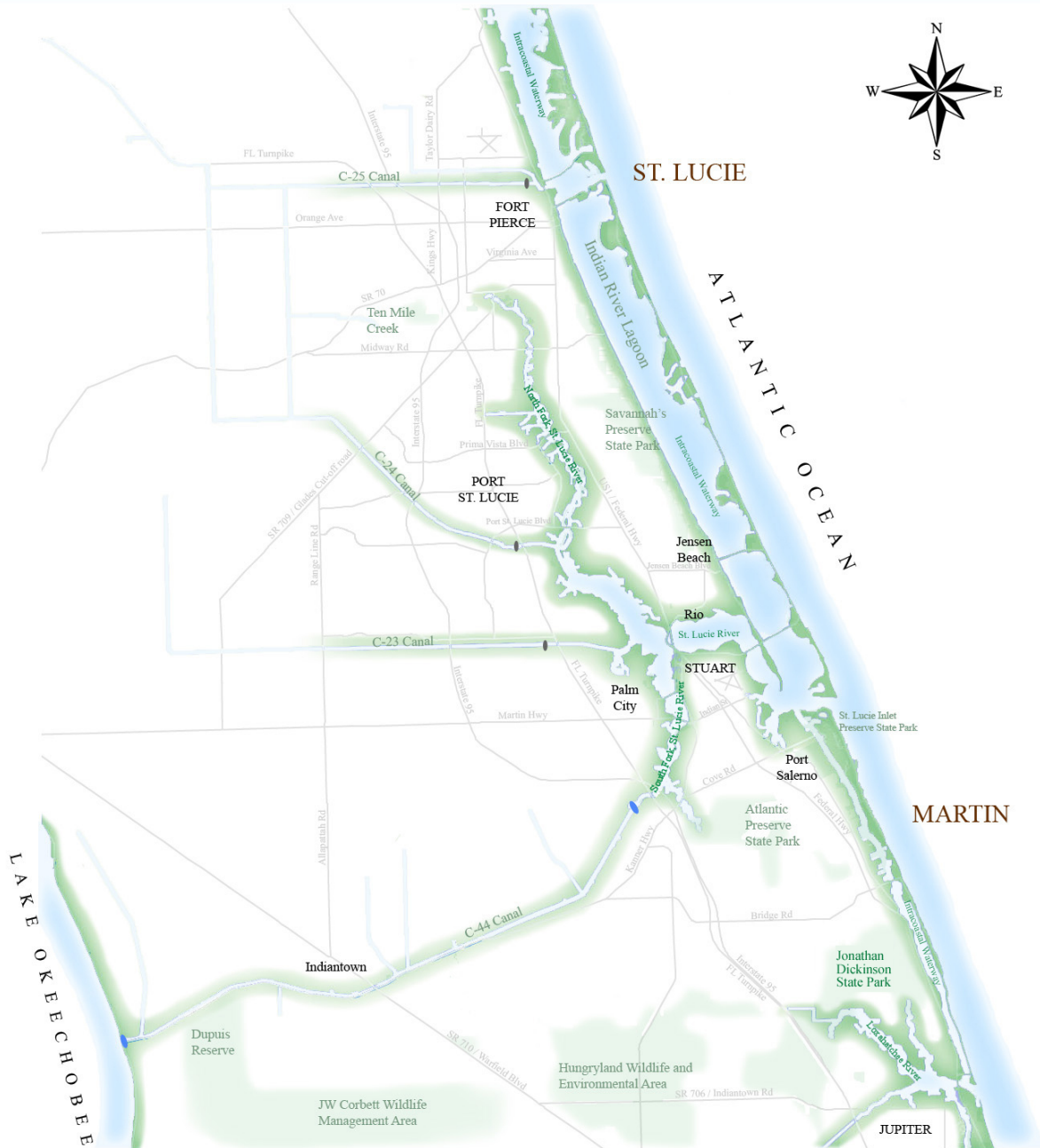
Martin and St. Lucie counties are characterized by extensive waterways that traverse the area. The Intracoastal Waterway (ICW), also known as the Atlantic Intracoastal Waterway (AIW), spans roughly 44 miles through the two counties and provides connections to both the Fort Pierce and St. Lucie Inlets. The St. Lucie River, including its north and south forks, provides connections to the ICW, water access inland, and a connection to Lake Okeechobee via the St. Lucie Canal (C-44). Additionally, the counties include a series of smaller creeks, canals, and tributaries, which provide additional waterway connections for residents, business owners, visitors, and marine life.

All seven municipalities located in the two counties have waterfront properties. The municipalities include the City of Fort Pierce, Town of St. Lucie Village, and City of Port St. Lucie in St. Lucie County; and the City of Stuart, Town of Ocean Breeze, Town of Sewall's Point, and Town of Jupiter Island in Martin County. Additional focused redevelopment initiatives are underway in Port Salerno, Rio, Jensen Beach, Old Palm City, and Indiantown. These communities have a broad range of uses adjacent to the waterways, including residential, commercial, industrial, recreational, conservation, and other uses. In addition, the waterways play a significant role in the movement of freight, which provides additional economic development potential. The future development patterns, access, protection, function, regulation, and maintenance of the waterways are critical to the counties' sustainability.



North Fork, St. Lucie River. Photo by TCRPC

Martin & St. Lucie WATERWAYS PLAN



Rev. 8/21/2014

LEGEND
● Canal Control Structure preventing access to natural waterway system
■ Canal Control Structure and Lock

PROJECT STUDY AREA

Introduction

Public Participation

The planning process to develop the waterways plan included extensive public involvement, education, and master planning to address the broad range of issues and stakeholder interests. The project was initiated with the selection of a steering committee comprised of representatives appointed by the MPO and TPO. The steering committee met frequently throughout the planning process and provided valuable guidance in the development of the Plan.



To inform the Plan, a formal public participation process was facilitated by TCRPC. This included a series of public educational forums conducted from December 2013 through May 2014. The educational forums were based on broad themes selected by the steering committee, including: marine transportation; land use and upland transportation; natural resources; regulation and management; recreational, cultural, and educational resources; and economic development. Following the forums, three half-day public workshops were conducted in Port St. Lucie, Fort Pierce, and Jensen Beach to obtain additional public input. Subsequently, a week-long public design studio was hosted in the TCRPC office to evaluate the ideas generated by the public and advance the development of planning concepts.

Additional public input was gathered through a series of interviews conducted by the TCRPC project team as well as interactive presentations of preliminary findings to the FIND Board, MPO and TPO Boards, their advisory committees, local governments, and other groups and organizations within the region. The Waterways Plan was received by the Martin MPO Board of Commissioners on September 22, 2014, the FIND Board of Commissioners on October 18, 2014, and the St. Lucie TPO Board of Commissioners on December 3, 2014, which is the date of this Final Report.

Introduction

Organization of the Plan

The Martin/St. Lucie Regional Waterways Plan is organized into seven chapters. Following this Introduction (Chapter 1), there are five chapters that represent the core areas of study, including:

- Natural Resources (Chapter 2), which provides an overview of the major waterways system components and related restoration efforts;
- Marine Transportation (Chapter 3), including details regarding dredging, navigational conflicts such as bridges, opportunities for passenger transportation, cargo transport, and the Port of Fort Pierce;
- Land Use and Upland Transportation (Chapter 4), addressing the eight waterfront centers (e.g., Port Salerno, Old Palm City, Jensen Beach, Rio, Indiantown, Stuart, Fort Pierce, and Port St. Lucie) and land-based transportation needs;
- Public Access and Recreation (Chapter 5), with overviews of recreational infrastructure and the various type of recreational activities; and
- Economic Development (Chapter 6), which highlights waterways-focused industry sectors such as marine industries, hospitality, and land development.

The plan concludes with a chapter on Implementation (Chapter 7), which includes recommended projects and programs, lead and collaborating agencies, and timeframes. For additional reference and detail, the plan also includes an Appendix with maps, meeting notes from the public forums, listing of relevant regulations at the federal, state, and local levels along with links to regulatory documents, and key market data supporting the plan's economic analysis.



St. Lucie River. Photo provided by SFWMD.

CHAPTER 2: PROTECTION OF NATURAL RESOURCES



Introduction

The waterways of Martin and St. Lucie counties are characterized by abundant natural resources in both freshwater and estuarine systems. The freshwater systems include Lake Okeechobee, the North and South Forks of the St. Lucie River, the North and Northwest Forks of the Loxahatchee River, as well as creeks, tributaries, and the major canal systems. Estuaries are water bodies in which seawater is significantly diluted with freshwater flowing from the land. The main estuaries in and near Martin and St. Lucie counties are the Indian River Lagoon and the portions of the St. Lucie and Loxahatchee rivers near the inlets. The estuaries are especially important because they contain highly productive natural communities and ecosystems, including seagrass beds, algal beds, oyster beds, exposed sand and shell bottoms, mud flats, tidal marshes, and mangrove swamps. Seagrasses help stabilize sediments, enhance water quality, provide habitat for animals, and they are primary producers at the base of the marine food chain. They are also an important food source for manatees and serve as nursery areas for a high percentage of the regionally important commercial and sport fish species. Exposed sand and shell bottoms support algae, clams, oysters, and other bottom dwelling organisms, which provide a foraging base for fish. Drift algal beds are unattached communities that move in response to the water currents. Similar to seagrasses, drift algal beds provide habitat and nursery areas for fish and may have special importance to juvenile shrimp, lobsters and other invertebrates. Mangrove communities provide a nutrient base, which is critical for maintaining the commercial and sport fish populations.



Indian River Lagoon just north of the St. Lucie Inlet. Photo courtesy of SFWMD.

The estuaries are heavily used by recreational boaters and are important to the marine industries. They are prime locations for boat facilities, waterfront development, and other water-related activities. The marine, recreation, and tourism industries and the local economy in general are highly dependent on the quality of natural resources in the local waterways. This chapter describes these resources, identifies the key threats, and examines current efforts to protect and enhance natural resources in the local waterways. This chapter is designed to provide a foundation for all the other chapters in the plan. This chapter describes the importance of water quality, describes existing programs to improve water quality, promotes awareness of water quality issues, and provides support for existing programs. This information is provided within the context of the overall purpose of the plan, which is to explore strategies to leverage the economic benefit of the waterways as a recreational resource and component of a multi-modal transportation system.

Overview of the Major Waterway Systems

The Martin and St. Lucie county waterways are defined by two main systems: the Indian River Lagoon, which traverses the two counties generally north-south along the Atlantic coastline; and the St. Lucie River and Estuary, which flows from western inland areas of Martin and St. Lucie counties and joins the Indian River Lagoon in northeastern Martin County. The St. Lucie Canal (C-44) is the only navigable east-west waterway connecting to Lake Okeechobee in western Martin County. The other navigable waterway systems in the two-county area include portions of the North and Northwest Forks of the Loxahatchee River. In addition, the primary waterways include connections to smaller creeks and tributaries as well as smaller canals. The following sections describe these waterways systems in more detail.



Major waterway connections to the region are illustrated in the map above.

Indian River Lagoon. The Indian River Lagoon is a 156-mile long estuary separating the barrier island from the mainland on the east coast of Florida. The southern portion of the lagoon spans the entire north-south length of St. Lucie and Martin counties, a distance of about 43 miles. The southern reaches of the lagoon continue south to the Jupiter Inlet, where it terminates in Palm Beach County. Extensive seagrass beds in the shallow waters and tidal swamp forests, which are dominated by mangroves along the shoreline, contribute to the lagoon’s role as a major spawning and nursery ground for fish and marine life. The Indian River Lagoon is recognized as one of the most species-diverse estuaries in North America. The lagoon was designated as an estuary of national significance by the U.S. Environmental Protection Agency (EPA) in 1991, which led to the formation of the Indian River Lagoon National Estuary Program. This program represents a coordinated effort by local governments, state and federal agencies, and private interests to identify issues, resolve problems, and restore the estuarine resources of

the lagoon system. Restoration of the lagoon is now being guided by a comprehensive conservation and management plan developed by the Indian River Lagoon National Estuary Program (1996, 2008).

The navigational channel in the Indian River Lagoon is known as the Atlantic Intracoastal Waterway. This channel, which extends from Jacksonville to Miami, was completed in 1941. The ICW extends the full length of the Indian River Lagoon in St. Lucie and Martin counties. The ICW is 125 feet wide, and it is 12 feet deep north of Fort Pierce Harbor and 10 feet deep south of this point. Dredging and deepening the ICW from 1953 to 1961 resulted in the creation of 34 spoil islands in St. Lucie County and seven spoil islands in Martin County (Florida Department of Natural Resources 1990a).

Inlets. Within and near the study area, the ICW is connected to the Atlantic Ocean by way of the Fort Pierce Inlet in St. Lucie County, St. Lucie Inlet in Martin County, and Jupiter Inlet in Palm Beach County. Each is described below. The **Fort Pierce Inlet** was historically a meandering natural passage from the lagoon to the ocean and was known as the Indian River Inlet. In 1920-1921, the inlet was dredged at its current location. In 1935, the inlet became a Federal Navigation Project, which led to the dredging of the entrance channel, interior channel, and turning basin in 1938. In 1995, the U.S. Army Corps of Engineers (USACE) modified the Fort Pierce Harbor and enlarged the entrance channel to 30 feet by 400 feet, the interior channel to 28 feet by 250 feet, and dredging of the turning basin to a depth of 28 feet (FDEP 1997).



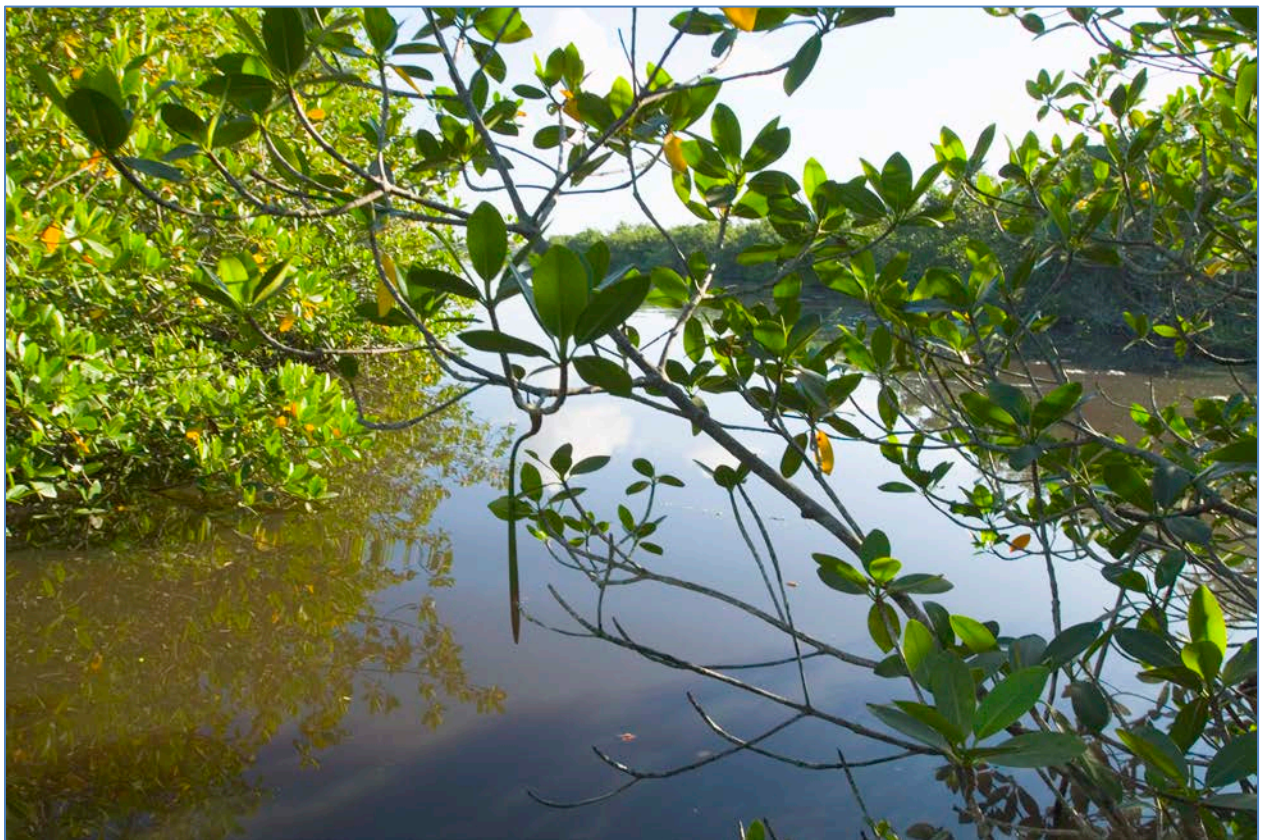
St. Lucie Inlet. Photo courtesy of SFWMD.

The **St. Lucie Inlet** was excavated in 1892 to provide navigational access to the ocean as well as tidal exchange (FDEP 1995). The St. Lucie Inlet was established as a federally authorized project in 1945. Maintenance dredging and stabilization projects have been periodically conducted by USACE. The Jupiter Inlet was natural until about 1922 when the Jupiter Inlet District dredged a six-foot deep channel through the inlet. The present channel is 165 feet wide and requires regular maintenance dredging by the Jupiter Inlet District.

The **C-25** canal, also known as the Belcher Canal, is a major east-west canal that discharges storm water directly into the Indian River Lagoon. The C-25 Canal and the Fort Pierce Farms Water Control District Canal No. 1 both discharge through the mouth of Taylor Creek, which connects to the lagoon just north of the Port of Fort Pierce. The C-25 canal connects to the lagoon just north of the Port of Fort Pierce. The C-25 canal was created as part of the Central and Southern Florida Flood Control project, which was authorized by Congress in 1948. Similar to

the C-23 and C-24 canals discussed below, navigation in the C-25 canal is limited by a control structure. The South Florida Water Management District (SFWMD) manages operable gates for flood control, but the weirs also function to prevent saltwater intrusion and protect wells located inland. SFWMD maintains suitable water levels in the C-25 canal to be used for agricultural irrigation.

St. Lucie River. The St. Lucie River is located in northern Martin and southern St. Lucie counties. The watershed covers an area of more than 937 square miles. Two forks of the river, the North Fork and South Fork, flow together near the Roosevelt Bridge in the City of Stuart. The river then flows eastward approximately six miles before reaching the Indian River Lagoon, where the river enters the Atlantic Ocean through the St. Lucie Inlet (SFWMD et al. 2009).



North Fork of the St. Lucie River. Photo courtesy of SFWMD.

Early accounts suggest the St. Lucie River was predominately a fresh water system before the 1880s. This is because of a lack of an inlet to allow tidal interchange. However, in the late 1800s, a channel was cut, and the St. Lucie Inlet was formed. This contributed to converting the lower portions of the river to an estuary. The characteristics of the St. Lucie River were also affected by the construction of the St. Lucie Canal (C-44) from 1916 to 1924. This canal was constructed to provide a connection from Lake Okeechobee to the St. Lucie River. The C-44 canal enters the South Fork of the St. Lucie River about seven miles upstream from its convergence with the North Fork. The St. Lucie Canal was built to provide an improved outlet for floodwaters from Lake Okeechobee. The C-44 canal also includes a portion of the Okeechobee Waterway, which is a 154-mile long navigable waterway extending from the

Atlantic Ocean near Stuart to the Gulf of Mexico near Fort Myers. This significant east/west waterway connection runs through Lake Okeechobee and consists of the Caloosahatchee River to the west of the lake and the St. Lucie Canal east of the lake. The USACE manages five locks along the Okeechobee Waterway. The St. Lucie Lock is located along the St. Lucie Canal, approximately 15.5 miles upstream of the junction of the St. Lucie River and the ICW. The St. Lucie Lock was built in 1941 for navigation and flood control purposes. In 1944, the connecting spillway structure was built for flood and regulatory flow control through the St. Lucie Canal to manage the water level in Lake Okeechobee. The structure also functions as a salinity barrier. In 1949, the navigation channel was enlarged to its present eight-foot depth.

The North Fork of the St. Lucie River has also been modified by drainage alterations. The **C-24** canal was completed in 1919 to control drainage in the western part of the basin. The C-24 connects to the North Fork about one mile upstream from the estuary. After flooding in 1947, the **C-23** canal was constructed by the USACE. The C-23 canal enters the North Fork at Bessey Creek. Navigation in these canals is limited by water control structures; however, upstream from the structures, the canals possess sufficient depths for the operation of smaller vessels. The C-23 and C-24 canals are used for agriculture, so the SFWMD maintains suitable water levels in these canals for irrigation.

Lake Okeechobee. Lake Okeechobee is a 730-square mile natural freshwater lake located in south central Florida. An eastern portion of the lake is partially located in western Martin County. The lake is shallow with a mean depth of about nine feet. It has a storage capacity of 1.05 trillion gallons of water and is considered the center of South Florida's water supply and flood control system. The lake is enclosed by a 143-mile structure known as the Herbert Hoover Dike (H.H. Dike). Levees were constructed around the lake beginning in the 1930's as a result of flooding from a disastrous hurricane in 1928 that killed about 2,000 people. In addition to the levees, major canals were constructed to provide outlets to tide. The two major outlets are the C-44 canal, which provides a connection to the St. Lucie River to the east, and the C-43 canal, which provides a connection to the Caloosahatchee River to the west. Additional canals connecting to the lake were constructed in association with the Central and Southern Flood Control Project, which was initiated as part of the Flood Control Act of 1948 (USACE 1999).

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Historical Problems Leading to Construction of Central and Southern Flood Control Project (C&SF) Project

- **Hurricanes in 1926 and 1928 resulted in failure of the levee around Lake Okeechobee**
- **Hurricane in 1947 resulted in wide-spread flooding throughout South Florida**
- **State of Florida requested Federal assistance in 1947**
- **Congress authorized the C&SF Project in 1948**

1926-1928
ENRAGING HURRICANES
... LOSS OF 2,500 LIVES

HOOPER DIKE
AUTHORIZED 1930
... COMPLETED 1937

AREAS FLOODED IN THE 1928 STORM
AREAS FLOODED IN THE 1926 STORM

AREAS FLOODED IN 1926 & 1928

AREAS FLOODED IN 1947



Herbert Hoover Dike surrounding Lake Okeechobee. Photo courtesy of SFWMD.

Under natural historic conditions, the lake was fed by a meandering Kissimmee River to the north. The lake provided a direct source of water to the Everglades. After heavy periods of rainfall, water would flow from the lake by way of numerous small tributaries and by a broad sheet-flow at the southeastern edge of the lake. Today, the situation is very different. The lake is now used to store water for urban and agricultural use, navigation, fish and wildlife preservation, and recreation. Channelization of the Kissimmee River to control prolonged flooding after hurricanes in the 1940s resulted in significant impacts to wildlife populations and water quality. Since 1999, the watershed has since undergone restoration to restore the Kissimmee River’s natural meandering flow. Outflows from the lake are received by the St. Lucie River, Caloosahatchee River, Everglades Agricultural Area, and Water Conservation Areas. The lake is critical for flood control during wet seasons and water supply during dry seasons (SFWMD 2011).



Mangroves. Photo courtesy of SFWMD.

The USACE is responsible for the operation and maintenance of the H.H. Dike. In recent years, concerns related to the potential failure of the dike and potential

risk to public health and safety have caused the USACE to adopt a regulation schedule that provides the highest priority to the continued safety of the communities surrounding the dike (SFWMD 2010). This means higher water storage levels and at times, intense discharges following heavy rainfalls to reduce the risk of flooding. The USACE is currently conducting an evaluation known as the Herbert Hoover Dike Dam Safety Modification Study to adequately address problems and develop alternatives for rehabilitation of the dike. However, the 2008 Lake Okeechobee Regulation Schedule (USACE 2007) keeps Lake Okeechobee water levels one foot lower than the previous schedule to attain a water level of 12.5 to 15.5 feet National Geodetic Vertical Datum of 1929. The maintenance of lower lake levels has led to an increase in discharges from the lake, which has significantly damaged the water quality and ecosystems in the St. Lucie River and Estuary, Indian River Lagoon, and other water bodies receiving water from the lake.



Cypress trees. Photo courtesy of SFWMD

Loxahatchee River. There are two portions of the Loxahatchee River – the North Fork and Northwest Fork that are relevant to the waterways plan. The main branch of the Loxahatchee River is the **Northwest Fork**, which flows northward from Palm Beach County into Martin County and through Jonathan Dickinson State Park. While in the park, the river turns east and then heads southeast, returning to Palm Beach County. The Northwest Fork then joins the Southwest Fork of the Loxahatchee River before emptying into the Atlantic Ocean through the Jupiter Inlet. Cypress Creek is a major tributary that flows northeastward until joining the Northwest Fork in southern Martin County. Kitching Creek is another major tributary that flows south in Martin County until joining the Northwest Fork in the park. Along the Northwest Fork, a portion of the river is designated as a National Wild and Scenic River because of its outstanding natural qualities. The Loxahatchee River is the only such federally designated river in Florida (FDEP and SFWMD 2010).

About a two-mile segment of the **North Fork** of the Loxahatchee River also occurs in southeastern Martin County. The upper reaches of the North Fork originate in Jonathan Dickinson State Park. The North Fork flows southward and joins the main body of the Loxahatchee River about 1.75 miles west of Jupiter Inlet. The ICW joins the main body of the Loxahatchee River about 0.5 miles west of Jupiter Inlet. It extends south from Martin County through the Indian River Lagoon until it reaches the Loxahatchee River. From this point, the ICW extends west through the Loxahatchee River and then continues south through Lake Worth Creek in Palm Beach County. Although the ICW does not enter the North or Northwest Forks of the Loxahatchee River, the river is navigable for many vessels for much of its length. Estuarine natural communities in this area include mangroves along the shoreline with submerged resources including tidal flats, seagrass beds and oyster bars (Department of Natural Resources 1984).

Key Issues and Evaluation

Historically, the main natural resource impacts to water bodies in Martin and St. Lucie counties have been water quality degradation and loss of habitat. Clean water is the single most important natural resource in the waterways. The Indian River Lagoon has been particularly impacted by inflows of fresh water from Taylor Creek and C-25 Canal in St. Lucie County, and the St. Lucie River in Martin County. The decline in water quality is attributed to an increase in nutrient input, sedimentation, turbidity, and changes in salinity due to freshwater discharges. Stormwater runoff has a major detrimental impact, as it contains heavy metals and hydrocarbons from roadways as well as fertilizers, herbicides, and pesticides from developed areas. Discharge from sewage treatment plants, leakage from faulty septic tanks, and sewage from boats also have the potential to add excess nutrients and pollutants to the estuaries. Seepage from septic tank drainfields that were installed closer to the waterways than current regulations allow are also recognized as a major contributor to excess nutrients and pollutants.



View of the southern shoreline of the St. Lucie Inlet in the foreground and the Indian River Lagoon in distance. This photo shows the north end of St. Lucie Inlet Preserve State Park. Photo courtesy of SFWMD.

The elimination or alteration of habitat was largely the result of shoreline development, navigational improvements, and antiquated mosquito control practices designed to create impoundments around mangrove forests. Dredging is needed to create, improve, and maintain channels and docking facilities. However, dredging activities need to be carefully designed regarding the source and deposition areas, the composition of the dredged material, and the construction technique to avoid adverse environmental impacts. Dredge and fill activities have

the potential to eliminate littoral vegetation and mangroves from the shoreline. The removal of seagrasses and mangroves by dredge and fill operations has contributed to degradation of a variety of estuarine resources, including fish and wildlife. The dredging and permanent maintenance of the inlets has caused an increase in salinity levels, which has changed the ecological composition of the lagoon system. Also, the dredging of inlets and channels and the deposition of spoil from these projects has reduced the amount of natural communities in the lagoon. These activities also have had the effect of altering the historical patterns of flushing and water circulation in the lagoon.

The loss of natural communities caused by dredging within and adjacent to the major water bodies is not the major issue that it was in the past, largely due to existing regulations by local governments and state and federal agencies. Both Martin and St. Lucie counties have extensive shoreline protection standards that limit the alteration of natural communities, protect mangroves, and require the treatment of stormwater prior to discharge into the estuaries. Further dredging and dock construction within the waterways, is regulated by the Florida Department of Environmental Protection (FDEP), which requires construction techniques and mitigation that minimizes direct and indirect impacts to water quality and submerged ecosystems (Refer to Land Development Codes and Regulations in Appendix).



S-80 structure. Photo courtesy of SFWMD

Today, there are three major issues related to the protection of water quality in the waterways of Martin and St. Lucie counties. The number one issue is impacts related to discharges from Lake Okeechobee through the C-44 canal to the St. Lucie River. The second issue is the impact from non-point sources of stormwater entering all the water bodies, especially through the major canal systems, including the C-23, C-24, and C-25 canals as well as smaller creeks and tributaries. The third issue is waste from boats within the waterways polluting the water. These and other issues are described in more detail in the following sections.

Lake Okeechobee Discharges. Foremost among the factors impacting natural resources in the waterways is the quality and quantity of water entering the estuaries. Freshwater discharges from Lake Okeechobee have had devastating effects on natural resources and made it impossible to maintain good water quality in the St. Lucie River Estuary and southern Indian River Lagoon. Major environmental concerns include adverse salinity fluctuations, accumulation of sediments and toxins, poor water

associated with urban and agricultural activities, loss of seagrass and shellfish resources, fish kills, and sick fish. The three fundamental causes of these problems are excessive freshwater inputs, excessive suspended sediments, and excessive nutrients. Other contributing problems

include insufficient dissolved oxygen and the presence of heavy metal and pesticide contamination in sediments.



Discharges from Lake Okeechobee flow through the S-80 structure on the C-44 canal. Photo courtesy of SFWMD.


Poor water quality is a major problem with Lake Okeechobee. High nutrient concentrations are responsible for blooms of undesirable blue-green algae. High phosphorous levels in the lake are the result of stormwater runoff from dairies, cattle ranches, and vegetable crops that drain into the lake primarily from the Kissimmee watershed and other drainage basins north of the lake. The increase in phosphorous in the lake has also contributed to the accumulation of phosphorous-rich mud sediments over large areas of the lake bottom. In addition, the maintenance of prolonged periods of high water levels in the lake for flood control has damaged near-shore vegetation and allowed undesirable species to expand in the lake's littoral zone. The discharge of water from the lake to the C-43 and C-44 canals has severely impacted the Caloosahatchee and St. Lucie River estuaries.

The flood control discharges from Lake Okeechobee through the St. Lucie Canal are known to exacerbate the problem of excessive and sudden freshwater discharges into the St. Lucie River. One of the keys to solving the major environmental problems is to design a system that controls the seasonal discharges of freshwater. The challenge is to design a system to simulate the flow of freshwater that would occur in a natural system. This can be accomplished by establishing new water preserve areas and by taking advantage of those natural lands that have additional water storage capability.

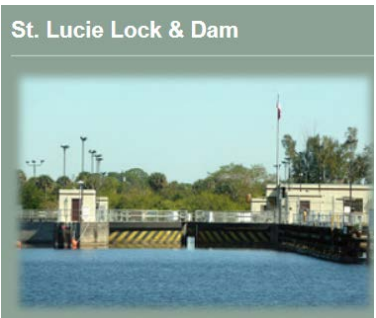


S-80 structure and the St. Lucie Lock on the C-44 canal. Photo courtesy of SFWMD.

In order to correct the major problems with the existing water management system affecting the Everglades, the USACE and SFWMD produced the Central and Southern Florida Project Comprehensive Review Study, known as the Restudy. In 2000, Congress authorized the Comprehensive Everglades Restoration Plan (CERP) to enhance wetlands and associated lakes, rivers, and bays in order to correct problems with the existing water management system. The major problems include: 1) extreme fluctuations in water levels in Lake Okeechobee that have a major adverse impact on fish and wildlife habitats; 2) extreme fluctuations in freshwater discharges to the Caloosahatchee and St. Lucie estuaries that result in detrimental salinity conditions and physical alterations of fish and wildlife habitat; 3) detrimental hydrologic conditions in freshwater wetland habitats that have major adverse impacts on plant and animal communities of the Everglades; and 4) unsuitable flows to bays and estuaries that adversely impact salinity and physically alter fish and wildlife habitats. The historic, current, and projected water flows related to CERP are illustrated in the following image.

**US Army Corps of Engineers**

St. Lucie Lock & Dam



Lock history: First lock was built at this site by the Everglades Drainage District in 1925.

Cost of construction: Approximately \$2 million total

Lift of lock: Sea level to current St. Lucie Canal water level. (14.5' normal)

Lockages: Approximately 10,000 vessels lock through annually; of these about 91% are recreational vessels.

Commodities: Approximately 26,000 tons of manufactured goods, equipment, machinery, crude materials locked annually.

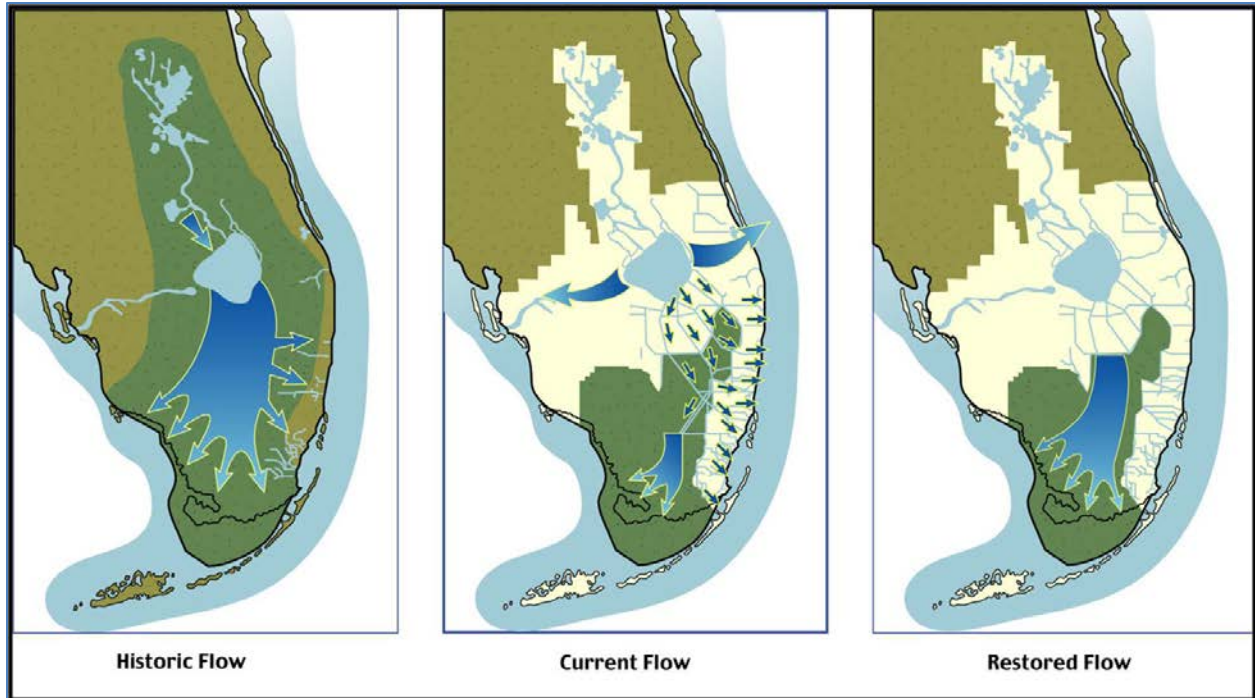


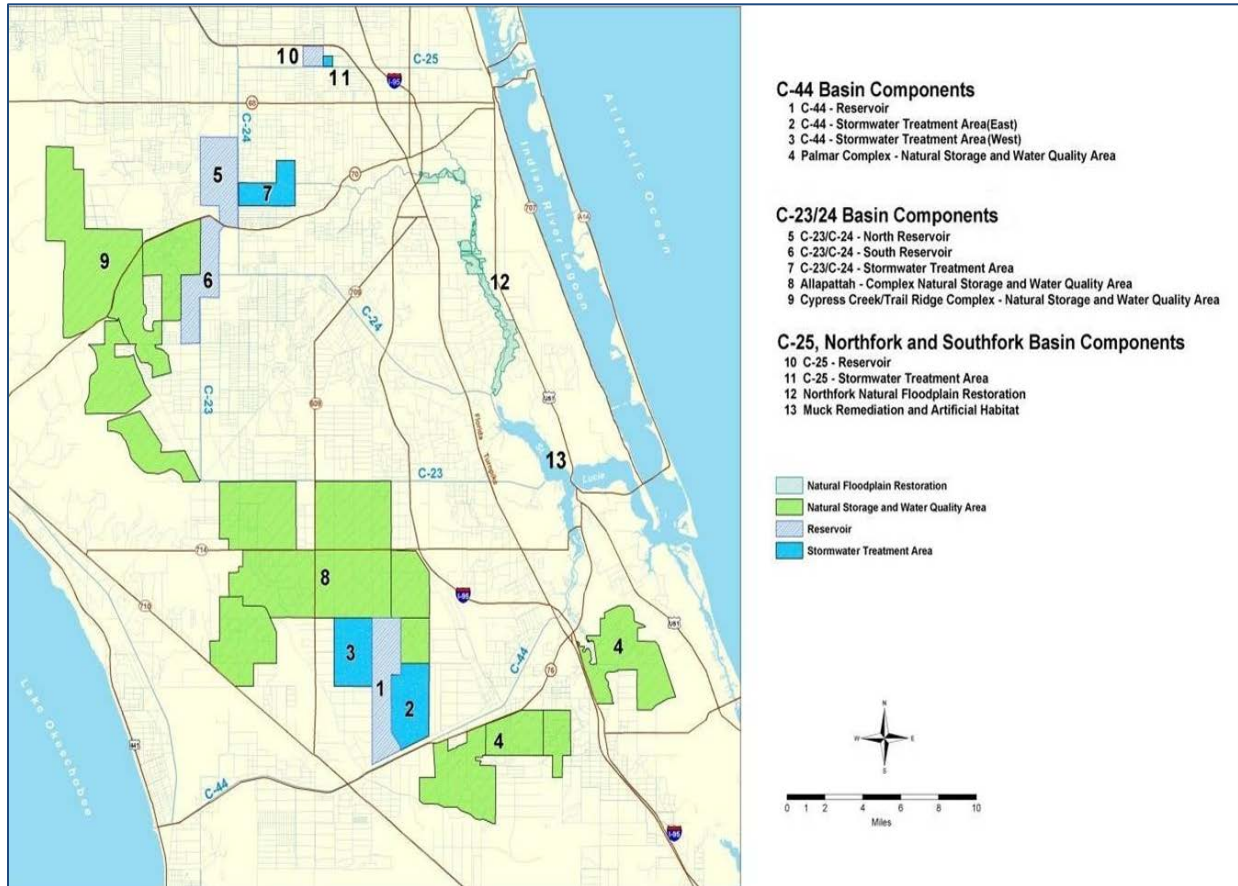
Illustration of water flows in southeast Florida. Image provided by SFWMD.

The CERP features 68 components and will be implemented over the next 35 years. The plan is in its 15th year and is moving forward slowly. There are three major components of the CERP that have the greatest benefit for the St. Lucie River Estuary and the Indian River Lagoon. These include the Lake Okeechobee Watershed project; Indian River Lagoon – South project; and the Central Everglades Planning Project (CEPP).

The Lake Okeechobee Watershed project is located north of Lake Okeechobee, outside the study area of this waterways plan. This project includes six structural components and a modification to the existing Lake Istokpoga Regulation Schedule. The structural components include the Taylor Creek/Nubbin Slough Reservoir and Stormwater Treatment Area, Kissimmee Reservoir, Istokpoga Reservoir, Istokpoga STA and Paradise Run Wetland Restoration. This project will improve quality and quantity of discharges into Lake Okeechobee, which will also benefit the downstream St. Lucie River Estuary (South Florida Water Management District et al. 2009).

The Indian River Lagoon – South project (USACE and SFWMD 2004) includes the major CERP components within Martin and St. Lucie counties. This project contains a plan for the restoration, protection, and preservation of the water resources of Martin and St. Lucie counties, including the St. Lucie River and Estuary and southern Indian River Lagoon. The Indian River Lagoon – South project will reduce discharges from Lake Okeechobee through the St. Lucie Canal to the St. Lucie River Estuary and Indian River Lagoon by establishing new water preserve areas and by taking advantage of natural lands that have additional water storage capability. The major components of the Indian River Lagoon – South project are illustrated in the image below. The recommended plan includes above-ground reservoirs; stormwater treatment areas; restoration of upland and wetland communities; diversion of existing watershed flows; muck removal; and creation of artificial submerged habitat. Many of these components will provide both ecological and recreational opportunities. For example, SFWMD has acquired approximately half of the

land needed to restore the Allapattah natural area (identified as “8” in the image) to its historically natural condition. The District is continuing work to restore the natural drainage features on this property. This property has been opened to the public for passive recreation usage. When this and other components of the plan are completed, they will have the potential to form a significant system of wildlife corridors and recreational greenways in Martin and St. Lucie counties.



Basin components of the Indian River Lagoon – South project. Image provided by SFWMD.

The CEPP is another major component of the CERP that will help reduce harmful discharges from Lake Okeechobee (USACE and SFWMD 2014). Similar to the Indian River Lagoon – South project, the USACE is leading this planning effort in partnership with the SFWMD. This project focuses on ecosystem restoration by providing additional water to the Everglades south of Lake Okeechobee by utilizing freshwater from Lake Okeechobee that would have been otherwise discharged to the St. Lucie and Caloosahatchee Estuaries. The recommended plan, which still awaits final authorization and funding from Congress, includes many features designed to increase storage, treatment, and conveyance of water south of Lake Okeechobee; remove canals and levees within the central Everglades; and retain water within Everglades National Park. The recommended plan is designed to reduce the number and severity of harmful, high-volume discharges from Lake Okeechobee and improve salinity in the St. Lucie and Caloosahatchee River Estuaries.



Outfall. Photo courtesy of SFWMD

Stormwater Discharges. Stormwater runoff from sources other than Lake Okeechobee also has a major impact on the water quality of the waterways. The construction of major drainage networks for agriculture and urban development, primarily in the 1950s, changed the discharge pattern of freshwater in the Indian River Lagoon and the St. Lucie River watersheds. The resulting uneven flow rates of freshwater affect the salinity balance in the estuary. Stormwater runoff is also a major source of non-point source pollutants originating from urban areas. Stormwater runoff is known to contain heavy metals and hydrocarbons from roadways as well as fertilizers, herbicides, and pesticides from developed areas. Discharge from sewage treatment plants, septic tank drainfields, and leakage from faulty septic tanks can also add excess nutrients and pollutants to the estuaries. Major environmental impacts have included poor water quality, adverse salinity fluctuations, accumulation of sediments and toxins, loss of seagrass and shellfish resources, fish kills, and sick fish. These impacts are the result of excessive freshwater inputs, excessive suspended sediments, and excessive

nutrients. Other contributing problems include insufficient dissolved oxygen and the presence of heavy metal and pesticide contamination in sediments.

The Indian River Lagoon – South project component of the CERP, discussed above, in relation to reducing harmful discharges from Lake Okeechobee, is also the largest project designed to address other stormwater issues in the watersheds of the Indian River Lagoon and the St. Lucie River. Key elements of the plan include construction and operation of four new above-ground reservoirs and their connecting canals, control structures, levees and pumps to capture water from the C-44, C-23, C-24 and C-25 canals for increased storage; and construction and operation of three new stormwater treatment areas to reduce sediment, phosphorus and nitrogen going to the St. Lucie River estuary and the lagoon. Stormwater Treatment Areas are planned for each of the C-44, C-23/24 and C-25 basins. Additional activities include restoration of the upland/wetland mosaic and habitat with ditch plugging, berm construction, and periodic fire maintenance at three locations. Also, redirection of water from the C-23/24 basin to the north fork of the St. Lucie River enabling freshwater flows to the estuary. The redirection of water will be beneficial to the lagoon by reducing the extreme fluctuations in freshwater discharges to the lagoon, and will provide an opportunity for additional sediment reduction and treatment of this water before entering the estuary.

Another important project to improve the water quality in the Indian River Lagoon is the Taylor Creek/C-25 Dredging Restoration Project, which is currently being implemented by St. Lucie County. This project involves dredging Taylor Creek from the C-25 spillway and Fort Pierce Farms Water Control District Canal No. 1 to the ICW in the Indian River Lagoon. The removal

of approximately 150,000 cubic yards of muck sediments will restore Taylor Creek to a sandy bottom. The removal of these sediments, which have accumulated over the last 40 years, will help to protect seagrasses and improve the overall health of the Indian River Lagoon.



Water control structure on Ten Mile Creek at Gordy Road in St. Lucie County. Photo courtesy of SFWMD.

The FDEP has recently launched the Basin Management Action Plan (BMAP) program to address water quality issues in several watersheds in Florida. The Final St. Lucie River and Estuary Basin Management Plan was adopted in May 2013 (St. Lucie River and Estuary Basin Technical Stakeholders 2013). This plan represents a blueprint for restoring impaired waters by reducing pollutant loadings to meet the allowable loadings established in a Total Maximum Daily Load (TMDL). TMDLs are water quality targets that are based on state water quality standards for specific pollutants, such as excessive nitrogen and phosphorus. The Department identified nine segments in the St. Lucie River and Estuary Basin as impaired by nutrients. The BMAP includes a comprehensive set of strategies designed to implement the pollutant reductions established by the TMDL. The strategies may include permit limits on wastewater facilities; urban and agricultural best management practices; conservation programs; financial assistance and revenue generating activities; and other actions. The total required reductions will be spread over a 15-year time frame. The pollutant loading reductions will be implemented in three five-year periods. The St. Lucie River and Estuary BMAP is in its first 5-year iteration for the basin.

Other important planning efforts and programs to reduce stormwater impacts are described in the Indian River Lagoon Comprehensive Conservation and Management Plan Update (Indian River Lagoon National Estuary Program 2008) and St. Lucie River Watershed Protection Plan (South

Florida Water Management District et al. 2009). Furthermore, Martin and St. Lucie counties continue to engage in specific projects to increase the storage and treatment of stormwater before it enters the waterways. These projects target areas that need stormwater retrofits because they were developed prior to current regulations, which require onsite storage and treatment of stormwater. Also, Martin and St. Lucie counties and all municipalities within these counties have adopted fertilizer ordinances, which restrict the use of fertilizer on landscaped areas during the rainy season. These ordinances are aimed at reducing the amount of harmful nutrients that enter local water bodies. Additional education and outreach to the general public is needed to help improve compliance with these ordinances.

The use of septic tanks for the disposal of sewage also has the potential to contribute wastewater effluent to the waterways. The use of septic tanks is controlled by regulations implemented by the Florida Department of Health. Current regulations require that septic tanks be located more than 75 feet from the boundaries of surface water bodies (Chapter 64E-6, Florida Administrative Code). However, new development is required to connect with waste water utility lines if they are available. There is reduced risk of allowing nutrients to reach the waterway with the use of a wastewater utility collection system. Problems with septic tanks may arise when a leak develops or a septic tank is not properly maintained. Efforts to protect the waterways may be improved through the use of advanced septic system designs, connection to public sewer systems, and periodic inspection and maintenance of septic systems in order to ensure they are functioning properly. All efforts to retrofit problem stormwater and wastewater management systems should help improve water quality.

Another area of concern is nutrient laden discharges from fallow agricultural lands used to dispose biosolids or domestic wastewater residuals. The Northern Everglades and Estuaries Protection Plan (Section 373.4595(4)(b)2.e, Florida Statutes) requires that after December 31, 2007, the FDEP may not authorize the disposal of domestic wastewater residuals within the St. Lucie River Watershed unless the applicant can affirmatively demonstrate that the nutrients in the residuals will not add to nutrient loadings in the watershed. The biosolids rule, Chapter 62-640, Florida Administrative Code, includes requirements for site permitting, nutrient management plans, and registration of distributed and marketed biosolids as fertilizer. This rule also prohibits the land application of other types of biosolids in the Northern Everglades unless a nutrient balance demonstration is approved by FDEP (SFWMD and FDEP 2012).

Boat Discharges. The project Steering Committee expressed considerable concern regarding the discharge of waste from boats in the water. Although the Florida Fish and Wildlife Commission (FWC) does regulate illegal waste disposal utilizing equipment to determine whether or not illegal waste disposal has occurred, it is often extremely difficult to enforce these regulations. To help address this issue, Martin County developed a mobile pump-out service in 2000 to facilitate the pump-out of bilges and wastewater holding tanks on boats. The service is offered free-of-charge year-round to Martin County residents, five days/week, and it is operated through Martin County's Utilities and Solid Waste Department. Waste is transported to a county operated wastewater treatment facility. The service began with one vessel, a Carolina Skiff named the "M.S. Poop," which was retrofitted with an on-deck holding tank for pumped effluent. The original vessel was operated for fourteen years, seeing increased demand annually over time from approximately 460 pump-outs in 2001 to 2,000 in 2013.



Martin County's mobile pump-out service, operating through Martin County's Utilities and Solid Waste Department, recently acquired two new vessels. The program could operate under contract to St. Lucie County to extend the service through both counties. Photo courtesy of Martin County.

Recently, the program acquired two new vessels, specifically designed to handle mobile pump-outs, retiring the original vessel. Funding for the new vessels was provided in part through FIND, which provided 75 percent of the funds, with the balance of funding provided by Martin County. Operating funds for the service are provided through FDEP's Sport Fish Restoration Program, with additional funds provided by Martin County.

The issue of responsible boating and the needs for pump-outs of personal watercraft and public restrooms were raised consistently through the plan development process by the public as an issue of concern. While dock-based pump-out facilities continue to be effective, especially at larger marinas, Martin County's mobile pump-out service directly addresses this issue. Records indicate growing demand for this service over time. There appears to be an opportunity for multi-county collaboration to expand the service into St. Lucie County, especially given the concentration of many of St. Lucie County's personal watercraft located at docks along the North Fork of the St. Lucie River. An interlocal agreement, with appropriate funding to offset local operational costs, could enable this service to be provided in St. Lucie County, which would also benefit Martin County residents with sewage removal along the river that drains into and through Martin County. Further intergovernmental discussions would be necessary to advance this concept, but it would appear to assist in waterway enhancement in a cost-efficient and effective manner, without the need for additional capital acquisition or staffing by St. Lucie County.

Ten Mile Creek Water Preserve Area. The Ten Mile Creek Water Preserve Area (WPA) is an above-ground 526-acre reservoir with a stormwater treatment area located in St. Lucie County. The project is located at the headwaters of the North Fork of the St. Lucie River along Ten Mile Creek. This project was authorized as a Critical Restoration Project by the 1996 Water Resources Development Act (SFWMD et al. 2009). The purpose of the project is to provide temporary storage of peak stormwater flows from the Ten Mile Creek basin in order to allow reduced flows

back into the creek, moderate salinity levels, and reduce sediment loads downstream in the St. Lucie River and Estuary. The USACE completed the project in 2006. However, subsequent monitoring and testing of the facility revealed that reservoir does not hold water as it was originally designed. Currently, litigation is pending concerning the corrective actions needed. The USACE has returned the Ten Mile Creek WPA to a passive operating state. The SFWMD is currently negotiating with the Corps to take over limited operation and maintenance of the facility until the litigation is complete and the necessary actions can be taken for the facility to become fully operational.



Ten Mile Creek Water Preserve Area. Photo courtesy of SFWMD.

Restoring the Loxahatchee River. Historically, the drainage basin of the Northwest Fork of the Loxahatchee River was comprised primarily of natural communities including pine flatwoods interspersed with cypress sloughs, hardwood swamps, marshes and wet prairies. At present, portions of the drainage basin have been drained or redirected, to discharge into other water bodies. Further, much of the developed land within the remaining basin has a drainage system designed to lower the water table and remove stormwater faster than would occur under natural conditions. These changes to the drainage patterns have resulted in several problems, including excessively high flows to the river following rainfall events and reduced flows to the river during the dry season. Unlike the St. Lucie River, which generally suffers from excessive flows, the main problem with the Northwest Fork of the Loxahatchee River is that it suffers from reduced freshwater flows, especially in the dry season. Reduced flows have allowed saltwater intrusion up the river channel, which has altered freshwater aquatic ecosystems, causing a change in the vegetation along the riverbanks.

As a result of the National Wild and Scenic River designation, a management plan was developed for the river (FDEP and SFWMD 2010). The Loxahatchee River Management Coordinating Council maintains oversight of plan implementation and management, which deals primarily with the wild and scenic portion of the river. In addition, the SFWMD (2006) has developed a restoration plan for the Loxahatchee River. This plan identifies the preferred restoration flows designed to protect upstream freshwater ecosystems as well as minimize impacts to downstream estuarine ecosystems. As part of this effort, Martin County has engaged in activities to restore flows to Kitching Creek, which is a major component of the Loxahatchee River Restoration Plan. Ultimately, the goal is to produce a more natural timing of flows to Kitching Creek and to help protect the Northwest Fork of the Loxahatchee River from saltwater intrusion during the dry season. Ongoing efforts to restore the Loxahatchee River will help enhance the waterways.



Loxahatchee River. Photo courtesy of SFWMD

Manatee Protection. The Florida manatee (*Trichechus manatus latirostris*), a subspecies of the West Indian manatee, is federally designated as endangered by the U.S. Fish and Wildlife Service (USFWS). This marine mammal inhabits the waterways of Florida, including both fresh and saltwater areas, the Atlantic Ocean, estuaries, rivers, canals, and dredged canals. Manatees prefer warm water areas. Although they range northward to other states during the summer, manatees migrate to southern Florida and often congregate near warm water refuges during the winter. Manatees often come to the surface of the water to breath air, making them extremely vulnerable to being struck by motorboats. In order to reduce the probability of manatees being struck by boats, both Martin and St. Lucie counties have adopted manatee protection plans, which have resulted in the adoption of Florida Administrative Code Rule 68C-22.024 – Martin County Zones; and Rule 68C-22.008 – St. Lucie County Zones (Appendices 3D and 3E). The rules are intended to regulate the speed and operation of motorboats in designated areas in these counties where manatees are likely to occur. Ongoing efforts to protect manatees in Martin and St. Lucie counties will help enhance these native inhabitants of the waterways.



Pair of Florida Manatees. Photo courtesy of SFWMD.

Sea Level Rise. Recent measurements from tidal gauges worldwide indicate that ocean levels are currently rising. Measurements along the United States coast indicate that sea level has risen at a rate of about 10 to 12 inches per century, but recent measurements suggest that sea level may rise at an accelerated rate in the future. Projections for Southeast Florida indicate that sea level is expected to rise 3-7 inches over 2010 levels by 2030 and 9-24 inches over 2010 levels by 2060. Sea level is projected to rise one foot from the 2010 level between 2040 and 2070, but a two-foot rise is possible by 2060 (Southeast Florida Regional Climate Change Compact 2012).

The main areas impacted by sea level rise in Martin and St. Lucie counties are the barrier islands; shorelines of the Indian River Lagoon, St. Lucie, and Loxahatchee Rivers; and islands within the lagoon and river systems. Both counties and all seven of the municipalities in the two-county area have jurisdiction over areas affected by sea level rise. Sea level rise will likely impact large areas of wetlands located along the shoreline of the Indian River Lagoon. The wetlands in these areas are primarily mangrove forest. The other relatively large areas of wetlands occur at the upper reaches of the North and South Forks of the St. Lucie River, and North and Northwest Forks of the Loxahatchee River (TCRPC 2005).

Many coastal management, construction, and planning and zoning guidelines can help prepare citizens and governments for rising sea levels. Mitigation efforts include activities that slow the process of global climate change by lowering the level of greenhouse gasses in the atmosphere, such as reducing reliance on fossil fuels or planting trees to absorb carbon dioxide. Adaptation is the term describing proactive steps to make developed areas more resilient to sea level rise. The

main strategies for responding to sea level rise include retreat, accommodation, and protection. Retreat is the strategy of abandoning lands and structures in coastal zones and allowing marine ecosystems to move inland. Accommodation is the strategy that allows for land use and occupancy of vulnerable areas to continue, but with no attempts to prevent flooding or inundation. Protection is a strategy that involves using structural, defensive measures to protect the land from the sea, so that land use can continue. Shores can be protected by hard structures such as seawalls, or by soft structural techniques like beach nourishment and elevating land surfaces with fill. All local governments in Martin and St. Lucie counties would be benefitted by considering future plans to address the impacts of sea level rise as it relates to shoreline development, roads, and other infrastructure in low lying areas.



Photo courtesy of SFWMD.

Key Findings and Recommendations

Members of the community identified water quality and the health of the Indian River Lagoon and St. Lucie River Estuary as paramount issues of concern across all topics in the plan. Continued support is needed for implementing and funding the CERP to reduce harmful discharges from Lake Okeechobee to the St. Lucie River Estuary and Indian River Lagoon. There is also a significant need to support the many other agency and local government efforts to improve the quality of stormwater discharges and prevent pollution of the waterways. The health of the Indian River Lagoon and St. Lucie River Estuary directly affects the success of the marine, recreation, and tourism industries in Martin and St. Lucie counties. The local economy will

benefit from the protection and maintenance of high quality natural resources in the local waterways.

Protect, Enhance, and Restore Natural Resources

- Continue to seek funding and implementation for Everglades restoration activities (Lead agencies: All local governments, agencies, congressional & legislative delegations, community groups).
- Continue implementation of ongoing natural resource restoration and enhancement programs (Lead agencies: All local governments, agencies, community groups).
- Support actions to facilitate the operation and maintenance of the Ten Mile Creek WPA by the SFWMD (Lead agencies: All local governments, agencies, community groups).
- Support implementation of the Martin and St. Lucie County Manatee Protection Plans, including monitoring speed zone compliance, law enforcement, education and awareness, habitat protection, monitoring boating activity patterns, and adaptive management (Lead agencies: Martin and St. Lucie counties, FWC, and Sheriff's Departments).

Improve Stormwater Management and Reduce Discharge of Pollutants

- Expand stormwater management programs and treatment of discharges including basin mapping, watershed mapping, water quality testing, and baffle boxes (Lead agencies: Martin and St. Lucie counties, SFWMD).
- Encourage connections to public sewer systems rather than the use of septic tanks (Lead agencies: All local governments, FDOH).
- Where wastewater utility connections are not available, promote the use of advanced septic system designs and periodic inspection and maintenance of septic systems when wastewater utility connections are not available (Lead agencies: All local governments, FDOH).
- Install more pump-out facilities; create and distribute a map for boaters of available pump-out facilities; add information on pump-out facilities at boat ramps; expand the existing system of mobile pump-out vessels (Lead agencies: Martin and St. Lucie counties, FIND, FDEP, MIATC)
- Inventory public restrooms accessible from waterways, marinas, public docks; increase number of public restrooms accessible from the water; develop a map of restrooms and tie into boater education program (Lead agencies: Martin and St. Lucie counties, FIND, MIATC)

Expand Environmental Education

- Improve the environmental education program for K-12; use Martin County's K-12 program through the Environmental Studies Center as a model where possible (Lead agencies: Martin and St. Lucie County School Districts).
- Promote the Regional Environmental Education Program & Team (comprised of school district representatives, agency education staffs) to help develop a multi-year, sequential curriculum, share agency resources, identify efficiencies, and secure funding for broader environmental initiatives (Lead agencies: Martin and St. Lucie County School Districts).
- Explore the opportunity for a Lagoon Partnership Network for public parks and organizations along the Lagoon for improved communication, common marketing, and sharing of information and resources (Lead agencies: Martin and St. Lucie counties, FDEP, SFWMD, non-profit educational providers).

Enhance Regulatory Enforcement and Awareness

- Improve communications protocol among agencies and sheriffs' departments for special event permitting, such as sandbar-based events (Lead agencies: Martin and St. Lucie County Sheriff's Departments, USCG, FWC).
- Increase number of personnel and vessels for marine patrol, sheriffs' offices (Lead Agencies: Martin and St. Lucie counties and Sheriffs' Departments).
- Develop a resource book listing various regulatory & management agencies, programs, areas of overlap, identification of any areas of deficiencies (Lead agencies: Martin and St. Lucie counties coordinating among other agencies).

Plan for Sea level Rise

- Support a program to assess the impact of sea level rise on all existing infrastructure adjacent to the waterways, including buildings, bridges, roads, docks, boat ramps, parking lots, seawalls, and water and sewer systems (Lead agencies: All local governments, FDEP, SFWMD).
- Support a program to ensure that all new buildings and infrastructure proposed adjacent to the waterways are designed to accommodate future sea level rise (Lead agencies: All local governments, FDEP, SFWMD).
- Support a program to design all new and upgraded seawalls to include environmentally friendly features to include mangroves, seagrasses, and other natural resources adjacent to areas protected from sea level rise (Lead agencies: All local governments, FDEP, SFWMD).

Key References

- Florida Department of Natural Resources. 1984. Loxahatchee River Lake Worth Creek Aquatic Preserve Management Plan. Florida Department of Natural Resources, Tallahassee, Florida.
- Florida Department of Natural Resources. 1985. Vero Beach to Fort Pierce Aquatic Preserve Management Plan. Florida Department of Natural Resources, Tallahassee, Florida.
- Florida Department of Natural Resources. 1990a. Indian River Lagoon Spoil Island Management Plan. Florida Department of Natural Resources, Tallahassee, Florida.
- Florida Department of Natural Resources. 1990b. Jensen Beach to Jupiter Inlet Aquatic Preserve Management Plan. Florida Department of Natural Resources, Tallahassee, Florida.
- Florida Department of Environmental Protection. 1997. Fort Pierce Inlet Management Study Implementation Study. Tallahassee, Florida.
- Florida Department of Environmental Protection. 2009. North Fork St. Lucie River Aquatic Preserve Management Plan. Tallahassee, Florida.
- Florida Department of Environmental Protection and South Florida Water Management District. 2010. Loxahatchee River National Wild and Scenic River Management Plan Update. West Palm Beach, Florida.
- Indian River Lagoon National Estuary Program. 1996. Indian River Lagoon Comprehensive Conservation and Management Plan. Melbourne, Florida.
- Indian River Lagoon National Estuary Program. 2008. Indian River Lagoon Comprehensive Conservation and Management Plan Update. Palm Bay, Florida.
- Martin County. 2002. Manatee Protection Plan. Martin County Growth Management Department, Stuart, Florida.
- South Florida Water Management District. 2006. Restoration Plan for the Northwest Fork of the Loxahatchee River. West Palm Beach, Florida.
- South Florida Water Management District. 2010. Final Adaptive Protocols for Lake Okeechobee Operations. West Palm Beach, Florida.
- South Florida Water Management District. 2011. Upper East Coast Water Supply Plan Update. South Florida Water Management District. West Palm Beach, Florida.
- South Florida Water Management District and Florida Department of Environmental Protection 2012. South Florida Environmental Report. South Florida Water Management District, West Palm Beach, Florida.

- South Florida Water Management District, Florida Department of Environmental Protection, and Florida Department of Agriculture and Consumer Services. 2009. St. Lucie River Watershed Protection Plan. South Florida Water Management District, West Palm Beach, Florida.
- Southeast Florida Regional Climate Change Compact Counties. 2012. A Region Responds to a Changing Climate, Regional Climate Action Plan. Southeast Florida Regional Climate Change Compact, Broward County, Natural Resources Planning and Management Division, Fort Lauderdale, Florida.
- St. Lucie River and Estuary Basin Technical Stakeholders. 2013. Basin Management Action Plan. Florida Department of Environmental Protection. Tallahassee, Florida.
- St. Johns River Water Management District and South Florida Water Management District. 2002 Indian River Lagoon Surface Water Improvement and Management (SWIM) Plan Update. St. Johns River Water Management District, Palatka, Florida and South Florida Water Management District, West Palm Beach, Florida.
- St. Lucie County. 2002. Manatee Protection Plan. St. Lucie County Leisure Services Department, Fort Pierce, Florida.
- Treasure Coast Regional Planning Council. 2005. Sea Level Rise in the Treasure Coast Region. Treasure Coast Regional Planning Council, Stuart, Florida.
- U.S. Army Corps of Engineers. 1999. Lake Okeechobee Schedule Study: Final Environmental Impact Statement and Annex A. Jacksonville, Florida.
- U.S. Army Corps of Engineers. 2007. Final Environmental Impact Statement Including Appendices A through G - Lake Okeechobee Regulation Schedule. U.S. Army Corps of Engineers, Jacksonville, Florida.
- U.S. Army Corps of Engineers and South Florida Water Management District. 2004 Central and Southern Florida Project, Indian River Lagoon – South, Final Integrated Project Implementation Report and Environmental Impact Statement. Jacksonville, Florida.
- U.S. Army Corps of Engineers and South Florida Water Management District. 2014 Central Everglades Planning Project, Final Integrated Project Implementation Report and Environmental Impact Statement. Jacksonville, Florida.



Introduction

Water-based transportation is an invaluable benefit the waterways provide to Martin and St. Lucie counties. In the early days of settlement in the region, the waterways played a central role in transporting people and goods for centuries, preceding the FEC railroad, then complementing it by bringing goods to stations for shipment. The introduction of inlets and the AIW facilitated the movement of larger cargo from across Florida to the Caribbean and other international ports. The waterways also provide a transportation route for thousands of pleasure craft and commercial vessels, used for recreation, fishing, water sports, and access to upland destinations. Non-motorized vessels are also prevalent, including sailboats, kayaks, and paddleboards. As a transportation system, the waterways provide the opportunity for additional transit, such as water taxis, that can connect upland destinations and enhance the region for both residents and visitors. Maintaining and protecting the health of the waterways is critical for the future prosperity of water-based activities and has an enormous impact on the regional economy. It is important to consider and balance the needs of all marine transportation users – from recreational paddlers and boaters to commercial enterprises, mega-yachts, and cargo barges.



Boats departing for a fishing tournament in Fort Pierce

The Port of Fort Pierce represents a unique driver of water-based transportation on the waterways, as both an origin and destination for cargo movement. The Port's deepened channel offers an opportunity for expanded marine commercial activities, such as high-speed ferry service and mega-yacht access. Additional port-related uses could include establishment of a maritime and logistics academy, for which locations are currently being evaluated by the Florida Department of Transportation (FDOT).

The ability to traverse the waterways network is also controlled by a series of bridges, both vehicular and railroad. Of particular concern are the FEC railroad bridges at the St. Lucie and Loxahatchee rivers, which date back to the 1920s and present conflicts for the flow of marine traffic. Potential increases in freight and passenger rail traffic will increase demand for bridge

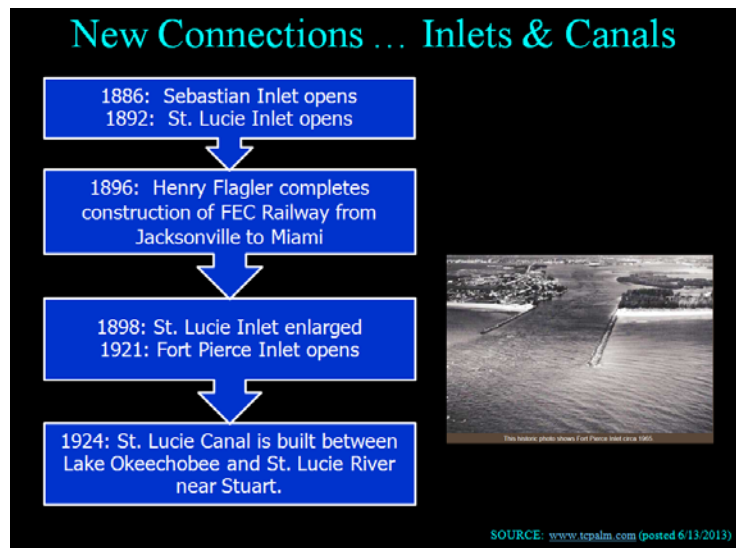
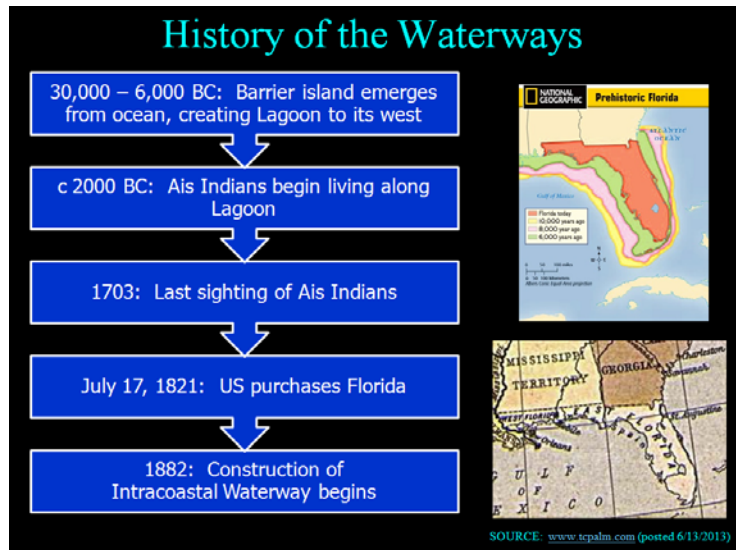
closings, which can impede marine navigation for all vessels. Long-term strategies to improve the bridge and reduce impacts on navigation are discussed in this chapter.

History of the Waterways for Transportation

Initially, the Indian River Lagoon was a fairly closed system, inaccessible to larger vessels. Approximately 43 miles of the 156-mile lagoon is contained in Martin and St. Lucie counties. The total lagoon runs from the Ponce de Leon Inlet in Volusia County to the Jupiter Inlet in Palm Beach County. The St. Lucie River was a mostly isolated system as well, considered a predominately fresh water system until the late 19th century. However, beginning in the 1800s, there were transformational activities, including the construction of expanded ocean inlets, the Atlantic Intracoastal Waterway, and the creation of the St. Lucie Canal connecting to Lake Okeechobee that permanently changed the region’s waterways regarding their ecology, hydrology, and navigation.

Inlets. The St. Lucie Inlet was created in 1892, with a five-foot deep channel across a thirty-foot bottom width. The inlet widened to 2,600 feet by the 1920s, demanding construction of a stone jetty to help stabilize a navigational channel through the inlet.

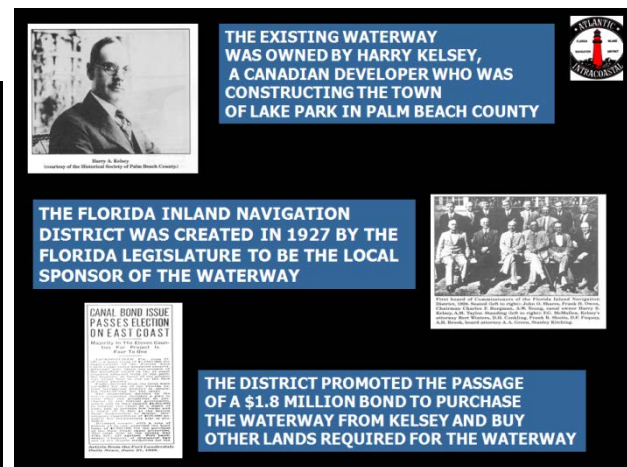
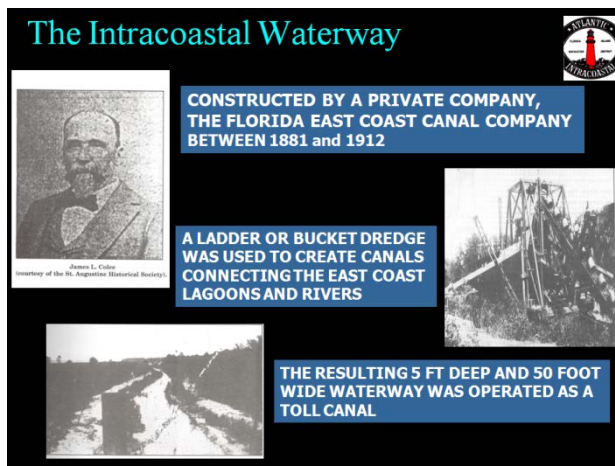
The St. Lucie Inlet became a federally authorized project in 1945. Today’s inlet is extensively impacted by shoaling that significantly threatens the inlet’s continued navigability. Despite a four-year dredging schedule, the inlet has not been dredged (since 2007). A span of seven years at the time of the plan’s publishing. The inlet is considered particularly challenging for boaters due to strong tidal currents, rapidly shoaling bottom, changing water depths, and shifting sands, which are compounded by the inlet’s small size. Continued inlet dredging is necessary to maintain this critical point of ocean access for the region’s extensive marine industrial, commercial, and recreational activities.



Marine Transportation

The Fort Pierce Inlet originally existed as a “meandering natural passage” known as the Indian River Inlet. When the St. Lucie Inlet was opened in the 1890s, shoaling rendered the original northern inlet unusable. The modern Fort Pierce Inlet was established in 1921, which included dredging and the construction of jetties. The inlet became a Federal Navigation Project in 1935 with the dredging of the entrance channel, interior channel, and turning basin. Current plans for the inlet include dredging the channel to approximately thirty feet to maintain clear passage for Port cargo vessels, with a 28-foot deep channel to the port. Additional inlets to the north in Sebastian (opening in 1886) and to the south in Jupiter (first recorded in the 1650s with modernization in the 1920s) also enhance the navigational access of the waterways and their connectivity.

Atlantic Intracoastal Waterway. Florida’s coastline has been a commercial shipping corridor since the early days of the area’s settlement. Across the nation, history indicates “canal fever” had emerged by the 1800’s with the construction of significant canals in northeastern, mid-western, and mid-Atlantic states. Canals construction was prioritized for the low-cost movement of cargo as well as safe military transport. As early as the 1820s, James Gadsden’s survey of Florida’s east coast identified the potential for a canal to connect the Mosquito and Indian River Lagoons and approximate locations -- central Florida to the Treasure Coast. While Florida was administered as a territory from the 1820s through the 1840s, a number of private companies were chartered to begin canal projects along the east coast. These early efforts led to inconsistent configurations and tolls for vessel passage.



As Florida’s population began to expand in the mid-1880s, there was market demand to develop a consistent, safe inland navigational route. The Florida Coast Line Canal and Transportation Company was chartered by the legislature as the lead entity to construct and complete the waterway, and the company acquired the various existing canal segments from Jacksonville to Miami. The state required the canal to be not less than fifty feet wide and not less than five feet deep at mean low water, stretching from Jacksonville (St. Johns River) to Miami (Biscayne Bay). Subsequently, with a land grant of approximately one million acres, the company constructed what became the Atlantic Intracoastal Waterway (ICW) between 1883 and 1912. Tolls were charged on the canal until the state established FIND in 1927, and the channel was ultimately completed in 1941. The AIW is 125 feet wide, maintained at a depth of twelve

Marine Transportation

feet north of Fort Pierce Harbor and ten feet south, and it is the primary corridor for the movement of marine traffic through the counties today.



Canal control structures, such as the one pictured above at the C-24 Canal, prevent navigational access between the rivers and drainage canals to the waterways. However, the canals are internally accessible via boat ramps for use by smaller powerboats, canoes, and kayaks. Photo credit: TCRPC



Canals. In the early 1900s, the Everglades Drainage District constructed a series of canals to reclaim swamp and overflowed lands in southern Florida. The St. Lucie Canal (C-44) was completed by 1924, providing a connection for Lake Okeechobee to the Atlantic Ocean for flood relief as well as cross-Florida navigation. The C-44 also includes a portion of the Okeechobee Waterway, constructed in 1937, which is a navigable waterway extending 154 miles from the Atlantic Ocean near Stuart to the Gulf of Mexico near Fort Myers, enabling a cross-Florida crossing in roughly 12-15 hours. Five locks exist along the length of the Okeechobee Waterway, including the St. Lucie Lock and Dam approximately 15.5 miles upstream of the intersection of the St. Lucie River and AIW. Controlled by the USACE, estimates indicate the lock provides passage for approximately 10,000 vessels annually, of which roughly 91 percent are recreational, 26,000 tons of varied commodities.

Other canals, such as the C-23 and C-24, were also constructed to drain the sub-basin into the North Fork of the St. Lucie River. Navigability into these canals from the St. Lucie River is prevented by saltwater control structures that prevent backflow of salt water (see photos in this section). These structures also limit boat usage in these canals to smaller motorized vessels, canoes, and kayaks.

The varied human interventions in the region's waterways over time network have enabled access and facilitated development for a broad range of marine users. These navigational features also trigger the need for continued channel and inlet maintenance in the form of dredging and stabilization, which is an issue of concern raised by the public during the development of the plan. The navigational accessibility of the waterways provides immense economic benefit to the region as well as a broad range of marine transportation opportunities. In their current configuration, the waterways can generally accommodate everything from kayaks to cargo barges. However, there are continued points of conflict at inlets and in certain canals that impede access. There is also the potential for expanded marine activity, including water taxis, high-speed ferries, and seaplanes. The Port of Fort Pierce represents the most intense industrial use in the study area, and the Port's continued long-term success is inextricably tied to its

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navigational access. During the development of the Plan, the public expressed strong support for expanding marine transportation opportunities of all forms, which are discussed in this chapter.

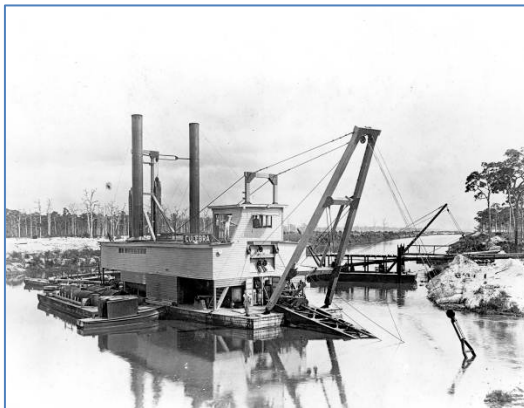
Use of the Waterways

The waterways of Martin and St. Lucie Counties are home to a variety of commercial and recreational users today. Waterway transportation is sometimes referred to as the silent workhorse of the U.S. economy, especially for the movement of freight, as marine cargo transport presents the lowest cost per ton-mile. However, the marine flow of goods is challenged by bridge conflicts, shallow areas, and a narrower range of commodity types versus truck or rail transport. Despite these challenges, the region's waterways routinely move specialty cargo via barge, typically on routes designed to avoid bridge conflicts.

The majority of marine transportation on the waterways is for smaller vessels -- recreational boating powered by motor, wind, or humans, and commercial boating for fishing, construction, and localized cargo distribution. The vast majority of the nearly 28,000 total registered vessels in the counties are boats that are less than 25 feet in length. The waterways' shoreline in both counties is comprised primarily of residential and public land use (recreational and preservation), which both generate and attract recreational boating activity. A far smaller footprint is afforded to commercial and industrial uses, which tend to be concentrated in waterfront redevelopment areas and provide essential services to the recreational boaters in the region.

Dredging & Maintenance of the Waterways

The waterways in Martin and St Lucie counties provide a regional identity and broad quality of life benefit in the area. The ability to navigate these waterways safely and consistently is a strong concern noted by the public, as continued navigation is critical to the region's future. Effective and funded dredging programs are the key for navigational preservation and enhancement.



Historic and recent images of dredging in the region. Top left – St. Lucie Canal dredging, photo courtesy of State Archives of Florida, Florida Memory, <http://floridamemory.com/items/show/2790>. Top right – recent dredging in the St. Lucie Inlet; photo courtesy of www.dredgingtoday.com.

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The waterways network consists of multiple segments that are maintained by several different agencies, some of which have overlapping responsibilities. In these cases, each agency is driven by a specific mission or objective, including navigation, flood control, and water quality. The key agencies and their responsibilities are identified as follows:

AGENCY	AREA OF RESPONSIBILITY
U.S. Army Corp of Engineers (USACE)	The USACE is responsible for dredging to maintain channel depths in the St. Lucie Inlet, Fort Pierce Inlet, and the Okeechobee Waterway
Florida Inland Navigation District (FIND)	FIND is the state sponsor for the Atlantic Intracoastal Waterway and the Okeechobee Waterway, and the agency works in partnership with USACE
South Florida Water Management District (SFWMD)	SFWMD is responsible for maintaining canals for drainage and flood control; however, it does not maintain any waterways for navigational purposes.
Local Governments	Local governments play an active role in maintaining all other waterways.

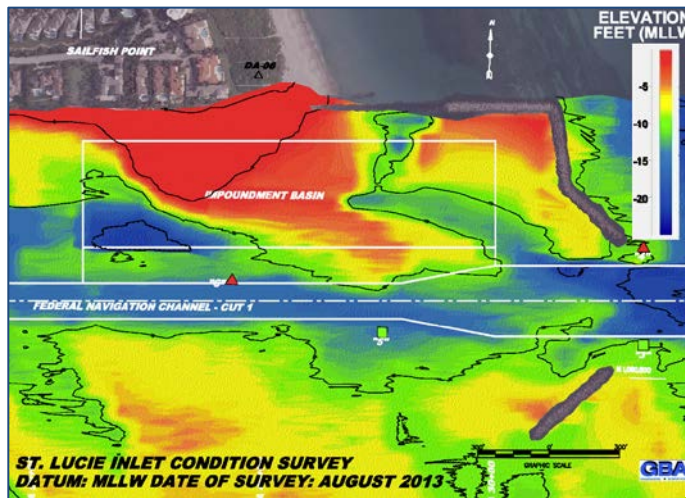
Dredging programs are designed to maintain designated channels at project depths. Controlling depths limit boating activities in high impact areas between dredging cycles. Dredging cycles vary by location based on conditions. For example, the “Crossroads” (which is the local name given to the intersection of the AIW and the St. Lucie Inlet) requires maintenance dredging every three years. Other areas are rarely dredged as depths are maintained for a longer period of time. FIND surveys the AIW every five years. The agency’s latest centerline survey will be completed late summer 2014, which will help provide an overview of current conditions and dredging needs.

EXISTING PROJECT DEPTHS FOR KEY WATERWAYS	
Intracoastal Waterway (North of Fort Pierce)	12 feet
Intracoastal Waterway (South of Fort Pierce)	10 feet
St. Lucie River/South Fork/Okeechobee Waterway	8 feet
Manatee Pocket (main channel)	10 feet

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The Fort Pierce Inlet (above-left) is federally maintained, with dredging conducted as needed by USACE with special consideration of access to the Port of Fort Pierce. The St. Lucie Inlet (above-right) is also federally maintained but on a longer dredging cycle. The inlet is prone to shoaling, which threatens navigability. Last dredged in 2007, Martin County indicates the inlet is in eminent risk of becoming non-navigable, which would cause substantial economic harm to the region. The County has undertaken extensive efforts, to raise awareness and secure federal and/or state funding to expedite maintenance dredging.



As illustrated in the St. Lucie Inlet Condition Survey to the left, continued shoaling at the inlet has compromised the impoundment basin, threatening the continued navigability of the inlet. Image courtesy of Martin County.

Martin & St. Lucie WATERWAYS PLAN

Dredging Responsibility

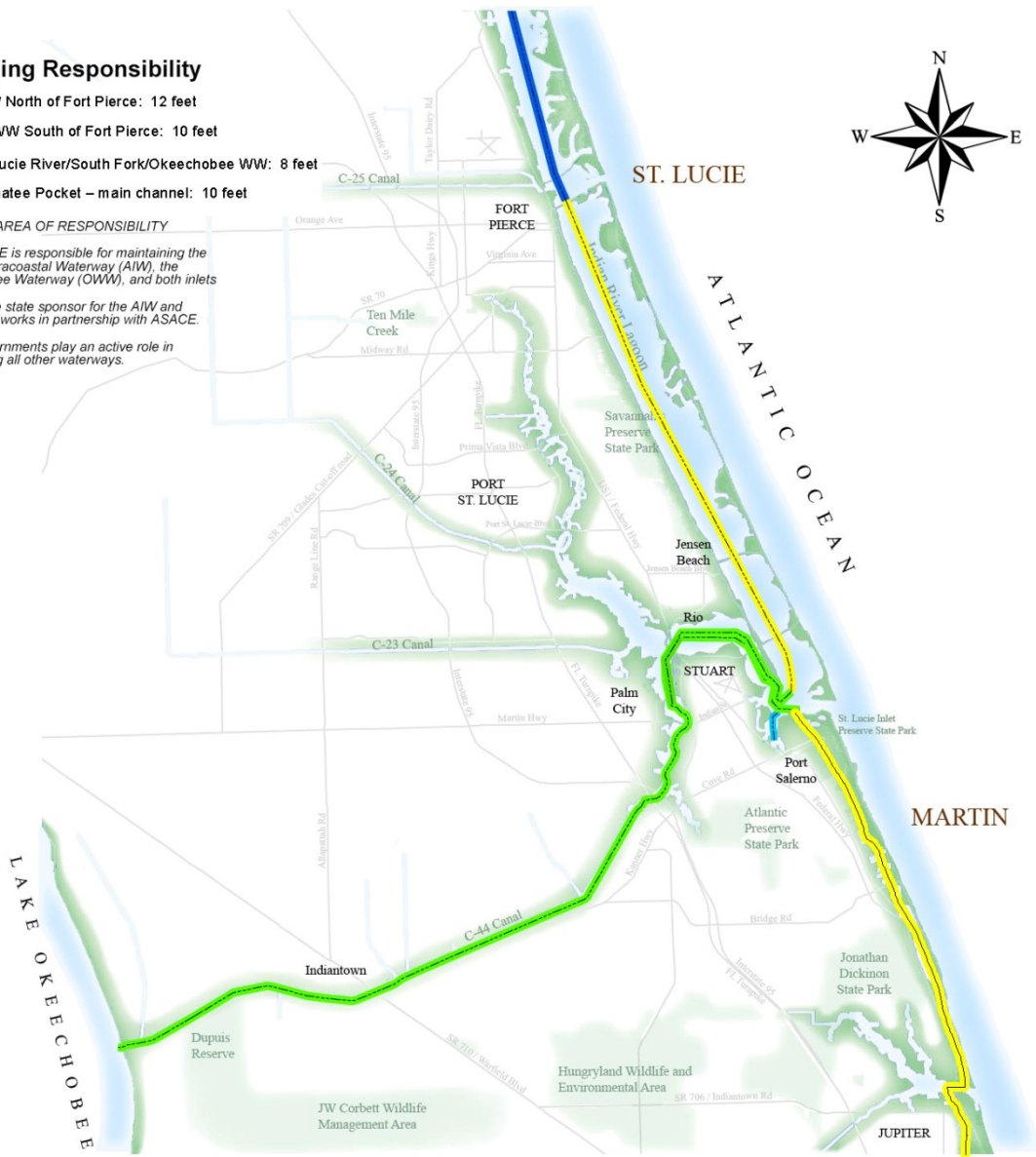
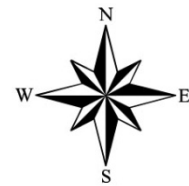
-  AIW North of Fort Pierce: 12 feet
-  ICWW South of Fort Pierce: 10 feet
-  St Lucie River/South Fork/Okeechobee WW: 8 feet
-  Manatee Pocket – main channel: 10 feet

AGENCY AREA OF RESPONSIBILITY

The USACE is responsible for maintaining the Atlantic Intracoastal Waterway (AIW), the Okeechobee Waterway (OWW), and both inlets

FIND is the state sponsor for the AIW and OWW and works in partnership with ASACE.

Local governments play an active role in maintaining all other waterways.



DREDGING RESPONSIBILITIES & PERMITTED DEPTHS

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Dredging Analysis. The region has been and continues to be actively engaged in maintaining the waterways. Martin County completed a dredge project in Manatee Pocket in 2013, removing 313,000 cubic yards of material. Currently, the USACE is preparing to begin a dredging program in Fort Pierce adjacent to the Port of Fort Pierce. As part of this project, FIND is hoping for an expansion of commercial activity on the waterway for the movement of cargo in this area, both north and south of the Port. Looking ahead for a five-year timeframe, maintenance dredging of the Okeechobee Waterway is included in FIND's current five-year plan, which will include the C-44 canal.

In the development of the waterways plan, participants expressed strong concerns about the need to maintenance dredge the St. Lucie Inlet. This issue has been identified as a legislative and funding priority by public and private interests. Martin County has sought federal funding for inlet dredging for several years, as the inlet's shoaling threatens to render it non-navigable. Safe, consistent ocean access is a baseline infrastructure component that underpins the region's economy, affecting marine industries, tourism, recreation, and the real estate market. The closure of the inlet would create an economic disaster, with the potential to eliminate much of the marine industry, reduce property values, and irrevocably harm tourism.



In 2011, Martin County completed a \$13 million dredging project in Manatee Pocket to establish a 100-wide, 10-foot deep channel through this fishing and boating center. While larger vessels can navigate the channel, deep-draft mega-yachts will require a deeper channel depth to enable safe, consistent access. Images from Martin County's Manatee Pocket Project website.

In addition to inlet access, additional dredging concerns were raised by boat builders and marina operators, particularly with regard to access by larger pleasure craft for sales, service, and maintenance. The largest recreational vessels are mega-yachts, which exceed eighty feet in length and are a highly desired class of vessels for marine sales, service, repair, and provisioning. Boat builders in Martin and St. Lucie counties produce a variety of vessel types and sizes, relying on the waterways to launch new vessels as well as enable customers to access their service and repair facilities. Boatbuilding and manufacturing is a highly valued industry in the region, including up to seventy different companies that employ approximately 1,500 workers. These companies tend to be located along major waterways but not always along the federally

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maintained channels. As a result, they often must invest in their own waterways or partner with local governments for this infrastructure. For example, Hinckley Yachts, employing 55 workers, is located in Manatee Pocket, and American Custom Yachts, Inc., employing 160 workers, is located just West of I-95 along the C-44 canal. Both of these operations stressed the need for ongoing dredging to maintain and improve the waterways, including navigational improvements at key locations. For example, there are a few locations where the depth is restricted to seven feet at high tide, which restricts access to and from these facilities for larger vessels.

Additional input from marine industry representatives and the public indicated instances of shoaling, especially after storm events and the annual hurricane season. Shoaling was also noted as a key conflict for two specific non-motorized vessel types: sailboats, especially in the vicinity of the U.S. Sailing Center in Jensen Beach, and rowing, especially to access the South Fork of the St. Lucie River by the Treasure Coast Rowing Club (TCRC) in Jensen Beach. Both of these vessel types require several feet of depth for safe navigation. Local boaters also indicated shoaling was a conflict near several boat ramps, which impedes safe navigation.

To address dredging needs comprehensively, participants encouraged the development of two county-scale multi-agency dredging groups that would meet at least annually after the close of hurricane season. Participants noted the unpredictability of annual hurricane seasons were a focal point for dredging impacts, and post-season debriefs among a multi-disciplinary working group would be an effective means to address dredging from the broadest perspective. Participants in such an effort could include local governments, FIND, SFWMD, and USACE, each of which maintains public responsibilities for channel and inlet maintenance, as well as the Marine Industries of the Treasure Coast (MIATC), with select representation from marinas and boat builders.

Local commercial and recreational boaters also have the most direct knowledge and navigational constraints. A broad dredging work group would be best positioned to review conditions and determine collective dredging needs to gain the greatest efficiency of cost and effort. Participants from all sectors encouraged dredging be approached from a system-wide perspective, as partial solutions tend to be more costly, and partial access to destinations is not effective. An active and strategic maintenance plan for the waterways is necessary to preserve recreational and commercial use of the waterways to maintain their economic benefit and amenity value.



An approach to address dredging holistically throughout the region, with particular focus on inlets and shoaling in channels, will improve marine transportation and its economic yield to the counties.

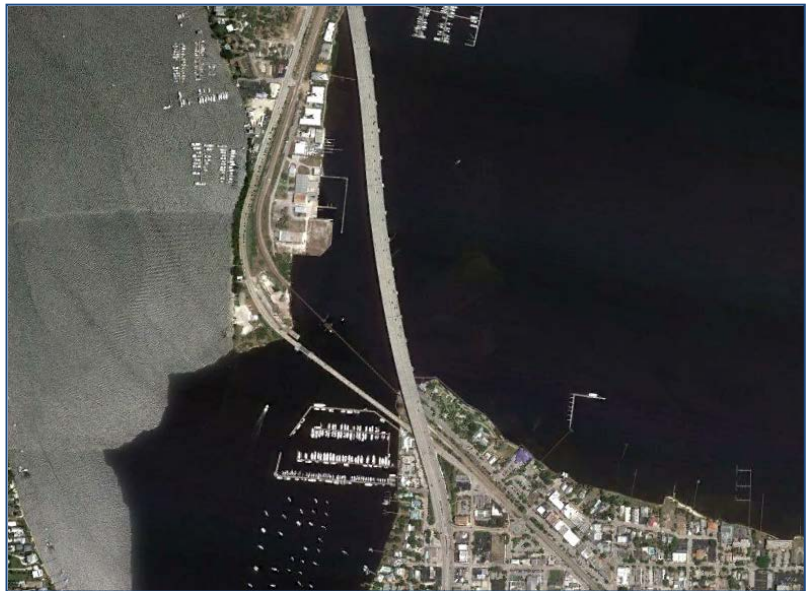
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More consistent navigational depths would also enable other marine transportation services such as water taxis to utilize the waterways to interconnect waterfront centers and other destinations.

Bridges & Navigation

The region is characterized by a multi-modal transportation network that includes roadways, railroads, waterways, and non-motorized facilities. Historically, as land development ensued, transportation demands facilitated the development of bridges for both vehicles and railroads. Vehicular bridges exist as both fixed-span and movable, providing connectivity as well as below bridge, causeways and piers for enhanced public access to the waterways. However, railroad bridges are configured differently, and they tend to provide more conflict for the public than access. In the regional waterways network, there are four movable railroad bridges. Two are located in western Martin County along the Okeechobee Waterway (an FEC bridge in Indiantown and a CSX bridge at Port Mayaca). The other two bridges are along the east coast (an FEC railroad bridge crossing the St. Lucie River in Stuart and a second FEC railroad bridge crossing the Loxahatchee River in Jupiter/Tequesta). While the Okeechobee Waterway bridges have limited impact on marine navigation, the two eastern bridges more extensively affect navigational access for vessels in Martin and St. Lucie counties and are focused upon in this section.

The Florida East Coast Railroad (FEER) was extended from Jacksonville to Key West from the late 1880s until the 1920s. The railroad was located along a sandy ridge, immediately east of the coastline, and dozens of bridges were constructed to complete the rail corridor. By the early 1900s, wooden bridges were constructed at the St. Lucie River and Loxahatchee River, which were ultimately replaced in the 1920s with the current concrete, bascule bridges. When the rail corridor was double tracked, the Loxahatchee River bridge was double-tracked along with the other corridor major river bridges. However, according to railroad representatives, the St. Lucie River was one of the only locations where the early railroad was left as a single-track bridge, as the bridge location between the closest points of land required substantial track curvatures to continue the rail corridor on its bridge alignment. The northern peninsula in particular was noted as being too narrow to accommodate a second track, which follows an S-curve as it continues north towards Jensen Beach.



Multiple bridges cross the St. Lucie River in downtown Stuart, with the FEC railroad bridge located between a moveable bridge on A1A and a high-span fixed bridge for US1/Federal Highway.

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Railroad bridges present significant conflicts for marine navigation. Above-left is the FEC bridge over the St. Lucie River, which is a single-track bridge while the Loxahatchee River FEC Bridge (above-right) can accommodate two tracks.

The Loxahatchee River railroad bridge parallels a high-span fixed vehicular bridge on State Road A1A. Marine traffic traversing this pair of bridges is predominately recreational, with upstream residential and recreational destinations, including Jonathan Dickinson State Park. Weekend and holiday boating traffic intensifies, with hundreds of vessels traveling through the bridges on sunny days. Bridge closings are regulated by the Code of Federal Regulations (CFR), (CFR § 117.299 Loxahatchee River), which indicates the bridge is “normally in the fully open position,” with the railroad able to close the bridge as needed to accommodate the passage of trains. The CFR notes a bridge closing sequence of sixteen minutes per train for railroad approach, warning, closure, and lock-down, plus the time necessary for the train to cross the bridge. Following a train crossing, the bridge is reopened and locked into position.

The St. Lucie River railroad bridge has broader impacts for marine navigation due to the Okeechobee Waterway, land use mix, and extent of properties affected by this constraint. In this vicinity are three bridges: a newer high-span fixed vehicular bridge on SE Federal Highway (referred to as the “New Roosevelt Bridge”), a bascule bridge on NW Dixie Highway/SR A1A (referred to as the “Old Roosevelt Bridge”), and the FEC railroad bridge. The channel in this location is the Okeechobee Waterway, which passes through all three bridges within approximately 800 feet. Complicating the navigability of this location is the alignment of the bascule openings, which are offset north/south and along skewed alignments rather than parallel. Marine traffic traversing these bridges includes recreational and commercial traffic, such as barges crossing the state via the Okeechobee Waterway.

This condition is further exacerbated by the bridge closing schedules, and by the offset alignment of the two bridge openings, requiring careful navigation especially for larger vessels to traverse the waterway in this location. Bridge opening schedules for these two bascule bridges are also governed by the CFR (CFR §117.317 Okeechobee Waterway (c) Florida East Coast Railroad bridge) and (d) Roosevelt (US1) Bridge). The railroad bridge is regulated in a manner identical to the Loxahatchee River Bridge, closing on an irregular as-needed basis for trains. However, the Roosevelt Bridge opens as-needed on a thirty-minute schedule on weekdays and twenty-minute schedule on weekends and holidays. The CFR indicates if the railroad bridge is closed, the Roosevelt Bridge is required to open immediately following the reopening of the railroad bridge “to pass all accumulated vessels.”

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The FEC railroad has carried freight exclusively since passenger service was disbanded in 1968. Estimates from FECR, the company responsible for the rail corridor infrastructure as well as freight operations, indicates the rail corridor carried up to twenty-four trains daily in the mid-2000s, but current freight demand has fallen to fourteen daily trains. The company's freight projections suggest demand to climb again over time to twenty-plus daily trains. The company's sister division, Florida East Coast Industries (FECI), is currently seeking the introduction of high-speed express passenger service, named All Aboard Florida, which proposes an additional thirty-two daily trains (sixteen round-trip, two per hour) between Miami and Orlando. Other passenger rail service, such as Amtrak, has also been proposed for the rail corridor, which could introduce several additional daily trains.

The discussion of increased railroad demand on both the Loxahatchee and St. Lucie River bridges has generated extensive public concern in the counties. While freight service can increase independent of additional regulation, FECI is seeking federal funding for the passenger service through the Railroad Rehabilitation and Improvement Financing program, which requires completion of an environmental impact statement. This affords the counties, public and private agencies, and the public an opportunity to extensively evaluate impacts upon the bridge and navigation and request conditions to mitigate impacts of the proposed project. There are a range of mitigating measures that have been suggested by local governments, agencies, and the public.

These include:

- Reduction in the total number of trains utilizing the corridor
- Relocation of freight and/or passenger traffic to alternate rail corridors, such as the CSX rail corridor
- Assignment of bridge tenders at both bridges to increase human surveillance and safety
- Installation of communications improvements for boaters, including electronic message boards and social media, regarding train schedules
- Adjustment to the CFR to require a minimum amount of time for navigational traffic, limit the number of railroad bridge closings, and/or limit the amount of time allowed per closing
- Sequencing of passenger and freight trains such that they cross the bridge simultaneously with one bridge closing accommodating the crossing of multiple trains
- Utilization of marine shipping corridors, such as M-95, to divert freight traffic onto barges and reduce freight demand on the rail corridor
- Rehabilitation, reconstruction, modernization or replacement of bridges to improve efficiency, predictability, speed of closing/opening, and vertical clearance for vessels
- Assignment of funding through federal, state, and other sources for capital and programmatic bridge improvements
- Advancing an analysis of freight rationalization to evaluate alternate means by which freight is received, repackaged, and distributed throughout southeast Florida

Reducing current and projected impacts on marine navigation is a complex challenge that will require coordination among many public and private entities for its resolution. The local governments in both counties have adopted strong positions opposing the marine navigational impacts proposed by the All Aboard Florida project and increased freight operations, noting

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impacts to economy, property values, marine navigational access, and quality of life. Implementation will require a long-term, multi-disciplinary approach with local governments, agencies, the private sector, and the public. Strategies to advance the dialogue to enhance the waterways are included in the recommendations chapter of this report.

Impacts of Landside Infrastructure

The land use composition and mix of uses bordering and in close proximity to the waterways help define demands on the system. The continued successful redevelopment of waterfront Community Redevelopment Agencies (CRAs), residential neighborhoods, and other commercial, cultural, recreational, and educational establishments, as well as the array of marine industrial uses, including marinas, dry docks, service facilities, and heavy industry together influence the demand for and success of transportation on the waterways.

Participants in the plan development process were supportive of the current marine transportation uses on the waterways, noting the good dispersion of boat ramps for motor boats, although additional amenities (e.g., parking, storage docks) are needed in some locations. Sailing on the waterways was noted, especially in Jensen Beach and Fort Pierce, with concerns expressed about shoaling and the need for better navigational markers. For non-motorized watercraft, participants indicated the breadth of the waterway enabled paddlers to remain in the shallows while motorcraft utilized deeper channels, although the Crossroads was noted in particular as an area of conflict for paddlers to access St. Lucie State Park from Sandsprit Park. There was strong interest expressed in expanded and improved canoe/kayak launch facilities. While this chapter focuses on economically-driven marine transportation on the waterways, issues related to public launches for all vessel types is addressed in the Public Access & Recreation section.

Participants also expressed strong interest in a variety of marine transportation options that are less prevalent or conceptual for the current waterways network. There is the potential to develop several water taxi networks (multiple networks due to the distance between nodes) that would require land and docks for stations and parking, multi-modal connectivity, and careful integration with event planners to improve service feasibility. There has been limited precedent for successful water taxi service in conjunction with special events (e.g., Port Salerno Seafood Festival) and long-term desire to connect key destinations, such as the St. Lucie Inlet Park, via water taxi. The City of Stuart is also anticipating water taxi service and has assigned some responsibilities to the private sector. While the density and geography of the region is not appropriate for work-based trips, water taxi service could augment special events and unique destinations to reinforce redevelopment priorities and provide a new means of access for special events.

The location of the select waterfront centers evaluated in the plan tend to be concentrated in the eastern portions of Martin and St. Lucie counties. These centers are accessible from the roadway network. However, public access by watercraft is limited. Potential water taxi dockage exists in several locations today, and additional dockage and careful programming can enable this form of access to enhance existing redevelopment programs and generate additional revenue opportunities for both counties.

Passenger Transportation of the Waterways

Martin and St. Lucie counties' waterways offer a rich array of destinations, special events, and activities that are enhanced by the ambiance of spectacular waterfront views. Community redevelopment activities in both counties have helped produce high quality destinations that attract both residents and visitors year-round.

The waterways offer opportunities for two different forms of passenger transit: localized transit, in the form of water taxis, and long-distance transit in the form of high-speed ferries and seaplanes. Water taxis in the region can provide access to waterfront centers; sizable lodging facilities; notable destinations for recreational, cultural, and educational activities; and natural areas like state parks and preserves. Given the low density and linear geography, the waterways lend themselves to several potential water taxi routes. While water taxi service is not reasonable to consider as a large-scale economic enterprise, it can provide a secondary benefit to tourism and economic development within waterfront centers, expanding market share and creating novelty for residents and visitors.

Long-distance transport facilitated by the waterways could possibly occur in two forms: high-speed ferries, which could operate from the Port of Fort Pierce or Stuart/Port Salerno, and seaplanes, which have different operating characteristics but could be accommodated either in Stuart or Fort Pierce. High-speed ferries would likely require integration into larger-scale redevelopment programs, but as travel markets evolve, they are presented for consideration. Seaplanes are a less common use, with a current distribution of seaplanes in select markets around Florida. They are a unusual use that has historically been identified for consideration by the City of Stuart, and their operating requirements could also be accommodated in Fort Pierce, consistent with the Port of Fort Pierce Master Plan. The following section provides an overview and analysis of water taxis, ferries, and seaplanes and their potential use and benefits for the region's waterways.



Both Port Salerno (above left) and Fort Pierce (above right) offer substantial dockage for larger vessels capable of crossing from Florida to the islands. Images courtesy of www.marinas.com.

Water Taxis

Waterborne transportation services can offer a different experience in the traditional roadway network. They can provide an alternative to traffic congestion, lack of parking, and crowded land-based transit as well as an opportunity to travel leisurely and reach water destinations that are otherwise inaccessible. The State of Florida has different types of water taxi services operating across the state, which differ in scale, market, and commercial viability. There are several operating in Palm Beach County, including the Palm Beach Water Taxi and Water Taxi of the Palm Beaches, as well as Fort Lauderdale's Water Bus, Jacksonville's Marine Taxi, and New Smyrna Beach's Water Taxi. This section includes a review of these existing services and identifies characteristics relevant to the subject counties.

Development of a successful water taxi service requires consideration of many variables, with primary focus on the following:

- Identify the right technology
- Define a competitive service
- Quantify the market demand
- Differentiate service from other competing services
- Provide the ability to compare to other service initiatives
- Identify and address key connectivity and accessibility issues
- Build regional support
- Integrate service into regional transportation system

In addition to the general guidelines listed above that are applicable to all transit services, it is important to understand some of the general conditions that facilitate more specifically the development of a successful water taxi service, as described below:

- Captive Markets ~ The most profitable services are located where there is market demand. This is true of any customer-oriented service and especially true with transit services. In the waterborne transportation environment, this is best provided by captive populations that have no other transportation alternative, such as island communities. This may also apply to transit destinations that are difficult to access by other forms of transportation such as accessing a waterfront event like the Salerno Seafood Festival or the Stuart Boat Show, which operate with limited upland parking and constrained roadways during the event.
- Revenue Collection ~ Another factor to consider is the collection of fare box revenues. Generally, fare box revenues from passenger-only commuter services do not cover operating costs. In many cases, a recovery of only 40 to 60 percent is typical of waterborne and other premium transit services like Bus Rapid Transit. This may require a service to be funded in part by the event or destination benefitted by the service. This funding partnership is typical in redevelopment areas with upland transit such as trolleys and shuttles, which are funded as both a transportation amenity as well as a promotion for the area and its events.

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- Multiple Sailings ~ Multiple sailings are essential for customers to provide flexibility in scheduled sailings and accommodate travel interruptions. Passengers rely on the comfort of knowing that if they miss one boat, there will be another one operating on a reliable schedule.
- Direct Routes ~ The most competitive passenger services are those that cut mileage and travel time, a feature that lends itself to the geography of the waterways in the region. As the crow flies – or as the ship sails – can provide the most direct routes for some passenger trips and efficient movement of vessels. Services that run parallel to established highway corridors struggle to provide equal or superior service.
- Vessel Speed ~ Most waterborne transportation services tend to run a mix of vessel types operating at 15 to 35 knots. Obviously, the faster the vessel, the more attractive the ride, but speed comes at a price. The faster vessels require a significant increase in capital and operating costs, and environmental constraints such as the presence of endangered species can require slower speed zones. Manatee protection zones in the two counties are baseline considerations in the analysis.
- Landside Connections – Strong landside connections are critical. For a waterborne transportation service to be effective, passengers must be able to get to and from the waterside to their final destination (landside) with ease. This greatly impacts the choice of potential riders in using this service. In addition to the pedestrian quality of destinations, multi-modal access to water taxi stops is a factor.
- Quality of Destination ~ For any transit service to be successful, the quality of destination, including mix of uses, land development patterns, walkability, and personal safety, are critical factors for users. Waterborne transportation requires destinations of sufficient critical mass to warrant their use by riders. If the variety of uses or experiences in a destination is too limited, the passenger service may only be successful for special events.
- Community and Environmental Impacts ~ The management of community and environmental impacts is critical, and impacts can occur for land and water. Both must be considered and monitored continuously for waterborne transportation services to be responsive to the communities they serve.
- Marketing & Promotions ~ Transit systems must have extensive marketing and often promotional activity as well to raise awareness of the system and build ridership. Martin and St. Lucie counties are both home to extensive waterways with pockets of waterside developments and activity centers. The activity centers range from recreation/parks to retail/restaurant centers to working waterfronts. The marketing and promotional materials for this region should tie these centers together as part of a system.

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Water Taxi Analysis. In order to evaluate the potential for expanded water taxi services in Martin and St. Lucie counties, a set of service assumptions have been defined and used to screen the region’s waterways, relevant landside developments, and opportunities for development and redevelopment. In general, water taxis operate at low speeds, ranging from 3 knots to 15 knots. This is largely due to vessel type and the operating environment. Wake wash impacts on property and moored and berthed vessels results in operating speed restrictions at marinas and along some sensitive areas along the waterways (particularly narrow zones with lots of parked vessels and/or sensitive shorelines). In addition, Manatee speed restrictions exist throughout a majority of the waterways in the region, providing a mix of year round and seasonal speed zone restrictions (maps provided in the appendix). Year-round restrictions are largely along the shorelines, while the designated channels are less restricted in some areas. However, all the possible water taxi station locations require vessels to maneuver in these restricted areas. As routes are determined, there are also time penalties associated with each stop to reflect approach, loading/unloading, and departure activities (five minutes per stop). Using this set of parameters, a variety of stops were evaluated based on 15, 30 and 60 minute trip lengths. A water taxi operating matrix is presented below indicating the distances that can be traveled within 15, 30, and 60 minutes at varying speeds.



Florida is home to several successful water taxi services today that have varying rate structures, routes, schedules, and operational relationships.

Water Taxi Operating Matrix

3-Knot Service				
Trip Time (minutes)	Knots	Miles Per Hour	Miles Per Minute	Route Length
15	3.00	3.5	0.06	0.9
30	3.00	3.5	0.06	1.7
60	3.00	3.5	0.06	3.5
5-Knot Service				
Trip Time (minutes)	Knots	Miles Per Hour	Miles Per Minute	Route Length
15	5.00	5.8	0.10	1.5
30	5.00	5.8	0.10	2.9
60	5.00	5.8	0.10	5.8
10-Knot Service				
Trip Time (minutes)	Knots	Miles Per Hour	Miles Per Minute	Route Length
15	10.00	11.5	0.19	2.9
30	10.00	11.5	0.19	5.8
60	10.00	11.5	0.19	11.5
15-Knot Service				
Trip Time (minutes)	Knots	Miles Per Hour	Miles Per Minute	Route Length
15	15.00	17.3	0.29	4.3
30	15.00	17.3	0.29	8.7
60	15.00	17.3	0.29	17.3
NOTE: A knot is equal to one nautical mile (1.852 km) per hour, or approximately 1.151 mph				

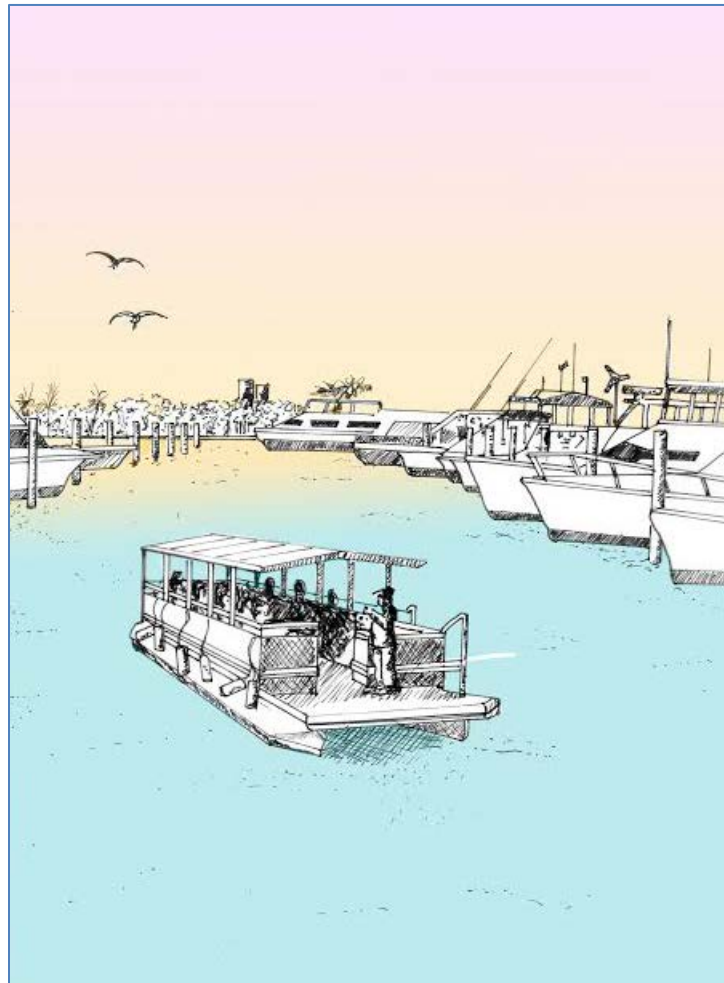
There are several key considerations that go into the evaluation of potential water taxi operations. The market demand for key origin/destination pairs is critical. There must be a large enough group of riders that want to travel from point A to point B. The ability to park at a station is necessary for at least one trip-end. Transportation from station to final destination is also critical. Other operational considerations include special event vs. daily service and on-demand vs. scheduled service.

From an infrastructure/capacity perspective, key considerations include waterside infrastructure, waterway regulatory restrictions, and waterway physical restrictions. These factors impact vessel selection and vessel operating speeds, which dictate the amenities while on the water as well as how long patrons are on the water. In general, there is a finite amount of time folks are interested in riding on a boat. This time is impacted by type of trip (commuter, excursion, recreational), weather conditions, and level of comfort and amenities.

Marine Transportation

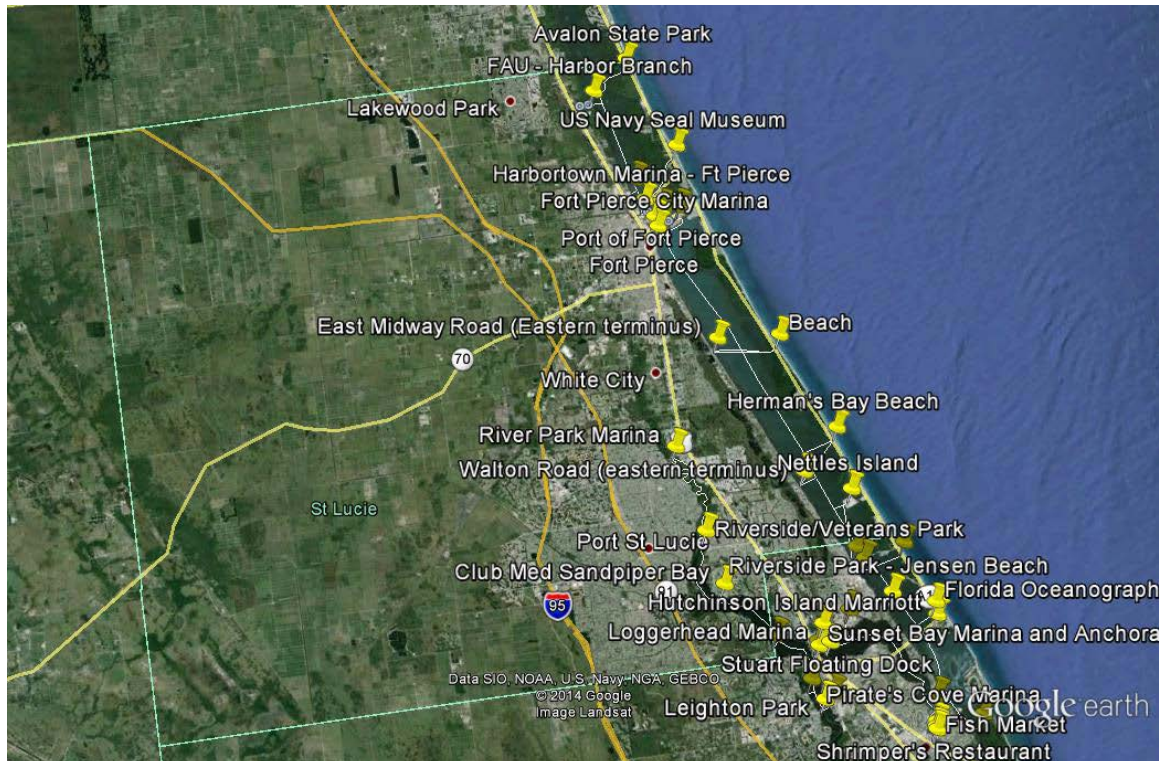
Participants in the development of the waterways plan identified a range of destinations for which water taxi service is desired. The initial screen of potential water taxi locations began with a focus on the waterfront centers, which are the areas with the greatest concentration of origins and destinations along the waterways. This was further informed by an analysis of select educational, cultural, and recreational destinations that could provide or benefit from water taxi ridership. Additional analysis included a review of hotels and lodging facilities, which corresponds to the tourism aspect of the service, as well as public and private marinas. Satellite imagery was further utilized to screen additional potential water taxi stations and routes. These locations were analyzed for potential ridership, access, and destination quality, yielding a set of potential water taxi station locations.

It should also be noted there have been instances following major storm events where residents of barrier islands in both counties have required water taxi and ferry services to access residences that are otherwise inaccessible due to damage to the roadway network. Given the populations on the barrier islands, the potential for emergency response intervention further reinforces the potential benefits available from water taxi service in the region.



Marine Transportation

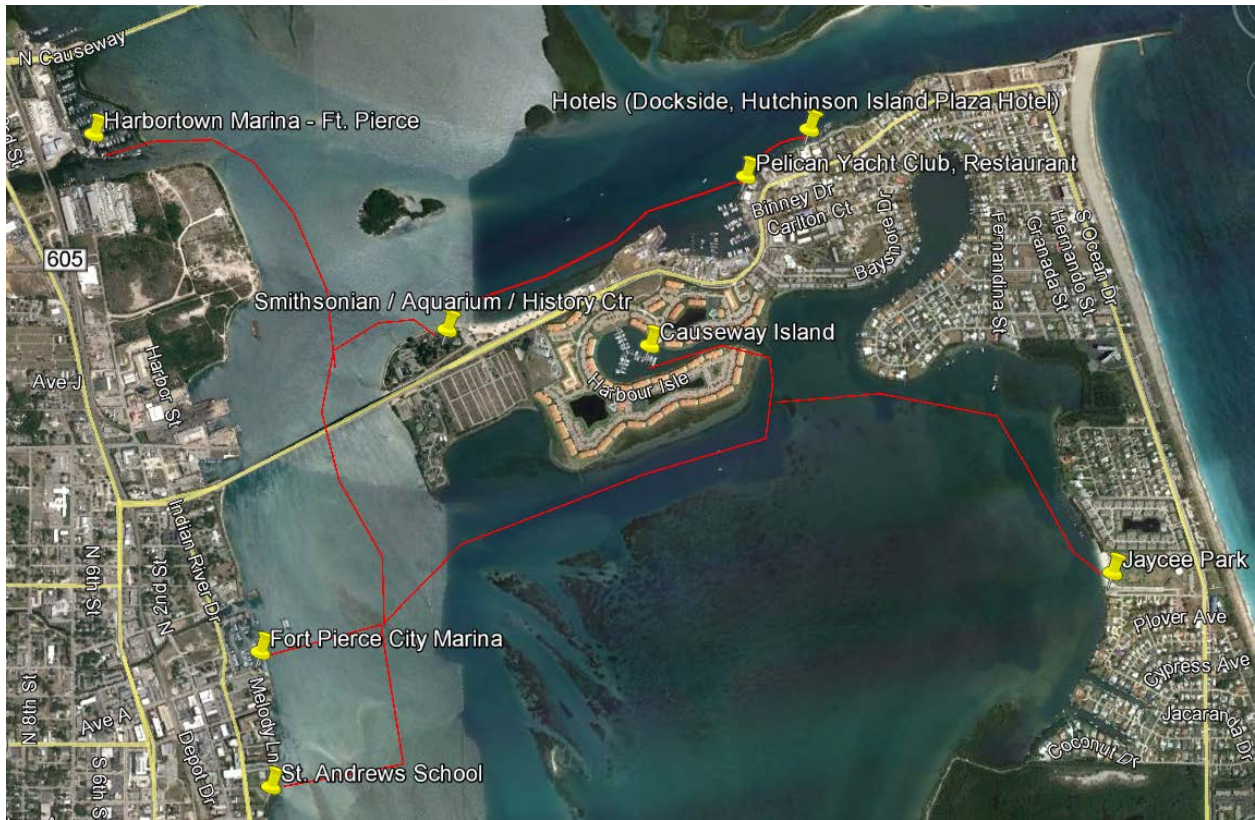
The map below illustrates the large number of sites resulting from this initial screening. Downtown Fort Pierce has several marinas and possible cultural and educational destinations. Potential beach access connections exist in northern and southern portions of the county, but there are limited load centers and infrastructure. As illustrated in the map, these beach-focused sites are geographically dispersed, with few that are close enough to establish a route using a slow-speed vessel.



Potential Water Taxi Routes and Sample Station Locations in St. Lucie County

Several near-term opportunities for new or expanded water taxi service have been identified for both Martin and St. Lucie counties. In downtown Fort Pierce, a few connections have been identified centered around the Fort Pierce City Marina, the Harbortown Marina, Causeway Island, the Smithsonian/Aquarium/History Museum, and the proposed St. Andrews School campus. Additional connections are possible with Jaycee Park to facilitate access for beach-side residents to events downtown as well as the island hotels (e.g., Dockside Inn, Hutchinson Island Plaza Hotel and Suites), and Pelican Yacht Club. A service connecting these facilities ideally will connect residential properties and commercial marinas with cultural resources and activities including the Farmer's Market and the Smithsonian/Aquarium/History Museum. These connections have a short distance and short travel time; provide key connections; and build upon the ongoing special events activities currently being organized in the downtown. These connections are illustrated below.

Marine Transportation



Most Likely Initial St. Lucie County Water Taxi Routes

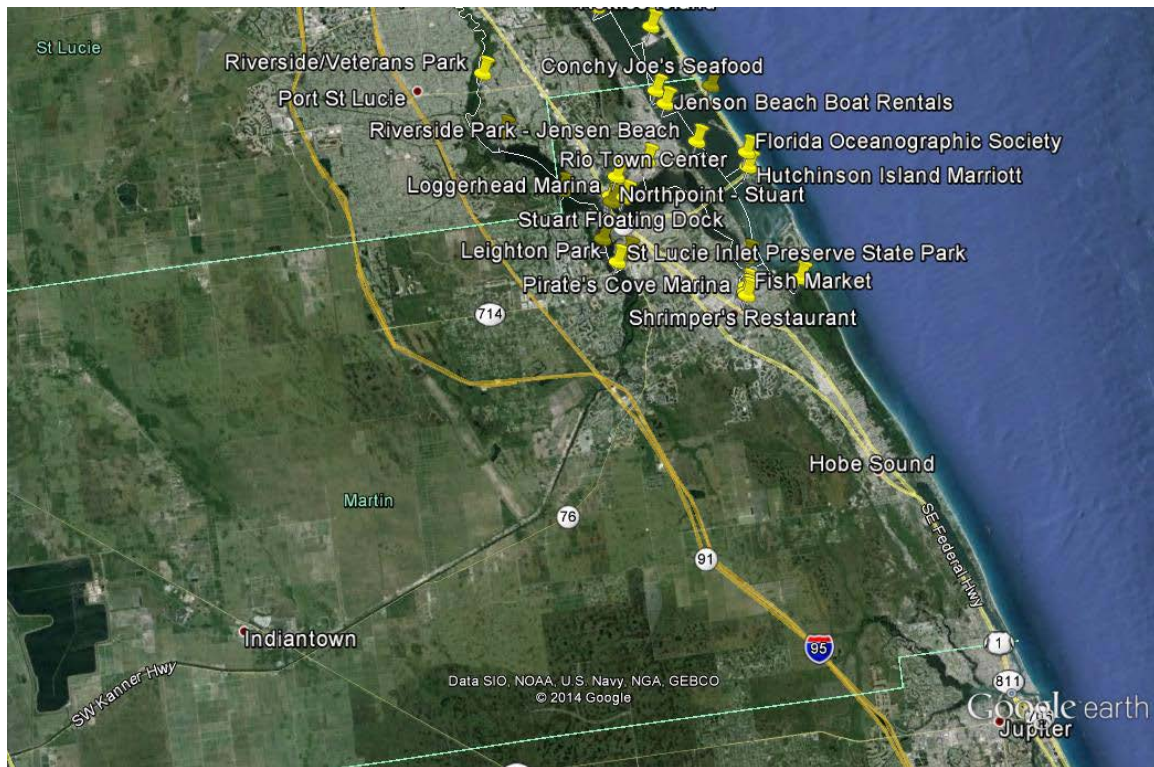
It is important to note another factor that could enhance the success of a service in downtown Fort Pierce is the presence of passenger service currently. Operating from the Fort Pierce City Marina, the Indian River Lagoon Boat Tours operation also is available as the Fort Pierce Water Taxi. Although the downtown's special events represent many factors necessary for successful service, the existing service has experienced limited success and has not been co-marketed with downtown special events. For a successful water taxi service to become established in Fort Pierce, or elsewhere in the study area, a common marketing program for the service and the special events and destinations it would serve is considered critical for success.

A longer term possibility for water taxi service in Port St. Lucie could include a route from Club Med/Sandpiper to the Westmoreland Tract if developed uniquely with sufficient diversity of use to make it a destination. Depending on the development program, the site could attract patrons via water taxi with an approximately thirty-minute travel time from the hotel. The route would likely lend itself to a packaged trip and meal as an excursion for groups of passengers, relying on co-marketing with Club Med for the greatest potential for success. This concept needs to be further informed by the City's desire for future uses on the subject parcel.

In addition to potential water taxi station locations identified by the public, Martin County's waterways were also screened using satellite imagery to identify possible water taxi stations and routes. The map below illustrates the large number of sites resulting from this initial screening. As shown, the majority of sites identified are located in the central and northern part of the county, focused around the St. Lucie Inlet and St. Lucie River. This area represents the densest

Marine Transportation

concentration of commercial and accessible waterside development. The North and South Forks of the St. Lucie River are characterized by a few, well-spaced natural recreational destinations. Port Salerno's Manatee Pocket has an established waterside community, and water taxis are used today for the annual seafood festival. Downtown Stuart has multiple marinas and destinations, with an existing public dock accessible by water taxis and water taxi requirements in place for new development. The biggest challenge in this portion of the region is the ability to build reasonable service routes, largely because of the distances.



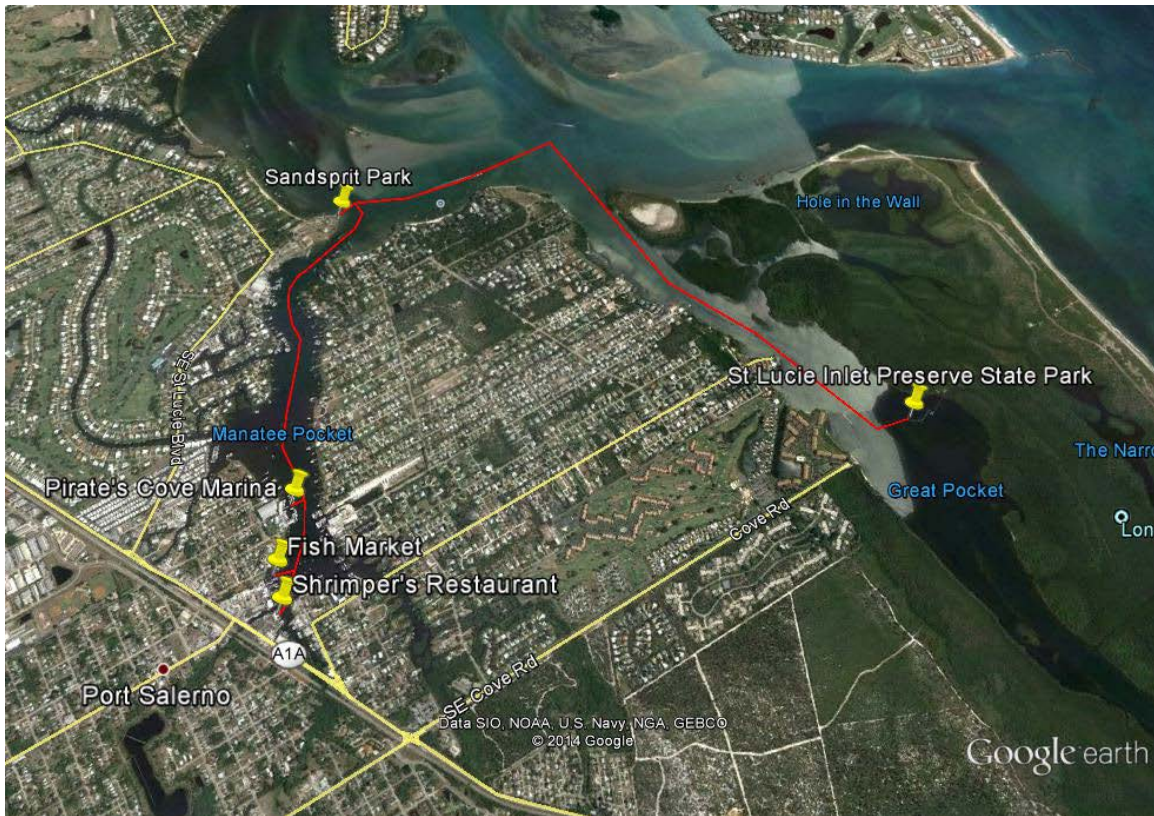
Potential Water Taxi Routes and Sample Station Locations in Martin

Several potential station locations have been identified in the vicinity of Port Salerno. The St. Lucie Inlet Preserve is a recreational area only accessible by boat. Service could be provided to this location from Sandsprit Park or from any of the possible stops suggested for Manatee Pocket. The County has maintained a long-term interest in this connection. Providing connections between Sandsprit Park and Manatee Pocket provides residents with access to the unique maritime village with waterfront activities and restaurants (e.g., Pirate's Cove Marina, Fish Market, Shrimper's Restaurant, Manatee Island Bar and Grill, Twisted Tuna). These routes are relatively short, provide key connections, including some to a boat-captive location, and can build from the occasional water taxi service in existence today. A limited service route could also potentially be offered from the Hutchinson Island Marriott Beach Resort and Marina, which is roughly 45 minutes by water taxi. Port Salerno's critical mass as an entertainment destination has grown in the last several years, with significant restaurant and other commercial activity in place. Recreational concessions for kayaks and paddleboards have also become established in recent years, enhancing the destination quality of "The Pocket." The increased economic activity could lend itself to

Marine Transportation

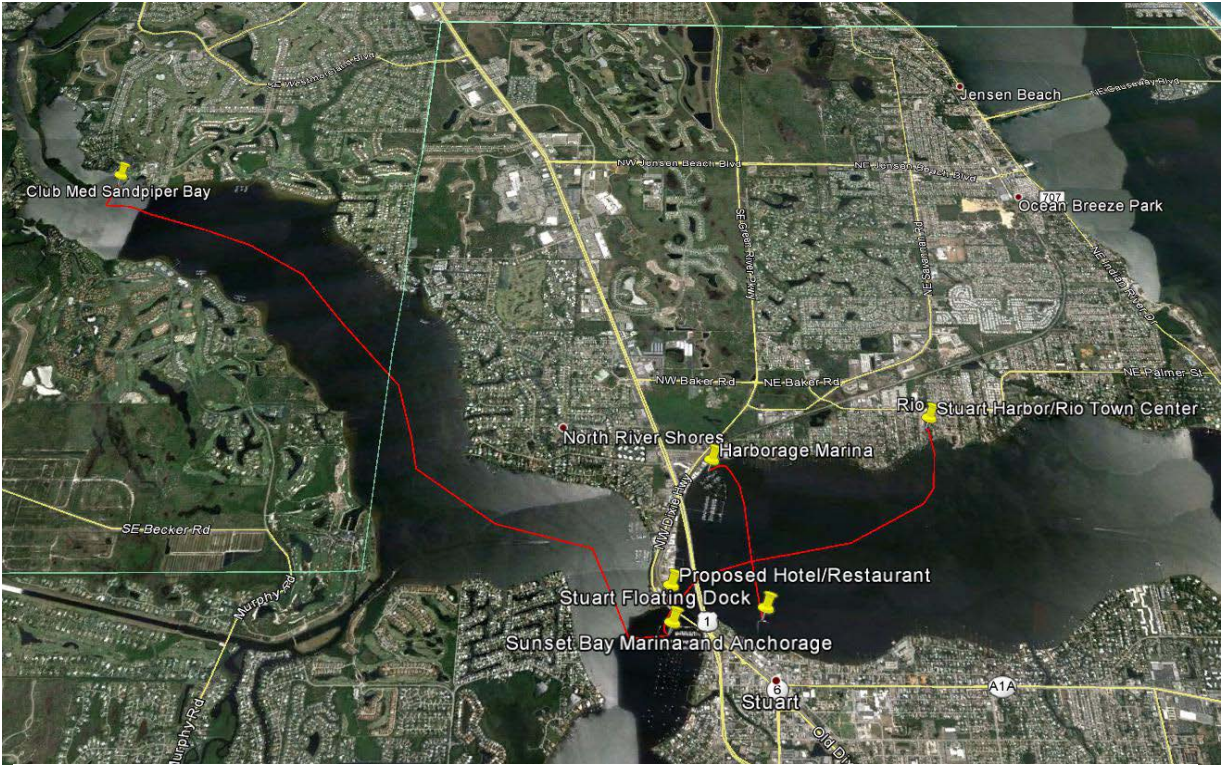
water taxi service to enhance the experience for patrons, maintain novelty in destination, and capitalize upon the uniqueness of the fishing village heritage.

Downtown Stuart has a variety of marinas and destinations in existence today with others planned (e.g., Stuart Floating Dock, Harborage Marina, Loggerhead Marina, Sunset Bay Marina). Additional facilities are located upriver on the South Fork (e.g., Riverwatch Marina, Leighton Park). There are limited origin/destination pairs in place today that would likely attract water taxi service to the downtown Stuart area. Club Med/Sandpiper, located upriver on the North Branch, could serve as a major generator. It is located roughly five miles from downtown Stuart, making any boat ride lengthy even at higher speeds. However, as an excursion service, it may be practical on a limited basis for special events or larger tours.



Most Likely Initial Martin County Water Taxi Routes – Port Salerno

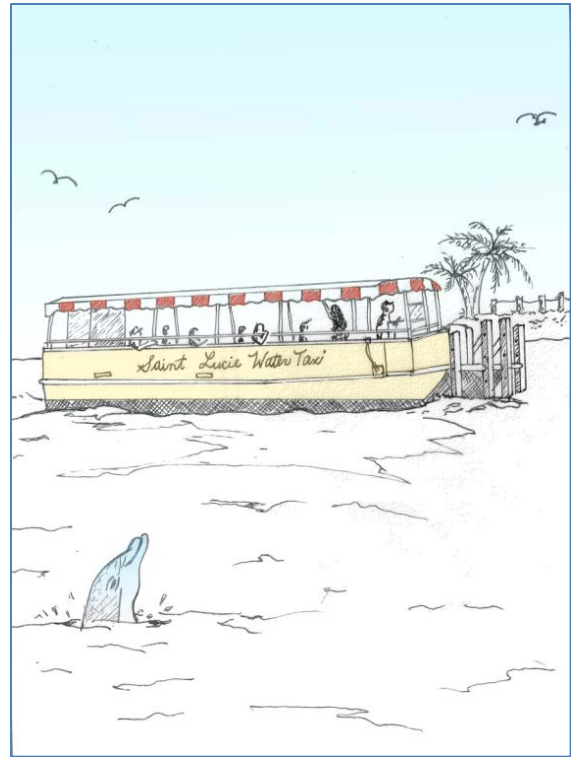
Marine Transportation



Most Likely Initial Martin County Water Taxi Routes – Stuart/Port St. Lucie

The following table below shows possible service times based on distance and speed assumptions consistent with other water taxi services and the waterways regulations. It is unlikely that any of the services will be short, fast connections, making them likely more feasible as excursion or special event operations as opposed to a commuter service.

Given these operating, land use, and route considerations, a preliminary water taxi system, with three individual initial routes in Fort Pierce, Stuart, and Port Salerno, is illustrated on the water taxi concept map following the travel time table. Summary maps detailing this analysis are also provided following the table.



Marine Transportation

Possible Water Taxi Routes, Preliminary Average Trip Times

From	To	Route Length (miles)	Average Speed (Knots/Hour)	Average Speed (Miles/Hour)	Partial Travel Time (minutes)	Time Penalties for Boarding, Stops & Disembarking (minutes)	Total Average Trip Time (minutes)
Fort Pierce City Marina	Harbortown Marina	1.8	3	3.5	32	10	42
Fort Pierce City Marina	History Museum/Smithsonian	1.0	3	3.5	18	10	28
Fort Pierce City Marina	Causeway Island	1.8	5	6	18	10	28
Causeway Island	Jaycee Park	1.4	3	3.5	23	10	33
St Andrew's School	Causeway Island	2.1	5	6	22	10	32
St Andrew's School	History Museum/Smithsonian	1.4	5	6	15	10	25
Sandsprit Park	St Lucie Inlet Preserve	2.3	5	6	24	10	34
Sandsprit Park	Pirate's Cove / Fish Market / Restaurants	1.8	3	3.5	30	25	55
Pirate's Cove	St Lucie Inlet Preserve	3.4	5	6	35	10	45
Club Med Sandpiper	Sunset Bay Marina	4.8	10	11	25	10	35
Sunset Bay Marina	Proposed Hotel/Restaurant	0.3	3	3.5	5	10	15
Proposed Hotel/Restaurant	Stuart Floating Dock	0.9	5	6	9	10	19
Stuart Floating Dock	Harborage Marina	1.0	5	6	10	10	20
Harborage Marina	Sunset Bay Marina	1.4	5	6	14	15	29
Stuart Floating Dock	Stuart Harbor/Rio Town Center	1.8	5	6	18	10	28

Martin & St. Lucie
WATERWAYS
 PLAN

Select Waterfront Centers

-  Fort Pierce CRA
-  Indiantown CRA
-  Jensen Beach CRA
-  Old Palm City CRA
-  Port Salerno CRA
-  Port St. Lucie CRA
-  Stuart CRA

NOTE: Martin County's redevelopment program also includes CRAs in Golden Gate and Hobe Sound which are without significant waterfront commercial frontage.



SELECT WATERFRONT CENTERS



Martin & St. Lucie WATERWAYS PLAN

Cultural, Educational and Recreational Destinations

- Select Cultural & Educational Destinations
- Select Recreational Destinations

Select Cultural, Educational & Recreational Destinations

- | | |
|--|--|
| 1 A.E. Backus Museum and Gallery | 23 Maritime & Yachting Museum |
| 2 Arts & Cultural Alliance of St. Lucie, Inc. | 24 Martin County Arts Council |
| 3 Blowing Rock - Nature Conservancy | 25 Motorized Kayak Adventures |
| 4 Elliot Museum | 26 National Navy UDT-Seal Museum |
| 5 Environmental Studies Center | 27 Oxbow Eco-Center |
| 6 FAU - Harbor Branch Oceanographic | 28 Peck Lake Park |
| 7 Florida Oceanographic Society | 29 Pepper Beach State Recreation Area |
| 8 Fort Pierce Inlet State Park | 30 Phipps Park Campground |
| 9 Halpatiokee Regional Park | 31 Port St. Lucie Botanical Gardens |
| 10 Heathcote Botanical Gardens | 32 River Lilly Cruises |
| 11 Historical Society of Marin | 33 Savannahs State Preserve |
| 12 Hobe Sound National Wildlife Refuge | 34 Seabranah Preserve State Park |
| 13 Hobe Sound Nature Center | 35 Smithsonian Marine Station at Fort Pierce |
| 14 House of Refuge Museum - Gilbert's Bar | 36 St. Lucie Aquarium (with Smithsonian Center) |
| 15 House of Seven Gables | 37 St. Lucie County Regional History Center |
| 16 Huang-Art War & Peace Museum | 38 St. Lucie County Cultural Affairs |
| 17 Indian RiverSide Park | 39 St. Lucie Inlet Preserve State Park |
| 18 Jonathan Dickinson State Park | 40 St. Lucie River Princess (cruise) |
| 19 Lady Stuart Deep Sea Fishing Fort Pierce Lady | 41 Stuart Heritage Museum (& Stuart Feed Store) |
| 20 Lady Stuart Deep Sea Fishing Lady Stuart I | 42 Treasure Coast Children's Museum |
| 21 Manatee Observation/Education Center | 43 Zora Neale Hurston Dust Tracks Heritage Trail |
| 22 Maritime & Yachting Museum | |

Source: 2014 TCRPC and 2012 NAICS data

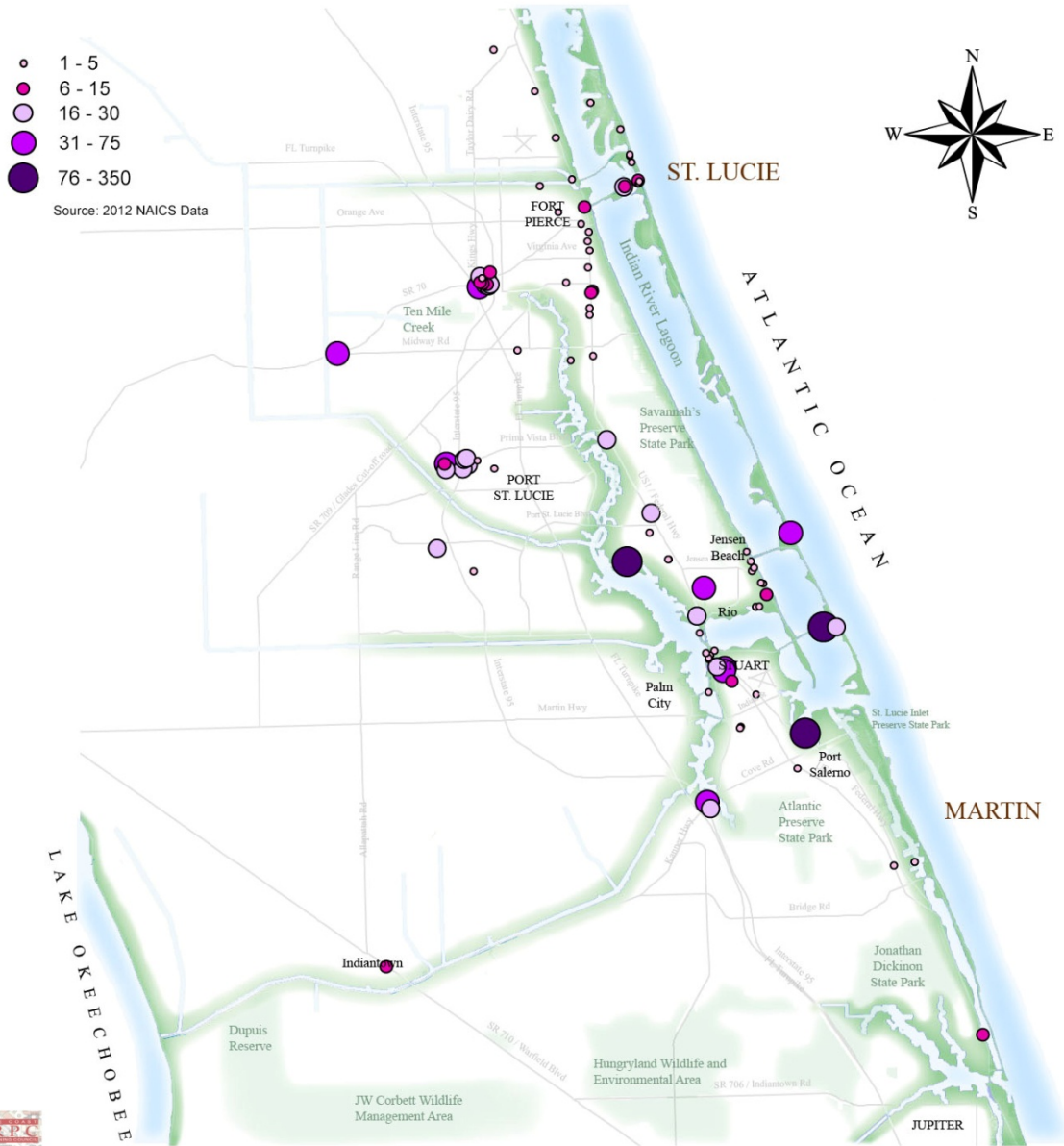


SELECT CULTURAL, EDUCATIONAL & RECREATIONAL FACILITIES

Martin & St. Lucie

WATERWAYS

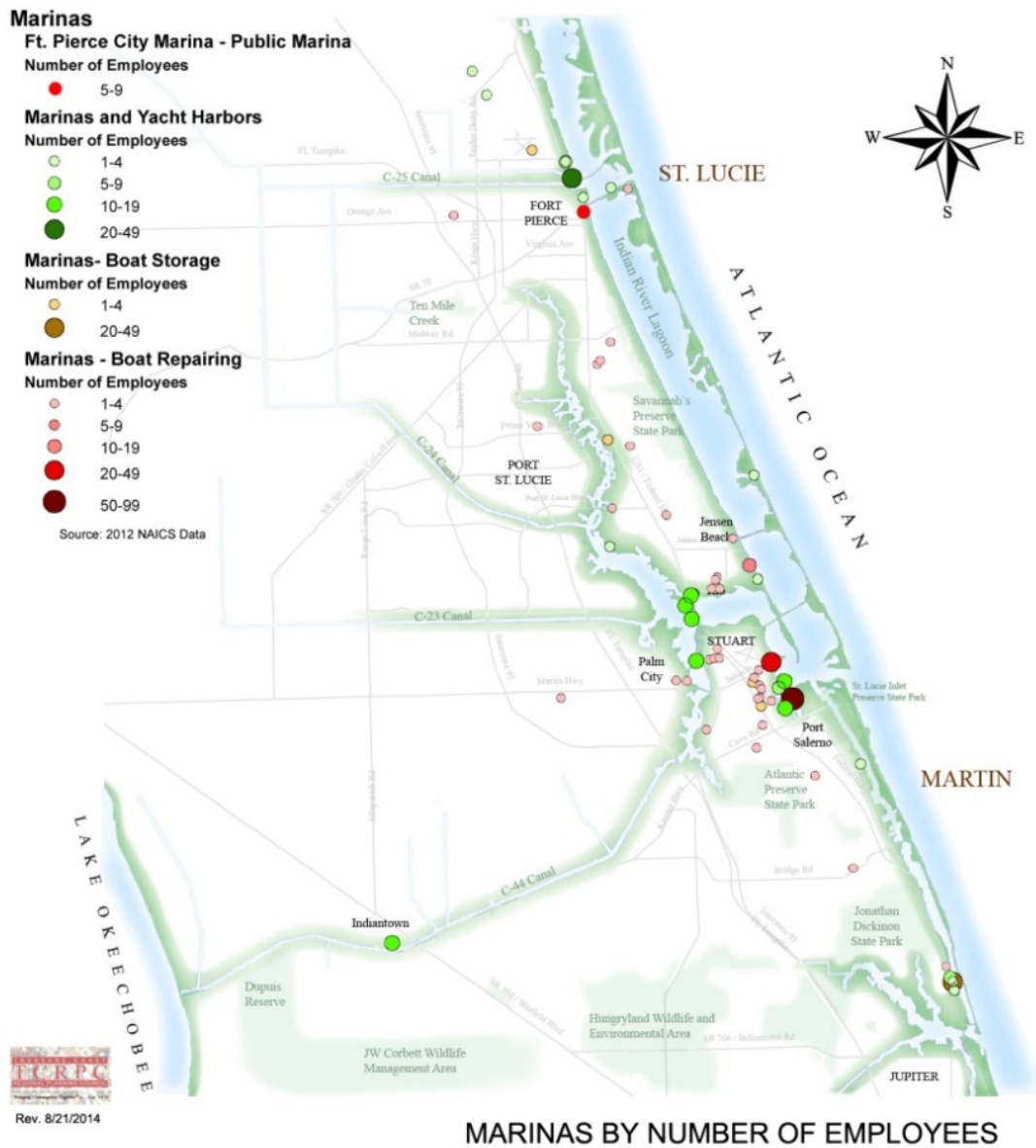
PLAN



HOTELS BY NUMBER OF EMPLOYEES



Martin & St. Lucie WATERWAYS PLAN



Martin & St. Lucie WATERWAYS PLAN

Potential Water Taxi Stations

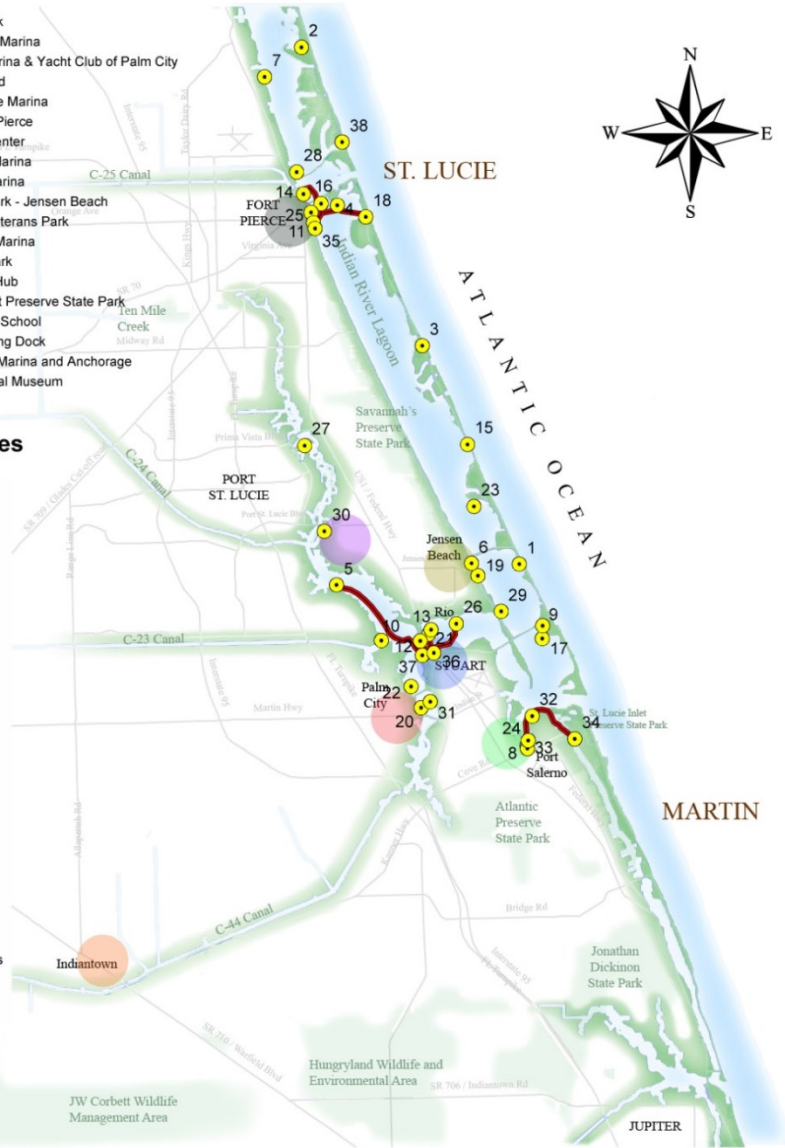
- | | |
|----------------------------------|--|
| 1 AIA Residential | 20 Leighton Park |
| 2 Avalon State Park | 21 Loggerhead Marina |
| 3 Beach | 22 Meridian Marina & Yacht Club of Palm City |
| 4 Causeway Island | 23 Nettles Island |
| 5 Club Med Sandpiper Bay | 24 Pirate's Cove Marina |
| 6 Conchy Joe's Seafood | 25 Port of Fort Pierce |
| 7 FAU - Harbor Branch | 26 Rio Town Center |
| 8 Fish Market | 27 River Park Marina |
| 9 Florida Oceanographic Society | 28 Riverside Marina |
| 10 Floridian Golf Club | 29 Riverside Park - Jensen Beach |
| 11 Fort Pierce City Marina | 30 Riverside/Veterans Park |
| 12 Future Restaurant/Hotel | 31 Rivenwatch Marina |
| 13 Harborage Marina | 32 Sandsprit Park |
| 14 Harbortown Marina - Ft Pierce | 33 Restuarant Hub |
| 15 Herman's Bay Beach | 34 St Lucie Inlet Preserve State Park |
| 16 History Museum/Smithsonian | 35 St. Andrews School |
| 17 Hutchinson Island Marriott | 36 Stuart Floating Dock |
| 18 Jaycee Park | 37 Sunset Bay Marina and Anchorage |
| 19 Jensen Beach Boat Rentals | 38 US Navy Seal Museum |

Potential Water Taxi Routes

Select Waterfront Centers

-  Fort Pierce CRA
-  Indiantown CRA
-  Jensen Beach CRA
-  Old Palm City CRA
-  Port Salerno CRA
-  Port St. Lucie CRA
-  Stuart CRA

NOTE: Martin County's redevelopment program also includes CRAs in Golden Gate and Hobe Sound which are without significant waterfront commercial frontage.



POTENTIAL WATER TAXI STATIONS & ROUTES

Marine Transportation

Longer-term water taxi opportunities will be based on short-term successes and future development along the waterways. Building on recent successes and initiatives will be a driving factor. Water taxi operations have been included in the past three Port Salerno Seafood Festivals reportedly carrying approximately 1,000-1,500 passengers (service provided free-of-charge with \$5 gate admission; costs of service funded as part of festival operations). Existing water taxi service is available in conjunction with eco-tour boat in Fort Pierce, and the City of Stuart anticipates requiring the future public/private developer of the North Point property to include a water taxi operation, including service to the City's floating dock and Sunset Marina as well as other potential water taxi stations as identified in this plan.

There appear to be four vessels operating today that can or could provide water taxi service, although several operate only seasonally. Service names and contact information are provided below:

River Lilly Cruises (Port St. Lucie):

<http://www.riverlillycruises.com/>

St. Lucie River Princess (Port St. Lucie):

<http://stlucierivercruise.com/>

Fort Pierce Water Taxi (& Indian River Lagoon Boat Tours) (Fort Pierce):

<http://indianriverlagoonandswamplandboattours.com/>

Island Princess Cruises (Port Salerno – Sailfish Marina, Manatee Pocket):

<http://islandprincesscruises.com/>

An inventory of typical, annual special events and festivals in the core areas where water taxi service could be feasible has been assembled as part of the plan development. This data is intended to provide a baseline for a special events inventory for marketing and promotions within the select waterfront centers, and as noted, for the potential development of water taxi service. There are roughly 80 unique annual events in the core downtowns and more than 250 weekly or monthly special events. This inventory does not include the additional competitive larger-scale sports events, such as fishing tournaments, sailing regattas, triathlons, and other sports tournaments, which also generate peak influxes of visitors to the area. A focused marketing and promotional initiative could determine appropriate event weekends, fine-tune water taxi station locations, determine funding structure, and develop a corresponding program. In addition to tourist development programs in both counties, each of the waterfront centers has community-based leadership, including merchant's associations, chambers of commerce, main street organizations, and well-established redevelopment programs that could be included in county-scale water taxi working groups to further evaluate the potential of this concept.

Water taxi access to special events and waterfront centers would be further enhanced if accommodations for bicycles and human-powered vehicles were provided, enabling day-long ventures via these non-vehicular modes. Water taxis could also provide connectivity to greenways/trails networks, expanding the ecotourism benefits provided by such a service.

INITIAL LISTING OF SELECT WATERFRONT SPECIAL EVENTS MARTIN & ST. LUCIE COUNTIES			
TYPICAL MONTH	LOCATION	EVENT	SPONSOR/ORGANIZER
Annual - Tuesdays	Fort Pierce	Free Day at Smithsonian Marine Station	Treasures of Fort Pierce
Annual - Thursdays	Fort Pierce	Bike Night	Fort Pierce Main Street
Annual - First Fridays	Fort Pierce	Friday Fest	Fort Pierce Main Street
Annual - Last Fridays	Fort Pierce	Classic Car Cruise In	Fort Pierce Main Street
Annual- Saturdays	Fort Pierce	Farmer's Market	Fort Pierce Main Street
January/February	Fort Pierce	Trawlerfest (Ft. Lauderdale to Ft. Pierce)	Passage Maker
March	Fort Pierce	Taste of the Sea & Sandy Shoes Seafood Festival	Fort Pierce Main Street
March	Fort Pierce	Taste of Saint Lucie in Downtown Ft. Pierce	Big Brothers and Big Sisters
April	Fort Pierce	Oysterfest	City of Fort Pierce and Marina
July	Fort Pierce	Dog Days of Summer	Heathcote Botanical Gardens
July	Fort Pierce	Backus Bingo Bash	E.E. Backus Gallery & Museum
September	Fort Pierce	Indian River Lagoon Science Festival	Friends of Harbor Branch
October	Fort Pierce	Bat-tastic Night Out With Nature	Florida Manatee Center
November	Fort Pierce	Annual Navy SEAL Muster & Music Festival	Navy Seal Museum
December	Fort Pierce	Sights and Sounds on 2nd St & Christmas Parade	Fort Pierce Main Street
December	Fort Pierce	The Best of the Best juried art show	E.E. Backus Gallery & Museum
December	Fort Pierce	Holiday Kick Off Regatta Offshore Race	Fort Pierce Yacht Club
Annual - Thursdays	Jensen Beach	Jammin' Jensen	Jensen Beach Chamber of Commerce
January	Jensen Beach	Jensen Beach Fine Art & Craft Show	Jensen Beach Chamber of Commerce
February	Jensen Beach	Mardi Gras Celebration	Jensen Beach Chamber of Commerce
March	Jensen Beach	St. Patrick's Day Celebration & Parade	Jensen Beach Chamber of Commerce
May	Jensen Beach	Florida State Road Race Championship	FBRA
October	Jensen Beach	Leif Erikson Festival & Regatta	Sons of Norway
October	Jensen Beach	October Zombie Invasion at Jammin' Jensen	Jensen Beach Chamber of Commerce
November	Jensen Beach	Jensen Beach Pineapple Festival	Jensen Beach Chamber of Commerce
December	Jensen Beach	Taste of Jensen	Jensen Beach Chamber of Commerce
October	Palm City	Palm City Fall Fest	Palm City Chamber of Commerce
January	Port Salerno	Port Salerno Seafood Festival	Port Salerno Dock Authority
September	Port Salerno	Mermaid & Pirates Festival (tentative)	Port Salerno Dock Authority
September	Port St. Lucie	The Great American Raft Race	North Port Marina
December	Port St. Lucie	Port St. Lucie Festival of Lights	Port St. Lucie Chamber of Commerce
Annual - Sundays	Stuart	Stuart Green Market	Stuart Main Street
Annual - First Thursdays	Stuart	Bike Night	Stuart Main Street
November thru April	Stuart	Rock' n Riverwalk Music	Stuart Main Street
January	Stuart	Boat Show	MIATC
February	Stuart	Bike Fest	The ARC of Martin County
February	Stuart	Downtown Stuart Art Festival	Stuart Main Street
February	Stuart	Howard Alan Art Festival	Stuart Main Street
March	Stuart	ArtsFest	Martin County Arts Council
March	Stuart	Downtown Stuart Stroll (March)	Stuart Main Street
April	Stuart	Stuart Sailfish Regatta	APBA
April	Stuart	Taste of Martin County	Big Brothers and Big Sisters
April	Stuart	Downtown Stuart Craft Festival	Stuart Main Street
May	Stuart	Downtown Sidewalk Sale (May)	Stuart Main Street
May	Stuart/Jensen Beach	Stuart Sailfish Regatta	Stuart Sailfish Regatta
June, July, August	Stuart	Food Truck Invasion	Martin County Chamber
July	Stuart	Start Spangled Stuart 4th Celebration	Stuart Main Street
August	Stuart	Dancin' in the Streets	Stuart Main Street
August	Stuart	Sailfish Splash Kids Triathlon	Martin County Chamber
September	Stuart	AIS on the Lagoon - Free Community Paddle Fest	Florida Oceanographic Society
October	Stuart	Downtown Stuart Fall Craft Festival	Stuart Main Street
October	Stuart	Hobgoblin on Main Street	Stuart Main Street
October	Stuart	Haunted House	Children's Museum of the Treasure Coast
November	Stuart	Downtown Sidewalk Sale (November)	Stuart Main Street

INITIAL LISTING OF WATERFRONT SPECIAL EVENTS MARTIN & ST. LUCIE COUNTIES			
TYPICAL MONTH	LOCATION	EVENT	SPONSOR/ORGANIZER
November	Stuart	Fall Fest	Children's Museum of the Treasure Coast
November	Stuart	Downtown Stuart Stroll (Nov)	Stuart Main Street
December	Stuart	Holidays Around the World	Children's Museum of the Treasure Coast
December	Stuart	Christmas on Main Street Tree Lighting	Stuart Main Street
December	Stuart	Christmas Boat Parade/Holiday Fun Festival	MIATC
SOURCE: CRAs, Main Street Organizations, Chambers of Commerce, Local Governments, TCRPC.			

Water taxi service can be accommodated in appropriately designed public or private docks. However, the public expressed strong interest in a network of public, multi-purpose docks that could accommodate water taxis as well as other recreational vessels and activities. Funding for public docks of this type is available through FIND and Federal Highway Administration (FHWA) as well as other potential sources for transportation and public access. Maintaining a broad intent for docks of this type will increase their funding competitiveness and provide a more beneficial improvement for the public.

For any transit service to be successful there must be an appropriate integration with the upland transportation network. Users of a water taxi service will arrive in various ways – by foot, bike, car, and transit. Pedestrian and bicycle traffic will naturally occur in walkable, mixed-use settings, such as the waterfront centers. The waterfront centers are also accessible by transit, with increasing demand likely for special events, although most of the identified special events are weekend activities, when no regularly scheduled transit is operating. Vehicular parking will be more difficult to manage, given the limited non-residential land area along the waterways. Marinas and many of the waterfront public parks experience peak demand on weekends, which parallels the peak times anticipated for water taxi use given the likely scheduling for special events. Careful parking management strategies will be necessary to appropriately manage parking demand along the waterway for water taxi patrons.



Special events such as Stuart’s Rock’N Riverwalk (pictured left) or arts festival (pictured above) can be accessed by water taxis utilizing the city’s FIND-funded courtesy dock (visible at the end of the Riverwalk in the arts festival image). Images courtesy of City of Stuart.

International Passenger Service Operations

The waterways of Martin and St. Lucie counties lend themselves to different forms of passenger transportation, both local and long-distance. Participants discussed local boating, access throughout Florida and the U.S. via canals or offshore, and international access to the Bahamas, Caribbean, and beyond. Given the transportation amenity provided by the Port of Fort Pierce and the pending channel deepening, participants expressed interest in the concept of high-speed ferry service that could connect the Port to other destinations, which was analyzed for feasibility.

South Florida is home to established passenger ferry services. Three different services highlight possible markets for the Martin/St. Lucie region. The Key West Express provides service from Fort Myers/Marco Island to Key West (150 miles one-way). The Bahamas Express provides service from Fort Lauderdale/Port Everglades to Freeport (100 miles one-way). Both of these services are sold as fast ferries. The Bimini Superfast Cruise Ship provides service from Miami/Port Miami to Bimini (60 miles one-way). This service is sold as a fast cruise ship providing a day-long excursion to Bimini. These services cater to travelers making day and multi-day trips. The boats range in size and amenities (e.g., comfortable seating, restaurants, casinos, cabins), and all provide high-speed operations.

The Bahamas Express is scheduled to travel 100 miles in three hours and the Key West Express is scheduled to travel 150 miles in 3.5 hours. The Bimini Superfast Cruise Ship has the capability to travel 60 miles in about two hours, but given the service it offers, it operates at slower speeds as part of a day-long itinerary. Service from Fort Pierce (the northern-most load center in the region) to these destinations would be significantly longer (140 miles to Bimini, 150 miles to Freeport, 265 miles to Nassau, 300 miles to Key West). Given these distances, services to Bimini or Freeport appear to be the most likely locations that could be marketable.



Successful Waterborne Services Exist Today - High Speed Service from Miami to Bimini

High-speed ferry services, such as those illustrated above, exist today and provide service to the Caribbean, Bimini, and Key West. Additional evaluation is necessary to understand the feasibility of intermittent service to similar destinations from the Port of Fort Pierce or possibly Stuart/Port Salerno.

For high-speed ferry service to be successful, key factors include vessel speed, the itinerary, and the size of the local market. A 30- to 35-knot vessel could provide a 4 to 4.5 hour service from Fort Pierce to Freeport or Bimini. A similar speed vessel could also provide service to Port

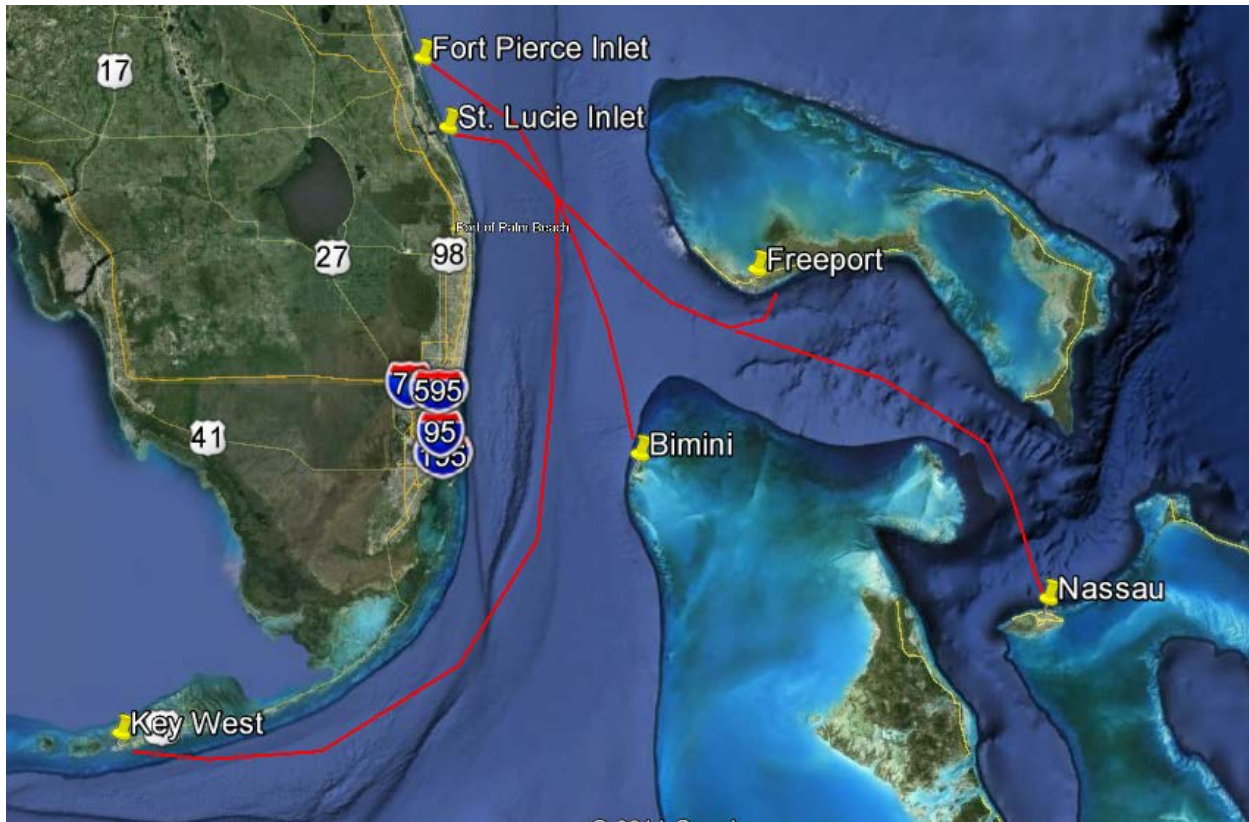
Marine Transportation

Canaveral within 2.5 hours. An operation out of Stuart or Port Salerno would be 20 to 25 miles shorter, potentially enabling a three-to-four hour service. However, station location is more complicated as the ideal load centers and existing dockage would require navigating up the St. Lucie River to Manatee Pocket (more than three miles) or to downtown Stuart (more than eight miles) at slow speeds. Under this scenario, vessel size would be restricted, and there would be a significant time penalty associated with the distance and speed. In order to minimize this penalty, a dock/station would need to be located as close to the inlet as possible (e.g., no further inland than Sandsprit Park or the northern part of Manatee Pocket). In order to serve an international market, the region also would need to have access to U.S. Customs services. Martin County recently approved the establishment of a customs facility at the county airport, which could serve international water ferry passengers. This development may provide the necessary incentive to an operator to begin testing the market.

Given the existing population base and current data regarding tourism activity, a regular service out of either inlet appears unlikely given today’s market conditions, but the factors related to an intermittent service are unknown. The addition of a new customs facility in Martin County combined with an aggressive marketing campaign may show a niche market. The table below illustrates the distance/time analysis for different vessel speeds. The potential routes from either inlet are illustrated in this section.

Comparison of Distance Traveled/Trip Time by Vessel Speed

30-Knot Service				
Trip Time (minutes)	Knots Per Hour	Miles Per Hour	Miles Per Minute	Route Length
120	30.00	34.6	0.58	69.2
180	30.00	34.6	0.58	103.8
240	30.00	34.6	0.58	138.4
35-Knot Service				
Trip Time (minutes)	Knots Per Hour	Miles Per Hour	Miles Per Minute	Route Length
120	35.00	40.3	0.67	80.6
180	35.00	40.3	0.67	120.9
240	35.00	40.3	0.67	161.2
40-Knot Service				
Trip Time (minutes)	Knots Per Hour	Miles Per Hour	Miles Per Minute	Route Length
120	40.00	46.1	0.77	92.2
180	40.00	46.1	0.77	138.3
240	40.00	46.1	0.77	184.4



Martin/St. Lucie-Based Potential Intercity Ferry Routes

South Florida is known for its waterways and easy access to nearby islands. Both Port Miami and Port Everglades are home to daily and multiday passenger operations that serve destinations in the Bahamian islands. As Martin and St. Lucie counties develop and implement this waterway system plan, similar passenger services should be considered and evaluated. The distance and trip time from Fort Pierce would be longer, but the landside and waterside infrastructure is easily put in place at or near the Port of Fort Pierce. An operation in the Port Salerno area would be more competitive from a distance perspective, but the investments to bring the infrastructure online would be more significant. The market base is much smaller than what exists to the South from both local a population and visitor perspective. However, a niche service that caters to the unique characteristics of the Treasure Coast could be successful. This could be a smaller vessel providing periodic or specialized trips. In order to better understand the market opportunities and community interest, a market and feasibility study should be conducted to quantify community and business interest in a service of this type.

Seaplane Operations

The waterways in Martin and St. Lucie counties are expansive, and provide enough room for a variety of waterborne transportation activities. Tourism is identified as a key component for economic development in the region. Participants in the plan development process suggested several unusual water-based transportation options designed to expand the tourism market of the region, including the potential for seaplane accommodations.

There are successful seaplane bases within 200 miles of Port St. Lucie. They range from privately-owned flight schools to commercial charter operations. In addition, there are two private seaplane facilities along the inland waterway, neither of which provides public access, located in Ambersand (Sebastian, FL) and Fulton (Floridana Beach, FL). The three public seaplane bases are described in the table below.

Public Seaplane Bases Within 200 Miles of Port St. Lucie

Miami, FL (X44)	Located 2 miles from Miami CBD 14,000 ft. runway; No fuel available In 2011, reported 37 operations per week, all air taxi Now used for charter, Bahamas flights, and sightseeing https://www.miamiseaplane.com/
Tavares, FL (FA1)	Located 25 miles from Orlando Publically owned by City 3000 ft. runway; Fuel available “American’s Seaplane City” - http://www.tavares.org/965/Seaplane-Stories
Winter Haven, FL (F57)	Privately owned – Primarily used for flight training 3600 ft. runway; Fuel available 27 operations per day

Seaplanes Operating in Florida Today	
Adventure Seaplanes, Inc. , Lake Wales, FL Belford Flying Service, Winter Haven, FL Boca Grande Seaplane Air Taxi, Boca Grande, FL Brown's Seaplane Base, Inc., Winter Haven, FL Chester Lawson, Port Orange, FL Florida Seaplanes, Altamonte Springs, FL Highside Ultralights, Sugarloaf, FL Ryan Aviation Seaplane Base, Inc. , Palm Coast, FL Jones Brothers Seaplanes, Tavares, FL	

There are a variety of types of seaplanes. The type of plane is impacted by a variety of factors, like private use versus for hire/commercial, size of market, and origin/destination transportation versus excursions/sightseeing. For example, a personal aircraft, local sightseeing operation, or flight training may be a light aircraft (Piper Cub, Aviat Husky, Cessna 172, Lake), which have

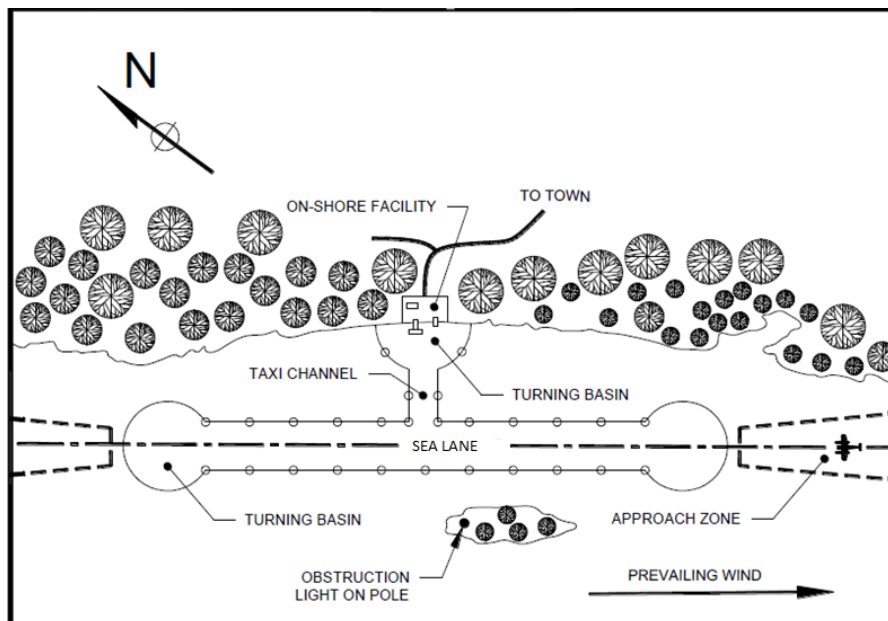
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two to four seats. Slightly larger planes, typically used more for transportation and charters include utility aircraft (de Havilland Beaver, Grumman Widgeon). These tend to have six seats and are more common in Alaska and Canada. These slightly larger planes can be land planes, sea planes, or amphibians.

Like other aviation operations, there are regulatory requirements from the Federal Aviation Administration (FAA) and State of Florida. The Florida Department of Transportation has an eight-step process regarding seaplane activity, which is available on-line at <http://www.dot.state.fl.us/aviation/publicuseairport.shtm>. FAA Guidance is provided in the Advisory Circular 150/5395-1A. In addition, there are waterway requirements. An operator must get U.S. Coast Guard approval for sea lane navigation markers. Permits for some activities (e.g., dredging, ramps) must be obtained from the USACE. State requirements are generous, allowing seaplanes to land almost anywhere not regulated by a municipality. Other permitting includes zoning, building, fire, environmental, and other ordinances.

In addition to the regulatory requirements, seaplane bases also have infrastructure requirements. The runway must be a minimum of 2,500 feet, with longer runway lengths for commercial operations. The runway should be at least 100 feet wide, but a width of 200 feet is preferred, and turning basins must be 200 feet. The minimum depth is three feet, but six feet is preferred and may be required based on the type of equipment. It is ideal to have a two-mile “flat” approach (40:1 clearance), or approach over water without obstacles. Once landed, docks should be in a favorable wind/wave direction. Finally, the airplane operation should be clear of channel & high traffic areas. Figure X illustrates FAA’s suggestion of how to lay out a seaplane base.

FAA Illustration of Seaplane Base Facilities



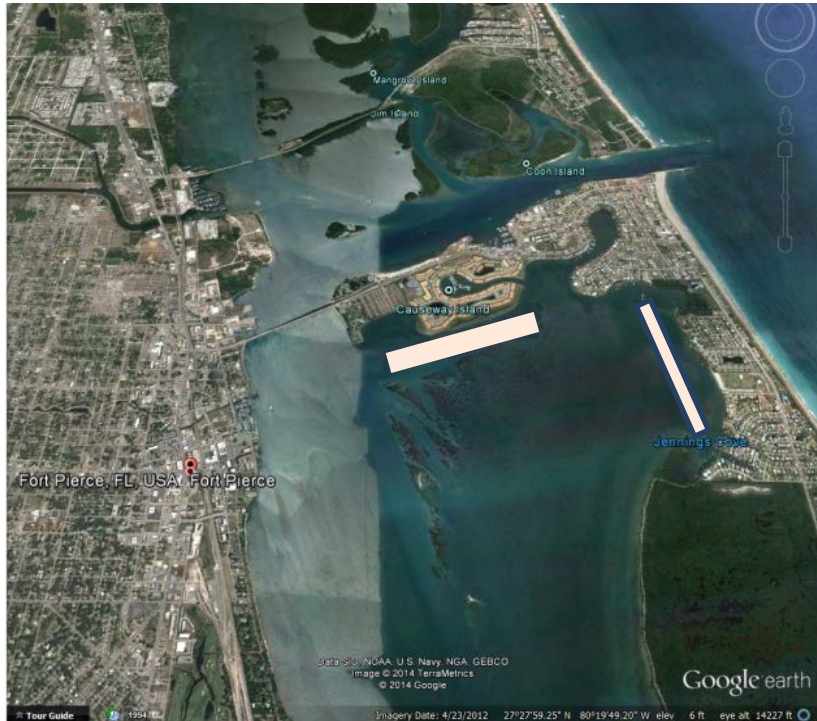
Source: FAA Advisory Circular 150/5395-1A

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Other seaplane base considerations relate to infrastructure and the environment, with consideration of noise and safety concerns. Seaplanes must yield to all traffic. Maneuverability of the planes can also be challenging as seaplanes have no brakes and no reverse. Characteristics of the plane can affect movement (e.g., strong weathervaning tendencies).

From an environmental perspective, seaplanes function as airplanes, not boats, in terms of emissions and pollution, producing no water discharge). There can also be impacts and hazards associated with birds and other wildlife like manatees. Fuel facilities are regulated by EPA standards.

In addition to all the above factors, there also are location considerations. The runway length must be at least 3,000 feet. Ideally, planes will be able to operate in multiple directions to accommodate changes in wind direction. Seaplanes will be traveling at 60-100+ MPH for approximately one-half to one mile in a straight line on the water. It is very important to have appropriate space and separation from other traffic. Buoys and markers are required to mark the runways. The runways must be clear of obstacles. Other key considerations include prevailing winds, water currents and tides, and waves. Waves should not be more than three-to-six inches ideally. At 12-15+ mph winds, waves may inhibit seaplane operations.



Possible Seaplane Accommodation in Fort Pierce

Customs facilities will be required for any international flights, and services could be provided by the existing U.S. Customs Office in Fort Pierce or the pending office in Stuart. There must be landside space available to lease out space for a terminal/office. There must be access to air related services (e.g., docks, fuel, maintenance). On-water fueling is extremely environmentally sensitive. Generally, seaplane base operators do not provide on-water fueling; customers must make their own arrangements. Amphibian planes can fuel at land facilities, or flying boats may be ramped. Docking facilities should be located to minimize water-taxi time.

A seaplane base would ideally be located outside of designated channel, adjacent to a seaplane dock, in a sheltered area with minimal obstacles and obstructions and minimal wildlife. Landside support (parking and other amenities) would be adjacent or close to the dock facilities. Two possible seaplane operation locations were identified in Fort Pierce and Stuart. These locations have adequate runway length, water depth, and are generally sheltered. They are in close proximity to existing docks and the established downtowns of both cities. Additional analysis is required to address approaches, prevailing winds, wildlife and environmental impacts,

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air service options (fueling), and market demand. In Fort Pierce, possible locations are illustrated in the maps in this section. Possible north/south and east/west runways have been identified south of Causeway Island in a sheltered area.

The map below illustrates a possible seaplane runway in Stuart. The concept is further along for this location as the Stuart CRA has proposed accommodations for seaplanes as a possible opportunity. A 4,000-foot runway has been identified along the St Lucie River north of Stuart, adjacent to the main channel. The existing Stuart Floating Dock is a possible terminal/land side base of operations.



Possible Seaplane Accommodation in Stuart

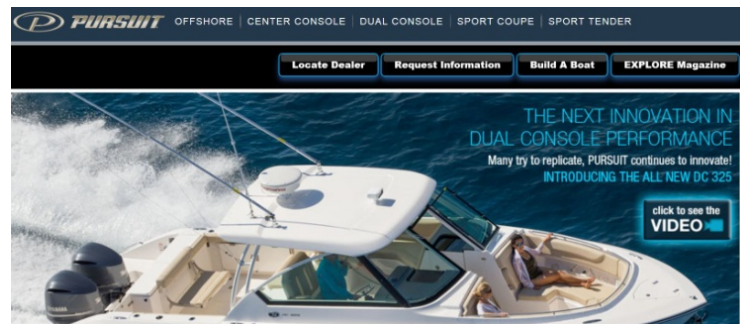
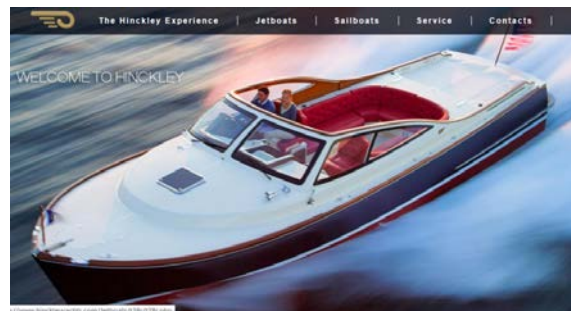
Martin and St. Lucie counties are home to hundreds of miles of beautiful waterways adjacent to waterfronts made up of parks and recreation areas, residential homes, and commercial and industrial businesses. A seaplane operation represents a possible opportunity for the region to gain additional access. However, it must be balanced with the potential impact on natural resources. A

seaplane operation could be private or commercial. A private facility would cater to individuals that own their own planes while a commercial operation would provide services (e.g., excursion/sightseeing, point to point) to the community. The initial screening described above suggests the basic infrastructure could be accommodated, but additional evaluation is necessary to determine potential impacts on natural resources and local communities. As a next step to the waterway system plan, a market and feasibility study should be conducted to help determine the market potential, community support, business sector level of interest, and potential environmental impacts of seaplanes.

Marine Related Industrial Uses of the Waterway

The waterways in Martin and St. Lucie counties are used by a diverse mix of private, commercial and industrial entities. As a result, industrial uses must consider a variety of factors to ensure compatibility. Existing and future industrial operations are and will be limited by community support, business interest, navigational limitations, environmental impacts, the marketability of the service, associated landside development requirements, and the ability to balance joint uses.

Boat Building & Mega-Yacht Facilities. Martin and St. Lucie counties are home to a well-established boat building, service and repair industry. The economic contributions and employment of this industry have been discussed earlier in this chapter under dredging. Dredging in particular, both in the inlet and channels, is the key infrastructure improvement necessary to enable the sale, service, and repair of larger vessels.



The ability to serve the mega-yacht industry is a substantial opportunity for the region's economy. To the south, Broward and Palm Beach counties are continuing to position themselves to attract a piece of the mega-yacht trade. Globally, these vessels tend to reposition following the seasons, with the winter months (November through May) sending vessels to the Caribbean, Bahamas, and Florida. The balance of the year finds these vessels in the Mediterranean, with a smaller proportion in New England (Boston, Maine, and Newport).

Mega-yachts typically spend more than \$1 million annually on maintenance and provisions. The global inventory of luxury and mega-yachts continues to grow, with yachting industry estimates indicating a global inventory of 3,800 vessels today (ranging in size from 75 to nearly 600 feet in length), and more than 500 currently in production. While a large percent of the yachting community enjoys the selection of activities and party atmosphere available in South Florida, folks that select Martin and St. Lucie counties for their services enjoy a quieter experience. Crews stay locally while the work is completed, which is an economic contributor. Among the

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challenges are the adequacy and availability of supporting services, crew amenities, and land-side parking and access. In addition, as luxury pleasure craft are getting bigger, additional infrastructure improvements, such as yard reconfiguration and channel deepening, are necessary to support this industry sector. Manatee Pocket, although recently dredged, needs additional depth south to Hinkley’s facility, and more consistent depths are necessary to access American Custom Yachts. Fort Pierce also needs additional depths for larger vessels to access the City Marina. The region’s yacht industry faces stiff competition. Significant capital is being invested and spent today in the Gulf of Mexico from Texas to Alabama, highlighting the economic opportunities provided by this niche.

The existing U.S. Customs Facility in Fort Pierce and the newly established one in Stuart will enhance the counties’ attractiveness to mega-yacht operations. Most vessels travel internationally, and a local Customs Office will further expedite vessel access to local marinas and service facilities.

Waterway Cargo Operations. The ICW serves as a mixed use transportation corridor in Martin and St. Lucie counties. Cargo services are limited to infrequent barge traffic to serve specific customers. Barge service provides products to specific industrial hubs (power plants). The region is home to two navigable inlets in Stuart and Fort Pierce. Cargo volumes from Jacksonville to Miami, fluctuate annually, driven largely by petroleum movements. There has been a significant reduction in recent years likely due to conversion of Florida Power and Light Company (FPL) plants from petroleum to natural gas. The last five years of cargo traffic are summarized below. As indicated, petroleum has dominated the flows, with total volumes down significantly in recent years.

*Atlantic Intracoastal Waterway Cargo Volumes
Jacksonville, FL to Miami, FL*

Year	Total Tons	Petroleum Tons	Percent Petroleum
2007	458,639	454,337	99%
2008	75,071	66,746	89%
2009	55,252	49,452	90%
2010	80,217	61,806	77%
2011	12,243	5,800	47%

SOURCE: USACE, www.navigationdatacenter.us/wcsc/webpub11/Part1_WWYs_tonsbyTT_Dr_Yr_commCY2011

There is a desire by some to increase the cargo moving on the ICW. This would likely be associated with waterside operations requiring direct barge service for bulk, break bulk, or specialized project cargo. New facilities may need additional dredging to provide access from the federal channel to the berth. Cargo movement is further complicated by bridges on the ICW, which constrains the movement of larger vessels.

Port of Fort Pierce. The Port of Fort Pierce is located in heart of downtown Fort Pierce. It is bordered to the south by Fisherman’s Wharf, a city-owned boat ramp, and to the north by a private land holder. It was recently designated as an Emerging Strategic Intermodal System (SIS) Seaport” by FDOT. This designation makes the Port eligible for state funding for eligible projects. SIS designation is significant as it puts the port on a level playing field with other Florida ports and provides an opportunity for the port to leverage local funding (public and private) with a state match. The Port’s 2013 Master Plan identified a range of opportunities for expansion including niche cargo, a maritime academy, improved and expanded berths, international ferry/cruise activities, intermodal and/or expanded tourist and recreational uses, and the potential to accommodate larger vessels such as mega-yachts. Many of these opportunities are discussed as standalone concepts in this waterways plan. As they are further evaluated through market and feasibility studies, the role the port wants to play will need to be further defined. Not all of these possibilities are compatible, so priorities will need to be established.

The Port of Fort Pierce has historically handled a variety of niche cargo commodities. Volumes have declined in recent years, but with rehabilitation to the channel and facility, niche cargo types can continue to be handled. The table below shows historic cargo volumes and also provides a five-year forecast. Interestingly, the five-year forecast suggests a huge increase in total cargo tonnage, but no breakdown by cargo type was provided. This suggests the port is still interested in handling cargo, but is still in the process of evaluating the best cargo opportunities.

Port of Fort Pierce Cargo Trends and Forecast

Cargo Type	FY 09/10	FY 10/11	FY 11/12	FY 15/16
Twenty-Foot Equivalent Units (TEUs or containers)	15,080	11,853	6,156	NA
Dry Bulk	77,000	52,380	20,400	NA
Liquid Bulk	4,000	3,842	880	NA
Break Bulk	55,000	37,410	-	NA
General Cargo	179,000	149,928	74,343	NA
Total Tons	315,000	243,560	95,623	807,000

Source: Florida Ports Council.

Potential niche cargo opportunities include construction material, dry bulk (aggregates, cement), break bulk (lumber, steel), specialized cargo (large equipment), mega-yacht supplies and equipment, and containerized consumer products (imported for local consumption and/or exported to shallow draft Caribbean ports).

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The Port of Fort Pierce is positioned to serve as a major economic contributor to St. Lucie County and the Treasure Coast. It is the only deep water seaport between Palm Beach and Cape Canaveral. It is now eligible for SIS funding, has a dredging program underway to bring its channel back to its project depth, and FIND is exploring waterway improvements to the north and south of the inlet that would only further expand the capacity of the inlet and the channel. In addition, the state has invested hundreds of millions of dollars in Florida's seaports over the last few years to position the state as an emerging global trade and logistics hub. The Florida Chamber Foundation, in partnership with the state, has further promoted the importance of logistics and trade infrastructure. These priorities have led to concepts like the development



The Port of Fort Pierce Master Plan considers the continued handling of niche cargo, and it was recently listed as an “emerging port” by the State of Florida.

of a maritime/logistics academy. These investments and initiatives are driven by an increasingly global economy, the widening of the Panama Canal, a growing number of free trade agreements, and a Governor committed to positioning Florida for growth. Now is the time for the port to identify its priorities and take action to implement those priorities.

The port's direct land use relationship with downtown Fort Pierce has complicated the redevelopment goals of the city. The port's private ownership, unusual among the fifteen ports in Florida, has delayed port activities, development, and redevelopment. Varying proposals for the future use of the port, ranging from intensification of marine industrial uses to mixed-use concepts, create uncertainty in the market. The port's channel depth of twenty-eight feet, which is federally maintained, is an infrastructure advantage for Port access, which can lend itself to access by larger commercial and/or luxury vessels. However, in its current condition, the Port is a challenging northern neighbor, creating an uncertain valley between the core of Fort Pierce's historic downtown and the County and privately owned lands to the north that could accommodate a mixed-use development program that capitalizes on the scenic and environmental quality of the Lagoon. Clear direction for the port's future is critically important to assist in Fort Pierce's continued success, which will produce regional benefits as well. The port should play an active role in the implementation of the waterway systems plan, particularly in those identified initiatives that impact its operations. These priorities, combined with changes like designation as a SIS port, should be used to help the port and the community lay out a development plan for the port.

M-95 Marine Highway Shipping Lanes.

A noted program for consideration in the port's repositioning is America's Marine Highway (AMH) Program, which was established to expand the marine freight network to relieve landside congestion. The AMH program promotes the development of short sea shipping as a component of a broader multimodal freight transport network. Established in 2007, the program includes 21

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designated all-water marine transportation routes that total 29,000 nautical miles. The M-95 designated corridor runs through the study area. This nearly 2,000-mile marine highway runs parallel to I-95, connecting Miami to Maine, and includes the Atlantic Ocean, Intracoastal Waterway, and fifteen major commercial ports. As noted in the AMH description of M-95: “*The Corridor is also lined with less congested, smaller niche ports that could play a vital part in the developing marine highway service network. While several Marine Highway operations already serve this corridor, there is significant opportunity for expansion to help address growing congestion, reduce greenhouse gas emissions, conserve energy, and lower landside infrastructure maintenance costs.*”

In October 2013, the AMH published the East Coast Marine Highway Initiative (ECMHI) which included market analysis, operational developments, business planning, and environmental analysis. The report noted significant infrastructure challenges to offset operating costs. While Fort Pierce was not a specific focus of the study, the report did identify “Habitat Areas of Particular Concern” with Fort Pierce at the nexus, noting with concern stretches of the coast from Fort Pierce to Cape Canaveral and from Cape Canaveral to Broward County. A copy of this study may be found here: <http://www.portofnewbedford.org/documents/ECMHI%20M-95%20Study%20Final%20Report.pdf>

Maritime/Logistics Academy. The Port, like many other entities around the state, is interested in the possibility of developing a Florida Marine Academy. FDOT undertook a study to look at the feasibility of and demand for such an academy in Florida. This action was informed in part by input from the logistics community that the trained workforce is inadequate and likely to get worse as people continue to retire. As part of the study, the concept was rebranded as the Florida Intermodal and Logistics Academy. The rebranding broadened the training program scope from on-vessel training to a more comprehensive logistics curriculum. This was in response to industry stakeholders who reported the need for landside training in port operations and port-related industries (e.g., trucking, rail, warehouse/distribution, international trade). In addition, maritime academies are federally authorized, and no additional academies are planned or anticipated to be authorized.



Cargo ship at the Port of Fort Pierce

In recent years, a large percentage of high schools and colleges have developed logistics-related programs. The State is considering what role it should play in helping advance the logistics academy concept, which may result in a funding program. It should be noted the logistics curriculum could be complementary to the establishment of a career track program for the marine industries as well. This need was indicated by marine industries participants throughout the development of the plan. Any grant program will likely require a set of standards regarding

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curriculum, affiliation with established university, and likely private sector partnerships. It also will likely be flexible, supporting a mix of programs from certificate and career programs to four-year programs and executive training.

It would appear the highest likelihood for an intermodal and logistics academy to be located at the Port of Fort Pierce would be in conjunction with continued marine industrial activity. It appears the academy could occur in multiple locations around a particular community or across the state. The port's proximity to Indian River State College enables the sharing of resources for state-of-the-art classroom training opportunities, with field work that could be conducted at the port (e.g., underwater welding or mechanical work, cargo handling with on-ship cranes). Field work to provide training for land-based cranes would likely need to occur at ports with existing infrastructure, such as the southeastern Florida ports, easily accessible within a day trip. The future marine industrial improvements at the port should be designed with consideration of these training activities to maximize their efficiency and keep the Port of Fort Pierce best positioned to attract this complementary academy use.



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From a land use standpoint, the prospect of an educational use such as an intermodal and logistics academy offers an opportunity to significantly improve the land use relationship between the Port and the historic downtown. Classic civic buildings could help buffer the industrial southern end of the Port and create an elegant terminus to Indian River Drive, which somewhat unceremoniously ends at the southern-most warehouse building today. The images in this section illustrate the before and after potential of infilling the academy use along Fisherman's Wharf.

Key Findings and Recommendations

Marine transportation along the waterways is a driver for the economics, recreation, and enjoyment of the region. There is both desire and opportunity for better coordinated dredging, including deeper channels in key areas and particularly the St. Lucie Inlet that will provide direct marine navigational benefits. Channel deepening will also enable access by larger vessels, such as mega-yachts, to boat builders, marinas, and service facilities, which will expand the economic benefit of the waterways. Shallow depths also create conflicts for non-motorized vessels, such as sailboats and rowing sculls. Annual multi-disciplinary, multi-user work sessions are desired to address dredging needs holistically to secure the greatest efficiency of effort and improve funding competitiveness. There is also public concern regarding potential impacts from the FEC railroad bridges on marine navigation, particularly at the St. Lucie and Loxahatchee rivers. Each of these bridges is nearly 100 years old, and evaluation of potential modernization and/or replacement along with other mitigations should be advanced in conjunction with FDOT and the railroad.

Opportunities exist for designated anchorages, water taxi service, seaplane operations, and high-speed ferry service from the Port of Fort Pierce, which will require market and environmental analyses to be advanced. A multi-disciplinary working group is needed to evaluate water taxi potential and advance discussions with special event promoters, fine tune station locations, and refine headways, frequencies, and routes. The public identified a series of potential multi-purpose dock locations that could be designed to accommodate water taxi service as well as other uses, which require prioritization for design and funding. The three locations that appear most feasible are Port Salerno/Manatee Pocket, downtown Stuart, and downtown Fort Pierce for initial water taxi services.

Maintenance Dredging

- Continue to prioritize maintenance dredging of the St. Lucie Inlet, and reinforce this request with comprehensive data regarding marine industries.
- Continue to maintain the Fort Pierce Inlet at thirty feet with a twenty-eight foot channel to access the port.
- Develop dredging work groups in each county to assess shoaling and dredging needs throughout the waterways, with assessments following annual storm seasons. Participants should include local governments, FIND, SFWMD, USACE, and MIATC.
- Consider deepening channels in Manatee Pocket, along the C-44 Canal, and at the Port of Fort Pierce to enable deeper-draft vessels to access local marinas and service facilities

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- Evaluate dredging needs in the vicinity of boat ramps to improve safety and efficiency, with particular focus at the Little Jim Bridge and Stan Blum Boat Ramps
- Evaluate dredging needs in the vicinity of the U.S. Sailing Center of Martin County and the TCRC and the installation of additional navigational aids

Water Taxi Service

- Initiate water taxi working teams for each county, coordinated by the MPO and TPO, to further refine waterfront special events and destinations, and potential schedule modifications to synchronize events. Participating entities should include, at a minimum, local governments/CRAs, main street organizations, chambers and merchant's associations, tourist development councils.
- Conduct a feasibility analysis study to determine potential demand, market, headways, operating speeds, and optimal water taxi stop spacing for system efficiency and effectiveness.
- Conduct community outreach to residents and businesses to build support for and capture input to water taxi services. Marinas, water adjacent businesses and local residents should be engaged in discussions to identify and define the most promising and near term opportunities.
- Develop a series of water taxi systems centered around key nodes (e.g., Fort Pierce, Port Salerno/Manatee Pocket/St. Lucie Inlet State Park, Stuart/Palm City). These systems should engage public and private partners and address priority routes as identified by the impacted communities.
- Develop maps of existing, near-term, and long-term taxi station dock locations, including upland transportation network and sample routes. This should include development of standards for consistent, thematic signage at water taxi stations. This resource should be used to support ongoing developments and establishment of priorities.
- Expand the baseline inventory of annual special events and programs (e.g., arts festivals, boat shows, farmer's markets, sporting events). Market water taxi service in conjunction with event marketing to improve feasibility and awareness of service.
- Seek FHWA, FIND, or other appropriate funding for construction of public multi-purpose docks designed to accommodate water taxi vessels, public access, and recreational uses. The counties should monitor possible funding programs/resources that could be used for waterborne passenger transportation.
- Promote appropriate transit-supportive land use activity at water taxi stop locations, including mix of uses, building placement, visibility, intermodal access, parking, and natural surveillance, to facilitate usage and increase efficiency.
- Coordinate water taxi stops with upland transit network where possible.

Navigational Conflicts from Railroad Bridges

- Coordinate with FECR and FDOT for updated freight service demands and forecasts.
- Advocate for the development of a more balanced freight distribution system in southeast Florida, with a reduction of freight impacts on the FEC rail corridor, in which more freight is moved via marine highway shipping lanes, and redirection of freight into inland logistics centers. This shipping potential extends to the west Florida and Gulf counties by increased use of the Okeechobee Waterway.
- Work with the Federal Railroad Administration through the National Environmental Policy Act (NEPA) process (including environmental impact statements) to reduce marine navigational impacts from new or expanded train service (e.g., requirements to sequence proximate trains to reduce number of bridge closings, reduce total number of trains).
- Seek assignment of bridge tenders at the St. Lucie and Loxahatchee River bridges to increase human surveillance and safety.
- Seek communications improvements for boaters, including electronic message boards and social media, regarding train schedules.
- Explore opportunities to modify the Code of Federal Regulations for the St. Lucie and Loxahatchee River FEC bridges to limit the number of railroad bridge closings and/or amount of time per closing.
- Work with FDOT to secure a thorough evaluation of bridge conditions, long-term needs for rehabilitation, reconstruction, modernization or replacement of bridges to improve efficiency, predictability, speed of closing/opening, and vertical clearance for vessels.
- Seek funding for bridge improvements as appropriate through federal, state, and other sources.

High-Speed Ferry Service

- Analyze feasibility and demand for potential high-speed ferry service to identify key market connections, screen possible destinations, and provide a preliminary market assessment including consideration of intermittent service.
- Consider improvements to accommodate high-speed ferry service at the Port of Fort Pierce.

Sea Plane Accommodations

- Analyze feasibility and demand for sea plane access to Stuart and Fort Pierce, including screening of possible locations and preliminary market assessment.

Marine Industries

- Work with the MIATC and select boat builders/manufacturers to more fully understand the needs of different marine industrial sub-clusters as related to marine transportation, including yacht/boat building industry, service and repair, and equipment and provisions.

Marine Transportation

Cargo Movements

- Conduct a market assessment to evaluate current and projected demand for cargo movements for targeted industries, including an assessment of waterside properties that could support related industries.

Port of Fort Pierce

- Maximize the potential of the Port of Fort Pierce, including definition of priority markets and a development plan to support feasible market areas, including cargo, passenger operations, and a maritime/logistics academy.
- Develop preferred alternative for Maritime/Intermodal Logistics Academy. Review FDOT's Intermodal Logistics Academy Study and monitor progress associated with definition of requirements and possible funding programs. Work with existing colleges to discuss a program. Define preferred program for the region (e.g., certification, trade school, 4-year degree).



The Port of Fort Pierce offers a unique regional opportunity to advance marine transportation activities, immediately adjacent to the Fort Pierce Inlet. Photo courtesy of Florida Ports Council.

CHAPTER 4: LAND USE & UPLAND TRANSPORTATION



Introduction

The interface between the waterways and the upland is the key to public access, economic development, and usability of the waterways. The majority of land along the water's edge in the two counties is used for residential, public recreational, or preservation purposes, with nodes of commercial and mixed-use development clustered in mostly historic communities. The locations with the greatest opportunity for economic activity and development potential are captured in a series of eight waterfront CRAs, which pre-date the Waterways Plan development process. These districts were consistently supported by the public as desired locations for further redevelopment and implementation of adopted redevelopment plans.

Based on public input and with direction from the project steering committee, MPO, and TPO, the land use analysis in the plan is focused on the eight waterfront CRAs, which vary in history, size, scale, and character. This individuality among the eight as unique, distinct places is noted as a critical factor to enable each center to achieve the greatest economic success. In addition to these centers, the plan identifies a series of noted waterfront destinations, including cultural, educational, recreational, commercial, and hospitality uses that can potentially accommodate water taxi service. These locations provide additional connectivity between the upland, the waterways, and the transportation network and enhance the destination quality of the area. Collectively, these varied waterfront destinations represent a waterfront land use network of access and activity along the waterways for residents, business and property owners, and visitors to the area.

This chapter provides an overview of the ongoing redevelopment programs in the eight select waterfront centers. An overview for each is provided, including the history of the community, factors leading toward its redevelopment program, current conditions, and noted improvements that would further support the goals of this plan. In addition, the upland transportation network is evaluated regarding access to and from the waterways. Key findings related to land use and upland transportation are presented at the conclusion of this chapter.

LAND USE ALONG THE WATERWAYS

Like many along Florida's east coast, communities in Martin and St. Lucie radiated from historic train depots established when Henry Flagler extended the FEC railway in the late 1800s and early 1900s. The rail-centric communities (Fort Pierce, Jensen Beach, and Stuart) evolved into full-service locations, with a broad mix of land uses and commercial opportunities. Agriculture, fishing, and tourism rapidly expanded the economic base of the coast, with the coastal communities benefitting from two deepwater ocean inlets. Commercial and recreational fishing demand generated the establishment of fish markets, fish packing plants, and a well-established marine industry that continues to play a central role in the current economy. Extensive agricultural production of pineapples in Jensen and chrysanthemums in Stuart expanded the

Land Use & Upland Transportation

reputation of these communities. Rio developed as a mostly residential community on the banks of the St. Lucie River while Palm City was established in the 1920s with a commercial center surrounded by extensive farm properties that transitioned over time to mostly residential. To the west, along the North Fork of the St. Lucie River, Port St. Lucie incorporated in 1961 as Florida's residential development began to accelerate, and the city has become the most populous in the region. At the western edge of Martin County, Indiantown was established in the 1890s, accelerating its development with the arrival of the Seaboard Air Line Railway through the 1920s, when development then slowed versus the other waterfront centers.

The Waterways Plan presents an opportunity to consider the select waterfront centers individually and as they relate to one another. Each community has undertaken considerable planning and evaluation over time to understand development trends and position itself for successful redevelopment going forward. The waterways affect each community differently, providing unique opportunities for access, land use premiums, specialized employment opportunities, and destination quality. Overviews for each center from a planning standpoint are provided in this chapter, while market considerations are presented in Chapter 6.

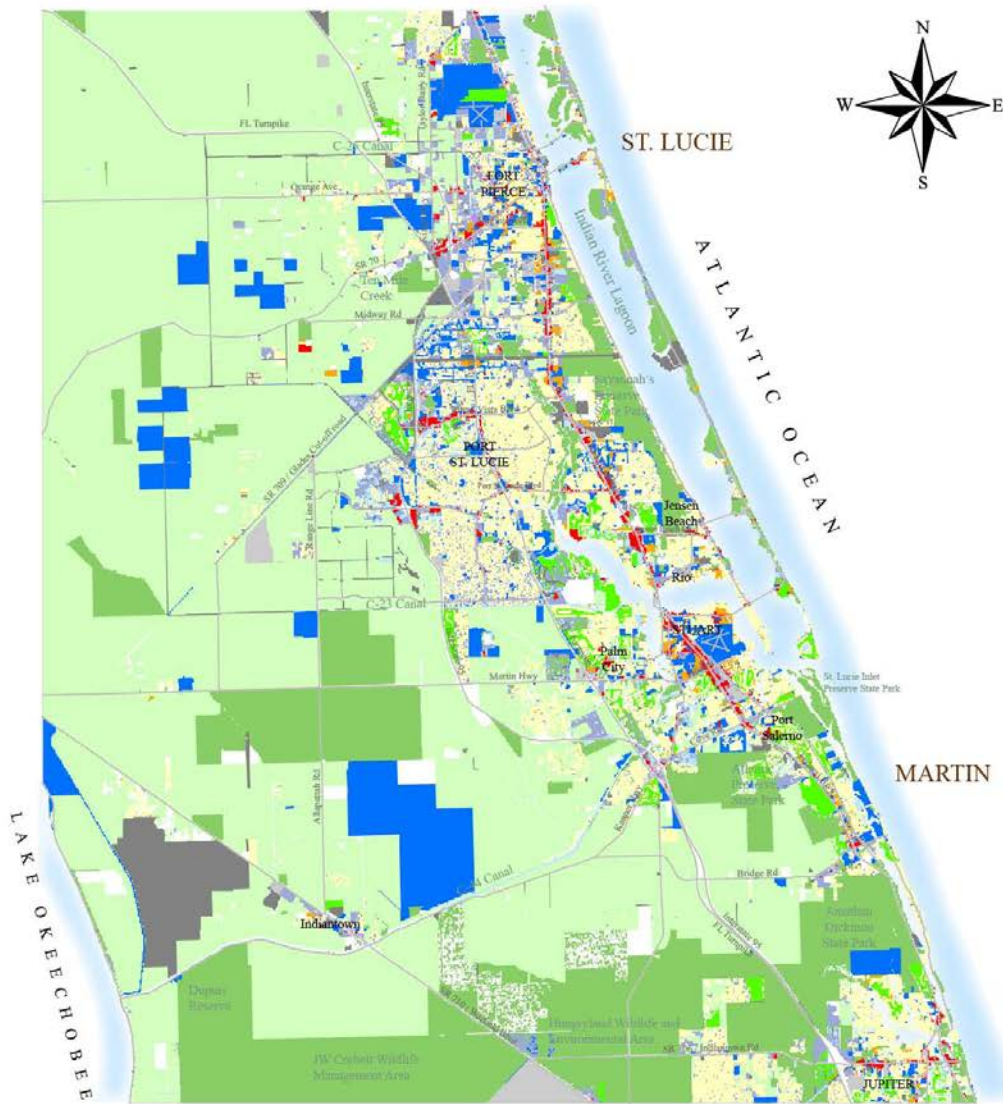
The study area for the waterways plan includes roughly 120 miles of waterways and the upland communities that front them. The composition of land use and development approaches differs among the local governments in the two counties, with more extensive waterfront shoreline available in Martin County. The composition of existing land use is highly mixed, with a predominance of residential and preservation along the water's edge. Existing land uses are illustrated in the following maps. The first map indicates all land use by future land use category while the second map indicates just residential land. This is important to consider as waterfront residential development land seldom becomes available for a re-use, underscoring the need to maximize available waterfront parcels for public access and enjoyment of the waterways as well as economic yield.



The region's waterfront provides extensive access to downtowns, such as downtown Jensen Beach (pictured above) along with commercial, residential, industrial, recreational, and conservation uses. Photo courtesy of www.marinas.com.

Martin & St. Lucie WATERWAYS PLAN


Existing Land Use



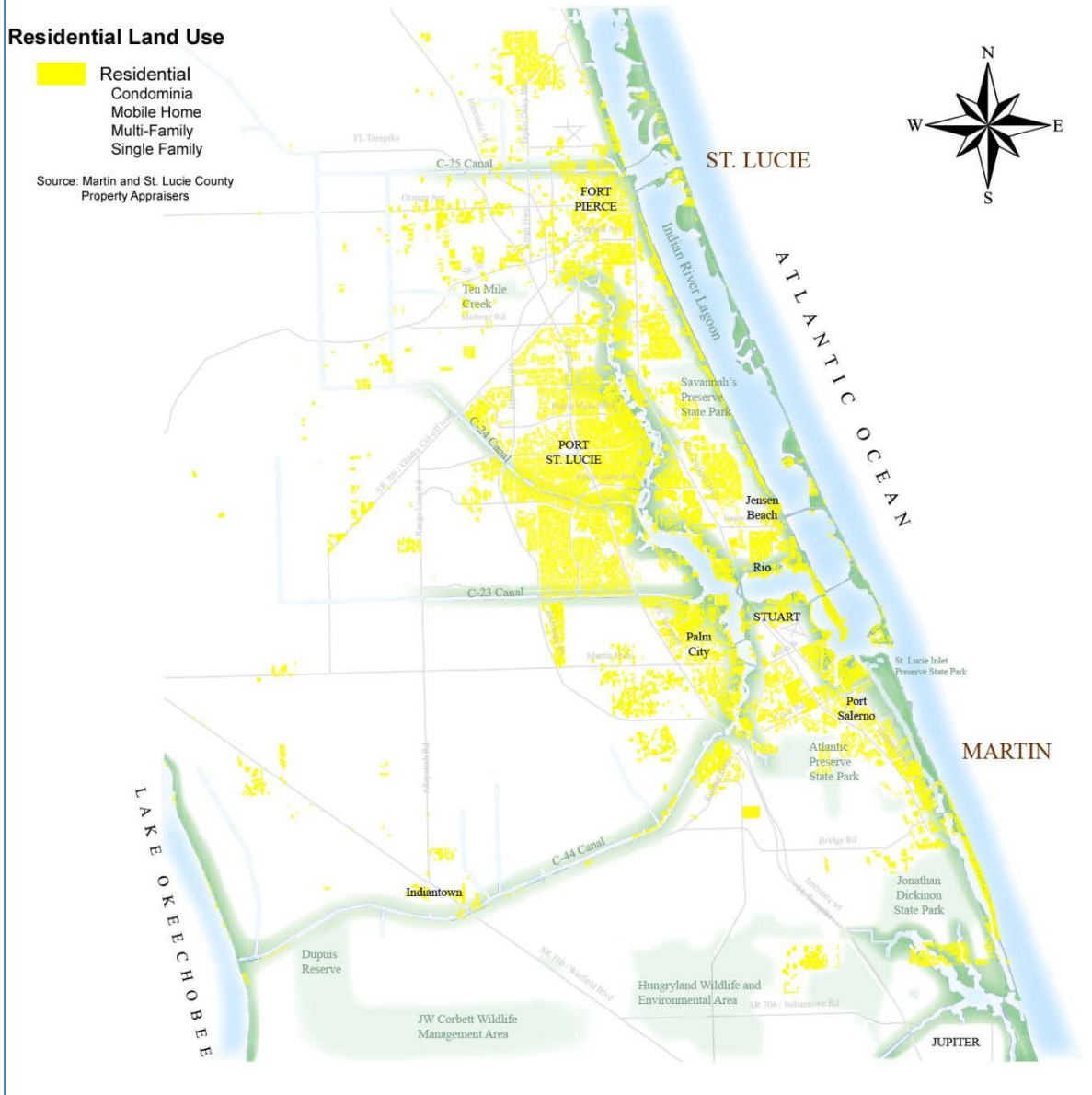
 Residential - Single Family	 Commercial	 Agriculture	 Industrial
 Residential - Multi-Family	 Institutional	 Open Space	 Transportation / Utility
 Mixed Use	 Vacant	 Recreation	 Water

Martin & St. Lucie WATERWAYS PLAN

Residential Land Use

-  Residential
- Condominia
- Mobile Home
- Multi-Family
- Single Family

Source: Martin and St. Lucie County
Property Appraisers

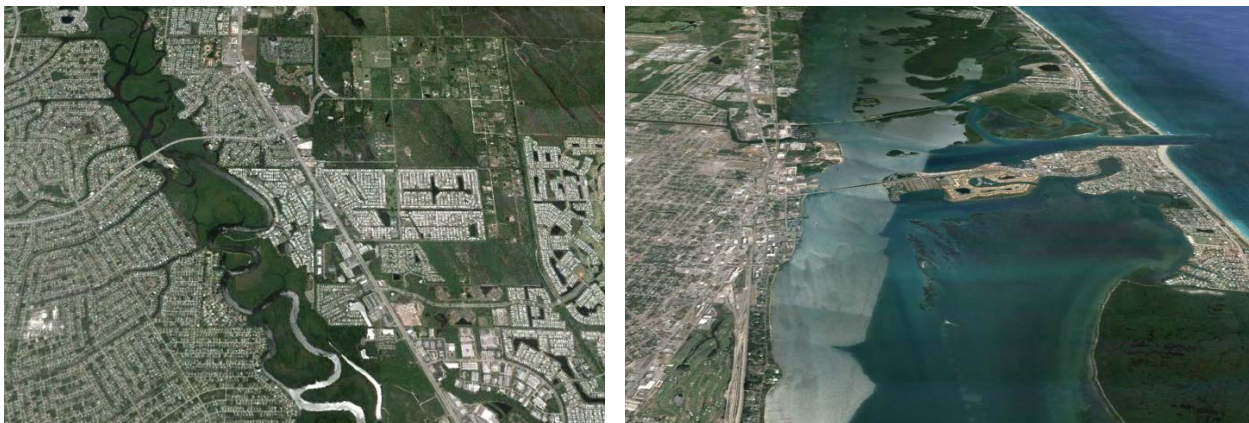


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The western areas of both counties are predominately agriculture, open space, and institutional uses, including much of the frontage along the C-44 canal. Along the Indian River Lagoon, the vast majority of land is dedicated to recreation and open space followed by residential uses. Waterfront land uses have the greatest diversity in the waterfront centers in Fort Pierce, Jensen Beach, Port Salerno (along the Indian River Lagoon), Rio, Stuart, Palm City, Port St. Lucie (along the St. Lucie River), and Indiantown (along the C-44 canal). With the exception of Port St. Lucie, which was established in 1961, the waterfront centers represent historic communities. Both the diversity of use and intensity of the transportation network are consistent with historic land development patterns. It should be noted that at the southern end of the study area, waterfront properties in Hobe Sound, another of Martin County's CRAs, consist almost exclusively of residential, recreational, and conservation uses, which are referenced with regard to public access and recreation in Chapter 5. The focal waterfront centers are identified in the maps that follow in this section.



Hobe Sound (above left) is characterized by mostly residential and conservation lands on the east side of the ICW, with conservation lands on the west, providing long stretches of natural area along the waterway. Old Palm City (above right) is more developed, with residential, commercial, and industrial uses, including marine industrial, fronting the St. Lucie River.



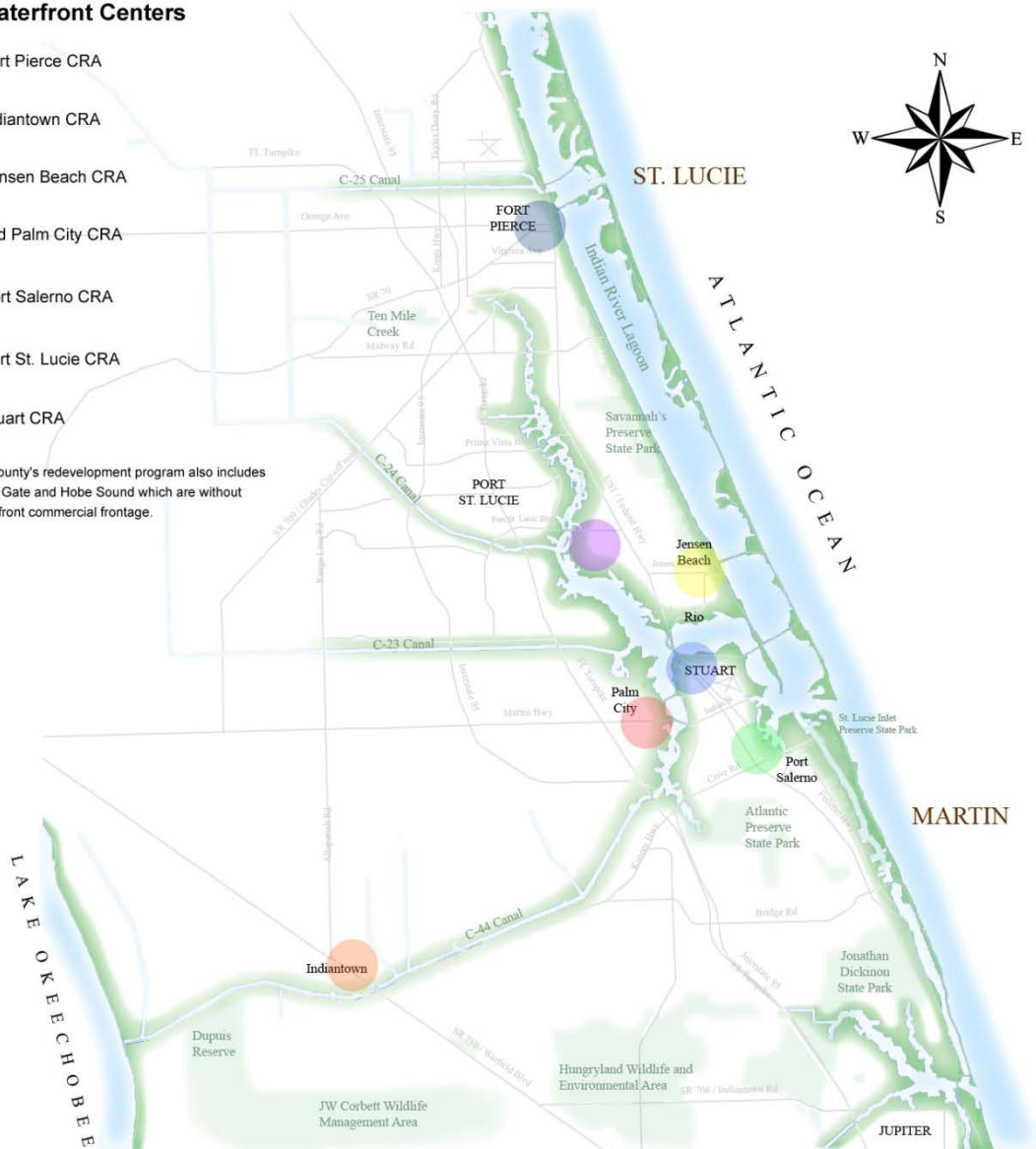
Port St. Lucie (above left) straddles the North Fork of the St. Lucie River, which includes mostly residential frontage along this aquatic preserve. Fort Pierce (above right) contains wide water views from the historic downtown on the city's mainland across the Indian River to the barrier island.

Martin & St. Lucie WATERWAYS PLAN

Select Waterfront Centers

-  Fort Pierce CRA
-  Indiantown CRA
-  Jensen Beach CRA
-  Old Palm City CRA
-  Port Salerno CRA
-  Port St. Lucie CRA
-  Stuart CRA

NOTE: Martin County's redevelopment program also includes CRAs in Golden Gate and Hobe Sound which are without significant waterfront commercial frontage.



Martin County

Martin County comprises 750 acres with a 2010 census population of approximately 146,000. The county contains four municipalities: Stuart, which is the county seat, Sewall's Point, Jupiter Island, and Ocean Breeze. The balance of the county, roughly 98% of its land area, remains unincorporated and is organized around seven community planning areas that have their own distinct look and feel. These include Hobe Sound, Port Salerno, Golden Gate, Indiantown, Palm City, Jensen Beach, and Rio. Between 2000 and 2001, the Martin County Board of County Commissioners designated these seven established communities as CRAs. The project steering committee, with input from the MPO and TPO, selected five of these Martin County CRAs for in-depth analysis in the context of the waterways plan, including Indiantown, Jensen Beach, Palm City, Port Salerno, and Rio. In addition, the City of Stuart's CRA, overseen by the city, was selected for analysis as well.

With respect to general land use planning along the waterways, Martin County's comprehensive growth management plan allows a variety of land uses, including mixed-use overlays, in these waterfront redevelopment areas. As marine industrial development is a focal component of the economics of the waterways, Martin County's no-net-loss policy adopted in 2006, is noted which generally prevents the conversion of existing Marine Service Areas to permanent residential uses. The policy further requires creation of a new Marine Service Area to be created to offset conversion of an existing Marine Service Area. The county's comprehensive plan indicates "In general, uses in the coastal area should be balanced among those that help conserve environmental resources, provide recreational opportunities, support tourism and redevelopment, and enhance the local economy."

Port Salerno

History: The Port Salerno community is an historic fishing village on the banks of the St. Lucie River, due west of the Stuart inlet. The community is defined geographically by the Manatee Pocket, which extends from Port Salerno's upland to the inlet and is fed by several creeks including Manatee Creek and Salerno Creek. Given the area's safe harbor and ocean proximity, Port Salerno developed as an active fishing destination, supporting up to eight commercial saltwater fish houses by the 1920s.

Port Salerno's commercial core emanated from the community's fishing center along A1A, with a block of one-story commercial buildings that remain mostly intact today. The historic urban pattern includes a grid system of streets and square blocks that helps define neighborhoods to the west with newer residential development surrounding the core of the district. Port Salerno's commercial activity tends to be concentrated along A1A, Cove Road, and Salerno Road, interspersed with moderate density residential neighborhoods.

As a traditional fishing village, Port Salerno was particularly affected when Florida voters approved a ban in 1994 on entangling nets in Florida waters. The ban prevents the use of gill and trammel nets in state waters, which extend three miles off-shore into the Atlantic Ocean as well as nine miles into the Gulf of Mexico. The measure also bans the use of larger nets that exceed 500 square feet in near shore waters. While the ban is considered highly positive for recreational fishing, with rebounding populations of mullet, pompano, spotted sea trout, and bluefish, it

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considerably impacted the commercial fishing industry by significantly reducing the amount of product. Commercial fish houses in Port Salerno fell from eight in the 1990s to only one that remains today.

As tends to be the case with most historic coastal communities in Florida, economic pressures from western development drained investment in Port Salerno, driving down property values and commercial occupancies. Community redevelopment efforts began in the mid-1990s, with development of an initial master plan in 1995 and formal establishment of a redevelopment agency in 2000. Properties within the CRA are illustrated in the aerial below, which is from the Martin County CRA.



Current Condition: Port Salerno's CRA contains a mix of uses, with an established restaurant/entertainment district in the southern end of Manatee Pocket that includes Pirate's Loft Hotel and Marina, one of the few waterfront hotels in the study area. Residential and industrial uses predominate the area west of the railroad tracks, which contains the region's largest concentration of marine industrial uses. In the past decade, the county and CRA have advanced significant improvements to the public realm, including roadway improvements, streetscaping, a new community center, boardwalks and riverwalks, park improvements, and stormwater improvements. The adopted redevelopment plan emphasizes the need for continued investment for connectivity, stormwater management, public open space, and to help balance a mixed-use redevelopment program.

As an authentic fishing village, Port Salerno's typical daily operation includes the running of commercial fishing boats from docks owned by the Port Salerno Commercial Fishing Dock Authority (CFDA), which represents the remaining commercial fisherman in the area. Daily

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catches are brought into the docks, which then becomes a location for an on-street fish market. Refrigerated trucks back up to the docks where fishermen negotiate fish prices and then trucks deliver fish locally to restaurants and retail markets. The trucks tend to arrive in the early morning hours, generally before 5 a.m., and remain in place for several hours, with engines running to maintain refrigeration, while the daily catches are brought to dock. While these transactions are critical to the commercial fishing economy, they cause neighborhood disruption, putting downward pressure on redevelopment.

Noted Redevelopment Initiatives: The CRA developed a redevelopment concept for a permanent fish market to be constructed adjacent to the commercial fishing docks (see concept plan below). As a publicly-led effort, the original master plan included cultural and educational amenities, iconic public art, and a fish walk to bring locals and visitors from Dixie Highway to the waterfront fish market. The site was conceptualized as a public/private venture, with several footprints reserved for private use to generate CRA revenues for capital repayment and operations/maintenance. With strong local public support, grant funds were secured in anticipation of public land acquisition. However, appraisals of the site fell below the negotiated acquisition price, which would have required CRA financial participation at a level not supported by the CRA board. As a result, the grant funding was lost, and the site has continued to remain in a vacant and underutilized condition.

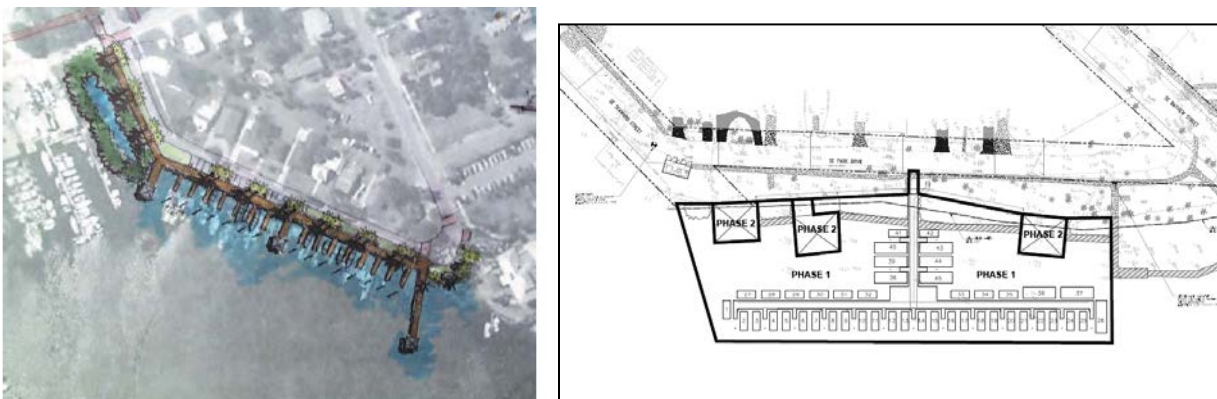


The Port Salerno CRA developed a mixed-use plan concept to establish a public fish market adjacent to the commercial fishing docks east of Desoto Avenue (plan above). The linear parcel was envisioned to contain substantial public amenities in the interior of the parcel, with commercial development fronting Dixie Highway.

The CFDA is also seeking to expand its docks to accommodate additional larger vessels, reinforcing the commercial fishing activities underway in Manatee Pocket. This improvement could be considered an additional phase of the public access improvements. The fishing docks

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already include a boardwalk extension parallel to the shoreline as identified in the adopted CRA plan. The configurations for both improvements are presented below.



The Port Salerno CRA Plan emphasizes public waterfront access with amenities such as boardwalks (above-left), which is mostly constructed. The Commercial Dock Authority is currently seeking reconfiguration of its docks to expand capacity and safe access, which is a first phase of this larger plan (above-right).

Participants in the planning process identified this location as a key opportunity to be evaluated in the development of the plan. Discussions with the current private property owner indicate the site may come to market in the near-term. Recently adopted land development regulations for waterfront parcels in the county extend setbacks from the water's edge to seventy-five feet. As a result, given the site's narrow width between street frontage and the shoreline, the waterfront parcel is likely undevelopable for private use.

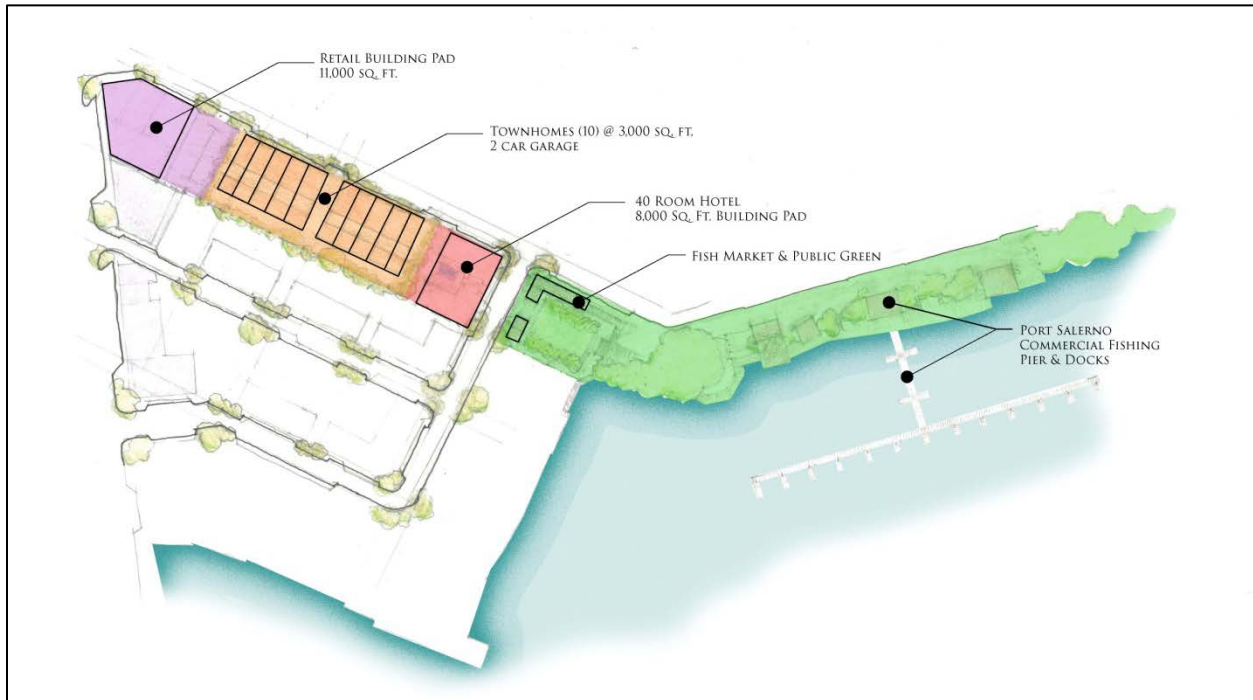
The proposed Port Salerno Fish Market concept considers the prior site concepts, current regulations, and market trends in the area. The concept suggests a public fish market and public open space be located adjacent to the commercial fishing docks, fronting Desoto Avenue. The balance of the site suggests an infill pattern to strengthen the relationship between the waterfront fish market and Dixie Highway, lining Seaward Street with building locations designed to enhance walkability and complement the surrounding mixed-use district. A commercial site is located at the corner of Seward Street and Dixie Highway, which could act as a flagship parcel on one of Port Salerno's main streets, providing an opportunity for a significant architectural presence to beckon visitors into the district. Given the lack of market data, the plan is non-specific as to mix of uses, and the program is flexible. Footprints could accommodate a variety of residential use types, which would likely be townhouses or apartments given what appears to be the market demand. The site could also accommodate a small inn, as a primary use or contributing use, located with sunrise views across the Pocket. As noted in the plan's market research, more data is necessary, particularly for tourist data, to indicate market demand for lodging. This site remains a primary redevelopment opportunity for Port Salerno and serves as a linchpin to facilitate further redevelopment activity in the district. Its redevelopment as suggested would also help implement the goals of the waterways plan.

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The authenticity of Port Salerno’s fishing village is enhanced by the arrival of commercial fishing boats. However, the current transfer of fish to wholesalers occurs along the edge of Desoto Street, requiring refrigerated trucks to idle for hours, disrupting neighborhood tranquility and deterring investment. The concept plan above indicates a program to enable the development of a public fish market on property adjacent to the commercial fishing docks. The balance of the site is presented as a private mixed-use opportunity that could include signature retail fronting Dixie Highway, interior residential units, and potentially a small inn. Potential development capacities of this concept are presented in the diagram below.

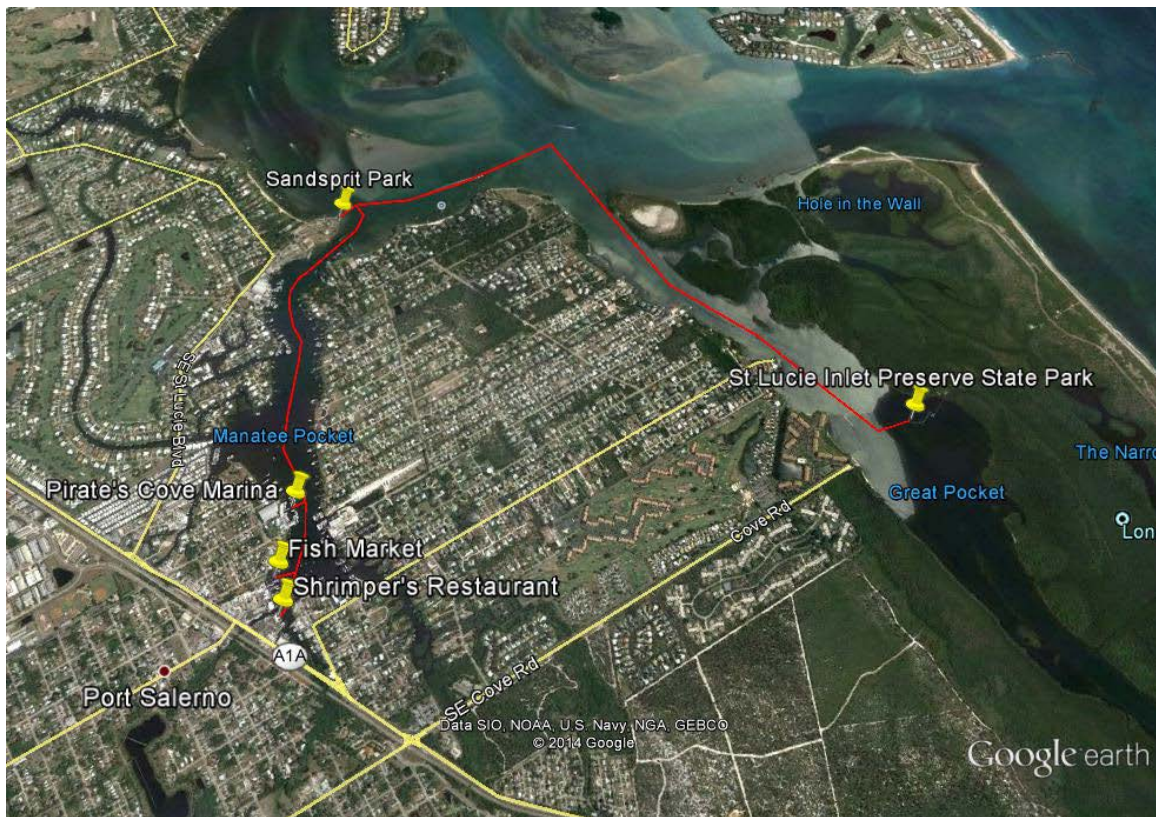


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Port Salerno also represents an opportunity for the establishment of an initial water taxi route. The community’s proximity to St. Lucie Inlet State Park, which is accessible only by the waterways, presents a unique destination opportunity, which could be accessed from Sandspruit Park. The area has also become an active restaurant/entertainment destination and cultural arts

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center, which could enable the development of additional thematic events like the Seafood Festival. A potential route is presented below that illustrates these connections, which would be enhanced with public dock access at the proposed fish market.



The potential water taxi route in Port Salerno through Manatee Pocket, shown in red on the map above, would provide connections from the waterfront restaurant hub by Dixie Highway to St. Lucie Inlet Preserve State Park, making a unique connection for the redevelopment area.

The establishment of a water taxi, expanded riverwalks and boardwalks, reconstructed fishing docks, and implementation of a fish market would enhance the waterways focus of Port Salerno and reinforce its redevelopment program.



Port Salerno's fishing village authenticity is reinforced daily by commercial fisherman executing their trade (pictured above left, photo credit: Port Salerno Seafood Festival). But the destination quality of the "Pocket" has expanded in recent years, with watersports activities such as paddleboard and kayak rentals (above center, photo credit: www.lotsafunmaps.com), and expanding restaurant and entertainment uses (Twisted Tuna restaurant pictured above right, photo credit: Martin County Artificial Reef Fund), all within walking distance of the docks.

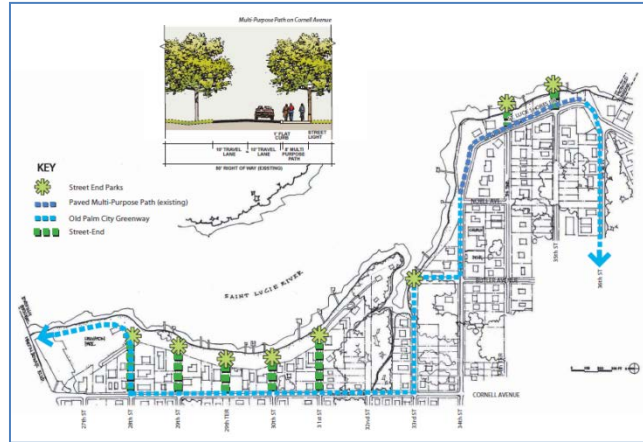
Old Palm City

History: While research indicates Palm City was settled in the 1800s as a setting for hunting and fishing, the community's somewhat remote location, roughly ten miles inland from the Indian River, delayed the pace of its development. In 1910, the purchase and subdivision of 12,000 acres into ten-acre farms initiated the first notable development of the area, with a marketing program for a bonus one-acre town parcel in conjunction with a farm plot purchase. Initial development activity was slowed markedly by hurricanes in the first half of the 20th century. By the 1950s, roadway improvements promoted access to Palm City, which then began to see more significant development, mostly in the form of larger residential subdivisions, with commercial uses lining major roadways. Newer development competed with the vitality of the historic town core, causing economic distress. In 2002, the Old Palm City CRA was established by Martin County to help promote redevelopment in the original mixed-use core of the community. The boundaries of the Old Palm City CRA are illustrated on the following map.

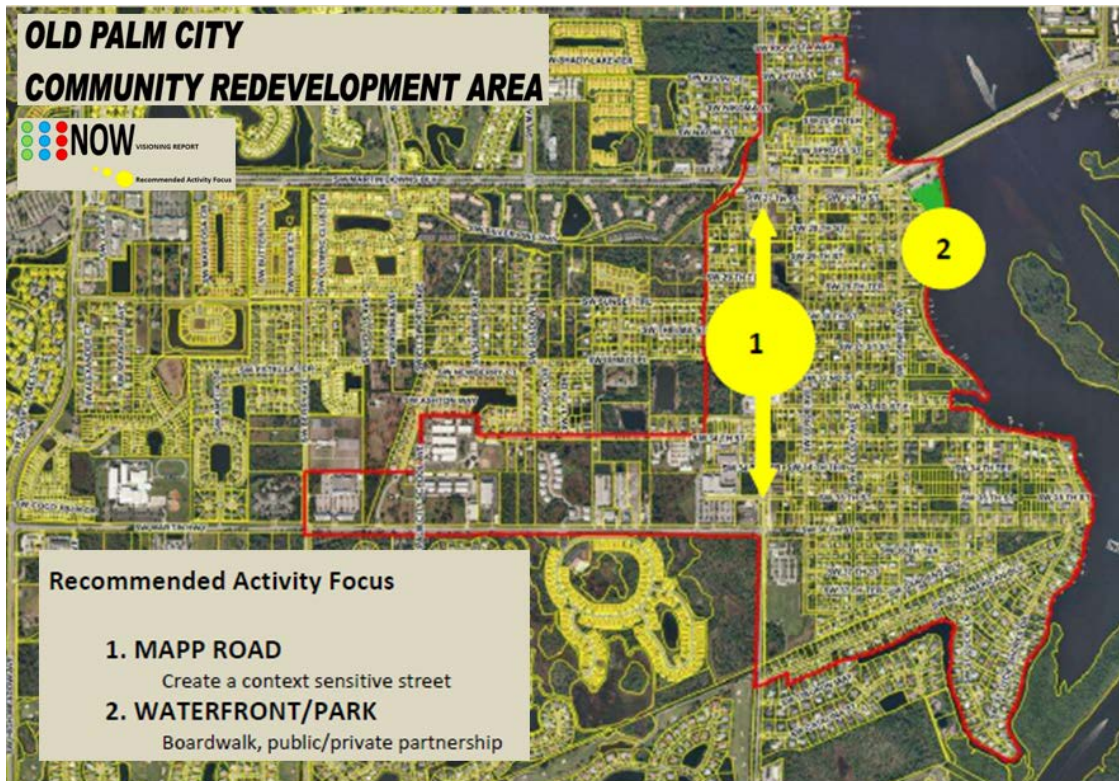


Current Conditions: Along the banks of the St. Lucie River, Old Palm City has retained its small town character with a localized roadway network, residential neighborhoods, schools, parks, and small businesses. Planning concepts first introduced in the area's 2002 visioning efforts focused on the opportunity to reinforce public access and recreational opportunities along the St. Lucie River, particularly between the Palm City Bridge and Indian Street Bridge. Located at the foot of the Palm City Bridge, Charlie Leighton Park is highlighted in these visioning documents as a prominent waterfront parcel, with references to potential public/private partnerships to enhance public access and extend the park's riverwalk south towards 36th Street. Relevant images from the Old Palm City CRA Plan and CRA NOW Vision Plan are included in this section. The CRA plan also references the potential for street-end pocket parks south of Charlie Leighton Park along the shore of the South Fork, which could include additional stormwater measures to improve water quality.

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The importance of public waterfront access is emphasized in the Old Palm City CRA Plan and NOW Plan. The aerial above-left indicates the existing and proposed locations for public parks and riverwalks, which could include street-end pocket parks (denoted in the image above-right). The CRA’s NOW plan (below) suggests a focus on public/private partnerships and other funding to activate the waterfront and park (identified in the yellow #2 circle).



Noted Redevelopment Initiatives: Charlie Leighton Park is an active waterfront park that includes a boat ramp, fishing pier, an older community center building, and a fairly new TCRC building and staging area. The park also includes active ball fields, used for soccer and other sports activities that are unrelated to the park’s waterfront location. The boat ramp’s popular location generates substantial use, especially on weekends, and county efforts are underway in determining the potential for additional boat ramp parking. The site is also a popular launching location for kayakers, and potential exists for the installation of a soft launch to separate these

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paddling vessels from motor boats. The TCRC funded the construction of its clubhouse, filling it to capacity, and demand exists for additional space to accommodate boat storage, fitness activities, and club events. Additionally, the existing community center is outdated, and a newer structure would expand programming opportunities.

Considering the conditions of the site, redevelopment plans to-date, and based on public input received during the development of the plan, a concept plan was developed for Charlie Leighton Park that suggests a different balance of uses in the park, which is presented below.



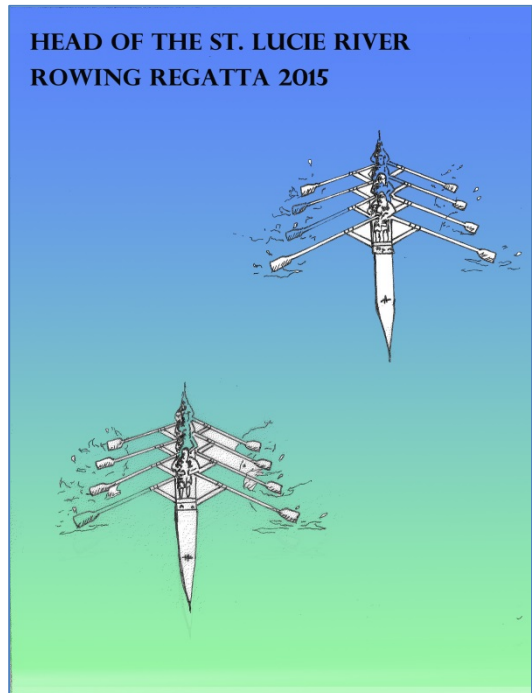
Existing conditions of Charlie Leighton Park (above-left) include a boat ramp and fishing pier, rowing club building, and community center, with active ball fields consuming the majority of this waterfront park. The concept plan for Charlie Leighton Park (above-right) suggests the location of a new two-story building and terraced seating to enable spectators to enjoy rowing events and regattas. The site could also accommodate a floating dock to enable safer access for rowers and paddlers. Expanded boat ramp parking is suggested adjacent to the ramp on the northern part of the site, and the center of the site is proposed to remain an open play field.

While active ball fields are a priority in every community, waterfront parks are in more limited supply. The subject site's ability to accommodate more boating, rowing, and other paddling uses, such as kayaks and paddleboards, is more consistent with the priorities expressed by the public and the charge of the plan. Participants also indicated a desire to utilize the site for special events, suggesting a two-story, multi-purpose building that could offer recreational space on its first level, and special event/limited restaurant space on its second level. The building could include a large open deck with seating to enable viewing of rowing events and regattas, with additional terraced seating located near the shoreline. It would also offer the public space for weddings, parties, and special events with spectacular views across the river. Footprints for additional buildings to accommodate rowing or other appropriate uses are indicated east and north of the existing club (shown with a pink roof). The plan includes two floating docks to more safely enable rowers and paddlers to launch their vessels.



Rowers launching from the Treasure Coast Rowing Club at Charlie Leighton Park must wade into the river to access their boats (top-left). The installation of low-profile floating docks would make for safer entry into these vessels and broaden the ability for more participants, especially older rowers. The rowing course extending south from the park is considered by many to be one of the best rowing locations in the country, which attracts collegiate teams to train, despite the overcrowded club conditions. With improved upland facilities and spectator accommodations, competitive events such as a “Head of the St. Lucie River” regatta could be established to expand the presence of this sport along with tourism revenue generation for this light-imprint use of the waterways.

The conceptual modifications to Charlie Leighton Park along with the establishment of street-end parks would expand waterways access for area residents and enhance rowing as a key water sport in the study area. In addition, an extension to the park’s riverwalk and establishment of additional trails connecting to waterfront points of access would help meet the intent of this plan.



Jensen Beach

History: Following the initial inhabitation of the Ais Indians in the 1500s, the modern settlement of Jensen began in the 1800s. Initially, hog farming was the stimulus for development in the small town, followed by a rapidly expanding pineapple industry. In the late 1800s, the arrival of the FEC railroad brought the opportunity to ship produce locally rather than by barge to a rail terminal in Titusville, which expanded the economic potential of the local economy. Also in the later 1890s, fishing emerged as a local commercial driver. Like many communities along the Indian River shoreline, commercial fish houses developed in Jensen Beach as well as lodging to support a growing tourist industry. Broader commercial uses expanded as the local economy matured, creating a vibrant main street terminating at the Indian River Lagoon.



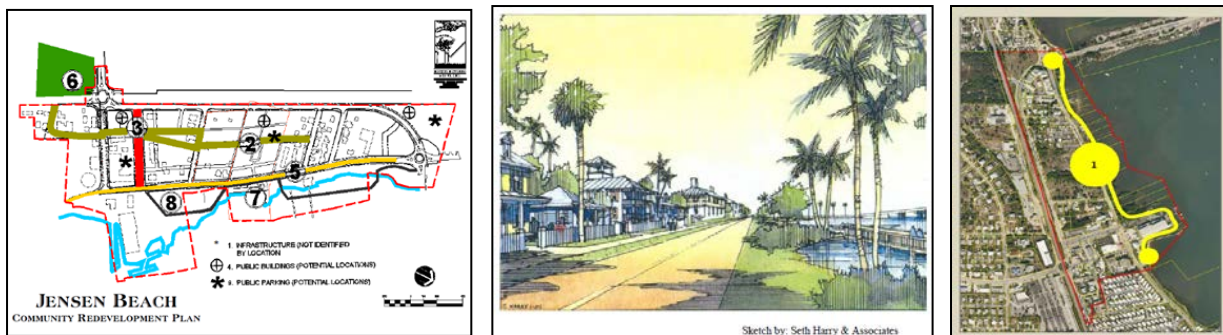
Like many Florida coastal communities, Jensen's core downtown began to decline by the 1970s due to aging building stock and competition from new development on US 1 and other commercial corridors. Organized redevelopment efforts began in 1986, with the adoption of a CRA master plan in 1995 that has been updated over time. A map of the CRA boundaries is included in this section along with the original redevelopment vision that continues to influence CRA activities today.



The first Jensen Beach Master Plan (presented above), developed in 1986, illustrated key redevelopment priorities still relevant today: a boardwalk, improved Indian River Drive, and improved pedestrian circulation.

Current Conditions: The Jensen Beach CRA is the smallest of the seven CRAs in Martin County, with only 65 acres included in the agency’s boundaries. The community is known as an eclectic, pedestrian-friendly community, with significant scenic views of the Indian River and a casual atmosphere. The main street includes smaller, locally-owned businesses and art galleries and an active street life. Fishing, boating, and active waterfront recreational activities are highly associated with Jensen Beach. Within a few minutes of the downtown are the U.S. Sailing Center of Martin County and Indian RiverSide Park, which has become a regional destination. The Jensen Beach causeway provides waterways access and a quick connection to the beach. The Jensen Beach Chamber is an active promoter of year-round events, which draw regular crowds for Jammin’ Jensen on Thursday evenings and thousands for its annual Pineapple Festival.

Noted Redevelopment Initiatives: The CRA and County have helped advance significant improvements in and around the district, including roadway improvements, streetscaping, decorative lighting and signage, and the Jensen Beach community center. Key waterways-related projects in the adopted CRA plan include the construction of a riverwalk along the Indian River shoreline, marina, and improvements to Indian River Drive. Safer, more convenient access to downtown Jensen Beach, with wider sidewalks, bike lanes, and on-street parking, would further enhance nonmotorized access to the downtown and contribute to the Indian River Lagoon Scenic Highway.



The current Jensen Beach CRA Plan (above-left) emphasizes the districts waterfront connections, retaining the boardwalk, pedestrian connections, and a marina. The “NOW” Plan (above-right) emphasizes the shoreline focus for redevelopment priorities. In addition, the plan calls for Indian River Drive improvements (illustrated above-center), that enhance the scenic highway and celebrate the beauty of the waterways.

The CRA’s NOW Plan also emphasizes the importance of waterfront enhancement while retaining the look and feel of Jensen Beach today. The plan calls for a “Jensen Beach Style Waterfront” with smaller businesses, pedestrian access, and a clean waterfront. This would help maintain the individuality of this waterfront center among the eight studied in this plan, helping each to become more successful by maintaining a unique look, feel, and sense of place.

Noted redevelopment opportunities to enhance the waterways consistent with the public sentiment include expanded recreational activities and opportunities, such as the U.S. Sailing Center at Martin County and Indian RiverSide Park, as well as special and competitive events utilizing the Jensen Beach and Stuart causeways for staging. The expansion of these activities will reinforce tourism as an economic engine, a targeted industry which will also help Jensen Beach accomplish its redevelopment priorities.

Rio

History: Rio appears to have developed as a quiet residential community in the mid-1800s. First known as Rio-San Lucie, the name Rio was established in 1897. In 1929, the City of Stuart extended its boundary across the St. Lucie River into the Rio area, and the famed Stuart/Rio arch was constructed to indicate Stuart’s northern city limits. By the 1950s, the Rio Civic Club was formed to address frequent flooding on A1A, and the group remains a core community group today. Rio began to experience conditions of economic decline and neglect, prompting Martin County to establish the Rio CRA in 2001. A map of the Rio CRA boundaries is provided below.



Current Conditions: Rio is a quaint waterfront community with a mix of residential and commercial uses. Its waterfront location provides significant redevelopment potential. However, in its current layout, the waterways are not visible from the community’s main corridors. The Rio CRA plan emphasizes expanding the waterfront connection, visually and physically, with a plan focus on creating a Rio Town Center (concept plan presented in this section). Additional improvements in the plan include roadway enhancement, drainage improvement, and beautification. The CRA recently completed a set of significant roadway and stormwater improvements along SR 707, which helps set the stage for redevelopment.



Rio’s redevelopment infrastructure improvements have recently included a streetscape upgrade similar to the one conceptualized above (image credit: Martin County CRA). The district’s wide-water views and waterfront orientation enhance values and redevelopment prospects.

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Select Redevelopment Initiative: The initial Rio redevelopment plan identified the need for a town center to help reinforce the identity of the community and broaden its relationship with the river. The concept included a mix of uses and a marina component, designed with strong pedestrian connectivity and walkable streets. Updated plans for Rio have continued to reinforce this primary redevelopment activity.



The original Rio Town Center concept from the Rio CRA plan is illustrative at the top. A recent development proposal to implement the concept is below. The proposal establishes a strong connection from SR 707 to the river, with a mix of residential, commercial, and marina use. It would appear that water taxi service could be accommodated with the marina configuration.

A current redevelopment proposal is being considered by Martin County to implement the Rio Town Center concept. This project proposes a mix of residential, commercial, and marina use with a strong connection to SR 707, enabling a vista to the St. Lucie River from the community's main street. The proposal evidences the market potential for Rio's redevelopment and would improve both access and visibility of the waterways. A market assessment would help inform the market potential for this site and likely demand if constructed to help further inform redevelopment priorities.

Indiantown

History: Buoyed by good hunting and fishing, the Seminole Indians were the first settlers of Indiantown in the early nineteenth century. Settlers arriving towards the end of the 19th century established residences, satisfied with the area's cattle grazing lands. In the early 1900s, large-scale land purchases around Lake Okeechobee for timber absorbed Indiantown, and the land became populated with sawmills, citrus, and cattle. Waterways connectivity was established in World War I when the U.S. Army dug the St. Lucie Canal as part of the drainage system for the Everglades. The 1920s brought the Seaboard Airline Railway, connecting the community to West Palm Beach, and a plan for a model community in Indiantown, but the plans never materialized. In 1923, the St. Lucie Canal was deepened and widened, ultimately becoming today's Okeechobee Waterway, providing a cross-Florida connection for barges and pleasure craft from Stuart to Fort Myers.

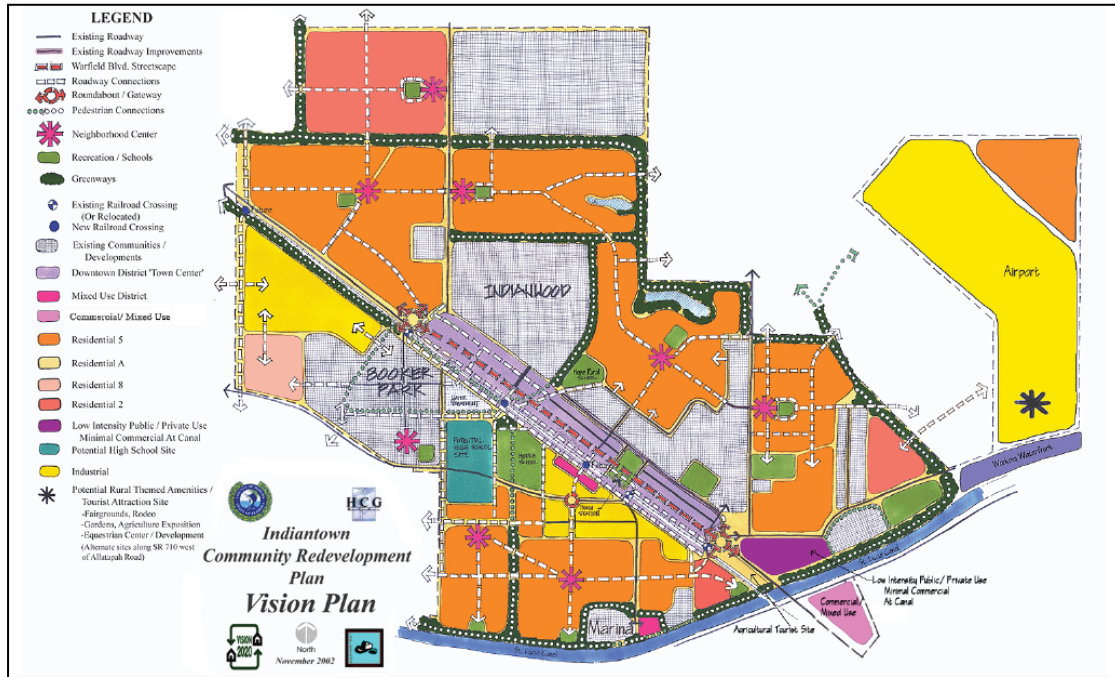
Indiantown developed an ethnically diverse population over time, surrounded by a mix of mostly agricultural, industrial, and residential land uses, with a small accompaniment of commercial and institutional. As Martin County advanced its redevelopment analyses, it recognized the impoverished conditions in Indiantown, compounded by lack of infrastructure, basic services, and declining economic base. Accordingly, the county created the Indiantown CRA in 2002, and a map of the CRA boundaries is presented below.



Current Conditions: Indiantown is a fairly small, quiet town among South Florida communities. The redevelopment area has seen limited investment, due in part to the community's isolation from the coastal portions of the county. The redevelopment program is intended to help job growth and a balanced range of industrial, agricultural, corporate, and commercial jobs. In the mid-2000s, there were several large scale developments proposed in Indiantown, but the economic downturn has delayed or virtually eliminated that style and scale of development for the foreseeable future. Related to the waterways, the community recently attracted the region's second shrimp farm, Fresh Shrimp, which is anticipated to be operational with a 40-acre farm in 2016. The company will join Puregrown Aquaculture, a second related business that produces clams.

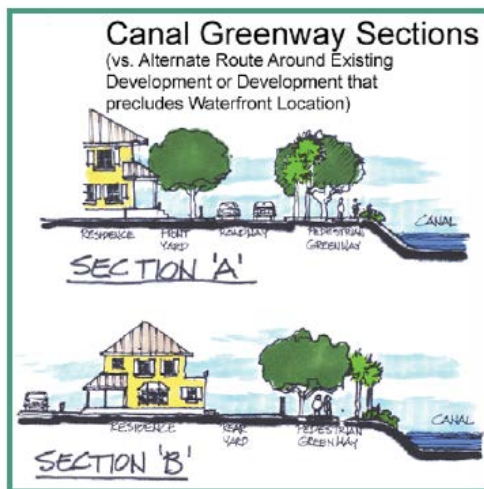
Land Use & Upland Transportation

Noted Redevelopment Initiatives: The Indiantown CRA Plan contains a vision plan to help guide future redevelopment (see below). Key initiatives related to the waterways plan include a marina and working waterfront district along the St. Lucie Canal as well as the potential for a greenways network along the canal banks.



The Indiantown Community Redevelopment Plan – Vision Plan identifies redevelopment concepts to help inform future priorities and directions for the community. Along the St. Lucie Canal, the plan identifies a marina use and a working waterfront district along with greenways connections to facilitate public access along the waterway.

Regarding waterways-related public access, the CRA plan recommends a series of greenways to be constructed along the C-44 canal. Greenways are a desirable community amenity, and along the canal bank they would create opportunities for a scenic backdrop. Greenways concepts from the CRA plan are presented in this section.



Canal greenways as conceptualized in the Indiantown CRA plan are shown in the image to the left. Above are two photos illustrating the canal corridor and a typical greenway condition that could be accommodated in the Indiantown community, enhancing waterfront access and value for redevelopment.

Land Use & Upland Transportation

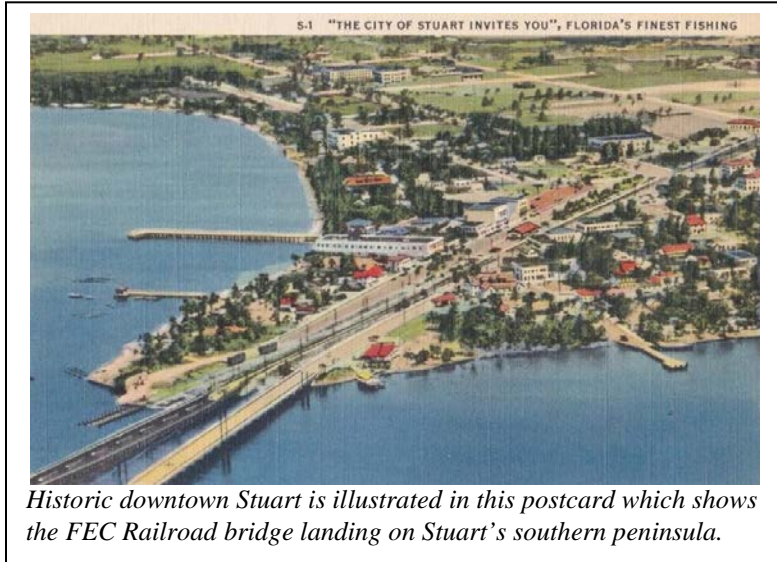
Actions to promote canal-bank greenways, advance additional marina development, or locations for marine industries are consistent with the public input gathered during the planning process. Indiantown's western location also makes it attractive for the storage of boats in advance of hurricanes, which may also be appropriated along the canal. In addition, fishing advocates suggest aquaculture reinforces the recreational fishing industry. Since a second aquaculture enterprise will be established in Indiantown within two years, it may be possible to facilitate additional aquaculture businesses given Indiantown's low-cost, highly available industrial and agricultural lands.



The Indiantown Marina (pictured above) is situated on the C-44 Canal, providing a nucleus of marine industrial activity in the Indiantown community as well as a safe haven for boaters seeking shelter from hurricanes crossing the Atlantic Ocean. The marina can also cater to a niche market of boaters crossing the state via this C-44.

Stuart

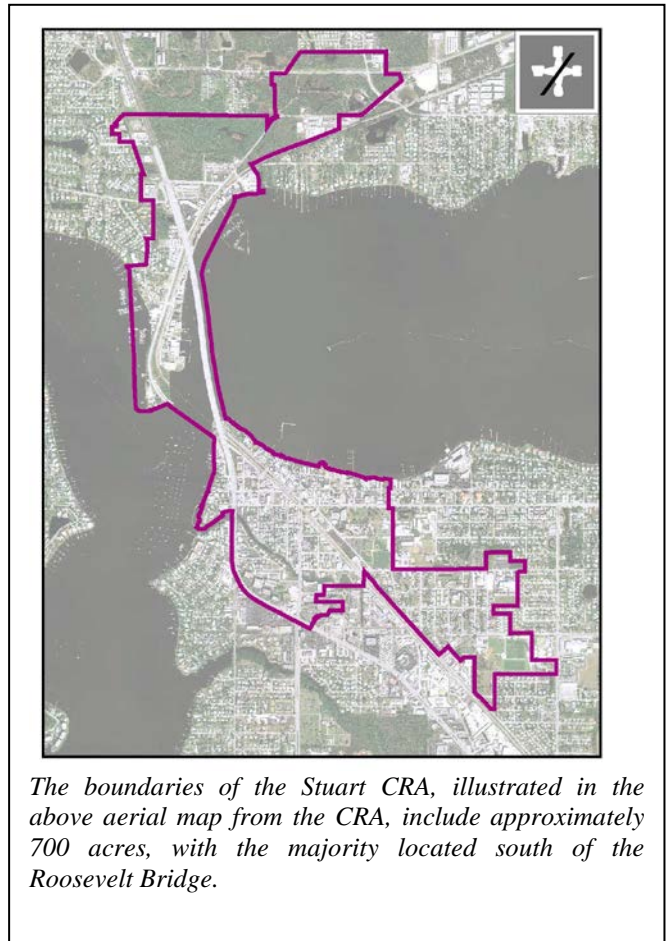
History: Known as the Sailfish Capital of the World, the City of Stuart is Martin County's seat and the largest of its four municipalities. The city is situated on the banks of the St. Lucie River, with a current population of approximately 16,000. Stuart was first settled in 1870, originally named Potsdam after early German settlers. With the arrival of the FEC railway in 1895, the city was renamed Stuart after the rail station land owner, becoming an economic



Historic downtown Stuart is illustrated in this postcard which shows the FEC Railroad bridge landing on Stuart's southern peninsula.

center exporting pineapples then chrysanthemums as primary products. The city's location at the convergence of the St. Lucie River and Indian River, with close proximity to the inlet, made it a destination for fishing, with sailfish becoming a trademark catch. Over time, Stuart's downtown became a regional destination, with a traditional main street, the Lyric Theatre, and medical, legal office district that still includes the courthouse and main county hospital campus.

Like many of Florida's east coast communities, by the 1970s western development had begun to shift capital and jobs out of the downtown. Retail had declined, and the older downtown building stock could not compete with newer retail commercial strips along US1. The city established a CRA in 1986, followed by a community planning charrette that created a downtown vision that continues to shape redevelopment today. The CRA was expanded in 1998 and 2002 to include properties both north and south of the Roosevelt Bridge. Currently, the CRA encompasses roughly 700 acres, with a broad mix of residential, retail/office, and industrial uses, and extensive parks and cultural facilities. A map of the current CRA boundaries, illustrating the extensive shoreline, is included in this section.



The boundaries of the Stuart CRA, illustrated in the above aerial map from the CRA, include approximately 700 acres, with the majority located south of the Roosevelt Bridge.

Current Conditions: Today, Stuart is celebrated for its vibrant, mixed-use downtown with nearly full occupancy on its

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main street and within the surrounding retail/office /residential district. The redevelopment area includes a northern peninsula (North Point) and a southern peninsula (South Point). The downtown is a destination for dozens of special events year-round that attract thousands of attendees. The CRA has advanced significant waterfront access improvements that include:

- The Southern Riverwalk surrounding South Point, from Sunset Anchorage and Marina to Joan Jefferson Way, with expansion planned east to Seminole Street; northern Riverwalk along shoreline adjacent to Harborage development; and western Riverwalk and fishwalk extending into river along Shepherd Park.
- A public floating dock planned for expansion that can accommodate water taxis and potentially seaplanes and personal watercraft.
- Sunset Anchorage and Marina, a public/private partnership enabling private operation of the former city-owned anchorage and marina, which can also accommodate water taxis.
- Public realm improvements including extensive landscaping, streetscaping, decorative signage and banners, street furniture, and public art.
- A network of downtown parks and plazas, with plans for additional street-end pocket parks; and
- A downtown trolley service that circulates through South Point, connecting the marina to the core downtown.



The sailfish is an iconic image for Stuart, celebrated in public art and helping brand the City as a waterfront destination.



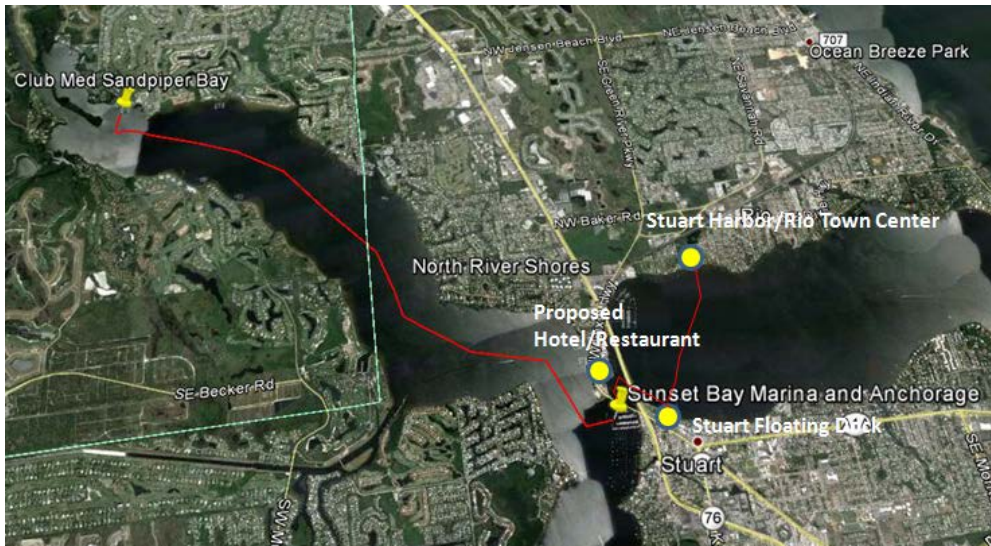
The city's public floating dock, extending from its southern riverwalk, is an example of the city's long-standing partnership with FIND.

In recent months, the city has advanced community-based discussions regarding the options for the utilization of the waterfront city hall site, acknowledging the current building is outdated and undersized. Consensus on this issue remains a topic of continued discussion. The city has also begun evaluations of a developer response for a proposed 120-room A-Loft hotel on the northern peninsula, which could also be accompanied by a restaurant on the remaining northern touchdown of the remnant Roosevelt Bridge. City officials indicate a water taxi station may be required in conjunction with the development of the site.

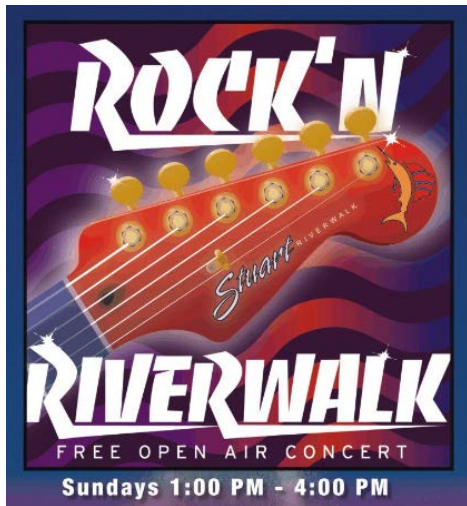
The CRA is well-organized for coordinated events and marketing, with Stuart Main Street and the Downtown Business Association partnering with the city for this purpose. These community-based groups organize and promote dozens of downtown events, which could be marketed with water taxi service long envisioned by the city. Water taxi connections from the historic downtown could include Club Med Sandpiper, which is located in Port St. Lucie, and Stuart

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Harbor/Rio Town Center, a proposed mixed-use project in the Rio CRA, enabling connections among multiple waterfront centers. Potential water taxi routes are identified in the map below.



The expansion of Stuart’s riverwalk, floating dock, street-end park system, and related public amenities would expand public access to the waterways and reinforce the city as a regional waterfront destination. A water taxi service would expand the city’s market, enabling easy access to Stuart’s year-round downtown events and scores of businesses, capitalizing on the economic benefits of the waterways. The city could further activate its waterfront with a destination use adjacent to its floating dock rather than its city hall, which is a decision the city will continue to evaluate over time.



Stuart’s extensive calendar of special events, such as Rock’N Riverwalk, attract thousands of visitors to the downtown area. Boaters utilize the city’s floating dock, funded by FIND, for access to the downtown district.

St. Lucie County

St. Lucie County encompasses an area just under 700 square miles with a 2010 census population of approximately 280,000. The county contains three municipalities; Fort Pierce, which is the county seat; Port St. Lucie, which is the largest city in the Treasure Coast region; and the Town of St. Lucie Village, a small community with a population just over 600. Roughly 20 percent of the county is contained in the three municipalities, leaving the balance in unincorporated St. Lucie County. The Fort Pierce Redevelopment Agency (FPRA) and the Port St. Lucie CRA were selected for in-depth analysis due to their waterfront connection. Overviews of both communities, their histories, current conditions, and redevelopment approaches are presented in the following sections.

Fort Pierce

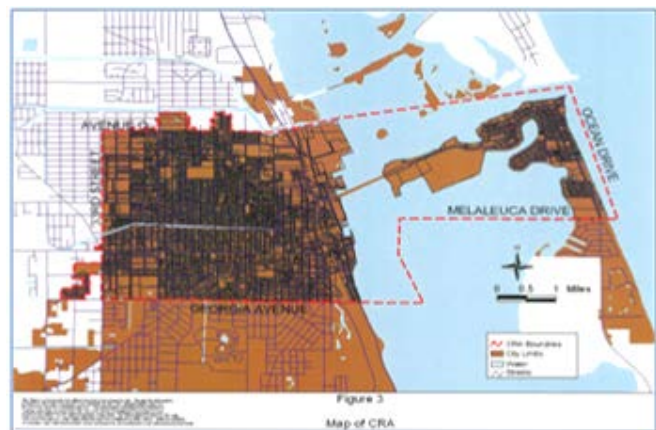
History: Historical accounts tend to indicate the area including Fort Pierce saw its earliest human occupation in the 1500s, with both Spanish and Indian settlements. In the mid-1800s, Fort Pierce was established as a U.S. Army fort during the Seminole wars, and by the 1840s, the area was positioned to advance modern settlement on the banks of the Indian River Lagoon. The early economy was similar to that of neighboring communities, focusing on agriculture, fishing, and cattle ranching. The introduction of the FEC railroad in the late 1800s expanded the commercial trade, particularly to the benefit of the citrus industry, which continues today in some of the original packing plants.



The vintage postcard pictured above celebrates the prominence of fishing in Fort Pierce's history.

Fort Pierce's fishing industry was also prominent by the 1900s, with fish houses and an oyster house along the banks of the river. Agriculture, fishing, and tourism helped reinforce a broadening economy, but declines began to occur by the 1950s. The termination of the FEC's passenger rail service impacted the tourism economy, and development activity began to slow. With the construction of Interstate 95 and Florida's Turnpike, the coastal community declined further, raising the call for redevelopment.

The city established the Fort Pierce Redevelopment Agency in 1982, which included the heart of historic downtown Fort Pierce along the Indian River. The city expanded the boundaries several times, ultimately including the Port and beaches in 2000. A map of the CRA boundaries is provided in this section.



Current Conditions: Fort Pierce’s redevelopment efforts have resulted in an elegant, scenic waterfront presence with remarkable wide-water views across the Indian River Lagoon. Fort Pierce’s waterfront in particular has become a regional destination for special events, extensive marina activity, and a rebounding fishing industry. The city has an active Fort Pierce Main Street Association that promotes and markets the redevelopment district year-round along with a bi-weekly Farmer’s Market, one of the largest in the region, attracting thousands on Wednesdays and Saturdays into the area. These activities are augmented by the chamber and visitor’s center.

The City and CRA have completed extensive improvements in the downtown area, including:

- Enhanced roadway network with landscaping, streetscaping, and public art
- A redeveloped city marina with 138 slips and adjacent promenade
- Extensive waterfront park improvements, including Veteran’s Memorial Park and an adjacent cluster of cultural uses, such as the Manatee Observation Center, Seven Gables Visitor Information Center, and Backus Art Gallery
- An extensive downtown parking program with a parking garage, surface lots, and on-street parking
- Significant public buildings, including a new federal Courthouse and public library, complementing the core of public institutional uses in the CRA



This image from the Fort Pierce CRA Plan illustrates the intensity of waterfront uses in the downtown as well as the City marina and adjacent public event space along the river’s edge.

Select Redevelopment Initiatives: The Fort Pierce CRA Plan emphasizes the need for the city to seek a broad range of uses, substantial capital investments, and job creation to address the challenges in the district. The plan notes specific strategies for the mixed-use redevelopment of the waterfront district adjacent to the library, the beach-sub area and its needs for visual and physical enhancement, and the importance of the city marina.

The City Marina has undergone substantial redevelopment after its destruction in the hurricanes of 2004. Improvements include a state-of-the-art marina with 138 slips; a series of breakwater

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islands that create habitat and enhance the scenic qualities of the waterfront; and improved pump out facilities. Deep water dredging is anticipated by the marina to enable mega yachts to be serviced at the facility, which is enhanced by its close proximity to the Fort Pierce inlet.

The Port of Fort Pierce lies at the northern end of the CRA district, encompassing more than 160 acres. The port has recently undergone an extensive master-planning effort and was recently identified by FDOT as an emerging port in the state's SIS program. This elevates the competitiveness of infrastructure improvements at the port, particularly as related to transportation access. The port's channel will be dredged to twenty-eight feet, enabling access for moderately sized cargo vessels. The redevelopment of the port has been complicated by its partially private ownership, which has stalled development opportunities both on the site as well as within the balance of the adjacent redevelopment district. The city, county, FPRA and others strongly support the development of a maritime and logistics academy on the port site, which could enable institutional use to help visually and physically buffer the port's industrial activities from the adjacent mixed-use development. Future uses for the port and adjacent parcels in this northern CRA sub-area could include a broad mix of uses, such as hotel, residential, and commercial uses, that would use the broad waterfront in a non-industrial manner.

Current redevelopment proposals within the CRA include a potential public/private redevelopment concept for the former H.D. King Power Plant property, which includes a mix of residential and commercial uses and will have implications toward additional remaining market share for similar uses in the district. St. Andrews, a private middle and high school, is currently being proposed for expansion at the southern end of the district, which would introduce a waterfront educational use developed in support of other downtown redevelopment activity. The school proposes to work in partnership with downtown restaurants, institutions, and cultural uses, utilizing a water taxi to transport students from a street-end park and public dock to the Smithsonian/Aquarium for field work. The school expansion could reinforce demand for downtown housing, which would create additional demand for commercial uses in the district. The school is also proposing a curriculum focused on waterways education that would place emphasis on the health and quality of the waterways in a positive means.

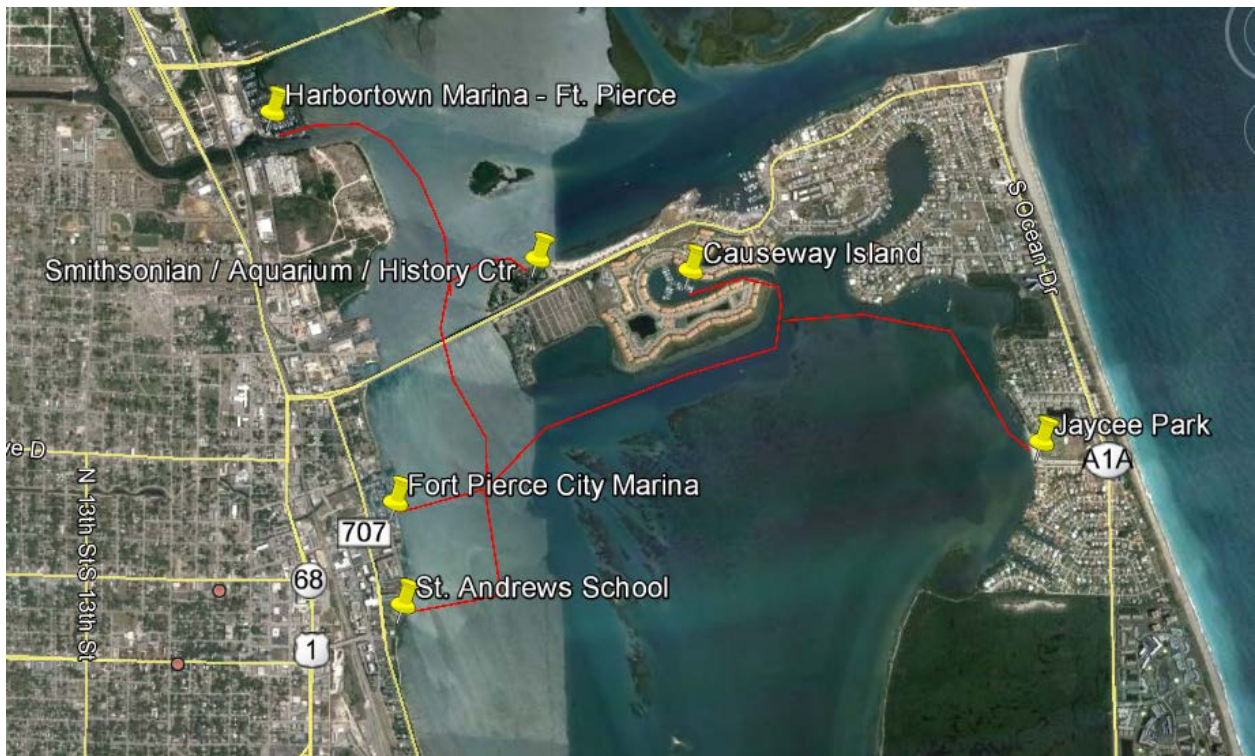
Continued support of the City Marina, organization of special events through Main Street and other groups, cultural and museum enrichment, and mixed use development on the waterways will help accomplish the objectives of this plan. The port presents a challenge and requires a direct policy approach to discern its best direction, secure funding for the necessary infrastructure, and provide certainty to the market.



As illustrated in the Fort Pierce Downtown Waterfront Charrette, the redevelopment of the H.D. King Power Plant could provide a redevelopment catalyst for downtown Fort Pierce. Images from TCRPC.

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Fort Pierce’s array of activities and consistent, annual special events create potential for a water taxi route in the area, which is illustrated below. The route could connect the City Marina, St. Andrews School, Harbor Town Marina, Smithsonian/Aquarium, Causeway Island, and Jaycee Park. Coordinated events, marketing, and promotions in conjunction with water taxi service will create the highest likelihood for successful service as enhancement for the destination quality of the downtown.



Within downtown Fort Pierce, there are a number of active and passive recreational, ecotourism, and heritage tourism activities available to the public. The only operating eco-tour boat/water taxi operates out of the Fort Pierce City Marina. Specialty kayak tours are available from vendors, such as motorized kayak tours that can expand the user base for these activities.

Port St. Lucie

History: The City of Port St. Lucie has a development history that is considerably different than the other seven waterfront centers. The area that currently constitutes the city was minimally populated, with the first settlers arriving in the 1890s, growing pineapple and citrus until a freeze discouraged the industry. The pace of development remained slow until 1958 when General Development Corporation purchased nearly 50,000 acres to market the area for development. With a \$50 million budget, the company set forth to develop a new community on the North Fork of the St. Lucie River. Lots sold for \$10 down and \$10 a month, providing homes for as little as \$9,000. With construction of bridges and roadways, the sales and development pace accelerated, and the city became incorporated in 1961.

The city became one of the fastest growing in Florida, growing from 330 homes in 1970 to nearly 56,000 in 1990. By the 2010 U.S. Census, the city had nearly 165,000 residents, making it the largest city in the Treasure Coast Region and the 9th largest in the state. The city’s initial focus on residential development has diversified considerably, with a broad mix of uses, nearby spring training facility, significant growth potential, and a successful effort to recruit a biotech hub featuring Torrey Pines Institute for Molecular Studies, Mann Research Center, and the Vaccine Gene Therapy Institute-Florida.

Declining property values and infrastructure constraints led the city to establish a CRA in 2001, centered around US1 and Port St. Lucie Boulevard and the city’s town center. The agency was expanded in 2006 to include additional properties along the North Fork of the St. Lucie River. In its CRA plan, the city expressly noted its desire to establish riverfront development, riverwalks, and expanded public access and recreational space as well as facilitate mixed-use development opportunities. A map of the CRA boundaries is provided below.

LIFE IN PORT ST. LUCIE, FLORIDA

Start Now to Own Your Own Choice Land on Florida's Famous East Coast

Look at the people on these pages, enjoying the happy, relaxed, fast-paced life of all year long in Port St. Lucie. And decide to start, right now, to prepare the way for your own wonderful future in this sun-drenched paradise.

Port St. Lucie is a fine, carefully planned, progressive community — built in a setting of great natural beauty. The land is high and dry — excellent with every year. The lovely St. Lucie River which winds through the property, is one of the most picturesque in all Florida. And as you drive through the countryside, you will marvel at the beauty of the green and gold citrus groves and across the entire expanse of tropical orange blossoms.

The climate is idealized — warm in winter and cooled in summer by prevailing trade winds from the Atlantic Ocean. Here, you can enjoy your favorite outdoor sports — from golfing, tennis, vegetables, and recreation, quite leisurely throughout the year.

And the location is ideal, on the fast-growing East Coast, famous for its well-known medical and luxury resort hotels.

BIG 80' x 125' HOMESITES
\$10 DOWN — \$10 A MONTH SALE PRICE \$995

Yes, thanks to the famous Mackie Plan, you can buy your own choice piece of property in Port St. Lucie — enjoy all the convenience and advantages of Florida's East Coast — for money you'll hardly even miss. Just \$10 down and \$10 a month buys a big, well-located homestead. Why not start right now, to own your own "piece in the sun" in Port St. Lucie?

All you do to fill out the coupon below and mail with a \$10 deposit, the once you've deposited in cash, you will be well on your way to a new, exciting life in the sun. You may only \$10 a month, which includes \$25 annual, and your contract is completed. But don't quit! Ask now! Prices subject to change without notice.

YOUR GUARANTEE

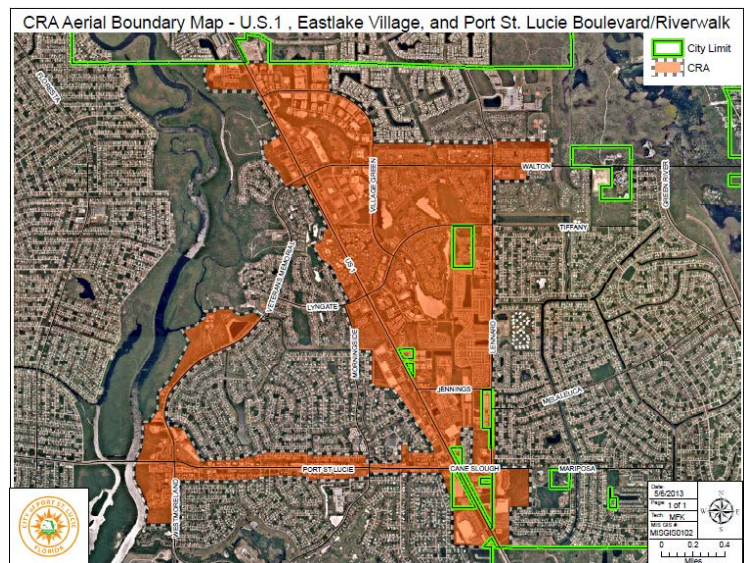
You are protected when you:

1. By the adjustable program of General Development Corporation.
2. By the fact that you have 90 days to return your money if you are not satisfied with the location of your property. Then pay only \$10 a month, which includes \$25 annual, and your contract is completed.
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4. By an unconditional 30 day money-back guarantee.

Send Coupon Today!

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Illustrated in this image is a typical GDC marketing campaign, with “miles of friendly waters to explore.”



Land Use & Upland Transportation

Current Conditions: The city has experienced considerable redevelopment over time, but it was heavily affected by the economic downturn of 2007. One mixed-use project was constructed along the river while a proposed residential project remains on hold. The city constructed an initial riverwalk in 2003, preceding the CRA's expansion, and a second reconstruction phase in 2006. The city's botanical garden lies along the North Fork just south of Port St. Lucie Boulevard.

According to the CRA Master Plan, the CRA is envisioned as "a central gathering place that creates an identity for the city as well as provides entertainment and economic opportunities. The area will include a variety of development districts and connective open space to better serve Port St. Lucie's current and future population." The CRA plan recommends two water-oriented districts along the North Fork. In the Riverwalk South District, which extends south of Port St. Lucie Boulevard, the plan anticipates hotel, residential, retail, and restaurant space along with an expanded boardwalk with shared access to the city's Botanical Gardens. The Riverwalk North District, extending north of Port St. Lucie Boulevard, anticipates a river-themed entertainment, recreation, and residential district, with connectivity to the southern district possible via roadway or boardwalk. Relevant images are provided below.



The redevelopment vision of the Port St. Lucie plan includes strong connections to the St. Lucie River, with boardwalks and celebrated points of interest along the river's shore. The Riverwalk South district is envisioned as medium-density entertainment node.

Noted Redevelopment Initiatives: Located immediately south of the city's botanical garden, the Riverwalk South parcel is the site for a defunct residential project named Moonraker Bay, due to the history of James Bond filming a portion of the movie on the water there. The site currently has a small fishing deck, small concrete kayak launch, and no permanent parking. The city has acquired the Riverwalk South property and it was the subject of discussion during the plan's public workshops. The site in its current configuration is highly underutilized, providing similar fishing access to the river as the section of riverwalk to the north. Participants in the planning process indicated they preferred a more active use for the property, and one that would better complement the adjacent botanical gardens for special activities. The public also noted there was nowhere to stop along the river if on a boat or kayak for any form of concessions, which could occur on the site. There was also discussion regarding improvements to the existing concrete kayak launch, given the preference by kayakers for soft launches. The site also faces

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west toward the St. Lucie River Aquatic Preserve, which provides an undisturbed natural view. A proposal was developed to respond to the public’s requests, which is presented in this section.



The images above illustrate the subject section of the North Fork, with the city’s riverwalk to the left and winding river passage to the right.

In 2006, the city acquired the 9-acre parcel “Westmoreland River Park Site,” which is south of the subject “Westmoreland Tract” analyzed in this plan. The city was awarded funding through the Florida Communities Trust program. In receiving the funding, the city committed to install a nature trail and interpretive signage on the parcel, which is illustrated in the site plan in this section. The Westmoreland Tract is noted as “mixed-use development,” and it has since been acquired by the city. Given the unique features of the site and the surrounding area, it is important to balance preservation of the natural environment with development that complements these features.

A concept plan for the Westmoreland Tract, or Riverwalk South district, is illustrated below. The concept introduces a multi-story building fronting the water with strong connections to Westmoreland Avenue and the botanical garden. The building is also connected to a proposed

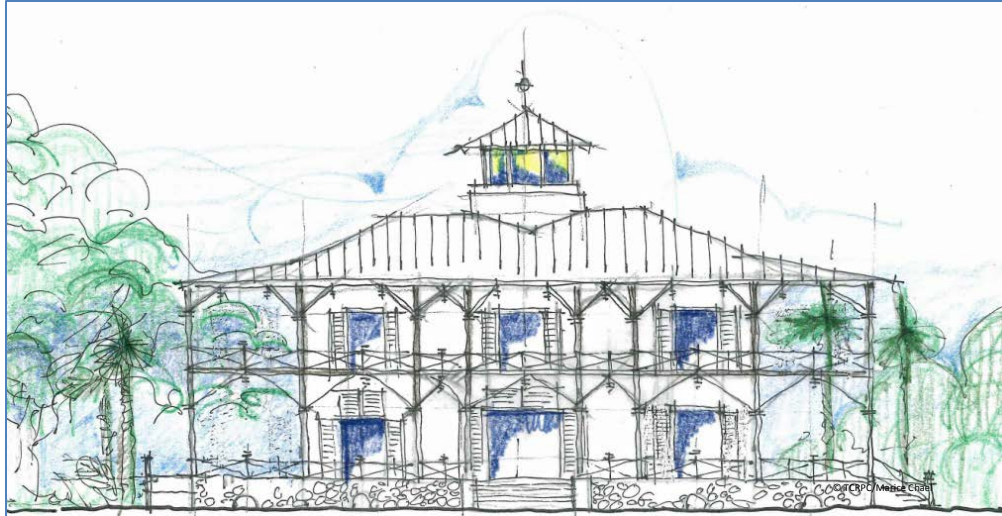


Land Use & Upland Transportation

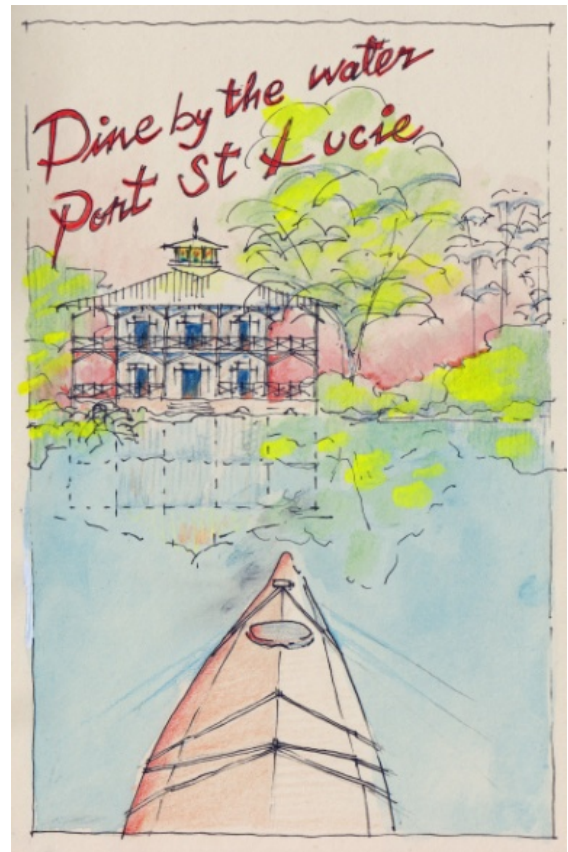
riverwalk extension from the current riverwalk to the north. The plan includes day docks to allow boats to dock at the site and a canoe/kayak sandy beach that would replace the current concrete canoe/kayak launch. A private paddle sports concession could operate at the water's edge. The building is suggested to be at least two stories, with wide wrap-around porches to provide users extensive views of the river and the preserve, especially at sunset.



Uses for the main building could include public meeting space, restaurant, and lodging, with room for a small inn on the site. Additional footprints are shown for small cottages, which could also be used for lodging rental. The site could be operated in conjunction with the adjacent botanical garden for special events like weddings and receptions. A publicly accessible restaurant with decking could provide a different form of waterfront access to the majority of city residents who do not live on the water. The site could also accommodate the relocation of historic structures, which could house museums, civic, or other uses. An elevation sketch of the building is provided in this section along with a suggested marketing poster for the concept. A financial evaluation of the site is included in the Economic Development Section, which notes a restaurant on this site would likely require full beverage sales to be financially feasible. The study also acknowledges a lodging use may not be market-supported in the near term, but nonetheless, the concept of hospitality along the river is unique and completely different than the vast majority of St. Lucie County's current inventory of 3,100 hotel rooms, which tend to be concentrated along the interstate and comprise an entirely different character and style.



It should be noted the site immediately south of the Westmoreland Tract is the “Westmoreland River Park” property, acquired by the city with Florida Communities Trust funds. The corresponding management plan requires the installation of a series of nature trails, which will complement the interest generated by the property as a unique destination. The site is also accessible from Westmoreland Boulevard, which is a fairly low-speed road with good bicycle/pedestrian amenities along most its length. Additional opportunities to enhance nonmotorized access should be identified and prioritized to bring residents and visitors to this unique location.



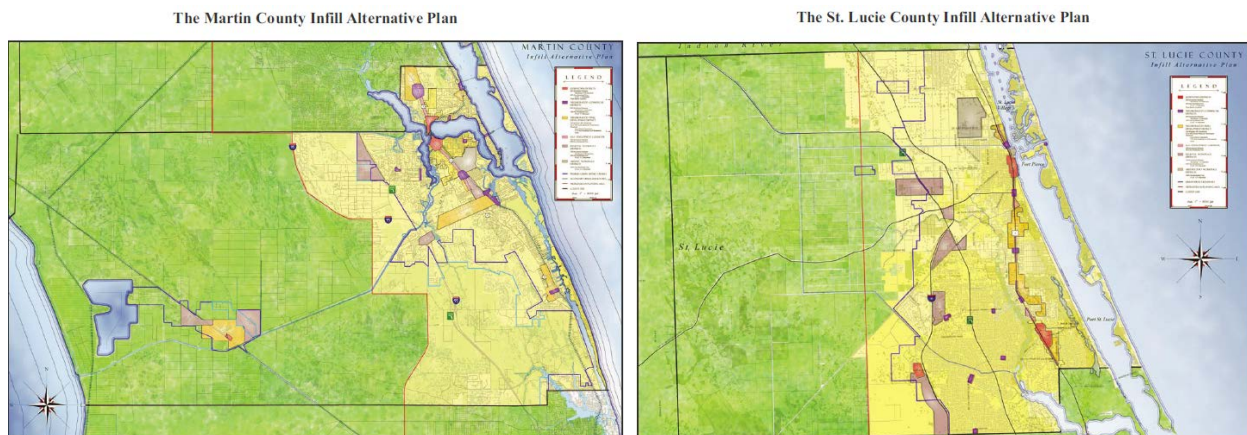
Upland Transportation

Introduction

Martin and St. Lucie counties have extensive transportation networks, including multi-modal transportation corridors, transit systems, two rail lines, and non-motorized networks for pedestrians and cyclists. Multi-modality is prioritized in the counties' joint long-range transportation plan. The development of the waterways plan by the MPO and TPO evidences the progressive focus of the agencies and elevates the importance of the waterways as part of the multi-modal transportation network. Well-developed transportation networks are considered critical for successful economic development. Noting the need for strong connectivity, participants identified a desire to enhance last-mile connections to and from waterfront centers. These connections are needed to facilitate both access to centers by residents and visitors as well as connections for waterborne travelers. Transit connections to waterway centers and beaches are especially desired by the public. For non-motorized access, both counties have extensive greenways/trails network systems, and additional opportunities along canal banks have potential. Access to waterways for the delivery of boats has been noted as a point of conflict historically, with measures in place to protect these corridors from encroachment. These opportunities are discussed below.

Multi-Modal Transportation Network

Martin and St. Lucie counties together developed a joint 2035 Regional Long Range Transportation Plan, *Enhancing Mobility*, that establishes the long-range goals and strategies for the transportation system of the future. The land use visions underscoring the transportation networks in the study area emphasize connectivity to the waterfront centers and access to the waterways, providing a rich array of transportation choices for travels.



Martin and St. Lucie Counties jointly developed a 2035 Regional Long Range Transportation Plan above that anticipates a concentration of development activity and transportation investments in the eastern portion of the counties.

From a roadway perspective, the waterfront centers are noted as locations selected for intensified redevelopment activities, and each is identified as a community redevelopment area by the

respective local governments. Participants expressed interest in seeking prioritized roadway improvements in the form of enhancements and signage to indicate a sense of arrival for these waterfront destinations. It was particularly noted the roadways connecting to Port Salerno and Fort Pierce lack sufficient visual cues for travelers, and enhancements were desired along routes extending from the Interstate to the core of these waterfront destinations. Additional evaluation is necessary to determine opportunities for these interventions and the associated funding for their implementation.

Last-Mile Connections

The last mile is a term applied to transportation planning to describe the challenging condition of getting people from their last stop in a transportation system to their ultimate destination. In transit planning, the focus is typically a bus stop or rail station. For the waterways plan, participants applied the last-mile focus to waterfront centers, marinas, and water taxis. Where passengers are waterborne, landside connections may require a variety of treatments to facilitate access to destinations or at the point of disembarking. Among the greener remedies to facilitate access for the last mile are local or micro-transit, including small shuttles, vans and trolleys; bicycle and car sharing; and pedestrian-supportive urban form. In partnership with local governments and marina operators, the MPO and TPO can assist in the identification of appropriate modes, secure seed funding, and integrate into transit development plans as appropriate.

Public Transit – Waterways Circulator

Public transit is forecast to play an increasing role in Martin and St. Lucie counties as the populations increase and demographics change. Both counties operate fixed-route transit service that serves the major residential, commercial, and institutional land uses in their respective service areas. However, there is no transit connection that directly services the beaches. In the development of the plan, the public noted this lack of connectivity and stressed its importance for health, well-being, and fairness, especially for access to the beaches by economically disadvantaged individuals. Given the transit capacity of the counties, demand for ridership, and geography of the study area, a Waterways Circulator seems most appropriate in St. Lucie County. Possible destinations could include downtown Fort Pierce, museums and cultural destinations, recreational destinations, and the beach. A circulator of this type would likely be best suited for weekend service.

Marine Transportation Routes

The transport of boats from boat building warehouses to the waterway presents a unique challenge to be accommodated in the region's transportation network. The challenge is particularly vexing in Port Salerno, where there are several boat builders west of the railroad tracks who build larger vessels. When vessels are completed, there are significant challenges to transport these boats to the water for launching. The dimensions of the larger vessels conflict with narrow roadways, and additional encroachments from buildings or infrastructure threatens this crucial local economic activity.

Land Use & Upland Transportation

To prevent additional encroachments from compromising the transport of vessels, Martin County adopted a resolution in 2010 to designate two Marine transportation routes to facilitate the movement of boats from Gran View Park, west of the railroad tracks in Port Salerno, to the water. The adopted route includes portions of US1, Cove Road, Commerce Avenue, Manatee Street, Dixie Highway, Robertson Road, and Horseshoe Point Road. According to the county evaluation of the concept, vertical and horizontal conflicts along routes could extend the time of transport from less than two hours to more than twelve.

In continued work with boat builders after adoption of the ordinance, a modified route was identified to more easily facilitate the transport of boats. The map below illustrates the two adopted routes (shown in blue and red) and the modification (shown in pink – highlight added). Future action is necessary for the county to modify the routes in the original resolution to implement the improved configuration as identified. There also remains a need for county action to protect the routes from future encroachments. A similar analysis should be conducted in St. Lucie County to evaluate transport of boats from existing boat builders or targeted locations for new builders.



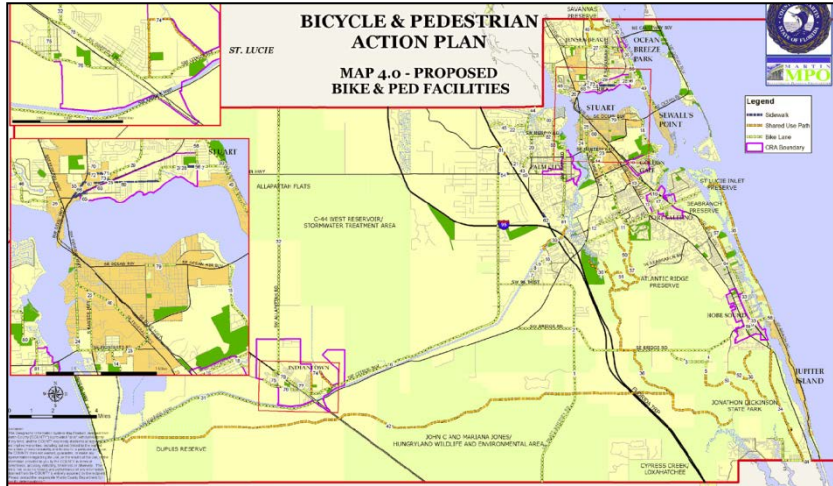
The map above-left illustrates ten boat builders concentrated in Port Salerno west of the railroad tracks. This industry sub-cluster represents significant economic benefit and year-round employment for the region. The map to the right illustrates the adopted Marine Transportation Routes (in blue and red), with a desired modification to the route identified (in pink highlight added). The modification to the route along with appropriate regulations to prevent encroachment should be given priority for adoption. Images are from Martin County.

Greenways and Trails

Given the growth in outdoor recreation, there is increasing demand and interest in networked facilities for non-motorized transportation. Standard facilities for cyclists and pedestrians include five or six-foot sidewalks and typically an on-street bicycle lane adjacent to vehicular travel lanes. Greenways and trails networks provide an opportunity to elevate the status of key facilities, provide more extensive buffering or isolation from motorized vehicles, and more extensively celebrate the unique natural, cultural, or historic features in a community. Greenways are generally defined as scenic land trails or routes traversing a natural area, typically

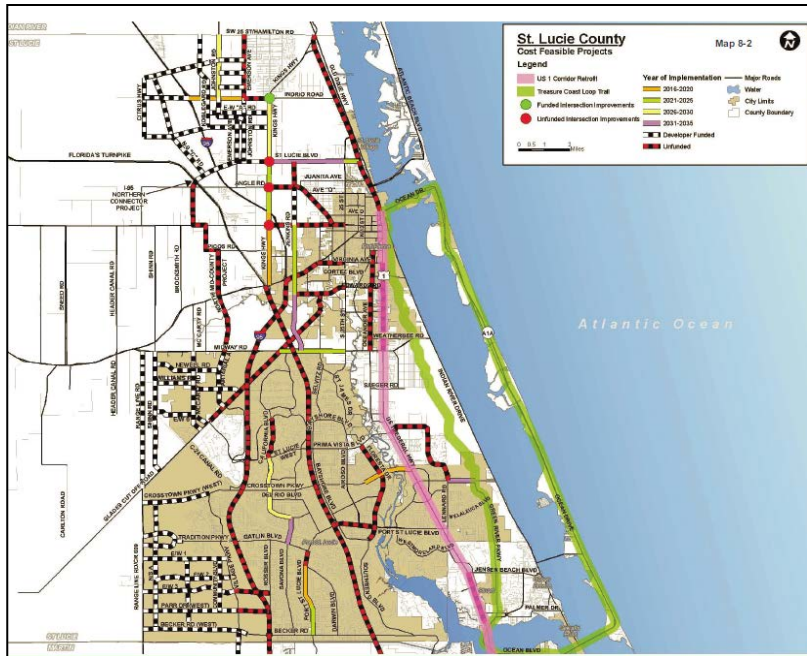
Land Use & Upland Transportation

remaining in an unpaved condition while trails are typically defined as pathways constructed of various materials. In addition to an unpaved condition, trails can include paved pathways and boardwalks. Although the terms are sometimes used interchangeably, trails generally refer to narrower paths and are more often paved.



Martin County's Bicycle and Pedestrian Action Plan clearly indicates enhanced connectivity to the waterfront centers, which are within the CRA boundaries as indicated above. This is consistent the public's desire for improved nonmotorized connections to these locations.

Participants in the planning process emphasized the importance of connectivity to the waterways and waterfront centers for all modes. Given the uniqueness of the region's geography and temperate climate, access for pedestrians and cyclists to water-focused destinations was especially emphasized. Maps of existing and future greenways and trails facilities are included in this section. In addition, St. Lucie County is advancing plans for waterways-focused greenways such as the Ten-Mile Creek Reservoir Greenway (to the North Fork) and the North Savannahs to Taylor Creek Greenway.



In the 2035 Enhancing Mobility Long-Range Transportation Plan for the counties, the Treasure Coast Loop Trail, as indicated in the green corridor illustrated on the above map, was highly prioritized. The trail is envisioned to be constructed in phases, given its substantial

Additional greenways and trails planning at the regional, state, and federal levels can assist in advancing the development and enhancement of facilities in Martin and St. Lucie counties. These include the Southeast Florida Regional Greenways and Trails Plan, FDEP's Greenways and Trails Systems Plan, and the East Coast Greenway. Facilities that provide waterways connections should be prioritized in these complementary planning efforts as well to increase their funding competitiveness and accelerate their development.

The banks of the major drainage canals, including the C-23, C-24, C-25, and C-44, provide a unique opportunity for off-road transportation corridors to enhance mobility, recreation, and public access to these waterways. The SFWMD has a positive history of working with local governments to establish multi-use, mostly unpaved trails along the banks of its canals. Trails on appropriate segments of these canal banks would contribute to the counties' multi-modal networks and add value to communities. This concept should be further explored with leadership from the MPO, TPO, and local governments in conjunction with the SFWMD. An evaluation of land use and existing conditions will help identify the most suitable segments for further evaluation. A trail system on the canals can also be augmented with educational signage to help communicate water quality issues such as stormwater runoff becoming non-point source pollution in the river and lagoon.

Key Findings and Recommendations

The region's land use and transportation network is designed to celebrate the waterways and accelerate connections to waterfront centers. These locations are the historic centers of the current communities, and as such, transportation networks expanded from them as central nodes. The public is highly supportive of the continued waterfront redevelopment activities underway in the select community redevelopment areas identified by the project steering committee, with additional infill opportunities available with the appropriate development of water taxi stations. Land use conditions vary among the select waterfront centers, and various interventions were identified in the planning process to advance redevelopment programs with an enhanced focus on their water orientation. Transportation improvements to enhance the last-mile connections to waterfront destinations and from marine destinations would facilitate destination quality and economic development. There is potential to establish a series of trail facilities along canal banks to expand public access and enhance recreational activity. Additionally, transportation measures to protect the transport of vessels from local boat builders to waterways are necessary to protect and enhance the industry. Specific recommendations are presented below.

Land Use (Generally)

- Support the implementation of adopted redevelopment programs, with a heightened focus on projects and programs that celebrate the waterways features and contributing elements of these communities. (Lead agency: local governments, CRAs).
- Consider the prioritization of local government and CRA funding for waterways-specific improvements as identified in the Waterways Plan to increase funding competitiveness and better leverage public funds. (Lead agencies: MPO, TPO, local governments, CRAs).
- Develop and maintain a consistent, annual inventory of vacant, underutilized, and pending development activity within the subject redevelopment areas to better forecast market growth, potential, and absorption. This inventory should be updated annually and utilized to more specifically target development uses and forms identified as undersupplied. (Lead Agency: CRAs).

Port Salerno (Lead agency: Martin County CRA)

- Support continued implementation of Port Salerno CRA Plan.
- Advance development of public fish market either independently or in conjunction with private redevelopment adjacent to Port Salerno Fishing Docks.
- Support the expansion of the commercial fishing docks to reinforce the commercial fishing industry. Ultimate configuration should consider appropriate landing for public water taxis as conceptual future use.
- Support the development of a water taxi route to facilitate access into and around Manatee Pocket, including access to St. Lucie Inlet Preserve State Park.
- Advance the analysis of competitive, organized, and novel water sports based in Port Salerno.

Palm City (Lead agency: Martin County CRA)

- Support continued implementation of Old Palm City CRA Plan.
- Explore feasibility of expanding water sports activities at Charlie Leighton Park, including additional boat ramp parking, a soft launch for canoes/kayaks, low-profile floating docks accessible for rowers and paddlers, and terraced or other seating to enable spectators to watch water-based events and competitions.
- Consider expansion of the existing rowing club facilities.
- Evaluate feasibility of multi-story public events facility, potentially including community center, fitness, restaurant, and rowing club uses.
- Evaluate additional public access opportunities such as extension of riverwalk and introduction of street-end pocket parks.
- Consider reconfiguration of existing active ball field into unstructured open play field with flexible use, enabling additional water-related use of the park.

Stuart (Lead agency: Stuart CRA)

- Support continued implementation of Stuart CRA Plan.
- Seek funding to expand the public floating dock and additional public dockage in other locations to support water taxi service.
- Evaluate the feasibility of accommodating seaplanes at the floating dock.
- Explore opportunities for additional street-end parks to celebrate waterways connections, with near-term priority for Colorado and Detroit Avenue street-ends.
- Evaluate establishment of water taxi service to include connection to Club Med at Sandpiper, Stuart Harbor/Rio Town Center, and other locations. Explore joint programming opportunities to enhance feasibility.

Indiantown

- Support continued implementation of the Indiantown CRA Plan.
- Explore the feasibility of establishing a series of greenways along St. Lucie Canal.
- Explore the feasibility of expanded aquaculture operations in Indiantown.
- Support the development of industrial uses that reinforce the marine industries, with consideration of a marine industrial district along the St. Lucie Canal.
- Explore the feasibility of additional marina uses along the St. Lucie Canal, with a focus on storage in advance of hurricanes.

Jensen Beach (Lead agency: Martin County CRA)

- Support continued implementation of the Jensen Beach CRA Plan.
- Advance the establishment of a boardwalk along the Indian River.
- Continue to evaluate the opportunity for additional marina development.
- Support improvements to Indian River Drive to enhance its pedestrian and cycling accessibility and aesthetic quality.
- Continue to support special events and activities that enhance waterways activities.

Rio (Lead agency: Martin County CRA)

- Support continued implementation of the Rio CRA Plan.
- Support the continued evaluation of the Rio Town Center (Stuart Harbor) proposal, with emphasis on creating public access to and visibility of the St. Lucie River.
- Consider establishment of a water taxi station as a component of the Rio Town Center project.

Fort Pierce (Lead agency: Fort Pierce CRA, St. Lucie County as appropriate)

- Consider strategies to physically and visually buffer industrial operations at the Port from the historic downtown, including the potential development of a maritime and logistics facility campus at the southern edge of the Port. Appropriate scaled and architecturally significant buildings could frame the Indian River Drive terminus.
- Seek water taxi dock construction in conjunction with private development activity where possible. The potential St. Andrews School campus expansion presents a model, whereby it appears the school is considering the construction of a public dock near the Boston Street street-end.
- Conduct a market assessment to determine market share likely to be absorbed by the former H.D. King Power Plant property redevelopment program to further inform future redevelopment priorities based on market demand.
- Support water taxi dock construction to support first-phase water taxi service. Suggested sites include at Aquarium/Smithsonian/History Museum, Harbortown Marina, Causeway Island, and Jaycee Park along with existing dock at Fort Pierce City Marina.
- Continue to explore opportunities to expand marine navigational opportunities and the development of marine industries along Taylor Creek, including increasing the vertical clearance of bridges.
- Consider the establishment of a working waterfronts designation to reinforce the marine industrial and commercial fishing activities along the waterway.

Port St. Lucie (Lead agency: Port St. Lucie CRA)

- Support continued implementation of the Port St. Lucie CRA Plan.
- Conduct a feasibility study for a mixed-use infill development program for the Westmoreland Tract, including consideration of restaurant, lodging, and recreational concessions.
- Prioritize the extension of the City's Riverwalk from Veteran's Park to the Westmoreland Tract.

Last-Mile Connections

- Evaluate roadway enhancements, including landscaping, enhanced signage, and street furniture, to emphasize approach to waterfront centers. These improvements should consider waterways-themed colors, branding, and design to celebrate proximity to the waterways and communicate a sense of arrival. (Lead agencies: MPO, TPO, local governments).
- Evaluate potential for local shuttles, trolleys, and micro-transit to facilitate movement within waterfront centers and in conjunction with water taxi stations and marinas. These localized services should be designed to enable marina guests to access destinations for provisions and personal/professional services to avoid the need for a personal vehicle. (Lead agencies: MPO, TPO, local governments).
- Consider establishment of bike-sharing and car-sharing programs (e.g., E-Bike, Flex-Car, Zip-Car) to facilitate ease of access from marinas to local destinations. Seek pilot program funding from FDOT. (Lead agencies: MPO, TPO, local governments).

Waterways Circulator

- Consider establishment of waterways circulator transit route to facilitate access to waterways, waterway centers, and the beach. Special consideration should be given to weekend service. (Lead agencies: MPO, TPO, transit agencies).

Non-Motorized Connections

- Prioritize greenway and trail connections that provide access to waterways and waterfront centers in local, regional, state, and national greenways/trails networks. (Lead Agencies: MPO, TPO, local governments).
- Evaluate potential for establishment of non-motorized trail facilities along the C-23, C-24, and C-25 canals as well as the C-44 canal. Consider location of educational signage along trails regarding stormwater management and its relationship to the health of the waterways. (Lead agencies: MPO, TPO, local governments, SFWMD).

Marine Transportation Routes

- Continue implementation of marine transportation routes with an updated route map to reflect best alignment through Port Salerno, including an update to routes as identified for improved transport. (Lead agencies: Martin County, MIATC).
- Adopt appropriate regulatory language to protect designated marine transportation routes from future encroachment. (Lead agency: Martin County, MIATC).
- Evaluate locations of other boat builders and preferred locations for future builders to identify most desirable transport routes and consider establishment of additional marine transportation routes as appropriate. (Lead agencies: Martin County, St. Lucie County, MIATC).
- Work with FECI and the FDOT to minimize or prevent encroachments on marine transportation routes via railroad improvements. Seek FDOT funding to augment rail crossing construction if needed for costs associated with relocated or modified infrastructure. (Lead agencies: Martin County, St. Lucie County).

References

City of Stuart Community Redevelopment Agency. City of Stuart Community Redevelopment Plan. August 2010. City of Stuart, Florida.

Fort Pierce Community Redevelopment Agency. The City of Fort Pierce Community Redevelopment Plan. August 2001. City of Fort Pierce, Florida.

Martin County Community Redevelopment Agency. NOW Visioning Plan. Undated.

Martin County Community Redevelopment Agency and Indiantown Neighborhood Advisory Committee. Indiantown Community Redevelopment Plan. December 2002; amended April 2012. Martin County, Florida.

Martin County Community Redevelopment Agency and Jensen Beach Neighborhood Advisory Committee. Jensen Beach Redevelopment Plan. September 2002; revised October 2009. Martin County, Florida.

Martin County Community Redevelopment Agency and Old Palm City Neighborhood Advisory Committee. Old Palm City Redevelopment Plan. April 2003; revised October 2009. Martin County, Florida.

Martin County Community Redevelopment Agency and Port Salerno Neighborhood Advisory Committee. Port Salerno Community Redevelopment Plan. May 2000; revised 2009. Martin County, Florida.

Martin County Community Redevelopment Agency and Rio Neighborhood Advisory Committee. Rio Community Redevelopment Plan. April 2001; revised October 2009. Martin County, Florida.

Martin Metropolitan Planning Organization and St. Lucie Transportation Planning Organization. Enhancing Mobility: Martin – St. Lucie 2035 Regional Long-Range Transportation Plan. February 2011. Martin County, Florida.

Port St. Lucie CRA Board. Port St. Lucie CRA Expansion Master Plan. September 2006. Port St. Lucie, Florida.

Martin/St. Lucie Regional Waterways Plan

**CHAPTER 5: PUBLIC ACCESS & RECREATION ~
ENJOYING THE WATERWAYS**



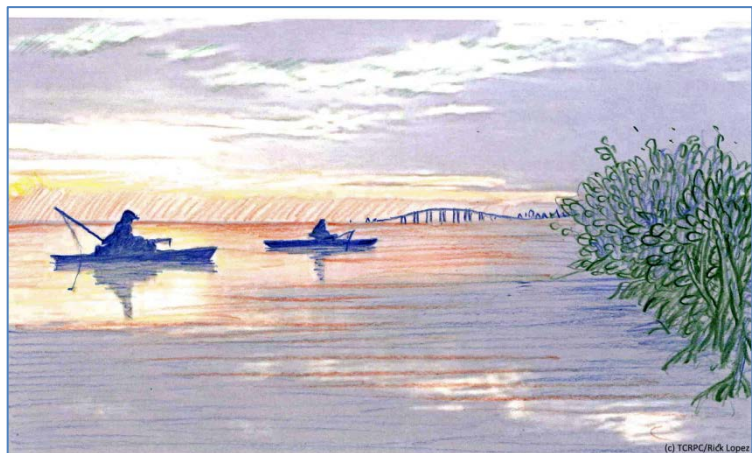
The waterways of Martin and St. Lucie counties provide an unparalleled amenity for residents and visitors alike, providing access, recreational opportunities, and a scenic backdrop for upland activities. In a healthy condition, the waterways are a widely celebrated amenity, enhancing a healthy outdoor lifestyle for residents and attracting visitors to enjoy the area’s beauty. Both counties include extensive lands in public ownership, which provide public access in perpetuity, along with nodes of public access within developed stretches of waterfront. Throughout the development of the plan, participants emphasized the importance of maintaining and expanding public access to the waterways for different types of activities such as active recreation, passive recreation, and just enjoying the water view. Existing facilities and recommended improvements are detailed in this chapter.

Recreational uses on and along the waterways are perhaps the most visible water-related activity and both unite and brand the two counties. There are many varieties of water-related recreation, including boating of all forms (motorized, human-powered, and wind-powered), fishing, swimming, wading, and sightseeing, among others. Waterways recreation includes both active and passive uses, which are further distinguished by the type of facility (man-made or natural). For recreational activities geared for the most natural setting, eco-tourism emerges as an additional consideration for the waterways. This chapter provides an overview of the different forms of recreational activities on the waterways, their locations, existing facilities, and recommendations for improvements.

Public Access

High-quality public access to the waterways is a distinguishing feature of Martin and St. Lucie counties that expands the value and benefit of the waterways throughout the area, especially to non-waterfront parcels. For this plan, points of public access are defined as locations or facilities that provide interaction with the water without restriction on who may use a subject point of access. Typical examples of public access points include:

- public parks and preserves
- riverwalks and promenades
- fishing piers
- boat ramps and canoe/kayak launches
- public marinas and mooring fields



Public Access & Recreation

Additional waterway access, which may be considered indirect public access, is provided through publicly accessible commercial uses along the water’s edge, such as restaurants and hotels. This report describes the different types of public access points, distinguishing between those designed for motorized vessels, non-motorized watercraft, cyclists and pedestrians, and shoreline accessibility. Waterfront residents can access the waterway in their backyards. However, the majority of Martin and St. Lucie residents must travel (by foot, bike, car, or transit) to access the river, canals, or lagoon.

Parks & Preserves

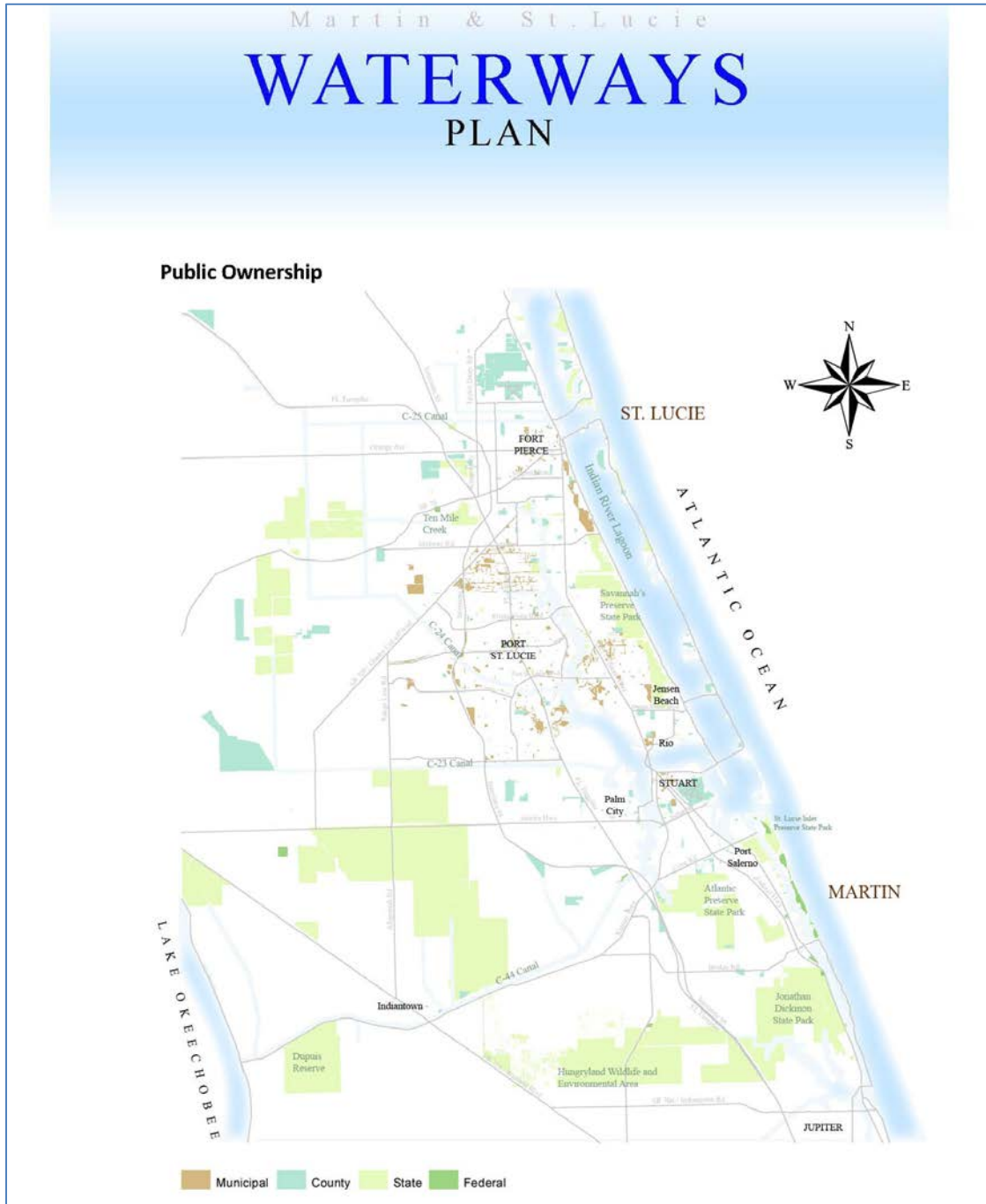
Martin & St. Lucie counties maintain an extensive inventory of public parks along the banks of the St. Lucie River and Indian River Lagoon as well as the St. Lucie Canal. Well-designed waterfront parks with beautiful amenities are distributed throughout the study area. Existing parks vary in size from small street-end parks to full-service park facilities capable of hosting regionally-scaled events. Local governments in the two counties operate more than 150 park and recreational facilities, which tend to be concentrated along the waterways. In addition to traditional active and passive park properties, the counties and municipalities have acquired thousands of acres of environmentally sensitive lands, complementing additional preserve lands maintained by the State of Florida and the federal government. Maps of the parks/recreational inventories in both counties are presented in this section, and these facilities provide waterfront access for all walks of life.



The region’s waterways are the backdrop for a variety of active and passive parks.

Public Access & Recreation

Parks, as a component of public access in Martin and St. Lucie counties, expand the public's access to the waterways. These facilities, especially those on the waterway, provide opportunities for farmer's markets, festivals, and public events such as Stuart's Dancin' in the Streets and Fort Pierce's Friday Fest. Waterfront parks offer opportunities for quiet lunches, scenic weddings, birthday celebrations, and help celebrate the waterways and enhance community identity.



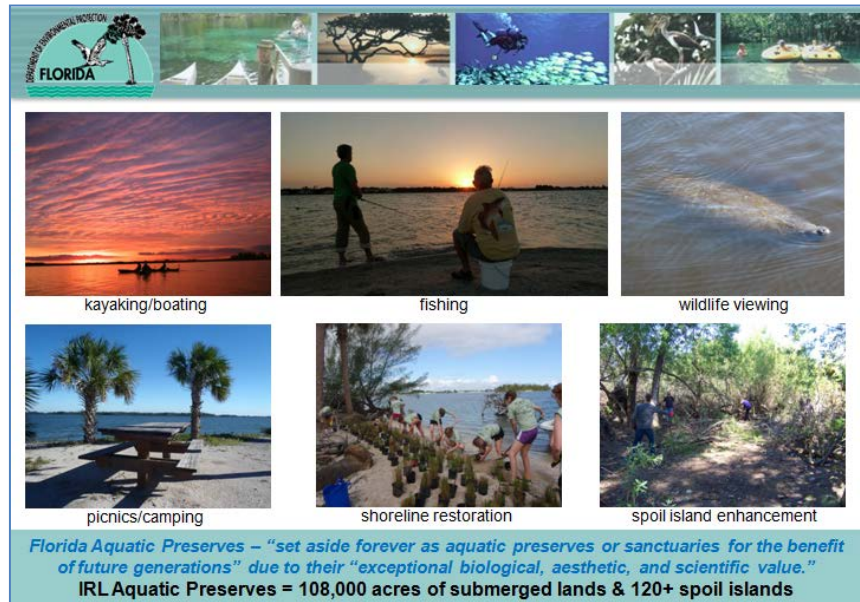
Martin and St. Lucie counties contain an extensive array of public parks and preserves. In addition to sizable federal and state parks and preserves, county residents have also taxed themselves to preserve natural areas.



The planning field differentiates between active and passive parks. Active parks have more structured activities and can contain ball fields, tennis courts, or playgrounds. Active parks require more infrastructure investment such as lighting, parking, and restrooms and need to be actively managed. They tend to be larger in scale than passive parks and are designed to host special events and activities. On the other hand, passive parks are typically smaller-scale, usually offering fewer activities, require less infrastructure, and providing simpler, lower-cost amenities, such as picnic tables and pavilions. Passive parks can be large or small and be adorned or simple.

County and local governments direct themselves to provide for a wide range of park types to provide recreation for all ages and interests from the young baseball player to the older couple strolling through a quiet natural area. Waterfront parks and preserves are extensively distributed along the waterways through the two counties, ranging in size from less than an acre to thousands of acres in state and federal preserves. In addition, there are numerous small pocket and street-end parks, scaled appropriately to serve their immediate neighborhood.

The larger active parks offer marine activities such as boat ramps, docks, and saltwater fishing. Some active parks also provide for non-marine-related activities, including playgrounds, ball fields, and pavilions. Ball fields in particular are an active use that, over time, may be more appropriately located on non-waterfront parcels to maximize the opportunity for waterfront activity in these higher-valued sites. Many passive parks are located within or on the edge of residential neighborhoods, providing high amenity value to these communities. Instead of motorized boat launches, these passive parks tend to



provide lighter imprint amenities, such as fishing piers, canoe/kayak launches, walking trails, bike paths, and play areas. *FDEP manages roughly 108,000 acres of Aquatic Preserve and more than 120 spoil islands in the Indian River Lagoon as “wet state parks.”*

The Indian River Lagoon Aquatic Preserves also include seven separate but interconnected aquatic preserves, placed in preservation by the State of Florida. These preserves include the Mosquito Lagoon and Banana River to the north, portions of the Indian River including Vero

Public Access & Recreation

Beach to Fort Pierce and Jensen Beach to the Jupiter Inlet, the North Fork of the St. Lucie River, and portions of the Loxahatchee River. These preserves are unique resources for the area, enabling enhanced protection and research to enhance the waterways.

Waterfront parks offer waterways access for boat owners, both motorized and non-motorized, as well as the opportunity for residents and visitors to rent vessels from concessionaires. Planning participants indicated the opportunity to rent canoes, kayaks, and paddle boards in the region's parks was an enhancement to the waterways, and more watersports concessions were requested. Both counties have existing models for paddlesports concessions in county park facilities which can be used to extend this concept to additional locations. Public waterfront parcels also offer the opportunity to expand the inventory of waterfront restrooms and refuse containers, which can reduce pollution loads in the waterways.

Street-End Parks. Given the winding nature of the region's waterways combined with the extensive roadway network, a simple and low-cost intervention to create additional public access exists in the form of street-end parks for roadways that terminate at the water's edge. Rather than abandon these leftover parcels to adjacent property owners, these small, narrow public parcels create the opportunity for inexpensive street-end parks within neighborhoods. Surrounding homeowners provide natural surveillance, and landscape or other buffering can provide appropriate transitions for adjacent private parcels.

Street-end parks can increase the quality of life for the surrounding community. They can provide scenic views and passive recreational access for fishing or launching a canoe or kayak. Small waterfront parks can also increase property values by expanding a waterfront amenity to non-waterfront properties. Street-end parks are particularly accessible for children and older adults, providing waterways access within a short walk from residences. From a design perspective, street-end parks also allow for streets to be terminated with architectural and/or landscape designs that enhance waterfront vistas for neighborhood residents and visitors.



The City of Stuart maintains a policy in its comprehensive plan which directs the preservation of waterfront street-ends for public access. The image above-left illustrates the improvements at the western end of Camden Avenue, where the street terminates at Frazier Creek. The city installed bollards, benches, lighting, and a ramped dock that enables the launching of canoes and kayaks from a floating dock. Parking is accommodated on-street. The image above-right is the Illinois Avenue Mini Park, which was developed with developer contributions at the northern end of Illinois Avenue. Amenities include benches, railings, trash receptacles, and access to the shoreline of the St. Lucie River.

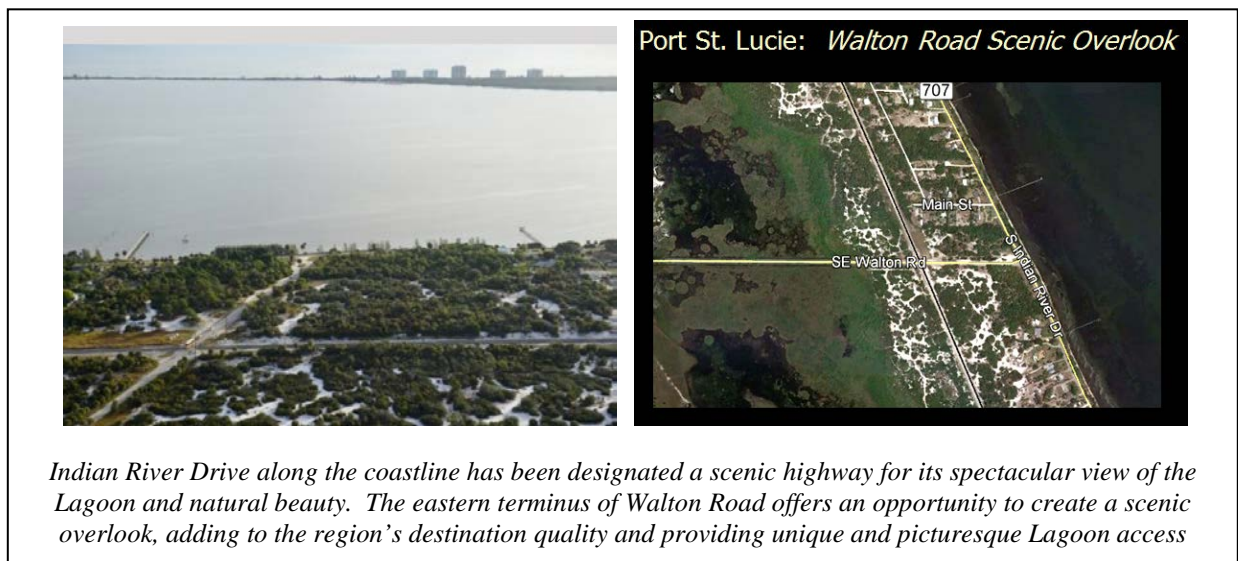
Public Access & Recreation

The City of Stuart’s comprehensive plan contains policy direction for the city to maintain all street-ends that terminate at the water’s edge for public access rather than abandon them, and the implementation has complemented the city’s successful parks program. Funding has been mixed, with some street-end parks funded by the city while others have been provided by private property owners.

For new residential plats on undeveloped or redeveloped parcels, maintaining street-ends for public access is a policy advantage that can provide low-cost access with the potential for maintenance obligations to be carried by a homeowner’s association or private development. In an ideal condition, street-end parks, and the buildings surrounding them, are designed with buildings facing these parks. This building orientation will keep eyes on the park, provide natural surveillance, as well as maintain a measure of privacy for adjacent residential properties. Adjacent buildings can be designed with two fronts, one facing the park and the other facing the waterway much like a corner lot. Stuart’s model language is available as an example of a successful policy approach to advance this concept at minimal cost to the city.

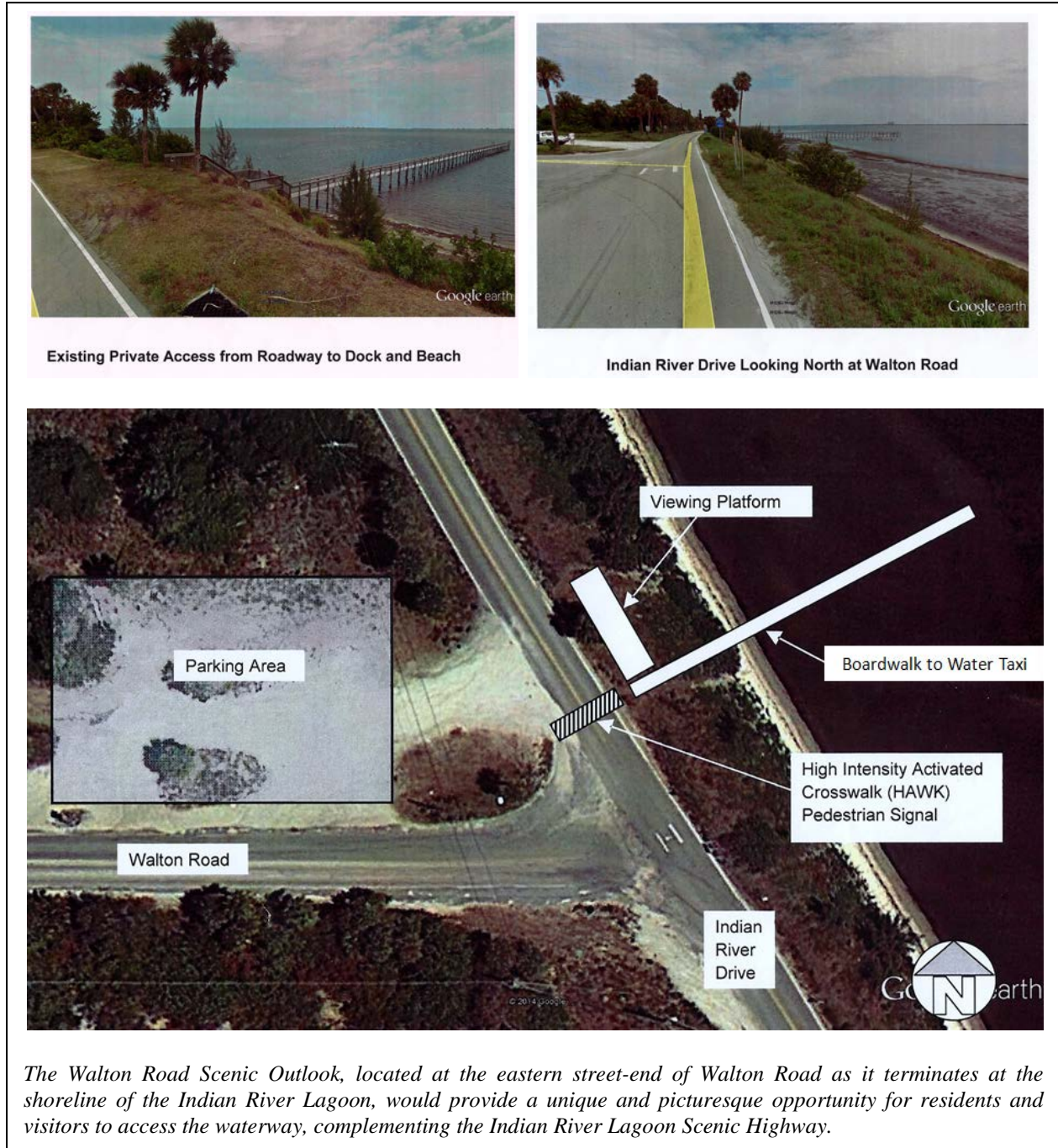
The City of Stuart continues to expand its street-end park system, with additional opportunities for park enhancements. Stuart is currently extending its riverwalk east to the Detroit Avenue street-end, which will enable the development of enhanced mini-parks at the Colorado and Detroit Avenue street-ends.

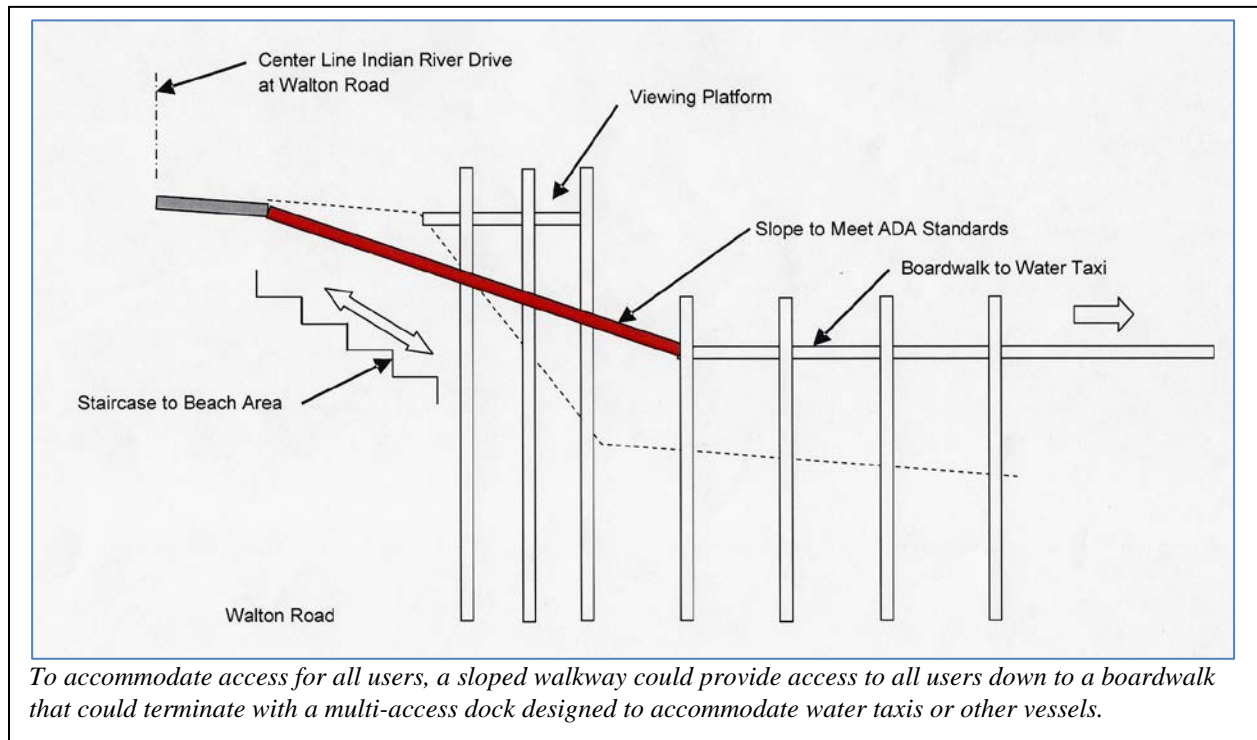
A more extensive street-end park opportunity is offered at the eastern end of Walton Road. In this location, Walton Road terminates at Indian River Drive, and private land currently occupies the street-end. For the City of Port St. Lucie, there is little opportunity to celebrate the city’s lagoon frontage, and this location was identified by participants as a high priority for acquisition and development as a public scenic overlook. Preliminary estimates from the city indicate the infrastructure cost for water and sewer connections to this site could exceed \$6 million, rendering the property unlikely to develop.



Public Access & Recreation



A Walton Road Scenic Overlook could be a unique public amenity along the Indian River Lagoon. Improvements at this location could include an extended deck and viewing platform overlooking the Indian River Lagoon, public multi-use dock that could accommodate water taxis, and staircase to the shoreline along with public restrooms, educational signage, and public art. Detailed concepts of these improvements are included in this section.





Given the steep elevation from the roadway grade to the shoreline, a sloped dock could be extended onto an elevated dock/boardwalk, along with potentially a staircase to enable access to the beach. This location also would provide a viewing platform and photo opportunity to capture the majesty of the Lagoon’s wide water views, enhancing the Indian River Drive – Treasure Coast Scenic Highway, and become a destination for photographers seeking sunrise views over the waterway.

Campgrounds. In addition to enjoying a day on the water, participants in the development of the plan were highly interested in expanding the opportunity for camping along the waterways. Currently, general camping is permitted in Jonathan Dickinson State Park and the Savannahs County Recreation Area. Youth camping is permitted at Fort Pierce Inlet State Park, which is limited to a maximum of 34 campers, and public interest in expanded camping access there as well as Avalon State Park. Martin County’s Phipps Park offers camping, and the County is currently considering the development of a destination campground on the site, with more extensive amenities for users. Adjacent to the county park is the St. Lucie South Recreation Area, operated by USACE as part of Lake Okeechobee. The other location for camping is the vast array of spoil islands located throughout the lagoon. FDEP has developed an Adopt a Spoil Island program to maintain these manmade features in the waterway. Spoil islands are the most primitive camp sites, but offer unique experiences for campers. A map of campgrounds along the waterways is provided in this section. Given the public’s interest in expanding camping locations, discussions should be advanced with FDEP and state park managers to explore opportunities for additional camping within these sites.

	
<p><i>The Indian River Lagoon Spoil Island Workgroup has developed an Adopt a Spoil Island program to protect and maintain spoil islands within the waterways. These islands serve as a destination for anglers and kayakers, complimented by unparalleled scenic views of the waterways.</i></p>	

Riverwalks, Promenades & Fishing Piers

While parks and preserves can provide access to the waterways with a sandy shoreline, there are instances where a hardened shoreline or structural access is an appropriate intervention. In the region, riverwalks and boardwalks, promenades along the shoreline, and fishing piers all provide more formal public access that can accommodate a wider range of users. These facilities can be expressly designed to accommodate physically challenged users, a key point raised during public outreach, as facilities are designed to meet the requirements of the Americans with Disabilities Act.



Stuart Riverwalk



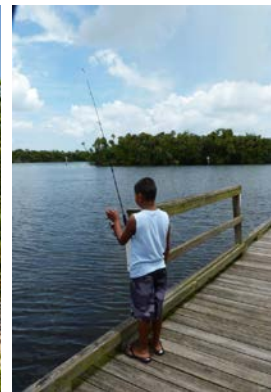
Indian Riverside Park



PSL Riverwalk Boardwalk



Stuart Fishwalk



River Park Marina

Public Access & Recreation

Both Martin and St. Lucie counties waterways are interspersed with these types of public access points. Riverwalks and promenades are popular improvements especially in the region’s downtown waterfront activity centers, providing access as well as venues for special events and concerts with adjacent performance spaces and seating. Riverwalks exist in rustic, natural settings, like along the North Fork of the St. Lucie River as part of Port St. Lucie’s Veteran’s Park as well as urban environments like downtown Stuart. A key recommendation identified by participants in the development of the plan is to extend Port St. Lucie’s Riverwalk south, crossing below Port St. Lucie Boulevard, passing the city’s Botanical Gardens, and ultimately connecting to the future use at the city-owned Westmoreland Tract. The site provides views of the North Fork of the St. Lucie River Aquatic Preserve. Activities suggested at the Westmoreland Tract include possible commercial use (e.g., restaurant with decking to maximize views, lodging) and canoe/kayak concessions along with a nature trail extending through the southern portion of the site. The riverwalk extension has already been contemplated by the City, and a public/private partnership at the Westmoreland site can provide private funding to leverage public grant dollars.



In the City of Port St. Lucie, there is an opportunity to extend the city’s Riverwalk from Veteran’s Park to the Westmoreland Tract, expanding the public’s access to the St. Lucie River and Aquatic Preserve and potential paddlesports concessions on the southern parcel.

Fishing piers are another form of waterways access that broadens the availability of this resource to users. For recreation or nutrition, fishing is a core component of waterways usage throughout Martin and St. Lucie counties. There is an extensive array of fishing docks and piers located mostly in public parks and along causeways. Participants indicated there was a good dispersion of fishing piers. However, additional amenities, such as fish cleaning tables, freshwater sources, and lighting would improve utility of these features and enable them to better serve the population’s needs. Additionally, with projected population growth, the public expressed concerns about the need for additional fishing piers to accommodate future users. There were also concerns expressed regarding additional accessibility for fishing amenities, particularly for

those with physical challenges who can be impeded from fishing if railing heights are too high. Protecting areas to ensure wheelchair-bound individuals can cast a line was a public request for future improvements. A list of select fishing piers is included in this section.

SELECT FISHING PIERS IN MARTIN & ST LUCIE COUNTIES	
Bear Point Sanctuary Fishing Pier	Fort Pierce
Black Pearl Boat Ramp Fishing Pier	Fort Pierce
Blind Creek Riverside North Fishing Pier	Fort Pierce
D.J. Wilcox Riverside Preserve Fishing Pier	Fort Pierce
Jetty on South Side Fort Pierce Inlet	Fort Pierce
Little Jim Fishing Pier	Fort Pierce
Pepper Park Riverside Fishing Piers	Fort Pierce
Queens Island Preserve Fishing Pier	Fort Pierce
South Causeway Park Fishing Pier	Fort Pierce
SELECT FISHING PIERS IN MARTIN & ST LUCIE COUNTIES	
Vitolo Family Preserve North Fishing Pier	Fort Pierce
Wildcat Cove Preserve Docks / Piers	Fort Pierce
Greenfield Park Fishing Dock	Hobe Sound
Peck's Lake Park	Hobe Sound
Indian Riverside Park Pier	Jensen Beach
Jensen Beach Causeway Fishing Pier	Jensen Beach
Charlie Leighton Park	Palm City
Sandsprit Park Fishing Piers	Port Salerno
Manatee Park	Port Salerno
River Park Marina Fishing Piers	Port St. Lucie
Veterans Park Fishing Pier	Port St. Lucie
Bathtub Reef Park Dock (Intracoastal side)	Stuart
Roosevelt Bridge Fishing Pier	Stuart
Shepard Park Fishing Dock	Stuart
Twin Rivers Park Fishing Docks	Stuart



Fishing in the region is a highly desired recreational and social activity that can also contribute towards healthy lifestyles. It cuts across all demographic groups in the counties. photo credits (from above left): www.fishingtipierce.com, www.treasurecoast.com, and www.coastalanglermag.com

Bridges & Causeways

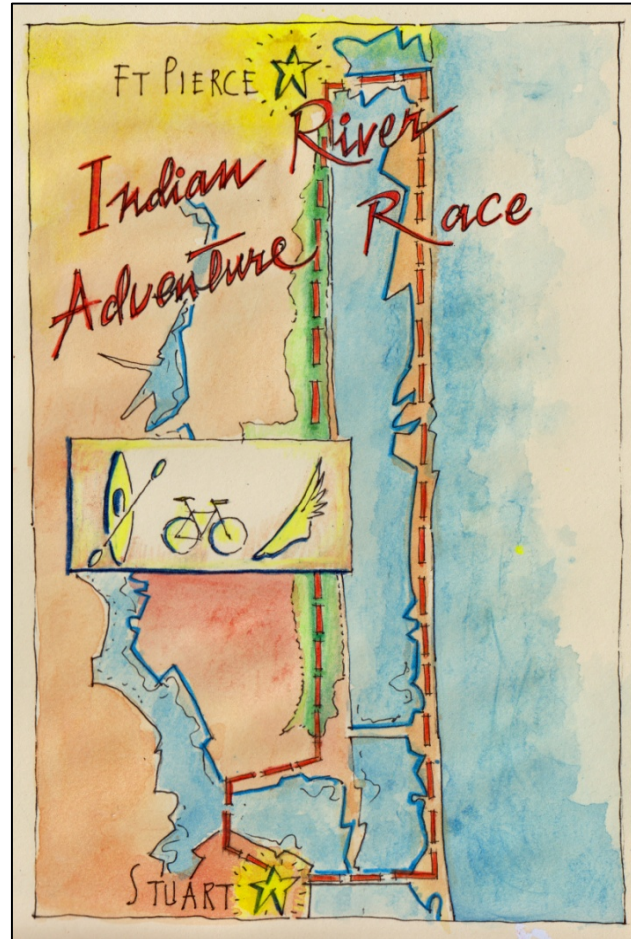
With the expansion of the multi-modal transportation network comes the demand for bridges and causeways to cross the waterways. Both Martin and St. Lucie counties have expanded public access considerably with the installation of amenities below bridges and along causeways. These facilities create new real estate for waterways access, enabling recreation, fishing, swimming, and boat launching. As new bridge facilities are constructed, participants in the development of the plan emphasized the benefits provided for public access when ancillary bridge infrastructure can include riverwalks, fishing piers, public seating, and performance venues. Further, the bridges themselves provide unique recreational amenities with multi-purpose pathways provided in conjunction with these facilities, creating new loops and circuits for cycling, rollerblading, and pedestrian activities.

The geography of the region's waterways creates a series of recreational loops and corridors when the bridges and causeways are considered from a broad scale perspective. These linear avenues across the waterway provide start/finish lines for recreational activities on the waterway as well as offer distinctive experiences for distance events.

Focusing on the Indian River Lagoon, the three causeways in Stuart, Jensen Beach, and Fort Pierce divide the lagoon into segments, with a four-mile Stuart/Jensen Beach segment and a fifteen-mile Jensen Beach/Fort Pierce segment. This contained space can provide waterways recreational activities, including triathlon and adventure race courses (triathlons include run, bike and swim components while adventure races tend to replace the swim activity with a paddling replacement – canoe, kayak, or paddleboard). As part of the larger sports marketing underway, event development utilizing waterways corridors (along the waterways or in them, depending on the events) can help further brand the region as a destination for these types of recreational events, both for training as well as the competitions themselves.



*Bridges and causeways provide additional public access to the waterways, both structured and unstructured.
Photo credits (left to right): TCRPC, City of Fort Pierce.*



The bridges and causeways crossing the Indian River Lagoon lend themselves to natural athletic competitions, such as marathons, triathlons, and cycling road races. Illustrated above-left are potential courses for events of this nature. Given the region’s temperate climate and topography, the region is especially well-suited to attract competitive sports events of this type to add to the local recreational activity base and grow the counties’ tourism revenue.

Bridges and causeways also provide spectator viewing for waterways events like the Stuart Sailfish Regatta, an annual boat race located in Jensen Beach that has become a significant economic generator for the region. The race uses a 1.1-mile oval loop for its course, with spectator seating established on the Stuart Causeway, illustrating how east/west courses for similar race events can be accommodated in the waterway without impeding boat traffic. The causeway accommodated elevated spectator seating, event activities, and concessions, and the course was located outside the channel to minimize conflict with other boating activity. The powerboats are shallow-draft, enabling the race to occur in the shallow part of the Lagoon.



Public Access & Recreation

The Stuart Causeway is also a functional venue for dragon boat races, festivals, and competitions. This sport is a growing trend across the U.S. and lends itself to corporate and team-building events as well. The vessels require at least six feet of depth, with typical course lengths of 500-2000 meters.

Along the South Fork of the St. Lucie River, the Indian Street Bridge has also become a setting for spectator viewing for rowing events and activities at the Treasure Coast Rowing Center. Rowing events typically launch just east of the rowing center, which is located at Charlie Leighton Park in Palm City, and continue south on the South Fork of the St. Lucie River, passing below the Indian Street Bridge. Given the distance of rowing events, low-profile spectator seating provides only partial viewing of events, and the bridge is well-located to provide views of this class of activity on the waterway.

The pending replacement of the State Road A1A/North Causeway Bridge at the northern end of Hutchinson Island represents an opportunity to implement public access improvements along the Indian River Lagoon as it crosses the Intracoastal Waterway. Given the priorities identified in the Waterways Plan, this bridge replacement project could include public multi-use docks designed to accommodate water taxis, fishing piers, public restrooms, areas for water sports concessions, and related recreational amenities, which would provide a significant enhancement for waterfront public access in St. Lucie County.

Marinas, Anchorages & Boat Ramps

Boating ramps and public marinas provide access to the region's waterways for those with and without boats. Boater registration data indicates there are approximately 28,000 registered boats in the two counties. 80% of Martin County's registered vessels and 90% of St. Lucie's are less than 25 feet in length. Both counties have substantial waterfront that is currently used or planned for residential use, which can provide direct boating access for residents. For boaters that do not **Marinas & Anchorages**. In the region, the Fort Pierce City Marina is the only publicly operated marina in operation. It is a full-service marina with wet slips, fuel sales, a pump-out facility that is offered free to the public, ship's store, and ancillary commercial and boating activity. The marina was recently rebuilt after its destruction in the hurricanes of 2004, with 138 slips and a new string of thirteen manmade islands that function as a breakwater as well as habitat for birds and marine life. The marina also oversees slips at Fisherman's Wharf, which adds another 38 slips north of the main marina near the Port of Fort Pierce. Among the improvements anticipated for these public facilities are channel deepening slip reconfiguration to accommodate larger vessels, measures which will enable stronger economic returns for these facilities going forward, as well as an additional pump-out and dinghy docks.

In addition, there are a number of other privately-owned marinas that operate over public submerged land leases, and therefore, they are required to provide access to the public for at least 90% of their boat storage. Further, these marinas are required to offer certain incentives to encourage public access. Examples of marinas operating with the "90% rule" include a majority of marinas operating in Manatee Pocket (e.g., Port Salerno Marine, Fish House, Twisted Tuna) as well as Riverwatch Marina and Boatyard in Stuart.

Public Access & Recreation

The City of Stuart’s former public anchorage facility is now operated privately as the Sunset Bay Marina and Anchorage, with nearly 200 slips, 69 moorings, two pump-outs, fuel sales, and on-site amenities. It also must comply with the 90% rule for public access. While access to pump-outs was free to boaters when the anchorage was publicly managed, free pump-outs are currently only offered to registered guests of the facility today, with a \$10 charge to pump-out vessels in conjunction with fuel purchases.

Despite the evident need, there are no other controlled anchorages or mooring field facilities in the region. However, unregulated anchorages tend to concentrate near boat ramps and areas of safe harbor. An anchorage would allow mariners to drop anchor; however, repeated anchoring can pose considerable environmental impacts to the sea floor. Moorings, by contrast, include permanent attachments to the sea floor, allowing mariners to tie up to floating buoys and avoid scarring the bottom with anchors. Beyond Stuart’s designated anchorage, there are a number of unregulated anchorages in Port Salerno/Manatee Pocket, Jensen Beach, and Fort Pierce. Designated anchorages and controlled mooring fields have been shown in many communities to assist with the removal of derelict vessels, protect sea grasses, and prevent the discharge of pollutants into waterways. Ultimately, managed mooring activities may be appropriate in these areas that can be run publicly or in conjunction with private marina operators.

Private marinas constitute another form of controlled access to the waterways, and these facilities are distributed extensively throughout the two counties. State marina registration data indicates nearly 2,200 slips are available in private marinas, with up to 2,000 dry storage slips in the two counties. As illustrated in the map below, the counties have a dispersion of marinas along the waterways, with clear concentrations in Port Salerno, Stuart, and Fort Pierce.

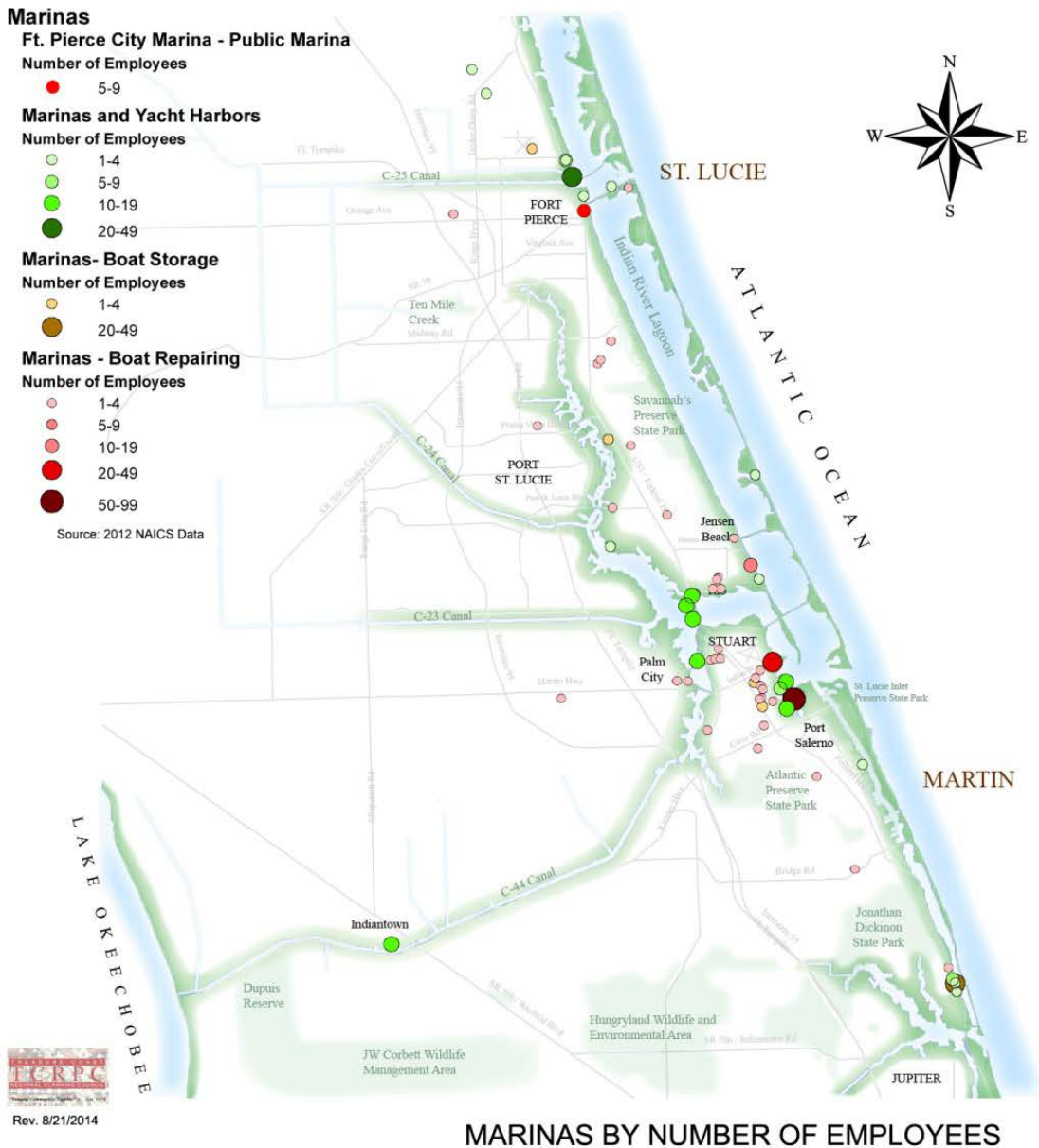


The majority of registered vessels in the region are below 30 feet in length, with sandbars as popular locations for anchoring. Images courtesy of SFWMD.

Martin & St. Lucie

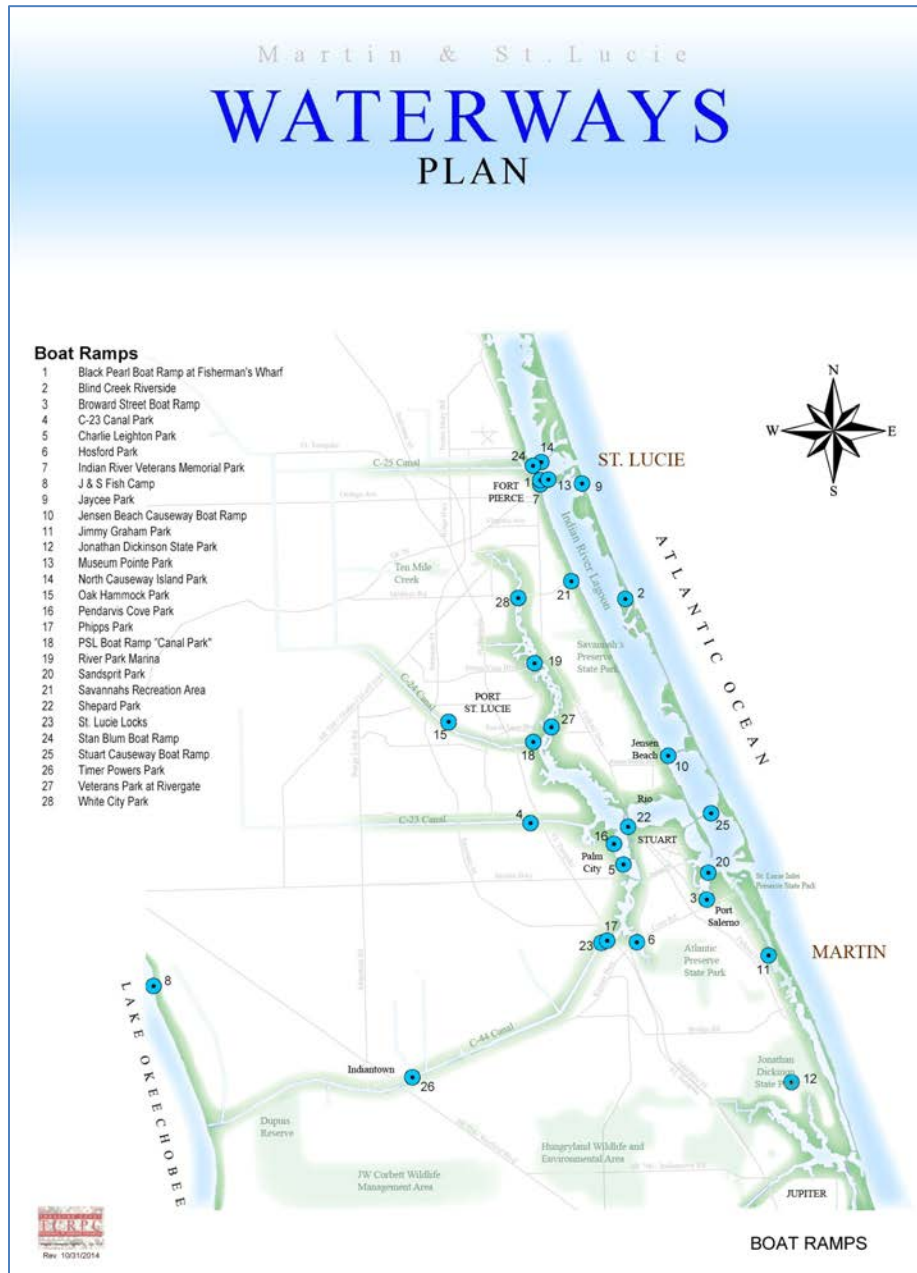
WATERWAYS

PLAN



Public Access & Recreation

Boat Ramps. Boat ramps are the primary means by which many smaller recreational boaters access the waterways. Currently, there are fifteen public boat ramp locations in Martin County and fourteen in St. Lucie County, with one additional public pending in the City of Port St. Lucie along the North Fork of the St. Lucie River (Canal Park). The primary constraint on boat ramp usage is parking, and peak weekend usage often overloads popular ramps that are close to the inlets (e.g., Sandsprit Park near the St. Lucie Inlet, Causeway ramps near the Fort Pierce inlet). Additional parking was also expressly noted as a need for Charlie Leighton Park. These locations are physically constrained, with limited room for additional parking.

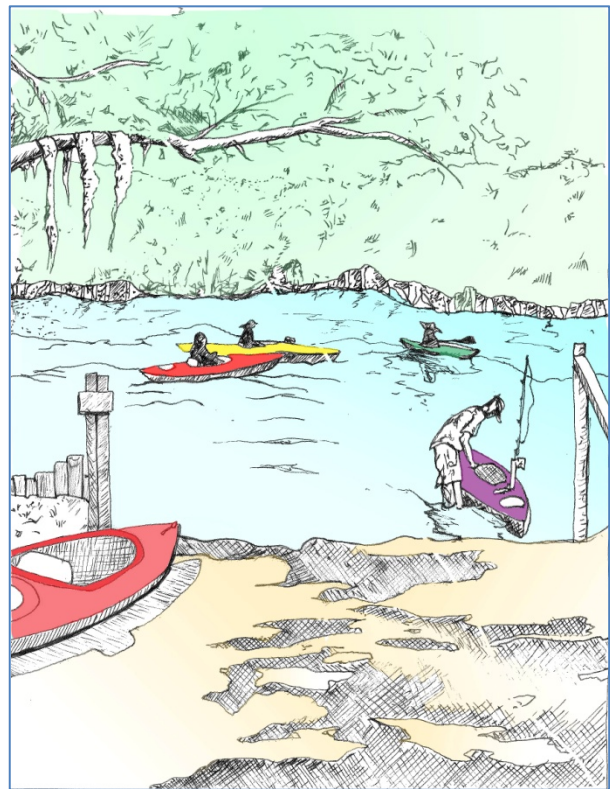


Boat ramps are also constrained by the amount of storage space on storage docks once boats are in the water. The public expressed strong interest in expanding storage docks as well as the

installation of additional amenities at public boat ramps, including angler amenities (e.g., fishing piers, fish cleaning tables, fishing line disposal), restrooms, and parking where possible. The need for additional storage dockage was specifically noted for Sandsprit Park and causeways in Fort Pierce. Dredging was also identified as a concern from participants, noting Stan Blum Boat Ramp and the South Causeway ramp in Fort Pierce. The City of Fort Pierce indicates a need to rebuild the Fisherman’s Wharf boat ramp, in conjunction with marina reconfiguration.

“Soft” Launches for Paddle Vessels

Non-motorized vessels broaden the opportunities for public access to the waterways, for recreation, fishing, and eco-tourism. Statistics for this group of users is not maintained consistently in state or local sources, but the growth of the industry is evident by the growing number of vendors, commercial enterprises, media coverage, and special events. Canoes, kayaks, and paddle boards are visible on all parts of the waterways, and vendors are present across both counties. The U.S. Marine Industry estimates in the past five years, sales of paddle vessels have averaged 84,000 canoes and 277,000 kayaks per year. Annual sales have been increasing on average for more than a decade. Paddleboards are another growing trend of non-motorized vessel present on the waterways, and they are increasingly being incorporated into fitness training programs. Additional paddle vessels include rowing vessels, which typically accommodate one to four paddlers, outrigger canoes, and dragon boats, which are 22-person paddling vessels. Smaller sailboats can launch in a manner similar to paddle vessels, ideally from a sandy shoreline. The access needs and constraints for these vessels are different than motorboats and sailboats, as discussed below.



Motorboats and larger sailboats require boat ramps or marina infrastructure to access the waterways. Boat ramps are typically designed with concrete ramps extending into the waterways from a driveway. Ramps collect vehicle residue (oil and gas), and they tend to develop algae across their surfaces underwater. Boaters line up to utilize ramps during peak periods, and it is typical to see fairly rapid launching in popular locations, with drivers quickly moving boat trailers out of the ramp to enable the next vehicle in line to launch the next boat. Once launched, boat captains move the boat to a storage dock, collect additional passengers and gear, and launch into the waterway.

Public Access & Recreation

Paddlers also need to launch vessels to access the waterway. Sandy shorelines are the most natural “soft launch,” and they can provide suitable access for many paddle vessels. Vessels are typically carried or otherwise transported from parking areas to the shore. Where sandy shorelines are unavailable, soft ramps are an alternative. Designed for the launch of paddling vessels, soft ramps ideally consist of a soft, stabilized material to enable safe launching.

Paddling by definition is human-powered, and while canoes and kayaks can be placed in the water quickly, they exit a launch more slowly than motor boats. Conflicts occur between boaters and paddlers when both are required to use the same launch. Concrete boat ramps are slippery for paddlers, scratch the bottom of soft-sided vessels, and the slower exit from the launch area is frustrating for boaters waiting to utilize a ramp.

To reduce these conflicts and expand paddling access to the waterways, the public expressed strong interest in the installation of additional soft launches in park facilities where boat ramps are currently located. This separation would enhance the public accessibility to the waterways and increase availability of concrete boat ramps for boaters, who are their intended patron. Participants indicated a need for additional “soft” launches, either as sandy shorelines, in conjunction with boat ramps, or through replacement of existing concrete canoe/kayak launches, at the following locations:

- Jensen Beach Causeway (west end);
- Stuart Causeway (west end);
- Pendarvis Cove Park, Hosford Park, and Charlie Leighton Park in Palm City;
- Jimmy Graham Park in Hobe Sound;
- Fort Pierce’s South Causeway Park and North Causeway;
- Pepper Park; and
- Westmoreland Tract in Port St. Lucie.



Sandy shorelines are available at Sandsprit Park (above), adjacent to the concrete boat ramps, allowing separation between boaters and paddlers. In contrast, both users must share the Broward Street boat ramp (below), which can cause conflict and delays.



Public Access & Recreation

Additional sandy shorelines are available in smaller local parks, such as Sewall’s Point Park, which can provide additional waterfront access for paddlers.

Soft launches should be no narrower than twenty feet to accommodate vessels parallel to shore in these locations. To further enhance both access and safety, participants indicated a desire for low-profile floating docks to augment soft launches, especially in locations without sandy shorelines. This would allow easier entry into floating vessels, especially in locations where the shoreline drops off rapidly. Key locations for these dock facilities include Charlie Leighton Park, which would provide access for canoes, kayaks, and rowing shells, complementing the focal rowing activity at this location by the TCRC, as well as the Stuart Causeway and Fort Pierce South Causeway Park.



These images illustrate access for two different user types at River Park Marina in Port St. Lucie. Boaters utilize the concrete boat ramp on the southwest side of the park while paddlers launch from the sandy shoreline on the northeast side of the property.

Parking constraints were specifically noted by paddlers at Cove Road Park (Port Salerno), Hosford Park (Palm City), Chastain Beach (Hutchinson Island), and Pendarvis Park (Palm City). Cove Road Park was particularly focused upon by the public. The park is the closest point for paddlers to access to St. Lucie Inlet State Park, which is accessible only by boat and is a regionally celebrated paddling destination. Restroom facilities are also necessary infrastructure in conjunction with paddling access, with demand noted for Cove Road Park and Hosford Park. Fresh water supply is the other needed amenity, with desire noted for hoses to wash down vessels before departure.

Public Access & Recreation

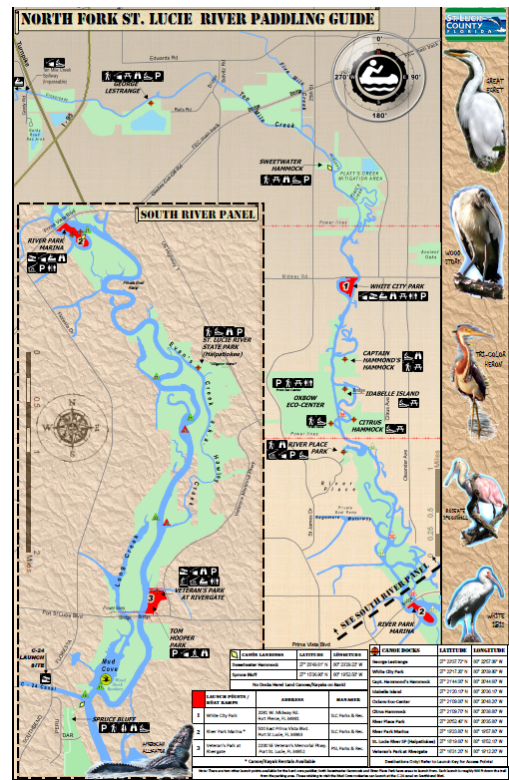
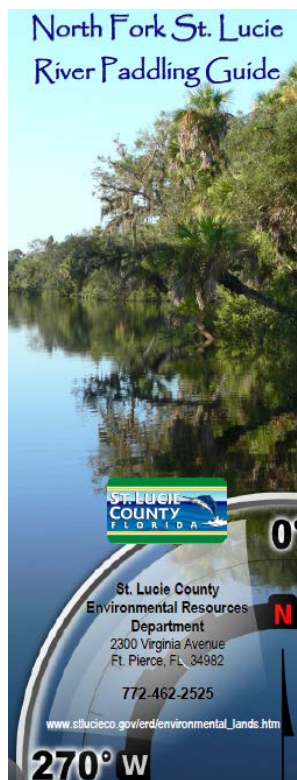
Both counties have identified paddling networks with paddling trails, canoe/kayak launches, and stop-overs, and this data is included in the Waterways Plan Paddling Trails Map provided on the following page. St. Lucie County has also developed a detailed paddling guide for the North Fork of the St. Lucie River, which includes a blueways map and locations of various paddling amenities (images included in this section). These include launch locations, landings, and areas for fishing, picnicking, restrooms, informational signage, and locations for wildlife observation. The guide includes multi-agency parcels to present a comprehensive inventory of these resources for users. Similar guides should be developed for other areas of the waterways, including the South Fork, Indian River Lagoon, Manatee Pocket, and Loxahatchee River.

A map of existing launch locations, canoe stop-overs, and paddling trails is provided in this section.

A map of existing launch locations, canoe stop-overs, and paddling trails is provided in this section.

Destinations for paddlers, along the North Fork St. Lucie River

NORTH TO SOUTH		Canoe Dock	Canoe Landing	Canoe Launch	Hiking	Fishing	Picnic Area	Wildlife Obs.	Restrooms	Parking	Historic Interest
Ten Mile Creek Natural Area			X	X	X	X	X	X		X	X
Gordy Road Spillway						X	X	X			
George Lestrage Natural Area	X			X	X	X	X	X		X	X
Sweetwater Hammock Natural Area			X	X		X	X			X	
White City Park	X		X		X	X	X	X			
Capt. Hammond's Hammock Natural Area	X			X	X	X	X				
Idabelle Island	X					X	X				
Oxbow Eco-Center	X			X		X	X	X		X	
Citrus Hammock Natural Area	X					X	X				
River Place Park	X			X	X	X	X	X		X	
River Park Marina	X	X	X	X	X	X	X	X	X	X	
St. Lucie River State Park	X			X			X			X	
Veteran's Park at Rivergate	X		X		X	X	X	X		X	
Mud Cove Wood Stork Rookery							X				
Spruce Bluff Nat. Area			X	X			X			X	X



St. Lucie County has developed a North Fort St. Lucie River Paddling Guide which lists canoe launches and landings along this portion of the waterways. “Canoe Only” signs are posted at landings to communicate their priority for non-motorized vessels.

Martin & St. Lucie WATERWAYS PLAN




● Canoe/Kayak Launch

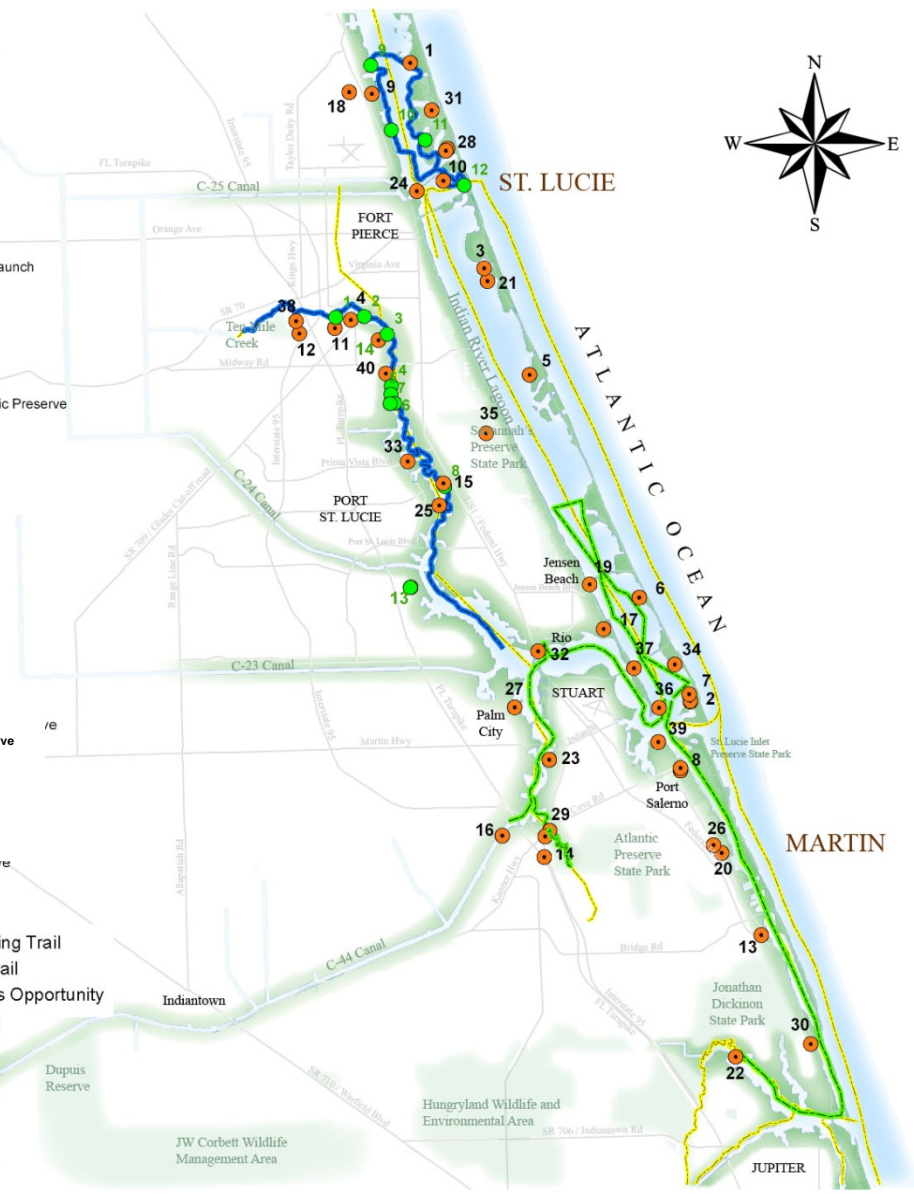
- 1 Avalon State Park
- 2 Bathub Reef Beach
- 3 Bear Point Sanctuary
- 4 Becker Preserve
- 5 Blind Creek Riverside
- 6 Bob Graham Beach
- 7 Chastain Beach
- 8 Cove Road Park
- 9 DJ Wilcox Riverside/Preserve
- 10 Fort Pierce Inlet State Park
- 11 George LeStrange Preserve
- 12 Gordy Road Preserve
- 13 Greenfield Park
- 14 Halpatiokee Regional Park
- 15 Halpatiokee State Park Canoe Launch
- 16 Hosford Park
- 17 Indian RiverSide Park
- 18 Indrio Savannas Preserve
- 19 Jensen Beach Causeway
- 20 Jimmy Graham Park
- 21 John Brooks Park Riverside
- 22 Jonathan Dickinson State Park
- 23 Kiplinger
- 24 North Causeway Island Park
- 25 North Fork St. Lucie River Aquatic Preserve
- 26 Peck Lake Park
- 27 Pendarvis Cove Park
- 28 Pepper Park Riverside
- 29 Phipps Park
- 30 Porter Park
- 31 Queens Island Preserve
- 32 Rio Nature Park
- 33 River Park Marina
- 34 Santa Lucea
- 35 Savannas Preserve State Park
- 36 Spoil Islands
- 37 Stuart Causeway
- 38 Ten Mile Creek Preserve
- 39 Twin Rivers
- 40 White City Park

● Canoe Stop Over

- 1 George LeStrange Preserve
- 1 George LeStrange Preserve
- 2 North Fork St Lucie State Park
- 3 Sweetwater Preserve
- 4 Captain Hammonds Hammock Preserve
- 5 Idabelle Island Preserve
- 6 Citrus Hammock Preserve
- 7 Oxbow EcoCenter
- 8 Halpatiokee State Park
- 9 Harbor Branch Preserve
- 10 St Lucie Village Heritage Park
- 11 Jack Island State Park
- 12 Fort Pierce Inlet State Park
- 14 Sweetwater Hammocks Preserve

Source: Martin and St. Lucie County

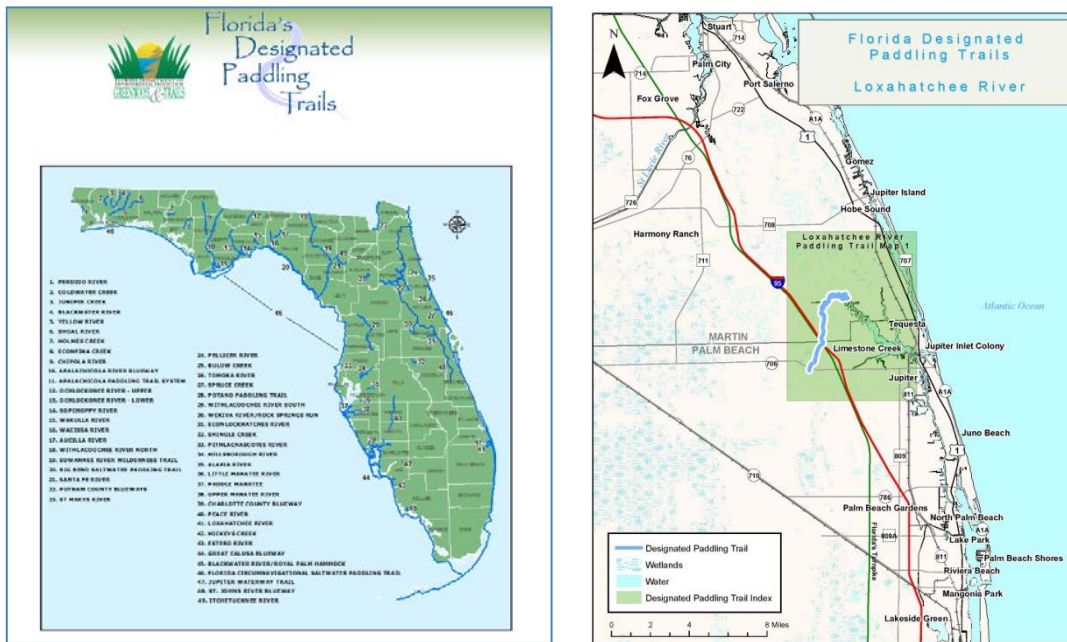
-  Martin County Paddling Trail
-  St. Lucie Paddling Trail
-  FDEP Paddling Trails Opportunity



PADDLING LAUNCHES & TRAILS

Public Access & Recreation

At the state level, FDEP maintains the Florida's paddling trail inventory. The primary component of this inventory is the Florida Circumnavigational Paddling Trail, which hugs the Florida coastline. Additional notable blueways are designated through FDEP, which elevates grant funding competitiveness of related improvements. A portion of the Loxahatchee River in southern Martin County is included among the state's inventory. Other paddling trails, such as the North Fork, South Fork, and Indian River Lagoon should be considered for designation to further celebrate these resources and secure funding for their enhancement.



FDEP maintains responsibility for designating Florida's Paddling Trails, which are indicated in the image above-left. Within the study area, only a portion the Loxahatchee River is currently a designated paddling trail at the state level. There is potential to seek designation of other paddling trails to enhance their visibility, protection, and enhancement. IMAGE SOURCE: <http://www.dep.state.fl.us/gwt/guide/paddle.htm>

To further enhance the paddling experience for residents and visitors alike, there is an opportunity to develop a series of educational kiosks along paddling trails. The waterways of the region provide a rich history, present a unique biologically diverse ecosystem, and offer an opportunity to tell the story of the watershed, its impacts, and efforts towards its restoration. A kiosk system represents an opportunity for public art as well, which was highly emphasized by the public for future amenities along the waterways. A kiosk system can also be utilized for special events, with individual kiosks serving as benchmark locations to document travel times for races or geocaches.

Waterways Safety & Awareness

Two additional issues related to public access include safety and awareness. With increased access to the waterways comes the challenge of ensuring those on or in the water are safe. Participants in the development of the plan noted the lack of swimming ability among key groups in the population, particularly among lower-income groups. Environmental educators and tour boat operators together indicated for many economically disadvantaged children,

educational boat tours on the water was their first time off the land. Dressed in life jackets for safety, these students thoroughly enjoyed the journey, developing a new appreciation for the waterways, the ecosystem they represent, and environmental stewardship. There is demand for swimming instruction, particularly among low-income children, and a range of instructional programs available across both counties. Providers include local governments, agencies such as the YMCA, and private instructors who can provide swimming instruction through relationships with social service agencies, private sponsors, and public advocates.

Broader education and the advance of environmental stewardship is a second consideration with regards to public access and awareness of the waterways. The health of the ecosystem, its hydrology, and responsible practices represent a complex and delicate balance among many factors. Programs

like stormwater management, fertilizer ordinances, vessel pump-outs, and backward environmental practices have a direct benefit to the health of the waterways. As noted by the participants in the plan's development, ongoing, extensive educational programs are the key to creating healthier relationships between residents, visitors, and the waterways. There are enormous impacts from Lake Okeechobee discharges and there are small, incremental daily impacts from storm drains, backyards, and bilge pumps. Each has a program for mitigation, and more education will help expand the public's knowledge of best practices.

Education has a generational influence as well, with some knowledge traveling from parents to children and other knowledge bubbles up. Participants stressed the rich array of educational programs available through the region's environmental and research institutions and listing of various educational facilities that provide waterways-related programs is provided below.



A recent headline in the study area emphasizing environmental stewardship and advocacy for kids

SELECT LISTING OF WATERWAYS ENVIRONMENTAL EDUCATIONAL FACILITIES		
FAU - Harbor Branch Oceanographic/Ocean Discovery Center	Fort Pierce	http://www.fau.edu/hboi
Fort Pierce Inlet State Park	Fort Pierce	http://www.floridastateparks.org/fortpiercinlet/
Manatee Observation & Education Center	Fort Pierce	http://manateecenter.com/
Smithsonian Marine Station at Fort Pierce	Fort Pierce	http://www.sms.si.edu/
St Lucie County Aquarium & Smithsonian Ecosystems Exhibit	Fort Pierce	http://stlucieco.gov/marine_center.htm
St Lucie County Regional History Center	Fort Pierce	http://www.stlucieco.gov/history/
Hobe Sound Nature Center	Hobe Sound	http://hobesoundnaturecenter.com/
Blowing Rock - Nature Conservancy	Hobe Sound	http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/florida/placesweprotect/blowing-rocks-preserve.xml
Hobe Sound National Wildlife Refuge	Hobe Sound	http://www.fws.gov/hobesound/
Jonathan Dickinson State Park	Hobe Sound	http://www.floridastateparks.org/ionathandickinson/
Environmental Studies Center	Jensen Beach	http://esc.martinschools.org
Oxbow Eco-Center	Port St Lucie	http://www.stlucieco.gov/erd/oxbow
Savannahs State Preserve	Port St. Lucie	http://www.floridastateparks.org/savannas/
Florida Oceanographic Coastal Center	Stuart	http://www.floridaocean.org
St. Lucie Inlet Preserve State Park	Stuart	http://www.floridastateparks.org/stlucieinlet/
Seabranh Preserve State Park	Stuart	http://www.floridastateparks.org/seabranh/

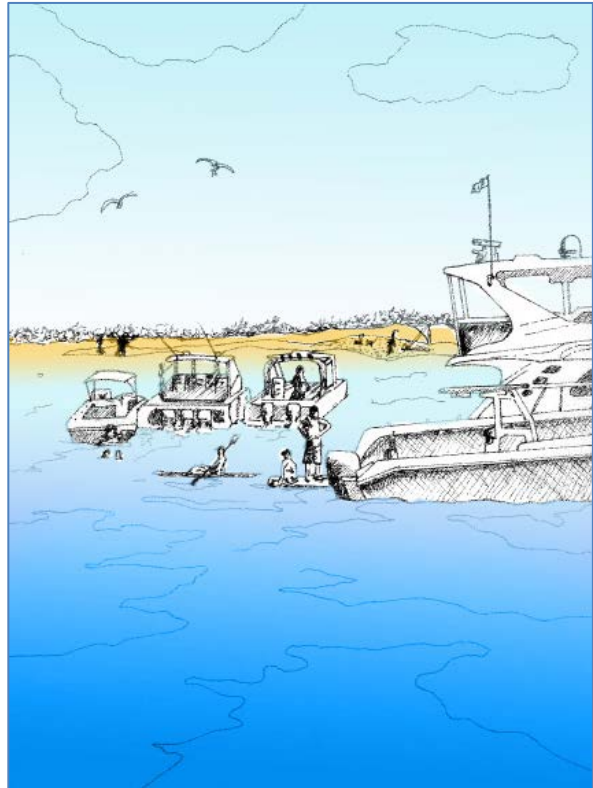
A key concept that attracted broad support from the public are environmental education programs that provide multi-year, sequential curricula. Participants in the planning process noted the sequencing and format offered by Environmental Studies Center (ESC) as a model to be considered across the region, as the program is specifically focused on the waterways. The ESC is operated by the Martin County School District, whereby kindergarten through seventh-grade students participate annually with classroom modules, field work and experiments, and classroom follow-up. The curriculum is designed to produce a holistic understanding of the ecosystem and the personal stewardship necessary for its sustainability. Educational providers participating in the plan’s development suggested a lagoon educational network could be established among the providers to establish a higher degree of coordination. A network of providers could also help provide expanded multi-year sequential programming in both counties, focused on the waterways and to ultimately build environmental stewardship. Further, the network could enable sharing of resources, multi-facility programming, and joint funding applications to enhance educational opportunities in the region.

Recreational Activities

As discussed in this chapter, there are many forms of recreational activity on the waterways of Martin and St. Lucie counties. National recreational statistics indicate more than 140 Americans make outdoor recreation a priority in their daily lives, spending nearly \$650 billion in direct consumer spending annually. Participation is increasing in all forms of recreation, including boating, fishing, and paddling. The first section of this chapter describes the various means of access to the waterways for users. The following section provides an overview of various water-oriented recreational activities, including metrics where available, typical events and activities, and opportunities for enhancement.

Motor Boats. Recreational boating is a hallmark feature in Martin and St. Lucie counties. Boater registration data indicates there are nearly 15,000 registered boats in Martin County and 12,000 in St. Lucie County, totaling nearly 27,000 registered pleasure boats. Access to these vessels is higher per capita in Martin, with nearly 100 boats per 1,000 people versus 43 boats per 1,000 in St. Lucie. These figures represent a significantly higher propensity of boat ownership per capita than the southern three counties (Palm Beach, Broward, and Miami-Dade), which average 24 boats per 1,000 people.

Across the counties, roughly 84% of all recreational boats are below 25 feet in length, with more of St. Lucie County's boats (89%) below 25 feet in length versus Martin County's at 79%. National statistics indicate the boating industry has been rebounding from the recession for several years, with a 10% increase in powerboat sales in 2012 and projected increases of 5-10% annually for the next several years. The boating sector seeing the largest increases nationally is the popular chunk of the local market – boats under 27 feet that are highly versatile, including multi-purpose boats for fishing and towing inflatables as well as jet boats and aluminum “party boats.”

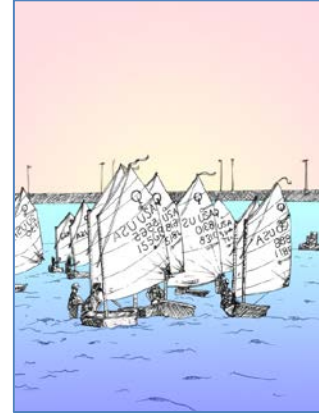


The registration data also indicates a rise in the number of larger vessels (65-109 feet), although the figures remain small versus the predominant class of vessels. Although total number of registered boats remains below the pre-recession figures, the national data and Florida's recovery vis-à-vis the nation seems to indicate boating activity will begin to increase again.

Sailing. There are two sailing organizations in the counties: the U.S. Sailing Center of Martin County, which is located in Jensen Beach, and the Treasure Coast Youth Sailing Foundation in Fort Pierce. The US Sailing Center of Martin County (USSCMC), was established in 1992 in a temporary facility on the Jensen Beach Causeway. Since then, the nonprofit has grown in stature

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and membership, establishing a two-story permanent presence in 2002 at the northern end of Indian RiverSide Park, with long-term plans for expansion. The USSCMC is a community sailing center offering recreational, competitive, and learn-to-sail opportunities for youth and adults of all ages. The non-profit offers instruction, summer camps, and training year-round, supporting its organization through user fees and fundraising. The center's fleet includes nearly 100 boats, including sailboats, inflatables, and small motorboats. USSCMC has become a considerable economic generator, sponsoring up to ten regattas annually, including the Junior Olympic Sailing Festival. The center's regattas attract more than a thousand participants annually who travel internationally for sailing events, with some regattas bringing competitors in from twenty countries. The center also offers clinics, club races, and opportunities for local community organizations to experience the waterways via sailing. Participants representing the center indicated shoaling and the need for additional navigational markers as key waterways-related challenges in the vicinity of the center. It was also noted the growth of sailing and its regattas could be enhanced with expanded tourist development programming, a consistent finding across several focal areas in the plan.



The U.S. Sailing Center of Martin County hosts eight to ten regattas annually, including the Junior Olympic Trials that have elevated sailing as a destination activity in the region.

On a slightly smaller scale, Fort Pierce is home to the Treasure Coast Youth Sailing Foundation, which is located at Jaycee Park. The Foundation began offering sailing classes in 2007, focused on youth sailing, and it has grown its activity base over time. The Fort Pierce Yacht Club and City of Fort Pierce co-sponsor the Foundation, which provides sailing instruction seasonally to mostly local children between seven and fourteen years old. Over seven seasons totaling 500 student registrations, the Foundation has provided roughly 60 tuition and lunch grants to enable participation by children from economically disadvantaged homes. The Foundation also owns a fleet of various sized sailboats, and



The Treasure Coast Youth Sailing Foundation is located in Fort Pierce on the Indian River Lagoon.

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with acquisition of additional vessels in partnership with the City of Fort Pierce, sailing instruction will be expanded to include participants up to the age of nineteen.

Paddle sports. Paddle sports are considered to be the fastest growing water sport in the U.S. today. Kayaking, canoeing, rafting, and paddle boarding have become destination activities, corresponding to national trends in ecotourism and outdoor recreation. Rowing and dragon boats are other paddle sports that benefit from these trends. Industry data indicates participation in paddlesports has increased year-over-year since 2006. In the past three years, stand-up paddleboarding has increased by 24%, kayak fishing by 20%, recreational kayaking by 11%, and sea kayaking by 8%. The rates of increase are even higher since 2013. Various paddle sports are presented in this section.

Canoes, Kayaks and Paddleboards. Canoes and kayaks have been used for thousands of years across the globe. While early vessels were constructed of animal skins or wood, the introduction of fiberglass in the 1950s followed by plastic molded kayaks in the 1980s provided technology improvements and cost efficiencies that accelerated what has become today's fast growing industry. Florida began to see its first state-wide canoe/kayak clubs in the 1980s, and today's listing with FDEP includes nearly 60 clubs across the state. There are various types of canoes and kayaks, and both are available for recreation, fishing, expeditions, and racing as well as specialty uses. Canoes are typically inshore only, and they are best suited for rivers and streams, although specialty canoes can be designed for off-shore use in flat seas. Kayaks have become more specialized in the past decade, with varied hulls, accessories, and equipment. Sea kayaks can be fitted with outriggers, sails, and pedals to enable them to travel longer distances with greater stability. Both canoes and kayaks can also be fitted with small motors for trolling, longer distances, and to assist those with physical challenges.



Kayak fishing is one of the fastest segments of the outdoor recreation industry and is a good fit for the regions' waterways.

Kayaks and canoes offer an opportunity to casually explore the waterways at a leisurely pace. Recreational paddling is best suited for winding creeks, rivers, and tributaries or shorelines with native vegetation, such as the banks of the Indian River Lagoon. Kayak anglers require specialty equipment, gear, and accessories to pursue their sport, producing increasing expenditures and revenues for the industry. Kayaks can be fitted with live wells, fish finders, storage compartments, and pedals to augment paddling by hand. Dive kayaks are also specialty vessels, with accessories to increase their range and gear storage capacity.

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Competitive kayak fishing tournaments emerged across Florida in the mid-2000s, and the industry is slowly building itself. As noted in the fishing discussion below, tournaments attract “heads in beds,” contributing to the local economy with indirect spending. The best-known local tournament is the DOA Lures Catch-and-Release in Jensen Beach. The region can capitalize on the growing trend of kayak angling by positioning itself with additional tournaments and tournament trails. Florida Sportsman is in its second year of a statewide Kayak Challenge that includes inshore and offshore divisions. The College Kayak Fishing – Salt Series is a thirteen-tournament series with two Florida events, the closest of which is in Cape Coral.



Tournaments such as the Florida Sportsman Kayak Challenge and College Kayak Fishing tour complement the rising popularity of kayak anglers in Florida and across the U.S.

Canoeing and kayaking have been featured as competition sports in the Summer Olympic Games since 1936. For more than a decade, Olympic paddling teams from Germany and Canada have been traveling to Stuart to train in the winter months. The medal-winning athletes use the St. Lucie Canal west of the locks, with accommodations historically provided by the Treasure Coast Training Center, a small local business with connections to Potsdam, Stuart’s informal sister city connected through legacy families. While the athletes themselves generate limited revenue, the allure of Olympic training locally, consistently year-after-year, lends itself to event development for competitive paddling. Competitive events sanctioned by the International Canoe Federation, which creates standard rules for all paddle events, are typically sprints of 200, 500, or 1000 meters and distance events of 1000, 5000, and 10,000 meters. Local Olympic training can become a core component of competitive paddling events, enabling aspiring competitors to pace with Olympians and raise the level of their sport.

Among paddle sports, both canoeing and kayaking are perhaps the most accessible to the broadest range of participants, from toddlers to the elderly. They are fairly low-cost and as smaller paddle vessels, easy to transport. Canoes and kayaks are also available in ADA-accessible formats, especially with appropriate launching amenities, which expand the range of these water sports across the region’s population.

Paddleboards. Paddleboarding has exceeded the growth rates of all paddle sports for the past several years. Created in the 1930s, paddleboarding was an oceangoing novelty based in Hawaii that expanded into California in the 1980s, gradually moving across the U.S. Stand-up paddleboards (SUPs) provide a platform on which a paddler can perform a range of different activities. SUPs can be used for recreational paddling, surfing, fishing and more recently, a range of fitness activities including distance-paddling and yoga. Locally, Paddlefest is an organized paddle event for residents to “stand up for the river.” Internationally, there are approximately 120 sanctioned paddleboard races, eight of which are in Florida between July and October. Four are on the east coast in Melbourne and Daytona Beach, but none are currently scheduled in the

region. Races are typically a quarter-mile (for kids) along with one, three, five, and ten mile races. Internationally, distance races can exceed twenty miles, but these are uncommon. The Florida State Paddleboard Championship, held in Cocoa Beach in April 2014, included a seven-mile open ocean course.



Paddleboarding has become the fastest growing paddle sport and is especially attractive to younger paddlers and millennials. Paddleboard fishing requires balance, physical skill, and determination that creates a different sense of adventure. New variations on the popular sport include paddleboard yoga and fitness. Glow paddleboards have also become popular for evening excursions, enhancing the destination quality of the sport.



The American Canoe Association (ACA) is a national nonprofit promoting all forms of paddlesports. With 30,000 members, ACA sanctions competitive events. The ACA maintains an on-line inventory of “water trails” across the United States that includes more than fifty trails in Florida, but none in Martin or St. Lucie Counties. To enhance the value of paddling in the counties, key water trails, such as the St. Lucie River or Indian River Lagoon, could be added to this national inventory, which would promote paddling as a destination for locals as well as tourists. More information on the ACA is available at <http://www.americancanoe.org/>.

In recent years, the ACA has developed a “collegiate race series” in several regions, with a new series beginning in Florida, solely for Florida schools, in 2014. The ACA indicates events in this series will include kayaking and stand-up paddleboarding for men, women, and co-ed teams, including individual and relay events. The race series will be designed with weekend qualifying events, which makes these competitions better tourism revenue generators. Collegiate events also help achieve the youth involvement for the waterways as expressed by the public, and help shape a waterways event brand. The region’s waterways offer a variety of courses and venues for both sprint and distance events, which will become known as the series is developed further.

Rowing. Rowing is another paddling activity on the waterways that provides a high degree of cardiovascular output without impacting the waterways resource. Rowing represents an \$800

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million annual industry and is a lifetime sport with divisions for juniors (below the age of eighteen), collegiate, and masters. Competitive rowing is a growing facet of the rowing industry, with regattas held internationally for all divisions. The TCRC was established in 1991 in Martin County. In 1997, the county enabled the club to construct a permanent boathouse with storage for 36 boats at Charlie Leighton Park in Palm City. The club offers members access to its boats as well as summer camps and club regattas. The club is self-sufficient, funding the construction of its boathouse, and conducts annual fundraising efforts for its operations and maintenance.

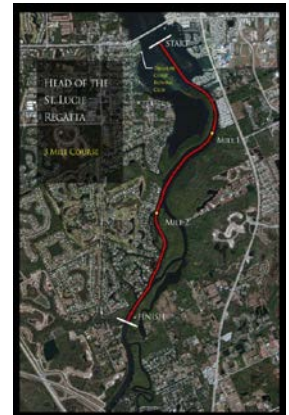
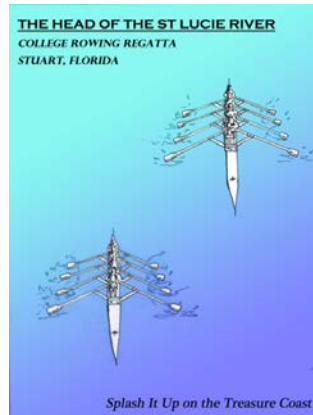
Annually, the club has attracted collegiate teams to train every winter in the South Fork of the St. Lucie River and St. Lucie Canal. Teams have included Michigan State, U.S. Naval Academy, Yale University, Clemson University, and Syracuse University. Rowers launch their shells from the shoreline of Leighton Park, and row south up to four miles to the lock, or eight miles round-trip. With increased interest in rowing, the club’s membership has grown along with its demand for space.

The club has been working with Martin County staff regarding potential modifications to the park property to expand its activities there. As discussed in the Land Use section, there is potential to modify the Leighton Park property to maximize its waterfront orientation, with the expansion of the rowing club facilities, boat ramp parking, and spectator seating. Other potential interventions include reconfiguring the current ball fields to enable a multi-story structure with upper-level seating. This would allow wide-water views for the public as well as spectator seating for rowing and

other water-based activities proximate to the site. Additionally, a low-profile floating dock is needed at the site to enable easier access into shells, especially for master’s rowers. This will further expand the recreational benefit of the site and enable safe access for a broader group of participants.



At Leighton Park, due to the lack of a floating dock, rowers wade into the St. Lucie River to access their boats, a method that limits the ability of older rowers to engage the sport with the highest degree of safety.



Rowing offers another opportunity to expand the region’s water sports brand. As a smaller-scale version of the annual Head of the Charles, and with unique natural features, the Head of the St. Lucie Regatta could offer rowers a three-mile scenic race, starting at Charlie Leighton Park in Palm City. Given the historic collegiate training, a sample marketing poster suggests a collegiate race.

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Rowing represents another waterways recreational opportunity that could yield revenue, expand healthy water-based activities, especially for younger participants, and reinforce the Treasure Coast water sports theme. The club has indicated the South Fork is wide enough for shorter regattas that could accommodate up to four lanes. Former collegiate rowers have indicated the South Fork and St. Lucie Canal present ideal conditions for training, especially in the winter months. Presuming good water quality, this characteristic can be used as a core marketing feature to attract new events and possibly advance the region as a rowing training destination for other collegiate and competitive rowers.

The Head of the Charles is an internationally acclaimed annual rowing event held on the St. Charles River in Boston. The race attracts upwards of 1,500 participants and thousands of spectators, illustrating the allure of rowing for both groups. The three-mile race occurs on a curvilinear segment of the river, similar in some ways to the St. Lucie River. Leighton Park could accommodate smaller regattas, appropriately scaled for the region and the property, that could be enhanced with a more waterways-focused re-use of the park. The “Head of the St. Lucie” could help further establish the area within the rowing circuit.

Paddlesports in their varied forms offer a low-cost, light-imprint way to access the waterways. Creating better paddling access, amenities, and advancing competitive paddling, through races and tournaments, enables this green recreational mode to generate additional revenue and help the region’s water sports brand.

Other Paddle Sports. There are a variety of additional paddle sports that are appropriate for the waterways of the counties. Dragon boats are already operational in the region, with larger-scale paddling vessels that require six-foot depths. Outrigger canoes are also growing in popularity. These and others offer opportunity to further develop a Treasure Coast Sports Industry Cluster, focused on water sports, to enhance economic benefits of the waterways.

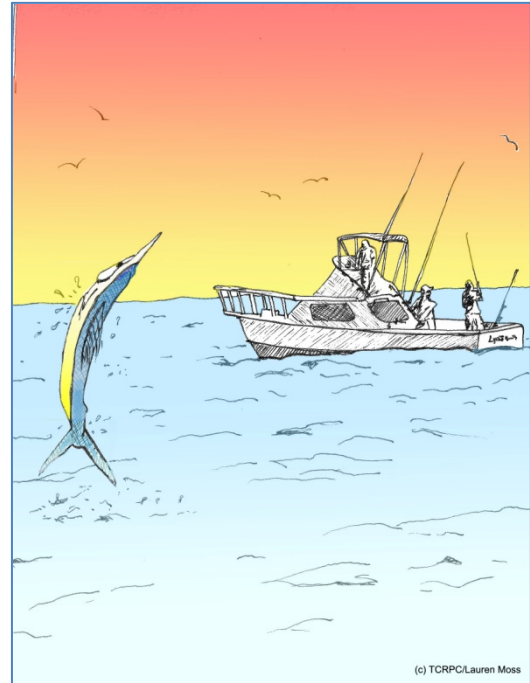


Fishing. The waters in and along the Treasure Coast have been the destination for fishing activity since the area was first founded. The region is uniquely positioned at the southern edge of the temperate zone and the northern boundary of the subtropical zone. With the influence of the Indian River Lagoon, the nation’s most diverse estuary, St. Lucie River, and proximity of the Gulf Stream, there is an unparalleled abundance and diversity of inland and offshore fish year-round. Inshore fish species include snook, redfish, tarpon, and sea trout, while offshore fisheries

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include sailfish, dolphin, kingfish, pompano, wahoo, marlin, and more. Lobster and shellfish are also available both inshore and offshore, with populations enhanced by artificial reef construction.

The region has a long history of both commercial and recreational fishing. From the early 1900s, commercial fish houses were concentrated in Fort Pierce and Port Salerno, generating local product as well as fish for transport. Commercial fishing includes seafood/fish harvesters, processors and dealers, and wholesalers/retailers. Fort Pierce was broadly known for its fish, turtles and oysters, and the Lagoon had fish camps along its banks for the first half of 1900s. Port Salerno developed as a fishing village, with fish and sharks as a primary local product.



Due in part to concerns about overfishing, Florida voters approved a Constitutional amendment in 1994 to ban entangling or “gill” nets in Florida waters, which extends three miles into the Atlantic and nine miles into the Gulf. Commercial fishing fell

drastically after the net ban, reflected in a single remaining fish house in Port Salerno versus eight at the peak of the industry. Today’s commercial fishing industry relies on hook and line as well as nets smaller than 500 square feet to catch its product. There appears to be both desire and demand for the establishment of a fish market in Port Salerno to reinforce the remaining commercial fishing industry and enhance the area’s focus as an authentic fishing village. A similar establishment is suggested for Fort Pierce, which could be operated in conjunction with the Farmer’s Market. These concepts are presented in Chapter 4 (Land Use & Upland Transportation).

Recreational fishing represents a different dimension of the fishing industry, which attracts all walks of life. The region has been attracting recreational fishers since the 1920s, including five presidents according to newspaper reports. The allure of sportfishing offshore has been a primary driver for tourism in Martin and St. Lucie counties, with Stuart becoming known as the Sailfish Capital of the World after a 1940’s sailfish regatta reportedly yielded more than 1,000 sailfish in a week. Catches such as these prompted Stuart’s Sailfish Club to produce a Release Button, available only to fishers who landed a sailfish then released it undamaged back into the ocean. This trend spread across other Florida fishing clubs, ultimately contributing to the Release Me campaign celebrated by recreational anglers. Port Salerno’s proximity to the St. Lucie Inlet has

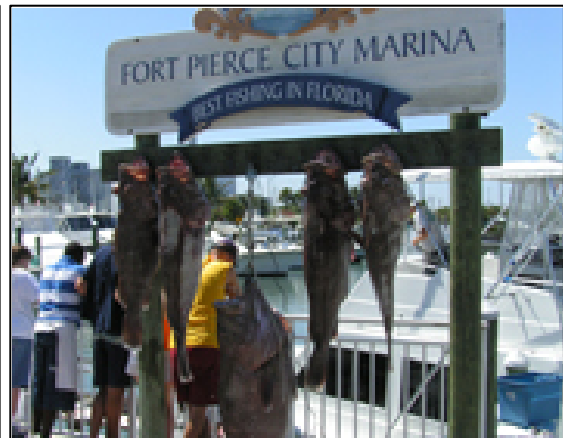
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earned it the reputation as the World Fishing Tournament Capital in several publications, and Fort Pierce’s easy access to the Atlantic similarly has generated a “Deep Sea Fishing Capital” moniker.

In the sportfishing industry, the State of Florida ranks first nationally in the total number of anglers as well as their annual expenditures, which underscores the economic importance of this industry to the region. At a state level, Florida markets itself as the Fishing Capital of the World, as census data indicates the state has the highest number of recreational fishing days per year, with the highest percentage of fishing days by tourists (roughly 10%).



Recreational fishing in the region’s waterways includes saltwater sport anglers who casually fish individually, with friends or family, and tournament anglers. These two types of anglers demand similar provisions, gas, bait and tackle, although tournament anglers tend to be more specialized as they seek particular species in competitive events. Offshore fishing likely contributes more economically within the region, due to the cost of fuel and related revenues, than inshore fishing. The region has long been characterized as an area with excellent fishing, well-documented both in marketing literature as well as general media, but it is likely the region’s fishing tournaments and regattas that have most widely communicated this feature. Between Fort Pierce and Port Salerno there are more than two dozen large-scale tournaments held on an annual basis in addition to numerous smaller tournaments. Tournaments are especially valuable for tourism, as they generate impacts for fuel sales, provisions, and hotel occupancies. Larger tournaments often attract boats and crews several days ahead of tournament day to pre-fish the area and determine best routes and locations. The counties also have nearly 100 fishing guides and charter boats, representing another economic driver locally. An inventory of the larger annual tournaments is presented in this section.



Fishing at Sandsprit Park, Stuart (above-left). Daily catch displayed at Fort Pierce Marina (above-right). Photos courtesy of TCRPC & St. Lucie County Tourism Office.

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SELECT ANNUAL FISHING TOURNAMENTS IN MARTIN & ST. LUCIE COUNTIES (OFFSHORE & INSHORE)		
MONTH	LAUNCH	TOURNAMENT
January	Fort Pierce	Pelican Yacht Invitational Billfish Tournament (3rd leg of TC Championship) (qualifying tournament for Offshore World Championship in 2013)
January	Stuart	Sailfish Point Yacht Club Tournament
March	Stuart	River Tournament (Snook, Trout, Jack Cravell)
April	Jensen Beach	DOA Lures Annual Paddlers Catch & Release Alive
May	Fort Pierce	St. Lucie County Chamber of Commerce's Annual Fishing Frenzy
May	Fort Pierce	Blue Water Open Dolphin Mania Fishing Tournament
May	Jensen Beach	Frances Langford Memorial Fishing Tournament (SKA)
May	Indian River Lagoon	PSL Anglers Seatrout Shoutout
May	Port Salerno	Florida Sportsman Southeast Bash & Tournament
May	Stuart	Ladies Tournament (sailfish, dolphin, kingfish, wahoo)
May	Port Salerno	Treasure Coast Builders Association Fishing Tournament (Inshore & Offshore)
June	Jensen Beach	Florida East Coast Angler Action Derby (entire east coast, inshore & offshore)
June	Stuart	Small Boat Tournament (sailfish, dolphin, kingfish, wahoo, tuna)
July	Stuart	Reefbuilder Benefit Tournament & Lionfish Round-up
July	Stuart	Stuart Sailfish Club's Ladies' Tournament
August	Stuart	Stuart Sailfish Club Junior Anglers Tournament
August	Port Salerno	Bonito Blast
September	Jensen Beach	Michael Shields Memorial Inshore Open
November	Stuart	Stuart Sailfish Club Members Tournament
November	Port Salerno	The Quickie
December	Stuart	Stuart Sailfish Club's Light Tackle Invitational Tournament (2nd leg of TC Championship)
December	Port Salerno	Pirate's Cove Sailfish Classic (1st leg of Treasure Coast Championship)

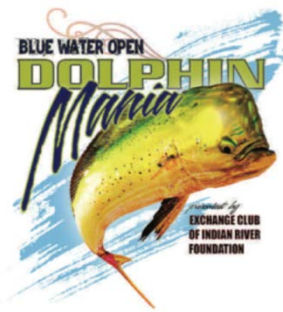
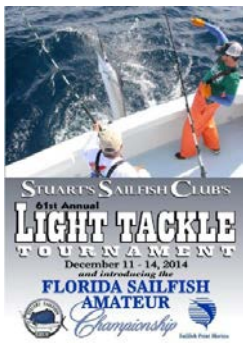
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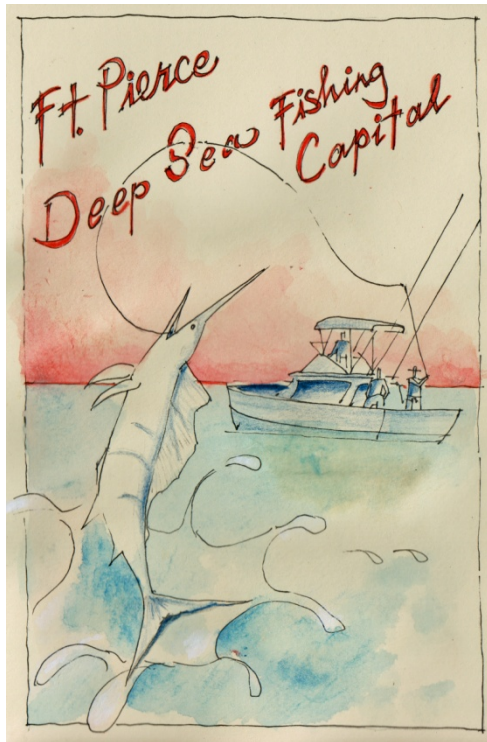
Boats exiting the Fort Pierce harbor for one of the many tournaments.



National economic data indicate a rising trend of women fishing, evidenced by the Florida-based “Ladies, Let’s Go Fishing!,” which is dedicated to attract women to sportfishing and teach responsible angling. Port Salerno is one of the four locations where the organization’s day-long training programs are taught. Below are logos of some of the region’s annual tournaments. As desired by participants, junior angler tournaments are offered as well.



36th Annual
Junior Angler Tournament
August 8-9, 2014
Offshore/Inshore Division

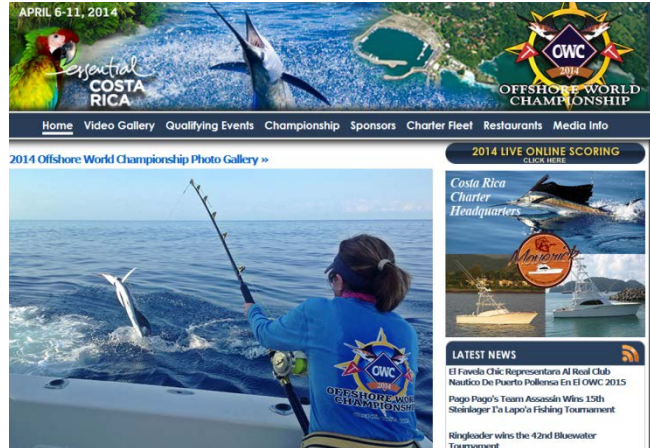


The region’s tournaments are reported to attract a broad range of participants, and one tournament, Fort Pierce’s Pelican Yacht Club Billfish Invitational, was a qualifying tournament for the Offshore World Championships. The designation of more local tournaments as qualifiers for tournament trails and larger championships with bigger purses, presenting an opportunity to attract more overnight stays in conjunction with these activities. Similarly, the Treasure Coast Championship, which is a three-legged tournament provides a model for linking local tournaments to others (either within the counties or with neighboring counties) to create larger payouts for winners. Tournament organizers, leading with those organized by the Stuart Sailfish Club, require circle hooks, which have become a standard requirement as they enhance the survival of sailfish when released back into the ocean.

King mackerel, or kingfish, represents another offshore fishing tournament trail, with the former Southern Kingfish Association (SKA) sponsoring as many as fifty annual events from North Carolina to Texas. The SKA was acquired in April 2014 by the National Boat Owners Association, which is developing a new tournament trail for the species.

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The Fort Pierce Marina is in discussions with tournament organizers to host a qualifying tournament in August, leading to national championships in October. Sailfish and kingfish represent two specific examples of finfish that provide direct economic benefit to the local marine industry as well as tourism and the larger economy. Expanded tournament development will enable larger prize packages, which are a primary motivator for tournament participants.



Sailfish and kingfish represent two prize tournament species that generate millions of dollars for local economies. The region already is a destination for tournament fishing, and securing additional qualifying events on the “tournament trails” can reinforce and further expand the industry.

Aside from swimming and snorkeling in the lagoon, fishing is the recreational activity that is the most harmed by the pollutants in the waterways. The peak discharges from Lake Okeechobee in the past several years, combined with non-point source pollution, heavily impacted the fishing industry in the region. Participants in the plan development process are highly supportive of fishing generally, seeking greater access through improved fishing piers and launches, as well as the local economic impacts of the industry. Participants raised issues of overfishing, the need for habitat restoration, environmental impacts on fish populations, and pollutant discharges as key concerns regarding the fishing industry. Without clean water, good habitat, and species diversification, opportunities for fishing for any motivation can be reduced or eliminated. Catch-and-release practices were discussed by participants as a means to help protect gamefish, with fishing industry data indicating up to a 97% gamefish release rate. Fishing industry research indicates tournament anglers are more likely than sport anglers to catch and release, which may help further mitigate this concern.



Fishing occurs in all forms on the waterways of Martin and St. Lucie. Photo credits (left to right): www.floridafishinglessons.com, www.kayakanglingbigfish.com, www.visitstluciefla.com

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Population growth, environmental impacts, and increased fishing activity, both commercial and recreational, impact fish populations and their continued sustainability. Regulatory measures such as catch limits and species-specific seasons help reinforce finfish populations, but the core fish population is dependent upon healthy fisheries. Representatives from Florida's Division of Aquaculture emphasize that a holistic approach is needed to sustain and expand fish stocks, including the restoration and enhancement of saltwater marshes and mangroves, to promote water quality enhancement and safe territory for juvenile fish. Aquaculture can further support fish populations by developing additional juvenile fish for release as well as fish for consumption, reducing pressures on wild fish populations. Florida Atlantic University's Harbor Branch Oceanographic operates an aquaculture division, including an on-site Aquaculture Development Park in St. Lucie County, with on-going research activities to determine methods to enhance local fisheries. It is clear that continued aquaculture research, in conjunction with habitat restoration, will help reinforce this local commodity and contribute towards the sustainability of the fish population.



Through FFWCC, research efforts are underway to evaluate how aquaculture can be used for fisheries enhancement, with efforts focused holistically on habitat quality, juvenile fish, timing, and ecosystem balance. Both Harbor Branch Oceanographic and Florida Oceanographic Society are engaged in this work, which can help sustain fisheries and reinforce the fishing industry.

The Water Sports Industry Cluster – “Splash It Up on the Treasure Coast”. The collective water sports activities opportunity in the region, both recreational and competitive, can provide considerable secondary benefits to the local tourism industry as well as reinforce local related businesses. Martin and St. Lucie counties, along with Indian River County, are represented by the Treasure Coast Sports Commission (TCSC), a three-county private non-profit designed to market, secure, and assist in managing sports-related competitions and events that place heads in beds. The water sports industry cluster exists in the region organically - fishing, boating, sailing, rowing, kayaking, canoeing, and paddleboarding – are a good fit for the local condition, presuming the region's waterways are restored and enhanced. If water quality is good, the potential to both enjoy the waterways recreationally and derive economic benefit is tremendous.

Other competitive events, such as triathlons, marathons, and cycling road races are hosted along the waterways for their scenic quality. They contribute to the local economy, attract tourist activity, and provide recreational outlets for residents. Given an additional level of marketing and organization, additional events can be developed that capitalize on the activities already

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underway, which can be packaged to reinforce redevelopment activity, corporate training and retreats, and larger-scale tourism packages. A “Splash It Up on the Treasure Coast” marketing and event development effort could be utilized to better position the region to compete for tournaments, competitions, and training. The theme could also be used to attract corporate team-building and training events, many of which are sited in conjunction with recreational activities at their core. With coordinated scheduling, multi-event weekends can be packaged and marketed, enhancing the tourism industry. The water sports industry is year-round in Martin and St. Lucie counties, with certain sports peaking in the area’s off-season. More research is necessary to inventory the water sports activities, understand their user base and economic contributions, and focus a marketing effort appropriate for the region.

Initial discussions with the TCSC indicate there is potential to advance this concept, further branding the region for water sports activities, packaging and marketing destination amenities to assist in securing events, and growing the industry base. In addition to the water sports activities discussed in this section, sports experts suggest expanding the concept to include all water sports, not just those that occur on the waterways (e.g., competitive swimming, beach volleyball, underwater hockey, water polo).



Photo courtesy of the St. Lucie County Media Relations and St. Lucie County Tourism Offices.

Fishing in the Indian River Lagoon.



Key Findings and Recommendations

There is a broad, expanding array of water-based recreational activities, including fishing, motorized watercraft activities (e.g., motorboating, water skiing), wind-powered activities (e.g., sailing, windsurfing, kiteboarding, sail kayaking), and human-powered activities (e.g., kayaking, canoeing, paddleboarding, dragonboats, rowing, swimming) along with ancillary recreational activities that are enhanced by the waterways (e.g., beach volleyball, triathletic activities, playgrounds, general recreation). This range of activities lend themselves to simple unstructured enjoyment of the waterways as well as more formalized, organized events, activities, and festivals, which demand more extensively developed upland infrastructure. There are conflicts that occur between motorized and non-motorized watercraft, particularly at concrete boat launches, which could be partially resolved with the installation of additional soft launches for canoes and kayaks. There is desire for additional water sports concessions in public parks as well as both casual and destination-quality campground facilities. Paddle sports activities are growing and would be enhanced with additional paddling-specific amenities in addition to launches, such as floating docks, informational signage, and camping opportunities. The waterways provide an opportunity to prioritize blueways and greenways facilities to further enhance waterways access and development potential.

Parks and Riverwalks

- Support the continued preservation and enhancement of waterfront parks and preserves.
- Explore the development of Walton Road Scenic Overlook integrated into the Treasure Coast Indian River Drive Scenic Highway.
- Consider the addition of an educational kiosk to tell the story of the waterways (e.g., history, Lagoon biodiversity and significance, threats and efforts towards restoration).
- Support the development of riverwalks as a means of public access to the waterways. Noted riverwalk improvements include Port St. Lucie (riverwalk extension from Veteran's Park to Westmoreland Tract) and Stuart (riverwalk extension to Detroit Avenue).
- Consider regulations to maintain street-ends terminating at the waterway as points of public access. Street-ends can remain in a natural state or be developed as small parks that may also include canoe/kayak launches, fishing piers, or pedestrian access to the shoreline that is natural or structured. Stuart's comprehensive plan policies regarding street-end parks may serve as regional best practices.
- Support the development of additional street-end parks in Stuart, such as the Colorado Avenue and Detroit Avenue street-ends in conjunction with the city's riverwalk extension.

Campgrounds

- Expand the inventory of both casual and destination-quality campgrounds along the waterways as a means of public access.
- Support the development of Phipps Park as a destination campground.
- Explore additional camping facilities at state parks, including Jonathan Dickinson State Park, Fort Pierce Inlet Park, and Avalon State Park.
- Support the Indian River Lagoon Adopt a Spoil Island project to enhance and maintain spoil islands.

Paddling

- Install soft launches, either as sandy shorelines or with soft, stabilized materials in conjunction with boat ramps to enhance paddling access and reduce conflicts between boaters and paddlers.
- Enhance paddling launch locations with sufficient parking and restroom facilities. Key locations to consider include Pendarvis Cove Park, Hosford Park, Cove Road Park, and Charlie Leighton Park.
- Consider development of a paddling trails guide for various sections of region's waterways, including the South Fork of the St. Lucie River and various portions of the Indian River Lagoon. St. Lucie County's North Fork St. Lucie River Paddling Guide may provide a regional best practice.
- Consider seeking designation of local paddling trails as Blueways with FDEP and with national paddling groups and organizations to enhance tourism benefits.
- Explore additional paddlesports concessions in public parks to increase public access to the waterways.

Boating

- Improve and expand boat ramp infrastructure, including expanded parking where feasible and new/expanded storage docks to increase capacity and efficiency of use. Select facilities to consider for rehabilitation and/or enhancement including Fisherman's Wharf, Stan Blum Park, Little Jim Boat Ramp, South Causeway Ramp, Manatee Center, Sandsprit Park, and Charlie Leighton Park.
- Consider establishment of mooring fields in areas with known unregulated moorings and high incidence or risk of derelict vessels.

Fishing

- Expand number and quality of fishing piers along Indian River Lagoon and the St. Lucie River.
- Add fish cleaning tables and receptacles for fishing lines at fishing piers and in locations with a high degree of fishing activity.
- Explore designation of appropriate local fishing tournaments as qualifier for larger-scale tournament trails with highly valued prizes.
- Support continued research and evaluation of habitat restoration, water quality improvements, aquaculture, and other methods to enhance fisheries and help sustain and enhance the wild fish population.

Water Safety

- Expand access to swimming instruction, especially for low-income children, to improve safe access to the waterways, following models such as the St. Lucie Swim Collaborative. Expand partnerships among local governments, social service agencies, and private instructors as appropriate.

Environmental Awareness

- Consider development of Lagoon Educational Partnership Network to improve communications among educational providers, sharing of resources, sequential and synchronized programming, and improved funding competitiveness for environmental programs.
- Expand opportunities for sequential, multi-year environmental education programs in the region utilizing existing environmental resource entities.

Treasure Coast Water Sports Industry Cluster

- Develop an inventory of regional water sports to understand breadth of activities, user groups, trends, and industry development potential. Include all water-related recreational activities, such as boating, sailing, paddling, rowing, fishing, snorkeling/diving, swimming, windsurfing, kite boarding, underwater hockey, water polo, and beach activities (e.g., surfing, beach volleyball). Include additional competitive events such as marathons, triathlons, cycling road races, and adventure races that are enhanced by race components adjacent to or utilizing the waterways.
- Consider development of a water sports marketing program in conjunction with tourist development councils.
- Develop commonly themed marketing collateral and program for waterways sports (e.g., Splash It Up on the Treasure Coast).
- Evaluate potential to broaden collegiate and Olympic training for rowing, sailing, and paddling.
- Include key water sports facilities in state, national, and industry publications to broaden marketing efforts (e.g., paddling trails, rowing club and facility, sailing center).



Camping by Kayak

CHAPTER 6: ECONOMIC DEVELOPMENT



Introduction

The Waterways Plan for Martin and St. Lucie counties is a comprehensive planning approach to identify and explore strategies to leverage economic benefits related to the waterways, including water-based transportation, upland connections, and measures to improve efficiency, access, recreation, and marine-related benefits.

The Economic Development chapter of the Waterways Plan for Martin and St. Lucie counties includes a broad market and economic overview of key industry sectors intended to evaluate the overall economic benefits, potentials/opportunities, and impacts of approximately 120 miles of waterways on the economies of both counties. These waterways include:

- Approximately 40 linear miles (North to South) of the Atlantic Intracoastal Waterway (AIW)
- The St. Lucie River, including the North and South Forks
- The St. Lucie Canal (also known as the C-44), which connects (through a series of locks) the North and South Forks of the St. Lucie River with Lake Okeechobee
- Additional canals (e.g., C-23, C-24, C-25), which are substantial drainage canals with limited navigational access to the natural waterways.

More specifically, the economic analysis focused on the following three core areas of study:

1. **Marine-related & Supporting Industries** The project team reviewed marine-support businesses (e.g., boat building/repair and sales, fuel sales, provisions); marina activities (e.g., recreational and commercial boating, boating registrations, marina facilities with wet/dry dock slips); and port facilities (e.g., warehousing and distribution, freight movement, and associated/spin-off impacts) in relevant areas of both counties.
2. **Land Use & Upland Economic Opportunities** The project team evaluated how long-term growth forecasts in key indices (e.g., population, households, employment) in both counties could broadly impact upland development opportunities along the waterways, with a focus on select waterfront centers identified by the MPO, TPO, and steering committee for their waterfront development and redevelopment potential. Each focus area includes an on-going community redevelopment effort, implemented in part by a community redevelopment agency. In Martin County, focus area locations included portions of downtown Stuart, Rio, Port Salerno, Old Palm City, Indiantown, and Jensen Beach. In St. Lucie County, select locations included waterfront areas in Port St. Lucie and downtown Fort Pierce.
3. **Other Waterways-Dependent Potentials** The project team examined waterways-dependent industry clusters and their impacts on tourism/hospitality (e.g., fishing,

recreation); water-based activities; commercial fishing; and long-term potentials and impacts associated with port-related activities.

Data Limitations

During preparation of the market and economic overview, it was determined that certain data were limited or not available. Two key examples include:

- Only two years of data were available on tourism/visitor trends in Martin County, and no such data were available on visitor trends in St. Lucie County;
- Real estate market data was not available at a sub-area scale for several of the focus areas, including Rio, Jensen Beach, Port Salerno and Indiantown. Therefore, county-scale data was utilized regarding commercial/workplace inventory/building stock, vacancies, net annual absorption, and related indicators of market performance to develop trend analyses and inform plan recommendations;
- Only seven years of data was available from CoStar, Inc., a national real estate database, regarding market performance in the two counties, which provides a near-term understanding of market conditions but not a historic view of market conditions over several economic cycles. CoStar, Inc. is considered to be the primary source for understanding real estate market conditions in key indices such as inventory, vacancies, rents, construction deliveries, and gross and net absorption (i.e., leasing activity). While selected data from both the Martin and St. Lucie County Property Appraiser offices was reviewed, their database does not track annual absorption activity, which is a key barometer of real estate market performance.
- Population data was derived from the University of Florida Bureau of Economic and Business Research (BEBR), utilizing moderate growth projections, as well as the Martin Metropolitan Planning Organization, St. Lucie Transportation Planning Organization, and Florida Department of Transportation.
- Demographic census data is available for three incorporated municipalities (Stuart, Fort Pierce, and Port St. Lucie); however, the CRA boundaries do not align with U.S. Census “Designated Places.” Therefore, demographic data was analyzed on a best-fit basis for census “designated places” regarding current and forecasted trends. Census Appendix 1Q provides an illustrative example of the Port Salerno CRA boundary and the “designated place” boundary for reference.
- Other data limitations pertaining to measuring the scale and impact of marine-related and supporting industries are also noted, and the Waterways Plan provides a baseline inventory of relevant industry data for the assemblage of a longitudinal data set for this industry sector.

Given these findings, a key recommendation in this study that data collection efforts be initiated by specific entities to help guide and inform the plan and related activities as they is implemented. This study is based on estimates, assumptions, and other information developed by the project team from its independent research effort, general knowledge of the market and the industry, and consultations with local representatives, and interviews with municipal and industry representatives, such as the Tourist Development Councils, municipalities, CRAs, and representatives of the marine industries.

Overview

The waterways in Martin and St. Lucie counties are unique natural assets, providing a broad and varied range of opportunities for strengthening transportation, recreation, economic development and overall quality of life for the residents and marine-related businesses in the two counties. Specifically, preserving working waterfronts, supporting catalytic redevelopment efforts at the select waterfront centers, and ensuring public access to the region's waterways will greatly enhance economic development in the surrounding upland communities by strengthening the following existing and emerging marine-related industry sectors:

- Marine industries (recreational and commercial)
- Water-based tourism/eco-tourism
- Marine transportation

Study Area

The two counties contain extensive waterways, including the ICW, St. Lucie River, and significant canals such as the St. Lucie Canal (or C-44), which provides a connection westward to Lake Okeechobee. The study area encompasses approximately 120 miles of waterways including a series of smaller creeks and tributaries which provide waterway connections for residents, businesses, visitors, and marine life in Martin and St. Lucie counties.

The project team focused on examining opportunities at select waterfront centers including downtown Stuart, Rio, Port Salerno, Old Palm City, Indiantown and Jensen Beach in Martin County, and at waterfront areas in Port St. Lucie and downtown Fort Pierce in St. Lucie County.

Demographic and Economic Profile



Underlying the market and economic overview is a comprehensive demographic and economic profile which examines the drivers of real estate market demand for specific land uses utilizing available economic and demographic data. A key objective of this profile is to translate future growth in key indices into demand for specific types of real estate in the Waterways study area.

View of the waterways. Photo courtesy of www.marinas.com.

Economic Development

The profile includes factors such as population and household growth; employment and occupational trends and forecasts by industry sector; household consumer spending patterns; household incomes; population by age cohort; visitor trends and spending patterns; and other indices intended to inform specific planning initiatives and market opportunities in the Waterways study area. Key findings are summarized below, and data are illustrated in Table 1 through Table 6 as follows:

Population Trends and Forecasts (2000 – 2035)

(Data source is the University of Florida BEBR)

Martin County

- Population grew by more than 21,300 new residents – from 126,700 in 2000 to 148,000 residents in 2013, reflecting an annual growth rate of 1.4%.
- Martin County’s population is projected to grow to 182,300 residents by 2035, resulting in 34,300 new residents over the next twenty two years.

St. Lucie County

- Population grew by almost 88,500 new residents over the past thirteen years, reflecting an annual growth rate of 3.7%.
- St. Lucie County’s population is projected to increase to 441,500 residents by 2035, reflecting a significant increase of more than 142,000 new residents over the next twenty one years.

Select Waterfront Centers

- Population growth in the focus areas between 2000 and 2010 was highly variable, noting the data for Stuart, Fort Pierce, and Port St. Lucie is municipal in scale.
- Martin County’s six focus areas’ share of population has declined from 50% to 46% over the period of 2000 to 2010.
- The overall growth rate of the six focus areas was approximately half that of Martin County as a whole – 0.8% per year -- between 2000 to 2010. This suggests that even though the focus areas exhibited absolute net new growth, the pace of growth is greater in other locations, such as unincorporated areas of Martin County. Moreover, population growth is scattered and dispersing.
- By comparison, the two focus areas in St. Lucie County - Fort Pierce and Port St. Lucie, exhibited overall growth significantly greater than their counterparts in Martin, with a modest growth rate of 1% per year in Fort Pierce and a significant growth rate of 6.4% in Port St. Lucie.
- By 2035, the focus areas are projected to yield more than 14,200 new residents in Martin County and more than 109,200 new residents in St. Lucie County.

Table 1: Demographic Trends & Forecasts, 2000—2035

	2000	As % of County	2010	As % of County	2000-2010 Growth Rate	Estimates 2013	Forecasts (1) (2)			
							2015	2010-2015 Gain/(Loss)	2035	2015-2035 Gain/(Loss)
Martin County										
County Population	126,731		146,318		1.4%	148,077	152,000	5,682	182,300	30,300
Palm City	20,097	15.9%	23,120	15.8%	1.4%		24,798	1,678	32,819	8,021
Stuart	14,633	11.5%	15,593	10.7%	0.6%	15,814	16,096	503	18,278	2,181
Jensen Beach	11,100	8.8%	11,707	8.0%	0.5%		12,023	316	13,374	1,351
Port Salerno	10,141	8.0%	10,091	6.9%	0.0%		10,066	(25)	9,967	(99)
Indiantown	5,588	4.4%	6,083	4.2%	0.9%		6,347	264	7,521	1,174
Rio	1,028	0.8%	965	0.7%	-0.6%		935	(30)	824	(111)
Subtotal - Focus Areas:	62,587	49.4%	67,559	46.2%	0.8%		70,191	2,632	81,786	11,595

POTENTIAL GROWTH (2013-2035):

Focus Areas

14,227

As % of Martin County

47%

St. Lucie County

County Population	192,695		277,789		3.7%	281,151	299,400	21,611	441,500	142,100
Port St. Lucie (3)	88,769	46.1%	164,603	59.3%	6.4%	167,914	224,143	59,540	261,609	37,466
Fort Pierce	37,516	19.5%	41,590	15.0%	1.0%	41,729	43,790	2,200	53,817	10,027
Subtotal - Focus Areas:	126,285	65.5%	206,193	74.2%	5.0%	209,643	267,933	61,740	315,426	47,493

POTENTIAL GROWTH (2013-2035):

Focus Areas

109,233

As % of St. Lucie County

77%

(1) Based on the 2015-2040 low-medium-high population forecasts prepared by BEBR. Analysis uses moderate projections for both counties.

(2) To determine 2035 population estimates by focus area, the analysis utilizes the 2000-2010 straight-line growth rates.

(3) If the 2000-2010 growth rate for Port St. Lucie is used, the city's 2035 population would actually exceed the 2035 population forecast for St. Lucie County. Therefore, the analysis assumes that Port St. Lucie's 2035 population will be based on its 2010 share of the county (59.3%).

Source: U.S. Census Bureau; University of Florida, Bureau of Business & Economic Research; ESRI Business Analyst; WTL+a, updated July 2014.

Economic Characteristics

Employment Trends. Employment growth is a key barometer of demand for workplace uses such as industrial, commercial retail, and multi-tenant office space. The project team examined trends and forecasts in total employment growth, utilizing available data as prepared by the state’s labor agency, the Florida Department of Economic Opportunity (formerly known as the Agency for Workforce Innovation/AWI), for the period between 1995 and 2013. For employment trends, Martin and St. Lucie counties are defined as the Port St. Lucie Metropolitan Statistical Area (MSA). For employment forecasts, the counties are defined as Workforce Region #20, which also includes Indian River and Okeechobee counties. Key findings are summarized below and illustrated in the accompanying tables:

- The Port St. Lucie MSA (Martin and St. Lucie counties) added 43,800 new jobs in the 10-year period between 1995 and 2005. This growth, which translates into more than 4,400 new jobs annually, was focused largely in specific sectors, including: professional/business services (+6,700), construction (+7,600) and retail trade (+6,000). In particular, growth in Professional/Business Services fueled demand for office space in key locations across both counties during this period.
- By contrast, the economic downturn of 2007-2009 resulted in the loss of 12,400 jobs in the two counties. However, since 2010, job gains in specific sectors reduced net job losses to (-5,100) between 2007-2013. Job losses were greatest in specific sectors, including: construction (-5,300) and wholesale trade (-1,500). Notably, the services sector has recovered more quickly than others, gaining 5,800 new jobs over the past six years. The area’s economic recovery is gaining traction, with 7,300 new jobs created between 2011 and 2013.



Industries trending up in the study area include professional/business services, construction, and retail trade, with 43,800 new jobs added between 1995 and 2005. Photo credits (clockwise from top left): www.floridatechonline.com, www.newslocker.com and www.travelpod.com.

Table 2: Employment Trends—Port St. Lucie MSA, 1995—2013

Industry Sector	1995	2000	2005	Change: 1995-2005		2007	2009	2011	2013	Change: 2007-2013	
				Amount	CAGR %					Amount	CAGR %
Mining & Construction	8,100	10,200	15,700	7,600	6.8%	12,800	8,000	7,200	7,500	(5,300)	-8.5%
Manufacturing	5,400	5,900	6,900	1,500	2.5%	6,200	4,900	5,100	5,500	(700)	-2.0%
Transp/Communications/Utilities	3,700	3,200	4,300	600	1.5%	4,200	4,000	4,200	4,300	100	0.4%
Trade											
Wholesale	2,800	3,200	6,400	3,600	8.6%	6,300	6,000	5,600	4,800	(1,500)	-4.4%
Retail	15,200	16,800	21,200	6,000	3.4%	21,100	18,400	19,300	20,200	(900)	-0.7%
Information	1,700	1,800	1,700	-	0.0%	1,700	1,400	1,600	1,400	(300)	-3.2%
Financial Activities	4,600	5,000	7,500	2,900	5.0%	6,800	5,600	5,400	5,400	(1,400)	-3.8%
Services											
Professional & Business	7,200	10,600	13,900	6,700	6.8%	14,200	12,400	13,800	15,200	1,000	1.1%
Education/Health Services	12,700	15,400	17,600	4,900	3.3%	19,200	20,700	21,500	22,600	3,400	2.8%
Leisure & Hospitality	10,500	12,000	13,700	3,200	2.7%	15,500	14,800	15,300	16,900	1,400	1.5%
Other Services	4,700	5,700	6,900	2,200	3.9%	7,100	6,900	6,400	6,800	(300)	-0.7%
Government	13,900	16,300	18,500	4,600	2.9%	20,400	20,000	19,600	19,800	(600)	-0.5%
Total (In 000s):	90,500	106,100	134,300	43,800	4.0%	135,500	123,100	125,000	130,400	(5,100)	-0.6%
<i>Change During Period:</i>		<i>15,600</i>	<i>28,200</i>			<i>1,200</i>	<i>(12,400)</i>	<i>1,900</i>	<i>5,400</i>		

<http://floridajobs.org/labor-market-information/data-center/statistical-programs/current-employment-statistics>

Source: Florida Department of Economic Opportunity (Agency for Workforce Innovation); WTL +a, April 2014.

Current Employment by Jurisdiction

Since both counties are part of a larger geographic area known as Workforce Region #20 for statistical purposes in forecasting employment growth, it is necessary to understand each county's current share of jobs. Employment by industry sector for 2012 (latest data available) is illustrated in Table 3 for Martin County and Table 4 for St. Lucie County. Employment projections are illustrated in Table 5. Key findings are summarized below:

Martin County

- In 2012, Martin County contained about 76,200 jobs, reflecting a jobs-to-population ratio of 0.51. That is, there are 0.5 jobs per resident for the 148,000 residents in the county. Martin County has a 37% share of Region #20's total jobs.
- If Martin County maintains its current 37% share of total jobs, this suggests a net gain of 10,400 new jobs in Martin County by 2021.

St. Lucie County

- In 2012, St. Lucie County contained almost 92,000 jobs, reflecting a jobs-to-population ratio of 0.33. That is, there are 0.3 jobs per resident for the 281,151 residents in the county. St. Lucie County has a 45% share of Region #20's total jobs.
- By comparison, 2012 jobs-to-population ratios varied from 0.39 (Florida, which reflects the large number of retirees in the state), to 0.47 (Palm Beach County), to 0.63 (United States).
- These ratios illustrate the magnitude of retirees on South Florida's economy, as there are more residents than jobs. It suggests that economic development initiatives focused on net new job creation are critical as a means of reducing that imbalance in both Martin and St. Lucie counties. Potential impacts on the waterways will depend on the types of jobs that are created. For example, strategies that focus on business retention and recruitment in the marine industries will have a direct impact on the waterways, while strategies in other industries, such as retail or high-tech, may not necessarily have a direct impact.
- If St. Lucie County maintains its current 45% share of total jobs, there exists the potential for 12,500 new jobs in St. Lucie over the next eight years.

Table 3: Business Mix (by NAICS Code)—Martin County, 2012

NAICS Category	Businesses		Employees	
	No.	% of Total	No.	% of Total
Agriculture & Mining	576	3.8%	2,529	3.3%
Construction	1,601	10.7%	6,429	8.4%
Manufacturing	572	3.8%	3,887	5.1%
Transportation & Warehousing	310	2.1%	1,996	2.6%
Communications	86	0.6%	570	0.7%
Utilities	48	0.3%	478	0.6%
Wholesale & Retail Trade				
Wholesale	611		3,111	
Retail	2,011		14,533	
- Home Improvement	120		1,116	
- General Merchandise	31		1,455	
- Food Stores	177		2,406	
- Auto Dealers/Gas Stations	206		1,413	
- Apparel & Accessory Stores	137		688	
- Furniture/Home Furnishings	206		748	
- Eating & Drinking Places	391		4,050	
- Miscellaneous & Non-store Retail	743		2,657	
Subtotal - All Retail:	2,622	17.5%	17,644	23.2%
Finance/Insurance/Real Estate	1,429	9.5%	5,616	7.4%
Services				
- Hotel/Lodging	53		555	
- Automotive Services	250		849	
- Motion Pictures & Amusements	316		2,435	
- Health Services	721		7,860	
- Legal Services	238		742	
- Educational Institutions	109		2,704	
- Other Services	5,976		17,949	
Subtotal - Services:	7,663	51.1%	33,094	43.4%
Government	87	0.6%	3,961	5.2%
TOTAL:	14,994	100.0%	76,204	100.0%

ANALYSIS:	
2013 Total Employment	76,204
As Share of Workforce Region #20	37.0%
2013 County Population	148,077
Jobs/Population Ratio	0.51

Source: ESRI Business Analyst; Dun & Bradstreet, Inc.; WTL +a, April 2014.

Table 4: Business Mix (By NAICS Code)—St. Lucie County, 2012

NAICS Category	Businesses		Employees	
	No.	% of Total	No.	% of Total
Agriculture & Mining	914	4.7%	3,430	3.7%
Construction	2,068	10.7%	7,515	8.2%
Manufacturing	561	2.9%	3,999	4.3%
Transportation & Warehousing	734	3.8%	3,126	3.4%
Communications	105	0.5%	522	0.6%
Utilities	55	0.3%	731	0.8%
Wholesale & Retail Trade				
Wholesale	762		3,221	
Retail	2,556		17,027	
- Home Improvement	136		978	
- General Merchandise	41		2,698	
- Food Stores	263		2,745	
- Auto Dealers/Gas Stations	243		1,692	
- Apparel & Accessory Stores	168		663	
- Furniture/Home Furnishings	276		745	
- Eating & Drinking Places	475		3,302	
- Miscellaneous & Non-store Retail	954		4,204	
Subtotal - All Retail:	3,318	17.1%	20,248	22.0%
Finance/Insurance/Real Estate	1,347	7.0%	4,799	5.2%
Services				
- Hotel/Lodging	78		1,312	
- Automotive Services	383		1,340	
- Motion Pictures & Amusements	406		1,547	
- Health Services	829		5,805	
- Legal Services	206		651	
- Educational Institutions	181		7,539	
- Other Services	8,037		21,759	
Subtotal - Services:	10,120	52.3%	39,953	43.4%
Government	125	0.6%	7,664	8.3%
TOTAL:	19,347	100.0%	91,987	100.0%

ANALYSIS:	
2013 Total Employment	91,987
As Share of Workforce Region #20	44.7%
2013 County Population	281,151
Jobs/Population Ratio	0.33

Source: ESRI Business Analyst; Dun & Bradstreet, Inc.; WTL +a, April 2014.

Table 5: Employment Forecasts—Workforce Region #20, 2013—2021

Employment Category	2013	% Dist.	2021	Change: 2013-2021	
				% Dist.	Total CAGR
Agriculture/Mining/Construction					
Agriculture	6,712		6,247		(465) -0.9%
Mining	86		103		17 0.0%
Construction	11,026		15,000		3,974 3.9%
Subtotal:	17,824	8.7%	21,350	9.1%	3,526 2.3%
Manufacturing					
Durable Goods Manufacturing	5,447		6,071		624 1.4%
Non-Durable Goods Manufacturing	2,110		1,978		(132) -0.8%
Subtotal:	7,557	3.7%	8,049	3.4%	492 0.8%
Transportation/Communications/Public Utilities					
Public Utilities	2,062		2,194		132 0.8%
Transportation & Warehousing	3,530		3,786		256 0.9%
Subtotal:	5,592	2.7%	5,980	2.6%	388 0.8%
Wholesale & Retail Trade					
Wholesale Trade	6,324		7,105		781 1.5%
Retail Trade	28,857		32,198		3,341 1.4%
Subtotal:	35,181	17.1%	39,303	16.8%	4,122 1.4%
Finance/Insurance/Real Estate					
Information	2,258		2,274		16 0.1%
Finance & Insurance	4,741		4,897		156 0.4%
Real Estate, Rental & Leasing	3,061		3,474		413 1.6%
Subtotal:	10,060	4.9%	10,645	4.5%	585 0.7%
Services					
Professional, Scientific & Technical Services	8,407		10,299		1,892 2.6%
Management of Companies & Enterprises	514		572		58 1.3%
Administrative & Waste Management	11,532		13,237		1,705 1.7%
Educational Services	1,404		1,736		332 2.7%
Health Care & Social Assistance	30,641		36,904		6,263 2.4%
Arts, Entertainment & Recreation	5,215		6,163		948 2.1%
Accommodation & Food Services	18,903		21,261		2,358 1.5%
Other Services (Except Government)	8,309		8,956		647 0.9%
Subtotal:	84,925	41.2%	99,128	42.4%	14,203 2.0%
Government	26,287	12.8%	29,535	12.6%	3,248 1.5%
Self-Employed & Unpaid Family Workers	18,506	9.0%	19,971	8.5%	1,465 1.0%
TOTAL - MSA:	205,932		233,961		28,029 1.6%
Annual Increase (Rounded):					3,500
Share of Jobs (If Jurisdiction Maintains its Current Share of MSA Employment):					
Martin County @	37%				10,400
St. Lucie County @	45%				12,500

Source: Florida Department of Economic Opportunity (Agency for Workforce Innovation); WTL +a, April 2014.

Visitor Trends by Jurisdiction

Based on available data, visitor and tourism trends were examined in both counties. This serves as the basis for identifying and measuring opportunities for lodging/hotel development potentials based on available/relevant information and data pertaining to visitor counts, recent/ongoing visitor events, growth in hotel rooms, annual hotel occupancies, and other factors. Due to the lack of visitor and tourism data for St. Lucie County, the project team was able to prepare a preliminary lodging demand analysis only for Martin County, in that the county has now secured two years of visitor profile data. This analysis provides a lodging demand analysis measuring potential market support for hotel development given real estate investment conditions. It is understood that Martin County commissioned a first visitor study (data available for 2012 and 2013 only), and St. Lucie County's Tourist Development Council (TDC) has indicated it intends to initiate a similar study in partnership with Indian River State College in the fall of 2014.

Key findings regarding available tourism indicators are summarized below and illustrated in Table 6 and the map indicating locations of hotels and inns.

Martin County

- The Martin County TDC has tracked visitor counts only for 2012 and 2013, with an estimated visitor count of 281,700 in 2012, increasing to 291,100 visitors in 2013. This reflects an annual growth rate of 4%. By comparison, the number of overnight visitors to Greater Miami and the beaches has increased at a sustained annual rate of 1.9% per year, although visitor growth has exhibited wide fluctuations ranging from annual declines of -5.8% between 2000-2001 to an annual increase of 6.3% between 2010 and 2011.
- The Martin County TDC has also tracked annual bed tax receipts since 2004. Over the past 10 years, the amount of transient occupancy taxes collected in Martin County has jumped by fully 89% from \$629,000 in 2004 to more than \$1.19 million in 2013.
- The Martin County TDC reports a total inventory of 1,364 rooms. STR Global (STR), the industry leader in hotel performance data, tracks market data for 1,126 rooms. The difference is likely attributable to smaller properties such as bed and breakfasts and inns that typically do not report their annual performance metrics to STR.

St. Lucie County

- As noted, no information on annual visitor counts is available for St. Lucie County. A recommendation to overcome this data shortfall is presented in the Key Findings and Recommendations section of this chapter.
- However, the TDC in St. Lucie County has tracked annual bed tax receipts since 2004. Over the past 10 years, the amount of transient occupancy taxes collected in St. Lucie County has

increased at a more modest pace of 6.4% from \$2.43 million in 2004 to \$2.59 million in 2013.

- Not surprisingly, peak months for bed tax collections are January, February and March which comprise 11% to 15% of total receipts. Otherwise, bed tax collections are uniformly distributed throughout the remainder of the year in the range of 5% to 7% per month.
- The St. Lucie TDC reports a total inventory of 3,290 hotel rooms. This comprises 1,530 rooms in Fort Pierce and 1,760 rooms in Port St. Lucie (including the Hutchinson Island portions of St. Lucie County) and excludes RV parks and campgrounds. STR reports 2,353 rooms for the county. The difference is likely attributable to smaller properties such as bed & breakfasts and inns that typically do not report their annual performance metrics to STR.



Table 6: Various Tourism Indicators (Based on Available Data), 2004—2013

Month	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	Change-Reporting Period	
											%	Monthly Dist.
Martin County (Partial Data)												
Annual Visitors	-	-	-	-	-	-	-	-	281,700	293,100	4.0%	
Est. Direct Spending	-	-	-	-	-	-	-	-	\$ 107,261,200	\$ 115,896,500	8.1%	
First-time Visitor	-	-	-	-	-	-	-	-	31%	33%	7.4%	
Repeat Visitor	-	-	-	-	-	-	-	-	69%	67%	-3.3%	
Party Size	-	-	-	-	-	-	-	-	2.35	2.25	-4.3%	
Length of Stay	-	-	-	-	-	-	-	-	3.3	3.3	0.0%	
Hotel Rooms	-	-	-	-	-	1,332	1,335	1,349	1,364	-	2.4%	
Avg. Daily Rate	\$ -	\$ -	\$ 108.37	\$ 100.25	\$ 95.55	\$ 89.57	\$ 82.27	\$ 85.16	\$ 85.20	\$ -	-4.9%	
Annual Bed Taxes	\$ 629,085	\$ 692,176	\$ 668,563	\$ 615,861	\$ 682,585	\$ 1,022,512	\$ 1,064,111	\$ 1,138,164	\$ 1,189,656	\$ -	89.1%	
St. Lucie County												
Annual Bed Tax Collections by Month												
October	\$ 130,985	\$ 166,716	\$ 135,365	\$ 143,974	\$ 171,229	\$ 132,587	\$ 102,493	\$ 130,442	\$ 173,278	\$ 149,534	14.2%	6%
November	139,317	203,138	238,022	160,992	164,799	121,770	114,708	138,672	163,734	155,148	11.4%	6%
December	162,389	207,140	222,998	192,166	178,921	139,969	140,255	169,856	226,034	191,586	18.0%	7%
January	249,554	339,531	272,209	234,963	257,437	206,169	199,466	273,540	310,747	265,194	6.3%	11%
February	346,159	331,438	371,042	328,751	313,549	265,083	242,867	307,808	313,774	318,995	-7.8%	13%
March	434,568	352,873	395,034	428,566	398,582	279,893	315,183	360,935	370,465	393,407	-9.5%	15%
April	207,008	242,180	249,718	217,745	190,243	171,871	204,344	193,666	212,720	239,366	15.6%	9%
May	165,803	195,765	232,280	181,655	167,072	167,858	150,512	174,584	175,584	183,814	10.9%	7%
June	163,979	196,339	175,440	180,677	148,861	148,302	152,969	169,521	182,609	180,143	9.9%	7%
July	178,699	193,147	175,586	193,005	148,197	138,879	163,167	180,947	204,977	187,503	4.9%	7%
August	140,025	162,040	161,379	168,704	143,523	111,984	155,446	158,014	204,971	169,486	21.0%	6%
September	115,769	167,073	132,651	136,054	192,907	78,896	98,181	110,371	140,348	156,068	34.8%	5%
TOTAL:	\$ 2,434,258	\$ 2,757,380	\$ 2,761,724	\$ 2,567,239	\$ 2,475,321	\$ 1,963,352	\$ 2,039,593	\$ 2,368,356	\$ 2,678,874	\$ 2,590,245	6.4%	

Source: Martin County Tourism Development Council; St. Lucie County Tourism Development Council; Treasure Coast Regional Planning Council; Research Data Services, Inc.; WTL+a, May 2

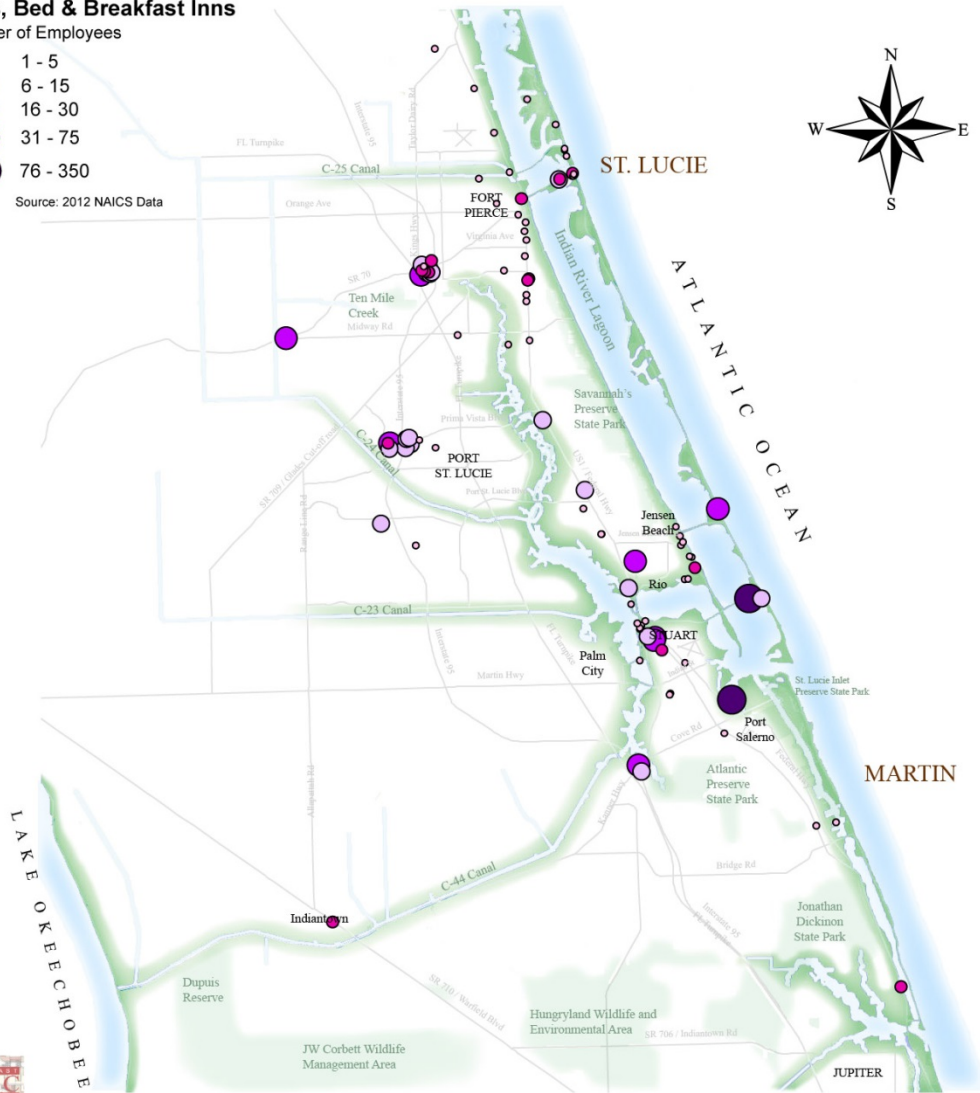
Martin & St. Lucie WATERWAYS PLAN

Hotels, Bed & Breakfast Inns

Number of Employees

- 1 - 5
- 6 - 15
- 16 - 30
- 31 - 75
- 76 - 350

Source: 2012 NAICS Data



HOTELS BY NUMBER OF EMPLOYEES



Rev. 8/21/2014

Marine-related and Supporting Industries

The project team examined marine-related and supporting industries to understand the impacts of such industries on the economies of both counties using secondary data. As part of an overview of the economics of selected marine-related industries, the following research activities were conducted:

- Reviewed available data on boat building/repair and sales; fuel sales, including fuel sales taxes as provided by the Florida Department of Revenue; and sale of marine-related provisions.
- Examined available data on specific marina activities such as recreational and commercial boating to understand the number of wet/dry dock facilities, marina slips, and occupancy patterns.
- Reviewed available data on annual boater registrations, including local and other Florida counties as well as out-of-state registrations.
- Researched available data on the Port of Fort Pierce such as warehousing/storage, shipping, and freight/trans-shipment movement by cargo tonnage.
- Summarized competition from other ports in South Florida such as the Ports of Palm Beach, Broward, and Miami-Dade counties.
- Reviewed economic activity indicators in the registered boating industry for Martin and St. Lucie counties, including direct and secondary spending by category per registered boat, direct and indirect employment, and total economic effects per County. This summary was based on the most recent data available from 2007-2008, which was summarized in a study completed in 2009.

Maritime Industries as an Economic Driver

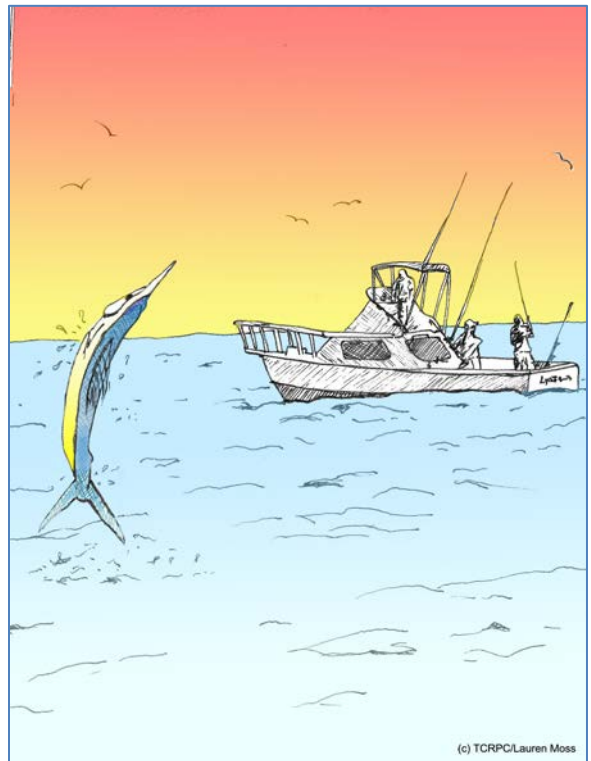
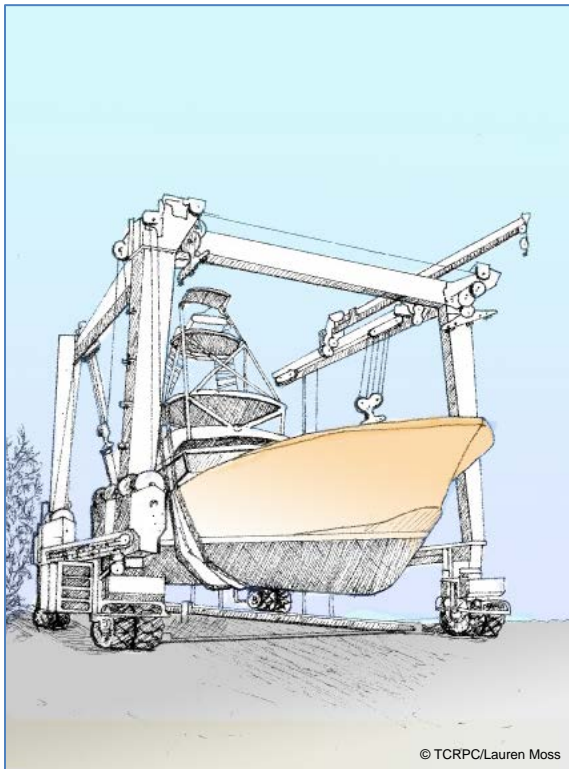
The maritime industries are a major contributor to the county economies of both Martin and St. Lucie counties. “Maritime industries” is a broad category of sub-industries including:

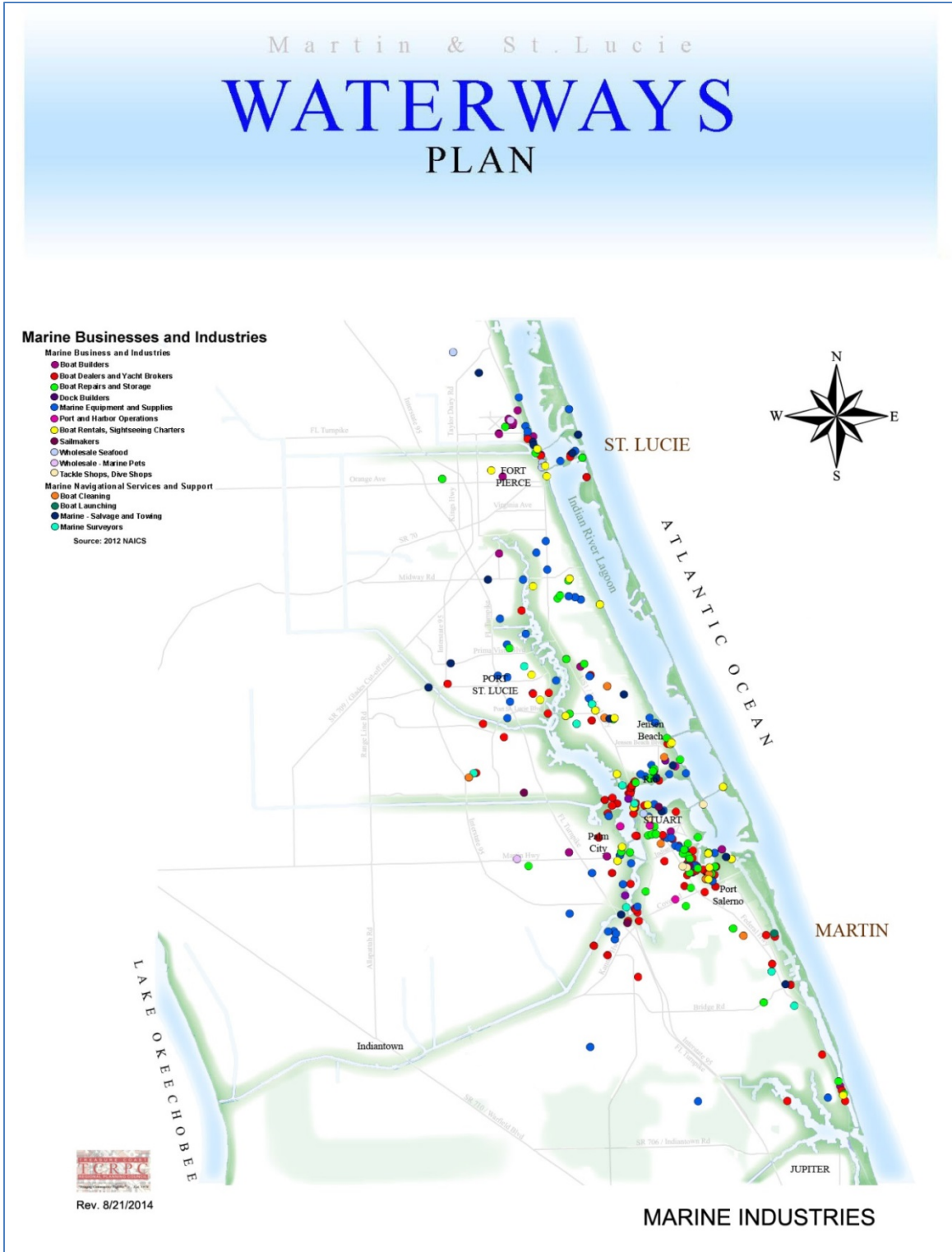
- Boat building and manufacturing
- Boat sales through dealers and brokers
- Marinas which provide slips and storage, maintenance and servicing
- Marine Services companies that provide maintenance and repairs, replacement engines and trailers, parts and specialized labor for maritime activities and facilities such as underwater welding and salvage
- Recreational Boating activities and the services and goods they incorporate boat and auto fuels, groceries and supplies, parts and servicing, marine accessories for boating, and costs for rental of marina slips, dry storage, and other costs

Economic Development

- Recreational commercial fishing such as charters and guide services for recreational anglers
- Commercial Fishing such as professional fishing companies that provide fresh catch for wholesale and retail markets
- Port Facilities for regional and globally linked shipping; this industry segment is linked to international changes in commercial cargo boat capacities, new dredge depth requirements for larger container boats, the resulting expansion of the Panama Canal (deeper and wider channels to accommodate the larger boats and increasing global trade), and Florida's emerging network of Ports, inland terminals, intermodal logistics centers and rail/road/port connections across the state as part of the SIS network

This broadly diverse industry is illustrated in the following map denoting locations of marine businesses and industries.





Economic Development

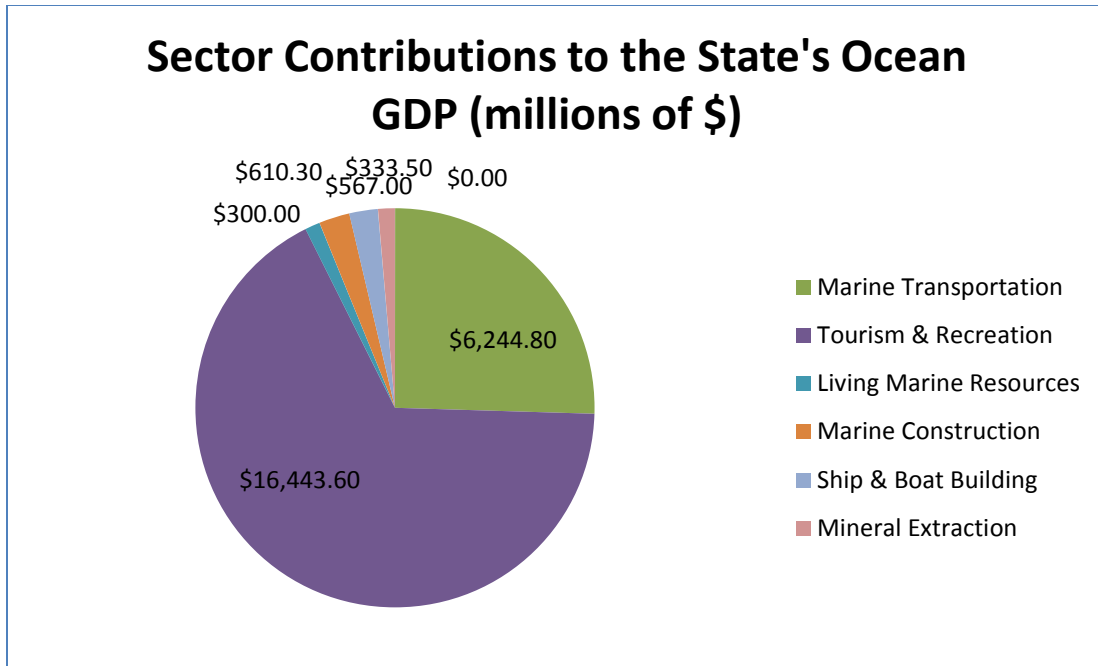
While the magnitude of these maritime industries in both Martin and St. Lucie counties totaled more than \$250 million in direct and indirect expenditures and represented more than 3,000 jobs (according to the most recent available from FWC, dated 2009), the project team's research indicated there is a surprisingly limited amount of information available about these industries and their status as economic drivers in 2014. To the extent possible, both primary and secondary research regarding existing conditions has been collected, analyzed, and summarized in the data, tables, and text that follows. The impacts in 2014 are likely much greater than those indicated in the 2009 study. This was the depth of the national downturn, and it should be noted that recreational boating was one of the most impacted business sectors during this period. However, there is a lack of industry-specific data, which is necessary to more specifically analyze current conditions and project trends. The need to develop and maintain a comprehensive Marine Industries dataset that provides the best possible information about the constituent industries comprising this industry cluster and its trends over time is addressed as a recommendation in Waterways Plan.

From a macro economic perspective, the contribution of oceans and major waterways to Florida's economy and its coastal counties is significant and directly addresses the need to develop a more site-specific understanding of how marine-dependent industries impact the region's economy. According to the latest data provided by the National Ocean Economics Program (NOEP), Florida's direct ocean economy in 2011:

- Generated \$24.5 billion or 3.3% of the state's Gross Domestic Product (GDP).
- Provided \$10.7 billion in wages and salaries.
- Provided 415,908 jobs.
- Encompassed over 25,000 establishments.

The NOEP defines the following industries as comprising the ocean economy:

- Tourism & Recreation
- Living Marine Resources
- Marine Construction
- Ship and Boat Building
- Mineral Extraction



Source: National Ocean Economics Program, Center for the Blue Economy website.

In their report, *State of the U.S. Ocean and Coastal Economies, 2014*, the National Ocean Economics Program provides some guiding language about the difficulties in measuring the value of the ocean economy as twofold:

“...defining the ocean economy requires a combination of industrial and geographical perspectives. Certain industries will be included by definition, as they directly use the ocean. For other industries, the choice of which establishments in that industry are selected for inclusion in the ocean economy will depend on their location in proximity to the oceans...”

“...Another important consideration in defining the ocean economy is to use data that permit the ocean economy to be compared to other parts of the economy on a consistent basis across time and space...”

In attempting to define the constituent components of a marine industries cluster, which, by definition, encompasses many sub-industries, data gaps and consistency issues over time and space are unavoidable.

Given the findings of this chapter, the marine industries clearly represent an industry sector that provides significant economic contributions to both counties. However, there is a need for a comprehensive industry dataset to assess and better define the industry, understand its historic performance within the counties and as compared to other regions, and project the industry’s growth and needs going forward.

Economic Development

Development and maintenance of information to track the trends, employment and economic activities associated with these industry segments is not just a marketing tool. It is also a recognition of the importance of the marine industry to both counties as a significant economic development component that is geographically suited to the water frontage, to upland development, land uses, and to sustaining a core of locally and family-owned small businesses. It is strongly recommended that this be better documented and tracked on an ongoing basis as part of each county's economic development strategy. The Treasure Coast Marine Industries Association is an existing entity that could structure and maintain a dataset, in partnership with local governments and business/economic organizations, but this effort would require support from the counties as the organization lacks the resources necessary to address this data need comprehensively.

It is also important to note the wage differential assigned to marine industrial jobs in the region versus other fields. Recent data compiled for the Port of Fort Pierce Master Plan Update (2012) indicates jobs in the marine/port/industrial/commercial realm tend to yield considerably higher wages versus lower-paying jobs found in the commercial, retail, and hospitality sector. Utilizing the Fort Pierce median incomes as a baseline, the study found marine-oriented jobs tended to generate average annual salaries exceeding \$50,000, more than 1.6 times the median household income in Fort Pierce, and slightly higher than the median household income for Florida overall.

As illustrated in the map of marine industries in this section, there is a clear concentration of these business establishments along the waterways, with clusters of businesses in Fort Pierce, Stuart, and Port Salerno. However, the geographic range of business locations extends well beyond the water's edge, and as indicated by the data, the marine industries sector affects the counties broadly and extensively.

Boat Building and Manufacturing Companies in Martin and St. Lucie Counties

The boat building and manufacturing industry is distributed nationally by both region and proximity to water. Linked to recreational fishing, speed boats and waterskiing, sailing, ocean going power boats, commercial fishing boats, mega yachts (generally defined as private pleasure boats over 100 feet in length), and individual recreational boats such as kayaks, canoes, rowing skulls and other craft, boat manufacturing facilities are located across the country. While some manufacturers are nationally and internationally known for their brands of mass produced boats or completely custom construction and design (higher end and higher priced), there are also local, one-location manufacturers that design, build and market boats of all sizes. The types of boats and locations are also tied to the water-based recreational activities within their respective regions. Bass boats are made in both waterfront states and inland to serve the Midwestern lake markets; but for salt water fishing boats, almost all of the manufacturing and servicing industry facilities need to be located on, or easily accessible to the ocean or (on the east coast) the ICW. Both Martin and St. Lucie counties have seen these industries develop and survive economic downturns and growth periods, and contribute to specialized skills and direct and indirect employment, economic contributions to local/regional economies, and a geographically specific economic opportunity for small and medium-sized businesses to develop.

Economic Development

There are varying inventories of boat manufacturers and builders in the two counties. The InfoUSA data, which is a national real estate inventory, identifies 24 boat builders according to the NAICS code classifications for the manufacturers of boats and boat/marine equipment and supplies. Data for these builders, including the number of employees, is included in this chapter, along with a map indicating the location of builders. Further research conducted as part of this study indicates potentially a broader list of boat and marine builders and manufacturers, with a total of 67 potential businesses in this category (33 in Martin County and 34 in St. Lucie County). Two of St. Lucie County’s top thirty employers are boat manufacturers, both located in Fort Pierce. These include Pursuit Boats, which employs approximately 200 persons (and established more than 20 years ago), and Maverick Boats, which employs 150 persons. A select listing of this larger pool of boat builders and manufacturers is presented in Table 7.

A marina inventory was also developed as part of this plan, with nearly thirty public and private marinas identified in the two counties, two-thirds of which are in Martin and roughly one-third in St. Lucie. These marinas can include wet slips (boats stored in the water, either in bays between floating walkways or tied up on anchored buoys in harbors or channels) and dry slips (boats stored on land or above the water in shelters). Some marinas offer both, some only wet slips. Marina capacities vary 25 to 40 slips for smaller facilities up to 300 wet slips in the largest location. Marinas also vary in the sizes of the boats they can accommodate, the facilities they provide, proximity to upland amenities, and whether they rent slips on a transient (daily or weekly) up to an annual basis.



A range of boat-building activities within the region. Image credits (clockwise from top left):

*www.americancustomyachts.com,
www.charterworld.com,
www.pursuitboats.com, and
www.bonadeboatworks.com.*

Table 7

SELECT LISTING OF BOAT BUILDERS & MANUFACTURERS				
#	COMPANY	PRIMARY CITY	BUSINESS CATEGORY (NAICS)	REPORTED # OF EMPLOYEES
1	Jupiter Hills Lighthouse	Tequesta	Boats-Manufacturers	1-4
2	Applied Concepts Unleashed Inc	Stuart	Boats-Manufacturers	5-9
3	Nordhavn Yachts	Stuart	Boats-Manufacturers	1-4
4	American Custom Yachts Inc	Stuart	Boats-Manufacturers	50-99
5	Bonadeo Boatworks LLC	Stuart	Boats-Manufacturers	5-9
6	Gamefisherman Inc	Stuart	Boats-Manufacturers	5-9
7	Garlington Landeweer Marine	Stuart	Boats-Manufacturers	10-19
8	Hake Yachts Inc	Stuart	Boats-Manufacturers	20-49
9	Jim Smith Boats	Stuart	Boats-Manufacturers	20-49
10	L & H Boats Inc	Stuart	Boats-Manufacturers	1-4
11	Lenco Marine Inc	Stuart	Marine Equipment & Supplies-Manufacturers	20-49
12	Lewis Marine Supply	Stuart	Marine Equipment & Supplies-Manufacturers	5-9
13	Lost River Marine	Stuart	Boats-Manufacturers	5-9
14	Malle Boat Works	Stuart	Boats-Manufacturers	5-9
15	Malle Building	Stuart	Boats-Manufacturers	1-4
16	R & R Boatworks	Stuart	Boats-Manufacturers	5-9
17	Willis Marine Inc	Stuart	Boats-Manufacturers	1-4
18	Asay Boats & Construction Co	Fort Pierce	Boats-Manufacturers	5-9
19	Bad Marine	Fort Pierce	Boats-Manufacturers	1-4
20	Maverick Boat Co Inc	Fort Pierce	Boats-Manufacturers	100-249
21	Pursuit Boats	Fort Pierce	Boats-Manufacturers	100-249
22	Arrow Power Boats	Fort Pierce	Boats-Manufacturers	5-9
23	Cracker Boy Boat Works Inc	Fort Pierce	Boats-Manufacturers	10-19
24	Hi-Tide Boat Lifts	Fort Pierce	Boat Equipment & Supplies-Manufacturers	50-99

SOURCE: InfoUSA 2013

Boat Dealers

Boat dealers in the counties include boat and yacht sales from Tequesta north to Fort Pierce, and include direct retail sales of new and previously owned boats as well as brokerage. Some dealers, as noted on the initial research list which follows, also offer operations, distribution services, and maintenance and specialty parts along with sales. There is inconsistency within the InfoUSA data regarding employee counts for these dealers; however, the tendency is towards smaller, specialized dealers that tend to employ up to five persons on average. The list from this source represents 50 boat dealers in both counties.

Table 8: Selected Boat Dealers, Martin County

No.	Name	Location	Business Categories
1	A Sailor's Place	Stuart	Boat sales; focus on inflatable boats/life rafts
2	A-1 Marine Tech Inc	Stuart	Boat Sales
3	A & J Boat Works	Stuart	Boat Sales
4	Aquarius Marine Systems	Port St. Lucie	Boat Sales
5	Blanchard Yacht Service	Jensen Beach	Yacht Sales
6	Gaston's Seagate Marine Sales	Stuart	Boat Sales
7	Hobe Sound Marine	Hobe Sound	Boat Sales
8	Hinckley Yacht Company	Stuart	Yacht Sales
9	HMY Yachts	Stuart	Yacht Sales
10	Island Trader Yacht Sales	Stuart	Yacht Sales
11	Lindsay Marine	Stuart	Boat Sales
12	MarineMax	Stuart	Boat Sales
13	Ocean Blue Yacht Sales	Stuart	Boat Sales
14	Palm City Boats	Stuart	Boat Sales
15	Pro Boats	Stuart	Boat Sales
16	Rhumb Line Yacht Sales	Palm City	Boat Sales
17	RJ Marine Group	Palm City	Boat Sales
18	Sea-maid Boat Lettering	Jensen Beach	Boat Sales
19	Sovereign Marine	Palm City	Boat Sales
20	Steadfast Marine	Port St. Lucie	Boat Sales
21	Stuart Yacht	Stuart	Yacht Sales
22	Sundance Marine	Jensen Beach	Boat Sales
23	Treasure Coast Boating Center	Stuart	Boat Sales
24	Treasure Coast Propellers	Stuart	Boat sales, specialty propellers
25	Treasure Coast Yacht Sales	Port St. Lucie	Yacht Sales
26	United Yacht Sales	Stuart	Yacht Sales
27	Whiticar Boat Works	Stuart	Boat/Yacht repair & maintenance
28	Whiticar Yacht Sakes	Stuart	Yacht Sales
29	Yacht Sales Consultants	Palm City	Yacht sales, brokerage

Source: Florida Boating & Recreation Guide, 2014; RDS, LLC; WTL+a, April 2014.

Table 9: Selected Boat Dealers, St. Lucie County

No.	Name	Location	Business Categories
1	The Marine Connection	Fort Pierce	Boat dealers, trailers, covers, tops
2	Top Notch Marine Inc.	Fort Pierce	Boat dealers, outboard motors, boat maintenance
3	Modern Discount Marine	Fort Pierce	Boat dealers
4	S2 Yachts	Fort Pierce	Boat dealers, yacht operations, boat distributors
5	Bluewater Sportfishing	Fort Pierce	Boat dealers, distributors, manufacturers
6	St. Lucie Outboard Marine	Fort Pierce	Boat dealers, outboard motors, boat maintenance
7	Hewes Manufacturing Co	Fort Pierce	Boat dealers, outboard motors, boat maintenance
8	Treasure Coast Kawasaki	Fort Pierce	Boat dealers, motor cycles. engines
9	William M Busch	Fort Pierce	Boat dealers, maintenance & repairs
10	Novurania of America	Fort Pierce	Boat dealers, boat builders & distributors
11	Pursuit Boats	Fort Pierce	Boat dealers, distributors & manufacturers
12	Greater Yamaha of Palm Beach	Fort Pierce	Boat dealers
13	Chase Manufacturing	Fort Pierce	Boat dealers
14	RKD Yacht Sales	Fort Pierce	Boat dealers, yacht operations
15	Automarine	Fort Pierce	Boat dealers
16	Universal Catamaran	Fort Pierce	Boat dealers
17	Joker Marine	Fort Pierce	Boat dealers
18	Maverick Boat Company	Fort Pierce	Boat dealers, boat builders & distributors
19	Cracker Boy Boat Works Inc	Area	Boat dealers, maintenance & repairs
20	Kephart's Wooden Boat Shop	Area	Boat dealers
21	Spencer Yacht Brokerage	Port St. Lucie	Boat dealers, boat builders & boat yards

Source: Primary & secondary research; RDS LLC; WTL+a, April 2014.

In both Florida and across the U.S., the marina industry is generally fragmented in ownership and geography, other than the consistent requirement for water access. Both private marinas and municipally-owned facilities exist in both Martin and St. Lucie Counties, with marinas of widely ranging sizes, boat size capacities, provision of amenities and nearby supporting facilities, and degrees of access to waterways and open water. Marina pricing is determined by the size of the boat (in feet), the number and relative demand for wet/dry slips, and whether other services are offered (such as adjacent upland storage). Rates to keep boats in marinas vary according to the length of stay; slips may be leased on the basis of transient stays (by hour or day/days), by the month or year, by fixed location accessible to uplands or on water moorings/buoys, and whether electrical utilities are provided. Smaller marinas are oriented toward smaller boats of 35 ft. to 60 ft. in length), while others can accommodate larger craft up to 150 feet.

An inventory of public and private marinas was developed as part of the plan research. The following tables summarize these facilities with operational and capacity characteristics. These tables are intended to provide a baseline inventory to be updated over time as part of regional marine industries database.

Table 10: Selected Marina Facilities in Martin County

No.	Name	Location	Wet Slips	Min/Max Boat Length	Dry Storage	Daily/Transient Rates/Ft.	Monthly Rates/Ft.	Annual Rates/Ft.	Notes
1	Allied Marine	Stuart	54	up to 100 ft	N/A	N/A	N/A	N/A	Recently for sale
2	Four Fish Inn and Marina	Jensen Beach	25	up to 90 ft	55	N/A	N/A	N/A	Near DT Jensen Beach; For-sale \$1.25M
3	Harbor Inn & Marina	Stuart	80	15-60 ft		\$1/ft + \$10 elec.	\$14/ft	from \$100	Adjacent to Downtown Stuart
4	Harbor Ridge Yacht & Country Club	Palm City	98	24-60 ft	N/A	Privately owned slips; no public rentals			Private; gated community; 3 marinas
5	Indiantown Marina	Indiantown	41	up to 55 ft		\$1/ft+elec (\$6-10/day)	\$12/ft; \$450 min		Slips and dry storage; on St. Lucie canal
6	Loblolly Marina	Hobe Sound	79	up to 100 ft	N/A	\$2/ft +elec (\$10/day)	\$12/ft monthly contract		On Intra-coastal, by Hobe Sound Wildlife Refuge
7	Loggerhead Marina	Stuart	300	up to 120 ft		\$2/day; \$1.50/day/week (7 day min.)	\$10/ft	n/a	2 marinas; East: up to 120 ft; West: up to 80 ft
8	Manatee Marina	Port Salerno	40		121	\$1.75/ft + elec (\$5-10)	\$13/ft/mo	\$11.50/ft/mo	Working boatyard; dry storage: \$170-\$435/mo
9	Mariner Cay	Stuart	51	up to 80 ft		\$2/ft + elec (\$5-7/day)	available	available	Manatee Pocket
10	Martin County Marina	Palm City		up to 40 ft					Publicly-owned facility
11	Monterey Inn & Marina	Stuart	12	up to 35 ft	N/A	\$1/ft w/room; \$1.75/foot public; \$10/day elec	N/A	N/A	18 waterfront rooms on Okeechobee waterway
12	Monterey Yacht & Country Club	Stuart							Private, 55+ age-restricted community
13	Nettles Island Marina	Jensen Beach	66	N/A	N/A	\$1.75/ft	N/A	N/A	Private, gated resort; 25,000 lb boat lift
14	Pirate's Cove Resort & Marina	Stuart	50	up to 100 ft	available	\$2.25/ft slips; \$2.75/ft face dock+elec (\$5-7/day)			50 room inn; on Manatee Pocket
15	River Forest Yachting Centers	Stuart		20-90 ft	200+	Primarily dry storage; Hurricane Club face docks			90 boat interior storage; 110+ outdoor racks
16	River watch Marina & Boat Storage	Stuart				\$10/ft	\$345-495		+ \$50 to \$125/month dep on type of storage
17	Sailfish Marina of Stuart	Stuart	55	up to 85 ft	200	\$2.50/ft + electric	N/A	\$15/ft	Dry Stg for up to 32 ft boats; climate-controlled indoor; discounts for US Boat and Sea Tow members
18	Sailfish Point Marina & Yacht Club	Stuart	77	up to 125 ft					Private facility
19	Stuart Yacht & Country Club	Stuart							Private club and resort
20	Sunset Bay Marina	Stuart	198	up to 150 ft	N/A	\$2/ft + elec (\$6-9/day); moorings \$10/day	Moorings: \$240/mo	N/A	Field of 69 moorings
Total:			1,147		581				

Source: Florida Boating & Recreation Guide, 2014; RDS, LLC; WTL+a, April 2014.

Table 11: Selected Marina Facilities in St. Lucie County

No.	Name	Location	Wet Slips	Min/Max Boat Length	Dry Storage	Daily/Transient Rates/Ft.	Monthly Rates/Ft.	Annual Rates/Ft.	Notes
1	Fort Pierce City Marina	Fort Pierce	137	up to 150 ft	N/A	\$1.85/ft + elec (\$5-9)	1-4 mo: \$13.50/ft; 5-11 mo: \$12/ft	\$11/ft	
2	Fort Pierce Inlet Marina	Fort Pierce	170	up to 90 ft	available	N/A	N/A	N/A	
3	Harbortown Marina	Fort Pierce	320		30 acres	\$1.85/ft + elec (\$7-15)	3-11 mos: \$12.50/ft +	N A Dock: \$5.50/ft; \$8.50/ft + elec	40 transient slips; Whiticar Boatworks adjacent; Storage: \$8.50-12.50/ft; Floating docks: + \$1/ft per day
4	Harbor Isle Marina	Fort Pierce	68	up to 120 ft		\$1.85/ft + elec (\$10)	\$550-600 <43 ft \$12-13.5/ft >43 ft	\$11/ft/mo	
5	Little Jim's Marina & Fishing Bridge	Fort Pierce							
6	Pelican Yacht Club	Fort Pierce	93	25 to 125 ft		\$2/ft + elec (\$5-12)	\$14/ft	N/A	equity-owned private marina; limited transient slips
7	Riverside Marina	Fort Pierce	80	up to 105 ft		\$30/ft	\$8/ft/mo		2 transient slips
8	South Bridge Marina & Storage	Fort Pierce	40	up to 35 ft	available				
9	Taylor Creek Marina	Fort Pierce	10	up to 35 ft	600				Wet slip counts vary
Total:			918		100's				

Source: Florida Boating & Recreation Guide, 2014; RDS, LLC; WTL+a, April 2014.

Boat Registrations

The marina industry is also linked to trends in regional boat registrations. While some boat owners store their boats at home and transport them by trailer to the water, which limits the size of the boat, larger boats are stored in wet slips or seasonally in dry storage facilities. As context for both the marina industry overview and to understand apparent trends and patterns, boat registrations were documented for 2013, comparing Martin and St. Lucie counties. As context to understand their respective market positions, additional boat registrations were also documented for other Southeast Florida counties from Indian River County south to Miami-Dade County.

For purposes of this analysis, three target years were selected: 2004, prior to the economic downturn; 2009, during the beginning of the economic recovery; and 2013, the most current year for which data was available. The tables which follow document registration patterns by boat size, by pleasure and commercial category, and total by county.

Table 12 illustrates regional boat registration volume by category and class. Key findings for each jurisdiction are summarized below.

Martin County

- In Martin County from 2004 to 2013, the number of Class 1 boats (16-25 feet in length) has declined by 14%, from 9,123 in 2004 to 7,891 in 2013. This class of boat decline represents most of the reduction in total boat registrations for Martin County, as the total reduction in registrations in all boat categories is just under 1,950 (from 17,265 in 2004 to 15,322 in 2013).
- The other category that was dramatically reduced was the Class 4 commercial boat category (65 to 109 feet in length), decreasing from 32 in 2004 to only 4 in 2013.
- Given Martin County household sizes of 2.4 persons per household, and assuming one registered vessel per household, the county's total boater registration of 15,322 registered vessels indicates **approximately 20% of households have a registered vessel, or approximately 24% of the county's total population**, has access to a registered vessel, nearly all of which are motorized vessels, both commercial and pleasure craft. This figure does not include the anticipated large number of non-motorized watercraft (e.g., kayaks, canoes, paddleboards) owned within the county as many of these vessels are presumed to be not registered.
- These figures are notably higher than the average boater registration across the State of Florida. Given the state's household size of 2.58 persons and assuming one registered vessel per household, approximately 13% of all Florida households or 16% of the state's population have access to a registered vessel.

Table 12: Total Boat Registrations for Selected Southeast Florida Counties, 2004—2013

Class	Length	Martin County						Saint Lucie County						Palm Beach County					
		2004		2009		2013		2004		2009		2013		2004		2009		2013	
		PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM
A-1	< 12 ft	2,237	10	2,141	11	2,013	18	1,732	10	1,858	10	1,724	16	8,616	69	8,229	54	6,864	58
A-2	12-15 ft	2,286	69	1,993	65	1,840	62	2,930	91	2,464	97	2,153	86	6,199	168	5,229	140	4,552	142
Class 1	16-25 ft	9,123	281	8,121	321	7,891	326	6,864	236	7,443	272	6,817	298	21,178	510	20,214	515	18,277	506
Class 2	25-39 ft	2,470	105	2,341	115	2,435	105	1,005	82	1,003	70	967	90	5,655	208	6,034	244	5,794	252
Class 3	40-64 ft	467	42	400	31	462	26	162	26	167	15	174	9	1,113	87	1,008	87	957	75
Class 4	65-109 ft	42	32	27	1	51	4	3	3	1	2	11	-	93	12	99	14	118	12
Class 5	110 & up	5	-	2	-	-	-	3	-	3	-	-	-	6	1	7	-	13	-
	Canoes	-	96	90	-	89	-	83	-	103	2	137	-	235	3	283	3	277	1
	Subtotals	16,630	635	15,115	544	14,781	541	12,782	448	13,042	468	11,983	499	43,095	1,058	41,103	1,057	36,852	1,046
	TOTAL		17,265		15,659		15,322		13,230		13,510		12,482		44,153		42,160		37,898

Boat Registration Totals for Selected FL Counties																			
Class	Length	Indian River County						Broward County						Miami-Dade					
		2004		2009		2013		2004		2009		2013		2004		2009		2013	
		PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM	PLS	COM
A-1	< 12 ft	1,204	14	1,342	16	1,132	8	10,043	130	9,477	49	8,633	48	11,126	136	13,186	128	12,418	120
A-2	12-15 ft	2,886	97	2,701	99	2,350	90	6,473	132	5,472	121	4,945	104	6,552	163	6,256	164	5,889	171
Class 1	16-25 ft	5,448	202	5,751	236	5,510	247	21,470	458	19,745	391	19,031	401	27,381	943	29,068	888	27,922	901
Class 2	25-39 ft	649	46	713	52	649	57	7,279	203	7,198	204	6,725	241	7,785	416	9,954	463	10,134	467
Class 3	40-64 ft	134	10	164	10	156	12	1,609	142	1,430	118	1,427	120	1,440	126	1,575	117	1,920	120
Class 4	65-109 ft	7	-	11	-	14	-	123	52	121	30	194	18	150	41	154	51	371	39
Class 5	110 & up	-	-	-	-	1	-	12	10	12	8	9	4	15	6	17	10	34	10
	Canoes	162	2	183	3	171	1	246	1	253	2	244	1	250	2	295	2	343	1
	Subtotals	10,490	371	10,865	416	9,983	415	47,255	1,128	43,708	923	41,208	937	54,699	1,833	60,505	1,823	59,031	1,829
	TOTAL		10,861		11,281		10,398		48,383		44,631		42,145		56,532		62,328		60,860

Source: FDOT Registration Records, 2004, 2009, 2013; RDS LLC; WTL+a

St. Lucie County

- In St. Lucie County during the same 10 year period, one of the small boat categories (A-2 boats 12-15 feet in length) decreased by a total of 800, from 2,930 to 2,153. While the relative size and percentage (about 27%) is not as dramatic as the reduction in large commercial boats in Martin County, the more relevant finding is that the 800 boats represent most of the overall reduction in registrations. Overall totals remained stable over this period.
- St. Lucie County has a slightly higher average household size of 2.63 persons. Assuming one registered vessel per household, the county's total boater registration of 12,482 registered vessels indicates **approximately 9% of households have a registered vessel, or approximately 11% of the county's total population**, has access to a registered vessel, nearly all of which are motorized vessels. Again, this figure does not include the anticipated large number of non-motorized watercraft (e.g., kayaks, canoes, paddleboards) owned within the county as many of these vessels are presumed to be not registered.

Neither Martin nor St. Lucie has captured a major share of registrations of larger boats (65 ft. and larger). In fact, in 2013, registrations in Palm Beach, Broward and Miami-Dade totaled 143, 225, and 454, respectively, in the large boat categories. Comparatively, registrations in this category in Martin County totaled 55 and St. Lucie County reported a total of 11 large registered boats. The economic impact of attracting these larger boats for upland services, fuel and other spin-off benefits can be significant, should the counties be able to attract them.

Using the same parameters, but to better understand the relative relationship of population and boat ownership/use in Southeast Florida, Martin County has the highest 'user penetration' rate: almost 100 boats registered per 1,000 residents. Notably, both Miami-Dade and Palm Beach Counties have a far lower penetration rate, with approximately 23 registrations per 1,000 residents in Miami-Dade and 27 per 1,000 in Palm Beach County. Clearly, boating (both leisure and commercial) is big business in both Martin and St. Lucie Counties. As illustrated in Table 13, key findings suggest the following:

- While the more populous of the six counties (Indian River, St. Lucie, Martin, Palm Beach, Broward and Miami-Dade) all have far greater resident population bases, it should be noted that in boat registration and users per 1,000 residents, **Martin County ranks first among Southeast Florida counties in pleasure boats and sixth in commercial boats** (an indication of the relative positioning for commercial fishing, charters, service boats, etc.). By comparison, **St. Lucie County ranks third among Southeast Florida counties in pleasure boat registrations and second in commercial boat registrations.**
- **Martin County has the highest 'user penetration rate': almost 100 boats registered per 1,000 residents.** Notably, both Miami-Dade and Palm Beach Counties have far lower penetration rates, with approximately 23 registrations per 1,000 residents in Miami-Dade and

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27 per 1,000 in Palm Beach County. Clearly, boating (both leisure and commercial) is a big business in both Martin and St. Lucie Counties and represents a priority expenditure for residents..

Table 13: Comparison of Boat Registrations, by 2013 County Population

County	2013 Population	Registered Pleasure Boats	Pleasure Boats Per 1,000 Residents	Registered Commercial Boats	Commercial Boats Per 1,000 Residents
Miami-Dade	2,582,375	59,031	22.9	1,829	0.71
Broward	1,784,715	41,208	23.1	937	0.53
Palm Beach	1,345,652	36,852	27.4	1,046	0.78
Saint Lucie	281,151	11,983	42.6	499	1.77
Martin	148,077	14,781	99.8	54	0.36
Indian River	139,586	9,983	71.5	415	2.97

Source: University of Florida, Bureau of Business & Economic Research; RDS LLC; WTL+a, April 2014.



Although every type of boat is registered in the region, the registration data indicates a considerable majority of registered vessels are less than 25 feet. Photo credits (clockwise from top left); Cambridge Systematics, Inc./www.atlanticvrusingclub.com, www.boattreasurecoast.com, and www.pursuitboats.com.

Mega-Yacht Operating Expenses

The economic impact of attracting larger boats for upland services, fuel, and other spin-off benefits can be significant, if Martin and St. Lucie counties can accommodate these vessels with accessible marina facilities. Megayacht listings such as superyacht.com indicate nearly 3,800 vessels worldwide ranging from 24 meters (79 feet) to nearly 600 feet, with more than 500 new vessels currently under construction. The economics and spending patterns of yacht and megayacht owners are not generally documented, but a recent article in the New York Times, which equated the annual spending by a U.S. billionaire on his mega-yacht to the economic spin offs from his charitable contributions are telling. The table below illustrates the amounts of direct spending that can be calculated based on his boat’s stated operating costs:

Table 14: Illustrative Example—Mega-Yacht Operating Expenses

Category	Estimated Total Costs	
	Monthly	Annual
Captain's Salary	14,583	175,000
Crew Salary (Per Person)	3,750	45,000
Nine Crew (Excluding Captain)	33,750	405,000
Other costs (Fuel, Provisions)	117,917	1,415,000
Overall Operating Costs:	\$ 170,000	\$ 2,040,000

Source: New York Times; RDS, LLC; WTL+a, April 2014.

While the salaries of the Captain and crew are not necessarily locally-based expenditures, monthly and annual operating costs (\$ 170,000 per month or over \$2 million per year) are potentially enormous, and unlikely to be affected by economic downturns. Moreover, megayachts are lucrative for local businesses when yachts and mega-yachts purchase fuel and provisions during an in-port stop. Average daily operating costs are just under \$4,000 per day excluding salaries.

The counties could derive economic benefit from megayacht activity with focused efforts to provide safe access with select channel dredging to access marinas for provisioning and service. The existing U.S. Customs Office in Fort Pierce and pending facility in Stuart could enhance the competitiveness for megayacht service for vessels in-bound from the Atlantic or those traveling

the ICW before departure abroad. Better access could also increase local registrations of this class of vessels, which could expand the benefits of this activity.

Economic Significance of Boating

The following summarizes the economic significance of the recreational boating industry in Martin and St. Lucie Counties. Importantly, the project team notes that this analysis is based on limited/outdated available information (from 2007—2008) on the recreational boating industry in Martin and St. Lucie Counties.

As illustrated in Table 15, the economic activities associated with recreational boating expenditures totaled over \$100 million for both counties (based on 2007—2008 data). While overall spending by category is largely parallel in terms of the distribution of spending in each category between the two counties, the absolute amounts vary considerably. By far the greatest amount of proportional spending is for boat fuel (which accounts for 36% to 38% in each county) as well as retail and food services associated with boating trips.

As illustrated in Table 16, a comparison of indirect economic activity/annual spending by individual water craft based on 2007—2008 data indicates that the highest spending categories in both counties included boat accessories and repairs and debt/loan repayments. The comparative table in this section illustrates the estimated total annual economic benefits and implications of boat ownership and compares results for Martin and St. Lucie Counties. Key findings suggest that:

- Total annual economic effects from pleasure boating in **Martin County generate more than \$149 million per year** in the local economy
- Total economic effects from pleasure boating in **St. Lucie County generate approximately \$105 million per year** in the local economy
- As illustrated in Table 17, in terms of jobs created and sustained for total boat-related employment (both direct and indirect), **Martin County generated almost 1,800 boat-related jobs and St. Lucie County contained slightly more than 1,300 boat-related jobs in 2007—2008.**

Table15: Economic Significance of Boating—Martin & St. Lucie Counties (2007—2008)

	Martin County	% of Total	St. Lucie County	% of Total
County Population (2009)	139,794		413,204	
Boat Data				
Total Registered Boats	11,271		14,605	
Boats Per 1,000 Residents	81		35	
Boat Sales	\$ 53,180,500		\$ 26,406,400	
Estimated Jobs	1,319		1,007	
Total Estimated Boating Days/Year	346,402		419,035	
Boat Activity-Related Direct Spending				
Lodging	\$ 7,426,500	11.4%	\$ 3,960,400	8.8%
Restaurants	9,246,600	14.2%	6,356,700	14.1%
Groceries	8,111,800	12.5%	5,873,200	13.0%
Recreation & Entertainment	1,978,000	3.0%	1,242,000	2.8%
Shopping	1,519,500	2.3%	899,900	2.0%
Marine Supplies	3,735,800	5.7%	2,728,800	6.1%
Boat Fuel	23,771,500	36.5%	17,252,300	38.3%
Auto Fuel	6,249,500	9.6%	4,827,600	10.7%
Marina Services	3,053,700	4.7%	1,876,500	4.2%
TOTAL:	\$ 65,092,900	100.0%	\$ 45,017,400	100.0%

Source: *Florida Fish & Wildlife Conservation Commission, Recreational Marine Research Center Report, 2009; RDS, LLC; WTL+a, July 2014.*

Table 16: Average Annual Indirect Economic Activity per Craft (2007—2008)

Category	Martin County	% of Total	St. Lucie County	% of Total
Slip Occupancy Costs	\$ 10,059,900	9.6%	\$ 6,825,200	9.1%
Debt/Loan Payments	17,037,500	16.3%	11,472,800	15.4%
Replacement Motors	4,595,600	4.4%	3,961,800	5.3%
Replacement Trailers	1,089,300	1.0%	1,019,400	1.4%
Insurance	8,640,400	8.3%	5,848,500	7.8%
Repairs	22,182,800	21.3%	15,267,300	20.4%
Boat Accessories	38,794,100	37.2%	28,914,800	38.7%
Taxes	1,977,300	1.9%	1,350,700	1.8%
TOTAL:	\$ 104,376,900	100.0%	\$ 74,660,500	100.0%

Source: Florida Fish & Wildlife Conservation Commission; Recreational Marine Research Center Report, 2009; RDS, LLC; WTL+a, July 2014.

Table 17: Annual Economic Significance of Registered Boats (2007—2008)

Category	Martin County	St. Lucie County
Direct Economic Effects	\$ 100,005,700	\$ 72,796,500
Indirect Economic Effects	49,259,900	32,591,200
Total - Economic Effects:	\$ 149,265,600	\$ 105,387,700
Total Jobs(Direct)	1,319	1,007
Total Jobs (Indirect)	461	300
Total Boat-related Jobs:	1,780	1,307

Source: Florida Fish & Wildlife Conservation Commission; Recreational Marine Research Center Report, 2009; RDS, LLC; WTL+a, August 2014.

Commercial Fishing and Economic Impacts

The economic impact of commercial fishing should also be considered as a viable economic development strategy, both as a direct generator (boat purchases, fish sales, employment etc.) and indirect (food processing and packaging, taxes generated, among other factors). Within the commercial fishing industry in the United States, the three major categories of economic activity are those generated by:

- Seafood/fish harvesters (fishermen, supporting boat industries)
- Seafood processor and dealers (storage, processing, packaging, transportation)
- Seafood wholesalers and retailers (brokers, business owners, restaurant suppliers)

According to 2011 data from the National Oceanographic and Atmospheric Administration, the federal agency that tracks the industry, Florida’s commercial fishing industry ranks second nationally in total sales with over \$14 billion and third in total employment with over 72,000 employees statewide. California was ranked first, with just over \$20 billion in total sales and total jobs at 122,000.

The National Maritime Fishing Survey is the source of information for state-wide and sub-regional annual commercial fishing totals, calculated in Metric Tons, total Pounds and value in dollar values. The table which follows illustrates the increase in value per year in commercial fishing volume for East Florida, the smallest geographic area for which data was available; despite relatively stable total annual tons/pounds the value increases are an indicator of changing consumer tastes and growing demand for seafood.

As illustrated in Table 18, commercial fishing volumes in “East Florida” have held generally steady in terms of tonnage, but **overall values have increased—from \$42.6 million in 2001 to more than \$57.7 million in 2012—a value gain of \$15.1 million and a significant, 35.5% change** in the value of commercial fishing catches.

Table 18: Commercial Fishing Volumes in East Florida, 2001—2012

<i>Reporting Year</i>	<i>Metric Tons (all species)</i>	<i>Pounds</i>	<i>Value in Dollars</i>
2001	12,308	27,020,921	\$ 42,639,065
2002	9,839	21,692,920	\$ 77,058,967
2006	12,256	27,020,921	\$ 42,001,701
2007	11,429	25,196,129	\$ 42,767,514
2011	14,172	31,244,000	\$ 60,463,000
2012	12,964	28,519,772	\$ 57,769,543

Source: National Maritime Fishing Survey, NOAA; RDS LLC, WTL+a

Aquaculture

Aquaculture is a growing practice, both domestically and agriculturally, for the production of food as well as stock enhancement. For food production, the regional planning council has noted in its various planning and economic development studies, particularly its Comprehensive Economic Development Strategy plans that the Agribusiness, Food Processing and Technology industry plays a large role in the region's overall economy. Agribusiness is identified as one of the region's prominent industry clusters and within the study area reflected an industry cluster employment location quotient of 1.41 in 2012. This means the region has approximately one and a half times as many agribusiness workers as the national average. In 2012, according to www.statsamerica.org, the study area employs approximately 3,921 people in the Agribusiness industry cluster. This level of employment represents just slightly over 3.0% of all industry cluster jobs.

Although employment in agriculture is declining, the region maintains a primary role in agricultural production. Palm Beach County ranks first in the state in income from agricultural sales, and it is of national prominence in the production of sugar cane and winter vegetables. St. Lucie County is the largest grapefruit producing county in the state, and the region is Florida's largest producer of citrus.

An important industry within the Agribusiness cluster in the study area is emerging and expanding aquaculture, and a number of aquaculture businesses are existing and in the development stages within the study area and nearby. In Indiantown, PureGrown Aquaculture currently produces sunray venus clams for consumption among its products. Fresh Shrimp USA recently announced plans for a \$12 million shrimp aquaculture facility, expected to employ 60-80 after its 2016 projected opening. Other local aquaculture producers include Florida Organic Aquaculture, which is a production and research facility in Fellsmere (Indian River County) geared towards shrimp production, and Florida Organic Aquaculture in Jupiter (Palm Beach County), which produces shrimp and sea cucumbers for sale.



According to the Florida Department of Agriculture and Consumer Services, Florida's aquaculture industry is a growing and diverse part of Florida's agribusiness. Florida aqua-culturists produce the greatest variety of aquatic species of any state in the nation. The country's aquaculture sales during 2007 were more than \$1.4 billion, with Florida ranking seventh in total sales. Edible, farm-raised aquatic products are the fastest-growing sector in world food production.

Aquaculture is also utilized for stock enhancement, which can directly support the commercial and recreational fishing industry. The FFWCC's Florida Marine Fisheries Enhancement Initiative is directly geared to assist in the enhancement of the saltwater sportfish population. This initiative includes the development of a series of strategically networked hatcheries along Florida's coasts that can respond to regional sportfish needs. Both FAU/Harbor Branch Oceanographic Institute (Fort Pierce) and Florida Oceanographic Society (Stuart) are engaged in this effort. Sport fishing is a key economic driver in the region, and efforts such as these should be reinforced and supported to help sustain and enhance this economic contributor.

Recreational Fishing as an Economic Contributor

While usually recognized more as a leisure activity than as a tool for economic development, recreational fishing is both a widely distributed activity and a major force in the economics of the state's tourism, and as a business sustained by Florida residents as well as visitors. According to the Florida Taxwatch Report released in 2013, Florida was ranked first in the United States, both in total number of anglers as well as in total annual angler expenditures, with approximately \$5 billion spent on fishing and fishing-related activities in 2012. These expenditures also supported over 80,000 jobs for Floridians, a significant total.

In 2011, FDEP indicated Florida had about 3.3 million fishing participants, with saltwater fishing representing 2.1 million participants (65% of the total) and 1.2 million participants in freshwater fishing (35% of the total). Of the 3.3 million total anglers who fished in Florida in 2011, 1.2 million (over a third) were non-Florida residents, an indication of the volume of tourism participants interested in fishing and spending in the state for licenses, equipment, boat rentals or charters, tackle, lodging, and meals associated with fishing trips.

- In 2012 alone, freshwater fishing license fees to the state generated \$9.4 million in state revenue, while saltwater fishing generated \$26.8 million in license fees. This split is an indication of the disproportionate share of total expenditures that are represented by saltwater anglers, at just under 75% of the total.
- In total, state and local taxes, including indirect tax benefits from fuel, food and beverage, sales tax on equipment, charters and other taxable expenditures, recreational fishing generated \$440.6 million in 2011.

As a tourism strategy related to the waterways economic development programs for Martin and St. Lucie counties, the benefits of proximity to open ocean, blue water, and world class game fish like Marlin is an opportunity that cannot be replicated elsewhere in the U.S.

Today, Florida's historic waterfront communities are once again in the process of reinventing themselves. In the wake of the net ban enacted in the mid-1990s, many of these communities are exploring new industries, including aquaculture and tourism. But even as times change, commercial fishing continues to be a mainstay of some waterfront economies. From Key West "pink gold" to Apalachicola oysters, wild-caught Florida seafood remains a premium product that is much sought after.

Florida Department of Agriculture and Consumer Services

Due to limited tourism expenditure data for Martin and St. Lucie counties, it was not possible to quantify specific spending and impact levels at a county-wide basis, but the connection to water proximity, water-based services, and businesses in both counties is presumably quite significant. It is recommended that, as possible, a standardized system to monitor the impact of the fishing industry in both locations should be researched, documented, and used as a baseline for future econometric measures of fishing's impact on the economic activity in both counties. It is too lucrative an industry not to document its beneficial impact, both as a tourism generator, which is a source of expenditures for a number of water-based industries, suppliers and services and as a low cost/low impact economic driver that does not require extensive public capital investment.

Cargo Shipping, Port Capacity and Florida's Commitment to Growth

Florida has long served as the major center of shipping and cargo transport of goods and manufactured products, agricultural products and food, and other materials to the Caribbean islands and, to a lesser degree, to parts of Africa. However, both the competitive context and the global market for shipped goods have changed dramatically over the past ten years. While other states have managed to capture a share of the growing shipping markets that have traditionally passed through Florida ports, Florida fell behind for a number of years and lost market share to southeastern ports such as Savannah and Charleston, both of which invested tens of millions in port improvements, development of inland intermodal centers linked by road and rail to other U.S. shipping locations, and in provision of public subsidy to strengthen the competitive positions of their states in global trade.

That trend has changed with a Florida initiative to redevelop and expand its ports, create a series of rail, road and (more rarely) airport-related cargo terminals, transshipping networks and landside storage for cargo containers. Florida has an important role to play in shipping, which is an increasingly important contributor to the U.S. economy. According to *The Economist* magazine, 70% of all imports to the United States arrive by ship into a U.S. port, while 75% of all exports go through American ports. If the nation's ports and shipping centers are not in synch with global changes, all parts of the national economy will decline.

In response to the needs and changes, in 2003 FDOT established a statewide network of highways, rail lines, airports, spaceports and intermodal transfer locations across Florida as a means to increase the state's competitive position in national and global shipping, as well as to

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focus public and private investments to keep Florida's ports in effective positions to provide efficient business development involved with trade. In early 2010, the Florida Strategic Intermodal System Strategic Plan was adopted by FDOT as a guide for future planning and to prioritize how state, federal, and local funding should be allocated for port/rail/road system improvements. Through the SIS, the state has begun an aggressive partnership with local port cities/authorities, the federal Government (US DOT and the Department of Commerce) and private land, rail system owners, and specific locations such as the Miami International Airport to better connect and increase capacity for shipping. The Miami airport transportation node is considering an on-airport international trade and shipping area with links to external rail and road networks for transfer by truck to other parts of the state, to the southeast or to the entire country.

The SIS Improvement plan is strategic in its intent to expand port capacity and intermodal transfer efficiencies across the state's network of fifteen designated ports. Of the fifteen identified ports in the state, seven have been designated as SIS ports and terminals, four were designated as emerging ports, and four, including the Port of Fort Pierce, have been designated as other ports. Each of the Florida SIS ports has, or has had, one or more product specialties that supported port revenues, expansion objectives and long-range capital investments.

Based on 2012 data, Table 19 illustrates the fifteen Florida SIS port facilities and details their respective annual shipping tonnage handled; the relative position of that port to statewide volumes; import and export tonnage; and a summary of pending capital investments intended to complete changes and remain competitive. It is also useful to consider the current and potentially the future role for Fort Pierce as it evolves. Currently, Fort Pierce is unable to secure federal port improvement funding, and has the lowest portion of total tonnage shipped through Florida. This becomes important for the Waterways Plan because there are both policy and capital investment decisions to be made about Fort Pierce and its existing port.



There are a number of cargo-related activities on the waterways, including the Port of Fort Pierce, cargo transport within the AIW and OCWW, and the potential for marine highway shipping lanes. Photo credit (from top left): www.dredgingtoday.com and Cambridge Systematics.

Table 19: Characteristics of Florida Ports, 2012

Florida Ports and the Waterways Plan											
No.	Port Name	SIS	Emerging SIS	Other Seaports	2012 Total Tonnage Handled	Percentage of Total	Export Tonnage	Import Tonnage	Percentage Domestic	Percentage International Export	Notes
1	Port Of Tampa	X			33,907,564	34%	6,160,395	5,452,413	66%	34%	Invested \$332 M to expand container shipping;; new container yard, rail connections due to Panama Canal Expansion; linked to Port Manatee
2	Port of Jacksonville/JaxPort	X			21,879,260	22%	2,527,138	11,192,520	37%	63%	Channel dredging, expanded container area for Asian shipments, Panama Canal expansion
3	Port Everglades	X			21,868,900	22%	3,780,814	7,278,533	49%	51%	Combo of Cruise and Cargo expansions; \$418 M capital investments; intermodal rail/pier connections added
4	Port of Miami	X			8,108,070	8%	4,222,135	3,885,935	0%	100%	\$1.42 B capital investments for truck tunnel, intermodal/rail connections, container capacity for Panama Canal expansion
5	Port Manatee	X			6,837,811	7%	1,044,956	5,792,855	0%	100%	Decline in phosphate, fertilizer shipping offset by container expansions; linked to Port of Tampa
6	Port Canaveral	X			3,904,986	4%	85,648	2,593,668	31%	69%	Cruise Ship focus/expansion for drive-to markets; petroleum exports, construction aggregates
7	Port of Palm Beach	X			2,005,461	2%	979,155	488,789	55%	45%	Linea Peninsular (Copper) relocated from New Orleans; BioEnergy wood chip shipments
8	Port of Panama City		X		1,420,665	1%	840,394	525,594	7%	93%	Commodities from Central, S America; direct shipments from Asia; focus on smaller container ships
9	Port of Fernandina		X		384,499	0.38%	375,437	9,062	2%	98%	Wood, forest products; Caribbean ports focus; 3,200 TEU stacking capacity
10	Port of Pensacola		X		224,159	0.22%	62,383	98,088	28%	72%	Bagged/frozen agricultural products; construction/cement/aggregates, paper
11	Port of Fort Pierce			X	95,623	0.10%	65,166	19,457	12%	88%	358,000 tons reported in 2013; 'inactive port' by Feds, no \$\$; Bahamas/Caribbean focus
	Subtotal Top 11				100,636,998						
12	Port St. Joe		X								Biomass/wood pellets, coal shipping
13	Port of Key West			X							Cruise ship focus
14	Port of St. Petersburg			X							3 acre port; limited traffic
15	Port Citrus			X							New Port Facility
<i>No Data Provided</i>											

Source: FDOT, Office of Policy Planning; Center for Transportation Research, University of South Florida; Florida Trend; RDS; WTL+g

If it is to compete with the larger Florida ports, Fort Pierce is in need of future port improvements, as well as on-site servicing for cargo intermodal activities and to grow the port's ability to handle increased cargo. It should be noted that expanding into a major cargo container port is not the only option for Fort Pierce's central port. The property could also evolve into waterfront housing/mixed use, hotel and retail or other uses that provide different benefits versus continuing to compete as a cargo shipping facility. The project team also notes that there are specialty niche markets that could affect the expansion and redevelopment potentials at Fort Pierce, including a focus on smaller vessels that cannot afford to use more modern port locations.

The cause of the current pattern of reinvestment and capacity expansion is the transition from regional/hemispheric trade patterns to global ones, which are occurring at a scale never imagined fifty years ago. The major increase in volume of shipments to the west coast of the U.S., particularly to the Port of Los Angeles, from Asia was constrained by both the handling capacity of the western ports as well as the constraints imposed by the width of Panama Canal for the newer, larger cargo container ships. Prior to the widening of the Panama Canal, the dimensions of the early 20th Century portion of the original canal and its series of locks imposed limitations on vessel sizes to 968 feet in length and 39.5 feet in draft (depth clearance). The Canal is currently being widened to allow larger container vessels, reportedly up to almost 1,200 feet in length and 49.4 feet in draft. To lower costs for shipments, cargo boats needed to grow large to carry more containers per trip. But without the wider, deeper canal, the larger ships would be unable to access Europe and the United States markets to-and-from Asia. This is what motivates the expansion project.

Table 20 illustrates the rapidly evolving size parameters for container/cargo shipping facilities. Among the factors affecting market positioning for ports in Florida are the following components:

- Channel width and depth
- The port area size (usually secure) to estimate carrying capacity of containers waiting for transfer to railcars or trucks and amount of needed container storage capacity
- Whether there are direct rail roll-off equipment
- Proximity to functional, multi-modal networks and systems

Table 20: Evolution of TEU Capacity, 1960—2013

Time Period	Ship Category	Ship Dimensions (Meters)	TEU Capacity	Stack
1955-1960	Early container ships/tankers	137 x 17 x 9	500-800	6
1960-1970	Early container ships/tankers	200 x 20 x 9	1,000-2,500	8
1970-1980	Fully Cellular	215 x 20 x 9	1,000-2,500	10
1980-1985	Panamax	250 x 32 x 12.5	3,000-3,400	13
1988-1998	Panamax Max	290 x 32 x 12.5	3,400-4,500	13
1999-2000	Post Panamax	285 x 40 x 13	4,000-5,000	15
2000-2010	Post Panamax Plus	300 x 43 x 14.5	6,000-8,000	17
2014	New Panamax	366 x 49 x 15.2	12,500	20
2006-2013	Post New Panamax	397 x 56 x 15.5	15,000	23
2013	Triple E Class	400 x 59 x 15.5	18,000	23
2025?	Malacca Max	TBD	27,000-30,000	N/A

Factors: Channel depth; port area size; unloading time/number of cranes; staging/TEU storage area availability; direct rail roll-offs; proximity to multi-modal connections

Source: GlobalSecurity.org; Lloyd's of London Ship Register; ContainerShips.org; RDS, LLC; WTL+a, June 2014.

The billions of dollars being spent to upgrade Florida's ports, both by the federal and state governments and by private entities, are an indication of the priority of shipping and intermodal connections to the overall gross domestic product of the state.

Given these considerations, continued careful analysis regarding significant port improvements, environmental risks of deeper dredging, and general competitive positioning should be addressed for the future of the Port of Fort Pierce. While there are major investments at the state level to improve Florida's facilities to remain viable locations for expanding water-based world trade, the future of Fort Pierce is closely aligned with aspects of redevelopment of the waterfront in Fort Pierce.

Key Conclusions—Marine-related & Supporting Industries

- While the magnitude of maritime industries in both Martin and St. Lucie Counties generated over \$250 million in direct and indirect expenditures and represented over 3,000 jobs (according to the most recent data in a 2009 report by the Florida Fish and Wildlife Conservation Commission), the project team's research indicates that there is a surprisingly limited amount of information available about these industries and their status as economic drivers in 2014. Therefore, additional industry-specific data is necessary to determine the economic value of the marine industries in Martin and St. Lucie counties.
- It is strongly recommended the economic activities and impacts of the marine industries be better documented and tracked over time as part of each county's economic development strategy.
- Neither Martin nor St. Lucie has captured a major share of registrations of larger boats (65 ft. and larger), with registrations of these vessels in Palm Beach, Broward and Miami-Dade well out-pacing local registration. The economic impact of attracting these larger boats for upland services, fuel and other spin-off benefits can be significant, should the counties be able to attract them.
- In terms of boat registration and users per 1,000 residents, Martin County ranks first in pleasure boats and sixth in commercial boats (an indication of the relative positioning for commercial fishing, charters, service boats, etc.). By comparison, St. Lucie County ranks third in pleasure boat registrations and second in commercial boat registrations. Martin County has the highest 'user penetration rate': almost 100 boats registered per 1,000 residents.
- Total annual economic effects from pleasure boating in **Martin County generate more than \$149 million per year** in the local economy.
- Total economic effects from pleasure boating in **St. Lucie County generate approximately \$105 million per year** in the local economy.

Economic Development

- Martin County generated almost 1,800 boat-related jobs, and St. Lucie County contained slightly more than 1,300 boat-related jobs in 2007—2008.
- While commercial fishing volumes in “East Florida” have held generally steady in terms of tonnage, **overall values have increased—from \$42.6 million in 2001 to more than \$57.7 million in 2012—a value gain of \$15.1 million and a significant, 35.5% change** in the value of commercial fishing catches.
- **Due to limited tourism expenditure data for Martin and St. Lucie Counties, specific spending and impact levels of recreational fishing cannot be quantified on a countywide basis.** Nonetheless, the connection to water proximity, water-based services and businesses in both counties is presumed to be significant.
- It is recommended that a standardized system to monitor the impact of the fishing industry in both Martin and St. Lucie Counties should be researched, documented, and used as a baseline for future econometric measures of fishing’s impact on the economic activity in both counties. It is too lucrative an industry not to document its beneficial impact as a tourism generator, a source of expenditures for a number of water-based industries, suppliers and services, and as a low cost/low impact economic driver that does not require extensive public capital investment.
- In addition, as part of an overall tourism development strategy in each county, annual or semi-annual surveys should be conducted of all of the fishing tournaments, including local and national. Data collection on spending (by category), length of stay and other key economic data will be necessary to understand the economic value and impacts generated by such activities. Moreover, to the extent that existing fishing tournaments can secure industry designation as “qualifiers” to larger national and/or international tournaments and competitive events could be expected to enhance the overall marketability and revenue-generating opportunities of these activities. For example, a local sailfish or kingfish tournament could be a qualifier to such events as the Offshore World Championships (Sailfish) or Southern Kingfish Association (Kingfish).

Land Use and Upland Economic Potentials

A key component of the Waterways Plan comprises recommendations and planning targets for new uses in the study's select waterfront focus areas (a map provided within this section). To the extent possible, the analysis is intended to translate future growth in key indices, such as population, households and jobs, into opportunities for economic development and allocate such opportunities to these locations. The development potential in these focus areas will vary according to use, adjacent population densities, accessibility, job growth in key industry sectors, proximity to waterfront and views that create amenity value, marketability and realistic development programs, and other factors informing market potentials.

Real Estate Market Conditions

To evaluate upland development potentials on a preliminary basis, the project team examined growth and planning forecasts in specific indices (population, households, and employment) for both counties as well as the cities of Stuart and Fort Pierce. The team reviewed recent and current market conditions in market-rate residential; workplace (general industrial and office); lodging/hospitality; and general retail uses using secondary data from various sources, such as CoStar, Inc., including real estate market performance in office, retail and industrial uses in multiple locations across the U.S. Based on this data, which is available at the county and municipal levels, the team evaluated key indicators, including annual leasing/absorption activity and residential housing starts.

Given the county and municipal-scale data, market potentials and development opportunities for new housing, workplace, and hospitality/lodging uses are allocated to each county generally as well as Stuart (focusing on zip code 34994) and Fort Pierce. For the remaining focus areas, the project team broadly summarized the market, real estate, and economic issues and potentials. Key findings for each county as well as Stuart (Zip Code 34994) and Fort Pierce are summarized in the tables that follow in this section.

Real Estate Market Profile—Martin County

- **Office.** Martin County has an office inventory of 3.8 million s.f. in 415 buildings. The inventory has increased only slightly over the past seven years, with less than 90,000 s.f. of new construction. There are 488,200 s.f. of vacant office space, indicating an overall vacancy rate of 12.8%. The amount of vacant stock has increased from 8.7% in 2007, as the 2007-2009 recession resulted in job losses, business contractions and negative leasing activity. In fact, net absorption (which is defined as the amount of space leased over the amount of space vacated) has been negative, with the loss of more than 358,000 s.f. of occupied office space over the past seven years. Annual net absorption was (-51,200 s.f.), reinforcing the importance of net new job creation in office-using sectors that will result in positive leasing activity. Paralleling the county's soft office market has been a decline in average rents, from \$24.81 per s.f. in 2007 to \$15.68 per s.f. in 2013. Notably, there were two years in which office leasing was positive (2010 and 2012). If positive leasing activity in Martin's office

inventory continues at the rate it did during these two years, it would require approximately seven years to achieve stabilization, which is defined in the industry as 93% to 95% occupancy. This suggests that, at least in the short-term, the Martin County office market is over-supplied for multi-tenant/speculative office buildings (i.e., those built without a key anchor tenant). These findings also reinforce the importance of pre-leasing efforts to secure tenants as a condition of financing for new construction. This will be particularly important for projects such as the proposed Stuart Harbor project in Rio and others.

- **Industrial.** Martin County contains more than 6.7 million s.f. of industrial space in 702 properties. Vacancies have fluctuated between 3% and 10%, although recent positive net absorption has reduced industrial vacancies to 6.6%. That said, overall net absorption during this period has been nominal—averaging 14,400 s.f. per year since 2007. Economic recovery, including job growth in industrial-using sectors, could be expected to strengthen the county’s industrial market in the near-term, since market conditions are nearing stabilized occupancies. Industrial rents have declined, from \$10 per s.f. in 2007 to \$6 per s.f. in 2013. This is characteristic of a fluctuating market where landlords lower rents as a concession to attract tenants.
- **Retail.** Martin County contains more than 11 million s.f. of retail space in 379 retail centers/properties across the county. Retail vacancies, which peaked at 8.2% in 2009, are generally stable in the range of 7%. Even with the recession, new construction delivered over 342,000 s.f. of new retail space, which is likely to have affected leasing activity, particularly in older centers, as tenants migrate to newer properties. Annual net absorption during this period was negative at 56,000 s.f. However, rental rates declined only slightly from \$17.44 per s.f. in 2007 to \$15.87 per s.f. in 2013. Key factors affecting the strength of the retail market include new household growth, the amount of disposable household income, and consolidation in the industry. In the near-term, anticipated new population/household growth will be positive for Martin County’s retail market. However, the overall outlook for the retail industry is less clear, as the U.S. is generally over-supplied, and consolidations/closings may continue.

Martin & St. Lucie WATERWAYS PLAN

Select Waterfront Centers

-  Fort Pierce CRA
-  Indiantown CRA
-  Jensen Beach CRA
-  Old Palm City CRA
-  Port Salerno CRA
-  Port St. Lucie CRA
-  Stuart CRA

NOTE: Martin County's redevelopment program also includes CRAs in Golden Gate and Hobe Sound which are without significant waterfront commercial frontage.



SELECT WATERFRONT CENTERS


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Table 21: Real Estate Market Profile—Martin County, 2007—2013

	2007	2008	2009	2010	2011	2012	2013	Change: 2007-2013		
								Total	Ann'l Avg.	% CAGR
Office-Martin County										
Inventory	3,735,423	3,760,150	3,785,150	3,785,150	3,797,886	3,797,886	3,804,186	68,763		
No. of Buildings	408	412	413	413	414	414	415	7		
Vacant Stock (1)	324,258	415,385	495,031	431,752	481,489	480,706	488,181	163,923		
Vacancy Rate	8.7%	11.0%	13.1%	11.4%	12.7%	12.7%	12.8%			6.7%
Total Net Absorption (1)	(262,910)	(66,400)	(54,646)	63,279	(37,001)	783	(1,175)	(358,070)	(51,153)	
Construction Deliveries	20,919	24,727	25,000	-	12,736	-	6,300	89,682		
Average Rental Rate (2)	\$ 24.81	\$ 25.22	\$ 17.36	\$ 16.71	\$ 16.51	\$ 16.19	\$ 15.68			-7.4%
Years to Stabilized (95%) Occupancy: Based on Average Annual Absorption								N/A		
Retail-Martin County										
Inventory	10,885,229	10,910,513	10,967,456	11,056,197	11,082,084	11,072,656	11,031,543	146,314		
No. of Buildings	691	694	696	701	704	702	702	11		
Vacant Stock (1)	492,274	808,776	904,208	687,717	784,672	864,043	831,046	338,772		
Vacancy Rate	4.5%	7.4%	8.2%	6.2%	7.1%	7.8%	7.5%			8.9%
Total Net Absorption (1)	(199,707)	(291,218)	(38,489)	305,232	(71,068)	(88,799)	(8,116)	(392,165)	(56,024)	
Construction Deliveries	103,898	28,083	56,943	88,741	25,887	-	38,811	342,363		
Average Rental Rate (2)	\$ 17.44	\$ 16.76	\$ 17.37	\$ 16.88	\$ 17.03	\$ 16.53	\$ 15.87			-1.6%
Years to Stabilized (95%) Occupancy: Based on Average Annual Absorption								N/A		
Industrial-Martin County										
Inventory	6,343,170	6,647,125	6,715,290	6,715,290	6,715,290	6,715,290	6,721,340	378,170		
No. of Buildings	368	376	378	378	378	378	379	11		
Vacant Stock (1)	199,811	303,006	667,113	620,432	587,228	645,680	444,096	244,285		
Vacancy Rate	3.2%	4.6%	9.9%	9.2%	8.7%	9.6%	6.6%			13.1%
Total Net Absorption (1)	(33,086)	200,760	(295,942)	46,681	33,204	(58,452)	207,634	100,799	14,400	
Construction Deliveries	33,669	303,955	68,165	-	-	-	6,050	411,839		
Average Rental Rate (2)	\$ 10.04	\$ 8.63	\$ 7.66	\$ 7.16	\$ 6.27	\$ 5.76	\$ 6.03			-8.2%
Years to Stabilized (95%) Occupancy: Based on Average Annual Absorption								N/A		

(1) Includes existing vacant relet and sublet space.

(2) Average asking rents for office space include both relet and sublet space on a full-service (FS) basis. For retail and industrial uses, asking rents are on a triple net basis (i.e., tenants pay their pro rata share of operating expenses, real estate taxes, common area maintenance, etc.).

Source: CoStar, Inc.; WTL+a, April 2014.

Real Estate Market Profile—St. Lucie County

- **Office.** St. Lucie County contains almost 5.4 million s.f. of office space in 532 buildings. New construction delivered over 570,000 s.f. of new office space over the past seven years. There are 715,600 s.f. of vacant office space, indicating an overall vacancy rate of 13.3%. The amount of vacant stock has fluctuated from 13% to 19% as the 2007-2009 recession resulted in job losses, business contractions, and negative leasing activity. Net absorption/leasing activity has been nominal, with only 24,000 s.f. of positive leasing activity over the past seven years, which translated into minimal annual net absorption of 3,400 s.f., reinforcing the importance of net new job creation in office-using sectors in St. Lucie County that will strengthen overall leasing activity. Paralleling the county's uneven office market has been a decline in average rents from \$18.24 per s.f. in 2007 to \$15.15 per s.f. in 2013, which is characteristic of a Class B/C market. The same factors illustrated for Martin County above also apply to St. Lucie County. Continued household growth will benefit the county's office market, particularly for professional/business services for medical, legal, and accounting, where demand is driven by rooftop growth in smaller, garden office buildings.
- **Industrial.** St. Lucie County contains more than 11 million s.f. of industrial space in 670 properties. Vacancies have fluctuated between 9% and 13%, although positive net absorption over the past two years has reduced industrial vacancies to 9.7%. However, overall net absorption during this period was negative, averaging (-65,400 s.f.) per year since 2007. Economic recovery, including job growth in industrial-using sectors, could be expected to strengthen St. Lucie County's industrial market in the near-term. Industrial rents have declined characteristic of a fluctuating market where landlords lower rents as a concession to attract tenants from \$7.76 per s.f. in 2007 to \$5.62 per s.f. in 2013.
- **Retail.** St. Lucie County contains more than 12.7 million s.f. of retail space in almost 950 retail centers/properties across the county. Retail vacancies, which peaked at 8.6% in 2007, have declined to 6.5%, reflecting generally stabilized market conditions. Even with the recession, new construction delivered an extraordinary amount of new retail space in St. Lucie County over the past seven years, with 1.7 million s.f. of new space paralleling the county's significant population growth. Annual net absorption during this period was positive, averaging 126,500 s.f. per year. However, this came at the expense of average rents, which declined significantly, from \$22.60 per s.f. in 2007 to \$14 per s.f.

Table 22: Real Estate Market Profile—St. Lucie County, 2007—2013

	2007	2008	2009	2010	2011	2012	2013	Change: 2007-2013		
								Total	Ann'l Avg.	% CAGR
Office: St. Lucie County										
Inventory	4,848,098	5,094,632	5,121,208	5,148,275	5,288,903	5,301,339	5,363,004	514,906		
No. of Buildings	506	520	522	525	528	530	532	26		
Vacant Stock (1)	618,283	847,968	966,476	750,349	749,496	700,074	715,646	97,363		
Vacancy Rate	12.8%	16.6%	18.9%	14.6%	14.2%	13.2%	13.3%			0.8%
Total Net Absorption (1)	(393,494)	16,849	(91,932)	243,194	141,481	61,858	46,093	24,049	3,436	
Construction Deliveries	70,775	230,029	26,576	27,067	140,628	12,436	63,054	570,565		
Average Rental Rate (2)	\$ 18.24	\$ 17.86	\$ 17.56	\$ 16.11	\$ 16.25	\$ 15.55	\$ 15.15			-3.0%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								N/A		
Retail-St. Lucie County										
Inventory	11,805,751	12,378,442	12,549,357	12,619,342	12,648,055	12,657,165	12,703,515	897,764		
No. of Buildings	905	925	939	938	942	943	947	42		
Vacant Stock (1)	1,010,019	624,597	850,347	911,614	738,790	776,916	829,127	(180,892)		
Vacancy Rate	8.6%	5.0%	6.8%	7.2%	5.8%	6.1%	6.5%			-4.4%
Total Net Absorption (1)	(202,218)	958,113	(54,835)	8,718	201,537	(29,016)	3,179	885,478	126,497	
Construction Deliveries	509,858	942,690	172,915	85,550	28,713	9,110	47,896	1,796,732		
Average Rental Rate (2)	\$ 22.60	\$ 21.42	\$ 17.68	\$ 15.32	\$ 14.76	\$ 14.12	\$ 14.01			-7.7%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								6		
Industrial-St. Lucie County										
Inventory	10,765,172	10,886,230	11,057,931	11,064,479	11,064,479	11,064,479	11,058,934	293,762		
No. of Buildings	658	663	670	671	671	671	670	12		
Vacant Stock (1)	991,475	1,065,788	1,466,374	1,333,626	1,339,652	1,247,388	1,077,527	86,052		
Vacancy Rate	9.2%	9.8%	13.3%	12.1%	12.1%	11.3%	9.7%			0.9%
Total Net Absorption (1)	(665,279)	46,745	(228,885)	139,296	(6,026)	92,264	164,316	(457,569)	(65,367)	
Construction Deliveries	90,968	121,058	171,701	6,548	-	-	-	390,275		
Average Rental Rate (2)	\$ 7.76	\$ 7.20	\$ 5.86	\$ 4.97	\$ 5.08	\$ 5.52	\$ 5.62			-5.2%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								N/A		

(1) Includes existing vacant relet and sublet space.

(2) Average asking rents for office space include both relet and sublet space on a full-service (FS) basis. For retail and industrial uses, asking rents are on a triple net basis (i.e., tenants pay their pro rata share of operating expenses, real estate taxes, common area maintenance, etc.).

Source: CoStar, Inc.; WTL+a, April 2014.

Real Estate Market Profile—City of Stuart (Zip Code 34994, which is the waterfront core)

- **Office.** The City of Stuart waterfront core contains approximately 2.1 million s.f. of office space in 236 buildings, accounting for fully 54% of the county’s office inventory. The city’s office market is comprised primarily of smaller garden office buildings ranging in size from 5,000 to 25,000 s.f. New construction delivered a nominal 31,000 s.f. of new office space over the past seven years. There are 226,200 s.f. of vacant office space, indicating an overall vacancy rate of 11%. The amount of vacant stock has fluctuated from 7.7% to 12.4% as the 2007-2009 recession resulted in job losses, business contractions, and negative leasing activity. In fact, net absorption/leasing activity has been negative, with 179,700 s.f. of negative absorption over the past seven years, which translated into annual net negative absorption of 25,700 s.f., reinforcing the importance of net new job creation in office-using sectors in Stuart that will strengthen overall leasing activity. Paralleling the city’s uneven soft market has been a decline in average rents from \$28.80 per s.f. in 2007 to \$16.16 per s.f. in 2013. The city’s office market did experience positive leasing activity during 2010 and 2013. If that positive activity continues, it would require an estimated six years to lease-up the existing vacant inventory and achieve stabilized occupancies in the city’s office market.
- **Industrial.** The City of Stuart waterfront core contains 623,000 s.f. of industrial space in 54 properties, accounting for only 9% of the county’s total industrial inventory. Vacancies have fluctuated between 3% and 12%, with uneven net absorption over the past several years resulting in a current vacancy rate of 9.2%. However, overall net absorption during this period was only slightly negative, averaging 8,200 s.f. per year since 2007. Economic recovery, including job growth in industrial-using sectors, could be expected to strengthen Stuart’s industrial market. Industrial rents have declined, which characteristic of a fluctuating market where landlords lower rents as a concession to attract tenants, from \$14 per s.f. in 2007 to \$9 per s.f. in 2013.
- **Retail.** The City of Stuart waterfront core contains 4.2 million s.f. of retail space in 292 retail centers/properties, accounting for 38% of Martin County’s retail stock. Retail vacancies are fluctuating, from a low of 5.2% in 2007 to a high of 10.1% in 2012. New construction delivered 183,000 s.f. of new retail space in Stuart. Weakened market conditions resulted in negative net absorption totaling 243,000 s.f., with an annual loss of 34,700 s.f. per year. On the other hand, average rents increased from \$14.72 per s.f. in 2007 to \$17.56 per s.f. in 2013, suggesting that certain locations and properties have remained stable through the recession. There were two years, 2009 and 2010, of positive leasing in the city’s retail market. If that positive activity continues, it would require an estimated three years to lease-up the existing vacant inventory and achieve stabilized occupancies in the city’s retail market.

Table 23: Real Estate Market Profile—City of Stuart, 2007—2013

	2007	2008	2009	2010	2011	2012	2013	Change: 2007-2013		
								Total	Ann'l Avg.	% CAGR
Office										
Inventory	2,046,801	2,065,528	2,065,528	2,065,528	2,065,528	2,065,528	2,065,528	18,727		
As % of Martin County	54.8%	54.9%	54.6%	54.6%	54.4%	54.4%	54.3%			
No. of Buildings	233	236	236	236	236	236	236	3		
Vacant Stock (1)	157,424	203,498	256,264	203,035	224,538	245,408	226,183	68,759		
Vacancy Rate	7.7%	9.9%	12.4%	9.8%	10.9%	11.9%	11.0%			6.1%
Total Net Absorption (1)	(129,691)	(27,347)	(52,766)	53,229	(21,503)	(20,870)	19,225	(179,723)	(25,675)	
Years of Positive Absorption Only									36,227	
Construction Deliveries	12,309	18,727	-	-	-	-	-	31,036		
Average Rental Rate (2)	\$ 28.80	\$ 31.33	\$ 17.98	\$ 16.97	\$ 16.69	\$ 16.60	\$ 16.16			-9.2%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								N/A		
Based on Years of Positive Net Absorption								6		
Retail										
Inventory	4,095,561	4,104,980	4,161,923	4,224,532	4,224,532	4,219,288	4,187,229	91,668		
As % of Martin County	37.6%	37.6%	37.9%	38.2%	38.1%	38.1%	38.0%			
No. of Buildings	289	289	291	293	293	292	292	3		
Vacant Stock (1)	214,918	390,520	362,851	256,054	311,175	426,430	406,803	191,885		
Vacancy Rate	5.2%	9.5%	8.7%	6.1%	7.4%	10.1%	9.7%			10.8%
Total Net Absorption (1)	(142,780)	(166,183)	84,612	169,406	(55,121)	(120,499)	(12,432)	(242,997)	(34,714)	
Years of Positive Absorption Only									127,009	
Construction Deliveries	42,625	12,218	56,943	62,609	-	-	8,683	183,078		
Average Rental Rate (2)	\$ 14.72	\$ 14.69	\$ 16.04	\$ 15.50	\$ 16.10	\$ 16.59	\$ 17.56			3.0%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								N/A		
Based on Years of Positive Net Absorption								3		
Industrial										
Inventory	623,013	623,013	623,013	623,013	623,013	623,013	623,013	-		
As % of Martin County	9.8%	9.4%	9.3%	9.3%	9.3%	9.3%	9.3%			
No. of Buildings	54	54	54	54	54	54	54	-		
Vacant Stock (1)	20,150	40,011	74,811	41,011	19,915	63,371	57,465	37,315		
Vacancy Rate	3.2%	6.4%	12.0%	6.6%	3.2%	10.2%	9.2%			19.1%
Total Net Absorption (1)	(20,150)	(19,861)	(34,800)	33,800	21,096	(43,456)	5,906	(57,465)	(8,209)	
Years of Positive Absorption Only									20,267	
Construction Deliveries	-	-	-	-	-	-	-	-		
Average Rental Rate (2)	\$ 14.00	\$ 14.00	\$ 9.88	\$ 8.12	\$ 9.00	\$ 9.00	\$ -			-7.1%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								N/A		
Based on Years of Positive Net Absorption								3		

(1) Includes existing vacant relet and sublet space.

(2) Average asking rents for office space include both relet and sublet space on a full-service (FS) basis. For retail and industrial uses, asking rents are on a triple net basis (i.e., tenants pay their pro rata share of operating expenses, real estate taxes, common area maintenance, etc.).

Source: CoStar, Inc.; WTL+a, revised July 2014.

Real Estate Market Profile—City of Fort Pierce

- **Office.** The City of Fort Pierce contains almost 2.4 million s.f. of office space in 288 buildings, which comprises 45% of the county. New construction delivered a modest 121,600 s.f. of new office space over the past seven years. There are 383,700 s.f. of vacant office space, indicating an overall vacancy rate of 16%. The amount of vacant stock has fluctuated from 14.5% to over 20% as the 2007-2009 recession resulted in job losses, business contractions, and negative leasing activity. Net absorption/leasing activity has been negative, with the loss of 240,100 s.f. of occupied space over this time, or 34,300 s.f. per year, reinforcing the importance of net new job creation in office-using sectors in Fort Pierce that will strengthen overall leasing activity. Paralleling the city's soft office market has been a modest decline in average rents from \$14.34 per s.f. in 2007 to \$12.67 per s.f. in 2013. There were three recent years of positive leasing activity in the city's office market, including 2008, 2010 and 2011. If that pace continues, it would require approximately five years to achieve stabilized occupancies in the Fort Pierce office market. This suggests that, at least in the short-term, the Fort Pierce office market is over-supplied for multi-tenant/speculative office buildings (i.e., those built without a key anchor tenant).
- **Industrial.** The City of Fort Pierce contains more than 7.03 million s.f. of industrial space in 436 properties. Vacancies have fluctuated between 6% and 10%. Overall net absorption during this period was uneven but ultimately negative, averaging 55,800 s.f. per year since 2007. Economic recovery, including job growth in industrial-using sectors, could be expected to strengthen the city's industrial market in the near-term. Industrial rents have declined—characteristic of a fluctuating market where landlords lower rents as a concession to attract tenants from \$6.81 per s.f. in 2007 to \$6 per s.f. in 2013. Average rents have recovered from a low point of \$4.27 per s.f. in 2010.
- **Retail.** The City of Fort Pierce contains more than 5.3 million s.f. of retail space in 559 retail centers/properties across the city, comprising 42% of the county. The city's retail market is effectively stabilized, with vacancies in the range of 3% to 7%, with a current rate of 5.6%. Fort Pierce benefitted from new retail construction across the county during this period, with 318,200 s.f. of new retail space. Annual net absorption during this period was slightly negative averaging 9,700 s.f. per year. Consistent with other retail submarkets in the Treasure Coast, retail rents in Fort Pierce declined from a high of \$14.46 per s.f. in 2007 to a current average of \$11.84 per s.f. in 2013. Key factors affecting the strength of the retail market in Fort Pierce include new household growth, the amount of disposable household income, and opportunities for revitalization and new mixed-use development in the downtown and along the city's commercial corridors.

In conclusion, these findings suggest that the study area's workplace real estate uses, including office, retail and industrial, exhibit varying levels of market strength/position. Market characteristics, such as uneven leasing patterns, both positive and negative, fluctuating rents and limited new construction are reflective of an economy in recovery. Net new job growth generated by business retention and recruitment efforts and broader economic development initiatives such as this plan are critical in strengthening workplace uses in the study area over the next three- to five-years.

Table 24: Real Estate Market Profile—City of Fort Pierce, 2007—2013

	2007	2008	2009	2010	2011	2012	2013	Change: 2007-2013		
								Total	Ann'l Avg.	% CAGR
Office										
Inventory	2,296,472	2,397,608	2,397,608	2,397,608	2,414,660	2,418,096	2,418,096	121,624		
As % of St. Lucie County	47.4%	47.1%	46.8%	46.6%	45.7%	45.6%	45.1%			
No. of Buildings	282	286	286	286	287	288	288	6		
Vacant Stock (1)	375,736	428,225	488,518	345,644	349,269	366,606	383,726	7,990		
Vacancy Rate	16.4%	17.9%	20.4%	14.4%	14.5%	15.2%	15.9%			-0.5%
Total Net Absorption (1)	(353,758)	48,647	(60,293)	142,874	13,427	(13,901)	(17,120)	(240,124)	(34,303)	
Years of Positive Absorption Only									68,316	
Construction Deliveries	-	101,136	-	-	17,052	3,436	-	121,624		
Average Rental Rate (2)	\$ 14.34	\$ 15.05	\$ 14.80	\$ 13.62	\$ 13.91	\$ 13.33	\$ 12.67			-2.0%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								N/A		
Based on Years of Positive Net Absorption								5		
Retail										
Inventory	5,205,432	5,246,790	5,273,362	5,313,986	5,332,138	5,332,138	5,345,394	139,962		
As % of St. Lucie County	44.1%	42.4%	42.0%	42.1%	42.2%	42.1%	42.1%			
No. of Buildings	554	556	559	557	559	559	559	5		
Vacant Stock (1)	162,332	208,692	282,181	377,743	256,094	299,102	299,888	137,556		
Vacancy Rate	3.1%	4.0%	5.4%	7.1%	4.8%	5.6%	5.6%			10.3%
Total Net Absorption (1)	(70,432)	(5,002)	(46,917)	(54,938)	139,801	(43,008)	12,470	(68,026)	(9,718)	
Years of Positive Absorption Only									76,136	
Construction Deliveries	-	211,640	28,572	45,000	18,152	-	14,802	318,166		
Average Rental Rate (2)	\$ 14.46	\$ 14.88	\$ 14.58	\$ 13.32	\$ 13.27	\$ 12.17	\$ 11.84			-3.3%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								N/A		
Based on Years of Positive Net Absorption								4		
Industrial										
Inventory	6,948,600	6,968,520	7,030,477	7,037,025	7,037,025	7,037,025	7,031,480	82,880		
As % of St. Lucie County	64.5%	64.0%	63.6%	63.6%	63.6%	63.6%	63.6%			
No. of Buildings	432	433	436	437	437	437	436	4		
Vacant Stock (1)	476,007	458,388	690,104	612,064	589,649	594,380	635,453	159,446		
Vacancy Rate	6.9%	6.6%	9.8%	8.7%	8.4%	8.4%	9.0%			4.7%
Total Net Absorption (1)	(313,713)	37,539	(169,759)	84,588	22,415	(4,731)	(46,618)	(390,279)	(55,754)	
Years of Positive Absorption Only									48,181	
Construction Deliveries	9,000	19,920	61,957	6,548	-	-	-	97,425		
Average Rental Rate (2)	\$ 6.81	\$ 5.56	\$ 4.63	\$ 4.27	\$ 5.07	\$ 6.49	\$ 6.04			-2.0%
Years to Stabilized (95%) Occupancy:										
Based on Average Annual Absorption								N/A		
Based on Years of Positive Net Absorption								13		

(1) Includes existing vacant relet and sublet space.

(2) Average asking rents for office space include both relet and sublet space on a full-service (FS) basis. For retail and industrial uses, asking rents are on a triple net basis (i.e., tenants pay their pro rata share of operating expenses, real estate taxes, common area maintenance, etc.).

Source: CoStar, Inc.; WTL+a, revised July 2014.

Hotel/Lodging Market Trends

This section includes an evaluation of market potentials for visitor-serving uses such as hospitality/lodging. Based on available data, recent and current market conditions in the area's supply of hotel/motel rooms were reviewed. Key operating metrics were analyzed, including average annual occupancies, room inventory/supply, room-night demand, average daily rates, and revenue per available room, which is the key factor indicating the overall health of an area's hotel market. This data served as the basis for preparing a preliminary lodging demand analysis to measure potential market support for hotel development. Key findings are summarized below and illustrated in Table 25 and Table 26.

- The Martin County TDC reports a hotel inventory of 1,364 rooms. As noted, performance data is available from STR Global for 1,126 rooms in nine properties in Martin County. Of this amount, data was obtained regarding 852 rooms. STR has strict criteria that prohibit release of data based on room counts under various brands, which required the Marriott Hutchinson Island property to be excluded from this analysis. The Marriott is Martin County's only full-service property, and therefore, the remaining inventory is comprised of limited-service product.
- As illustrated in Table 25, Martin County's hotel market is in recovery from the 2007-2009 recession, when annual occupancies reached a low of only 46.7%. Since then, occupancies recovered to 62.5% in 2013, and they are running 66% year-to-date in 2014. The six-year average is 55.6%. Continued strengthening of Martin County's hotel market is critical, which reinforces the importance of growing the county's visitor market, including special sporting events, water-based recreation, and other activities that serve to generate additional room-night demand.

The St. Lucie TDC reports a total inventory of 3,290 hotel rooms. This comprises 1,530 rooms in Fort Pierce and 1,760 rooms in Port St. Lucie, including the Hutchinson Island portions of St. Lucie County, and it excludes RV parks and campgrounds. STR tracks market data for 2,353 rooms in 26 properties, with exclusion of likely smaller properties that do not report their annual performance metrics to STR. Notably, the county's hotel market is comprised in its entirety of limited-service economy and mid-scale brands. There are very few full-service properties other than the Club Med Resort in St. Lucie County. Hotel performance in St. Lucie has been softer than in Martin County, with annual occupancies reaching a low of 41% in 2009. Since then, occupancies recovered to 54% in 2013, and they are running 59.7% year-to-date in 2014. The six-year average is 50.3%. This is considerably below threshold occupancies that are typically required to finance new hotel construction, which requires sustained annual occupancies between 65% and 72%.

Table 25: Hotel Market Performance—Martin County, 2008—2014

	2008	2009	2010	2011	2012	2013	Jan-May 2014	CHANGE: 2008-2013	
								Average	CAGR
Performance Characteristics									
Number of Rooms	669	857	830	815	852	852	852		(1)
Available Room Nights (Supply)	244,219	312,805	302,815	297,348	311,131	310,980	123,277	296,550	4.95%
Occupied Room Nights (Demand)	127,866	146,056	162,479	176,876	182,501	194,284	81,384	165,010	8.73%
Annual Occupancy (%)	52.4%	46.7%	53.7%	59.5%	58.7%	62.5%	66.0%	55.6%	3.60%
Average Daily Rate	\$ 88.26	\$ 82.19	\$ 80.50	\$ 84.75	\$ 83.66	\$ 85.34	\$ 92.63	\$ 84.04	-0.67%
(2) Revenue Per Available Room	\$ 46.21	\$ 38.38	\$ 43.19	\$ 50.41	\$ 49.07	\$ 53.31	\$ 61.15	\$ 46.76	2.90%
Year-to-Year % Growth									
Annual Occupancy	-	(10.8%)	14.9%	10.9%	(1.4%)	6.5%	5.7%		
Average Daily Rate	-	(6.9%)	(2.1%)	5.3%	(1.3%)	2.0%	8.5%		
Revenue/Available Room	-	(17.0%)	12.5%	16.7%	(2.7%)	8.6%	14.7%		
Selected Property (3)									
	Rooms	% Dist.	Year Open						
Courtyard Hutchinson Island Oceanside	110	13%	1986						
Courtyard Stuart	120	14%	2009						
Hampton Inn Suites Stuart North	102	12%	2008						
Holiday Inn Express Stuart	79	9%	2007						
Clarion Inn Stuart	118	14%	1967						
Best Western Downtown Stuart	119	14%	1966						
Quality Inn Stuart	82	10%	1974						
Suburban Extended Stay Stuart	122	14%	1999						
Total:	852	100%							

(1) CAGR=Compound Annual Growth Rate.

(2) Revenue per available room is the best measure of year-to-year growth because it considers simultaneous changes in both room rate and annual occupancies.

(3) Performance data for the Marriott Hutchinson Island property were omitted from this analysis because including that property would have violated STR's data limitations/restrictions.

Source: STR Global; RDS; WTL+a, July 2014.

Table 26: Hotel Market Performance—St. Lucie County, 2008—2014

	2008	2009	2010	2011	2012	2013	Jan-May 2014	CHANGE: 2008-2013	
								Average	CAGR
Performance Characteristics									
Number of Rooms	968	1,344	1,533	1,533	1,532	1,531	1,531		(1)
Available Room Nights (Supply)	353,331	490,714	559,545	559,545	559,211	558,874	231,181	296,550	9.60%
Occupied Room Nights (Demand)	184,989	202,918	256,962	302,539	300,194	300,864	152,764	258,078	10.22%
Annual Occupancy (%)	52.4%	41.4%	45.9%	54.1%	53.7%	53.8%	59.7%	50.3%	0.56%
Average Daily Rate	\$ 81.80	\$ 68.51	\$ 65.65	\$ 67.02	\$ 70.73	\$ 75.47	\$ 90.29	\$ 71.12	-1.60%
(2) Revenue Per Available Room	\$ 42.83	\$ 28.33	\$ 30.15	\$ 36.24	\$ 37.97	\$ 40.63	\$ 59.66	\$ 35.74	-1.05%
Year-to-Year % Growth									
Annual Occupancy	-	(21.0%)	11.1%	17.7%	(0.7%)	0.3%	10.8%		
Average Daily Rate	-	(16.2%)	(4.2%)	2.1%	5.5%	6.7%	19.6%		
Revenue/Available Room	-	(33.9%)	6.4%	20.2%	4.8%	7.0%	46.8%		
Selected Property (3)									
	Rooms	% Dist.	Year Open						
Fairfield Inn & Suites Fort Pierce	108	7%	2008						
Springhill Suites Port St Lucie	105	7%	1998						
Residence Inn Port St Lucie	125	8%	2009						
Hampton Inn Suites Fort Pierce	81	5%	2006						
Hampton Inn Suites Port St Lucie West	72	5%	2002						
Homewood Suites Port St Lucie Tradition	111	7%	2009						
Holiday Inn Express & Suites Fort Pierce West	94	6%	2009						
Holiday Inn Express & Suites Port St Lucie West	93	6%	2009						
Holiday Inn Port St Lucie	142	9%	1988						
Quality Inn Fort Pierce	72	5%	1993						
Comfort Suites Fort Pierce	68	4%	2004						
Best Western Plus Fort Pierce Inn	60	4%	2005						
Best Western Port St Lucie	98	6%	1987						
Motel 6 Fort Pierce	119	8%	1991						
Days Inn Fort Pierce Midtown	96	6%	1977						
La Quinta Inns & Suites Fort Pierce	87	6%	2008						
Total:	1,531	100%							

(1) CAGR=Compound Annual Growth Rate.

(2) Revenue per available room is the best measure of year-to-year growth because it considers simultaneous changes in both room rate and annual occupancies.

Source: STR Global; RDS; WTL+a, July 2014.

Market Issues & Potentials by Focus Area

Based on the demographic and economic profile and evaluation of recent and current market conditions, the following summarizes, on a preliminary basis, market issues, opportunities, and challenges for each of the select focus areas identified in the Waterways Plan. On the whole, these potentials are intended to complement and reinforce successful redevelopment initiatives underway in the focus areas, with the objective that better and more frequent organized waterways activities identified in the plan serve to enhance, or induce, market potentials in key uses/opportunities.

As specific economic development initiatives in the study area move forward, more detailed studies will be necessary, including market/financial feasibility, engineering and site planning.

Key findings are detailed below with supporting analyses. Note that detailed office, industrial and hotel demand models are illustrated in Table 31 through Table 33 in the Appendix.

Port Salerno



Port Salerno's role as a fishing village and working waterfront as well as location for large events such as the Port Salerno Seafood Festival and other special programmed activities serve to strengthen its role in Martin County as a local and regional destination. This position has been further enhanced with a number of waterfront restaurants that draw both local residents and visitors.

As noted in this chapter, the residential neighborhoods surrounding the waterfront in the Port Salerno CDP (Census-Designated Place) contain a current population of more than 10,000 residents in 4,445 households. Port Salerno's population is generally stable, although it declined slightly between 2000 and 2010 according to data from UF BEBR. Port Salerno accounts for approximately 7% of Martin County's total population. According to the Martin County CRA, there are an estimated 3,100 jobs in the Port Salerno CRA, which accounts for an estimated 4% of the county's total employment base. Although specific estimates of building area by use are not consistently available, the character of development Port Salerno suggests a majority of jobs are likely within general industrial sectors such as boat building/repair, marinas, marine services industries, and commercial fishing operations. In addition, there are retail and restaurant jobs because of the presence of such businesses in this area.

In evaluating economic opportunities in Port Salerno, several critical issues are apparent:

- The total amount of net developable area, including vacant and underutilized parcels, is an outstanding data need that requires parcel-by-parcel analysis within the district. Moreover, setbacks from the waterfront to building area were recently increased from 25 ft. to 75 ft. It

is critical to understand what impact this has on future economic opportunities and carrying capacity of buildable parcels.



The primary objective of the CRA plan in Port Salerno is to strengthen its role as an authentic fishing village and working waterfront. This may also include expansion of fishing docks through the Port Salerno Commercial Fishing Dock Authority, and the possible construction of a fish market as a complement to private redevelopment and to further enhance the authenticity and function of this community as a fishing village.

- Given the UF BEBR data indicates the population was flat or slightly declining between 2000-2010, a straight-line projection would suggest limited opportunities for new residential development. Therefore, new housing in selected locations in the waterfront area may require some form of inducement. Locations and sites that maximize water views and provide both densities and heights sufficient to stimulate the market and generate land and building price point premiums will be critical, particularly for in-fill, for-sale multi-family product such as stacked flats or townhouses.



The Martin County CRA has made significant investments in public realm improvements in Port Salerno to jump-start private investment. The project team's economic data indicates these investments typically produce a leverage ratio in the early years of \$1:\$3. As revitalization initiatives and marketability solidifies, leverage ratios increase on the order of \$1:\$12. As specific initiatives are proposed, it is recommended that feasibility studies compare the magnitude of investment against those projects seeking public incentives.

- As markets recover, and marina properties become subject for redevelopment, it will be key to consider the potential loss of locally-owned marine industrial uses, which may or may not have succession plans in-place. As the regional economy recovers, and land values rise, this may put further pressure on such locations/sites to change land uses through redevelopment.
- If Port Salerno maintains its current 4% share of Martin County's employment base, it would translate into approximately 400 new jobs between 2013-2021, as part of the forecast increase of 10,400 jobs in Martin County over the next eight years. Assuming an average occupancy factor of roughly 300 s.f. per employee (which takes into account a range of jobs from marine-serving to retail to restaurant in Port Salerno) suggests demand for approximately 125,000 s.f. of workplace real estate.

Economic Development

- One of the concepts tested in the Waterways Plan is the introduction of a small hotel or inn designed to reflect Port Salerno’s fishing village environment. However, based on recent and current operating metrics of Martin County’s hotel market, it is unlikely that such a concept would be feasible in the near-term, particularly if it is an independent (mom and pop) operator that may or may not have access to a central reservation system. Recent countywide occupancy levels, which averaged 55% over the past six years, are too low to justify such a concept, and occupancies will have to strengthen to sustained annual performance in the range of 65% or greater to attract traditional financing. Without market incentives, residential uses on the subject site appear more likely to occur in the near-term.

Palm City



The plan suggests potential modifications to Charlie Leighton Park, a small waterfront park in Palm City, to maximize water-related sports, special events and recreational uses. This would include working collaboratively with the Treasure Coast Rowing Club toward expansion of a facility to accommodate expanded rowing activities with amenities such as a floating dock and food and beverage operations.

This concept also considers construction of a multi-use two-story structure to include upper-level balconies that enable viewing of rowing and other events, and first-floor rowing-related functions such as storage, fitness, and recreational space. A food and beverage operator is suggested as part of this concept.



Market potentials for new housing elsewhere in Palm City also appear market-supportable.

- As illustrated in Table 27, if Palm City maintains its 2000-2010 growth rate in population of 1.4% per year, which paralleled Martin County’s growth rate, net new population growth could be expected to yield more than 8,000 new residents between 2015 and 2035. If the core Palm City area also maintains its current household size of 2.37 persons per household, this could yield demand for almost 3,400 housing units over the next 20 years, or fully 63% of countywide demand for housing over this period.

Stuart—Downtown & Waterfront



The City of Stuart, and particularly its downtown and waterfront areas, serves as a viable regional destination for local residents and visitors in retail, entertainment/culture, and dining as well as government and medical facilities. The City and CRA have implemented a number of successful revitalization and re-development initiatives, and its downtown business and occupancy patterns are generally strong. Moreover,

there are several publicly-owned sites on the waterfront that are highly marketable because of their significant water views and access, and these may become potentially available to accommodate new economic opportunities. This could reinforce the economic momentum to add complementary uses along the city’s waterfront. This includes, for example, a 120-room Aloft Hotel recently proposed for a city-owned, 2.1-acre site between the FEC rail corridor and the U.S. Route 1/Federal Highway Bridge.

Market potentials for several uses appear strong in Stuart, as highlighted below:

- As illustrated in Table 27, if Stuart maintains its 2000-2010 growth rate in population of 0.6% per year, net new population growth could be expected to yield approximately 2,200 new residents between 2015 and 2035. If the city also maintains its current household size of 2.07 persons per household, this could yield demand for almost 1,100 housing units over the next 20 years, or roughly 20% of countywide demand for housing over this period.
- New housing starts in Stuart between 2004 and 2012 totaled 740 units. Stuart comprises only 4% of the county’s total single-family starts but 43% of its multi-family starts.
- However, from a planning perspective, clustering new housing in downtown Stuart and on selected available sites along the city’s waterfront will not only generate premiums in terms of potential property tax revenues, but it will also serve to expand customer markets for downtown’s retail businesses.

Table 27: Housing Potentials—Martin County, 2015—2035

	2015 Population	2015-2035 Population Gain/(Loss)	Persons Per Household	2035 Housing Units (1)
Martin County				
County Population	148,077	30,300	2.29	13,232
Palm City	24,798	8,021	2.37	3,388
Stuart	16,096	2,181	2.02	1,077
Jensen Beach	12,023	1,351	2.12	638
Port Salerno	10,066	(99)	2.27	-
Indiantown	6,347	1,174	3.79	310
Rio	935	(111)	2.04	-
Martin County				
Focus Areas:	70,191	11,595		5,413
As % of Martin County				41%

Table 28 illustrates a fair share allocation for Stuart of future growth in office and industrial demand generated by job growth in Martin County between 2013 and 2021. The full demand analysis for each use is illustrated in Table 31 and Table 32 in the Appendix.

- This analysis suggests market potentials for approximately 362,000 s.f. of office space citywide, based on maintaining the city’s current 54% share of the county’s office market, as well as demand for a more modest 67,000 s.f. of general industrial space over the next eight years, based on maintaining the city’s current 9% share of the county’s industrial market.
- To the extent that sites can be identified and financing secured, a reasonable planning target for new office space in downtown Stuart, and/or possibly on selected sites on the waterfront as part of mixed-use projects, ought to be in the range of 100,000 s.f. of new office space.

Table 28: Allocation of Office & Industrial Potentials—City of Stuart, 2013—2021

	Office	Industrial
Martin County		
Existing Gross Inventory (In SF)	3,804,186	6,721,340
Market Potentials (2021)	667,400	725,900
City of Stuart		
Existing Inventory (In SF)	2,065,528	623,013
Share of County	54%	9%
Market Potentials (2021) (1):	362,400	67,300

- As illustrated in Table 33 in the Appendix, the hotel analysis suggests that Martin County currently has an over-supply of hotel rooms. The analysis assumes sustained annual growth in the county’s visitor market of 4% per year, which occurred between 2012 and 2013, but this rate may be difficult to sustain over a longer timeframe. Further, the analysis assumes an increase in the number of visitors who stay in hotels and no change in party size or length of stay. Combined, these will serve to increase hotel occupancies, which are assumed to increase from current/2014 levels of 66% to 70%, which can also be attributable to an improving economy and net new job growth.
- Even with sustained growth at this pace, this reveals an over-supply (excess) ranging from (275) to (400+) rooms annually over the eight-year forecast period. However, the project team economists note that several hotel properties suffer from physical and functional obsolescence, and these properties may be conducive for redevelopment over the next three to ten years. This will serve to strengthen occupancies for remaining properties and enhance market prospects for new hotel development, such as the proposed Aloft project. Moreover, other locations in Martin County beyond downtown Stuart with key attributes are likely to be more attractive for new hotel development as the county’s hotel market strengthens, particularly those with captive markets such as tourists, in Jensen Beach and, to a lesser extent, Port Salerno.

Indiantown



From a real estate and economic perspective, Indiantown's locational characteristics serve to provide multiple benefits. First, it is located at the nexus of the state's transportation network, with proximity to I-95, the Florida Turnpike, active rail sidings, and other forms of transportation. Second, it has lower land costs than more heavily-developed locations in the eastern part of Martin County, and certainly relative to land costs in other parts of South Florida, such as Palm Beach County. This can serve as a strong benefit to land-consumptive uses, such as horizontal warehousing and

distribution space that require large horizontal/single-floor footprints. Third, proximity to nearby canals provides access to Lake Okeechobee, which in turn provides boaters with cross-state access to the Gulf Coast. Fourth, Indiantown has vacant industrial-zoned land.

Market opportunities in Indiantown for new housing will be contingent on future growth in population and households, which is likely to be tied to job access and availability. Notably, data limitations have prevented more detailed study of workplace uses. Data limitations include net developable land available to accommodate future industrial or office development, the number of jobs, and market conditions of existing real estate. As such, estimates of market potentials for these uses cannot be prepared.



- As illustrated in Table 27, if Indiantown maintains its 2000-2010 growth rate in population of 0.9% per year, net new population growth could be expected to yield approximately 1,200 new residents between 2015 and 2035. If Indiantown also maintains its current household size of 3.79 persons per household, this could yield demand for approximately 300 housing units over the next 20 years, or roughly 6% of countywide demand for housing over this period.
- Many factors will affect the amount of this demand that could translate into new housing units, including vacancy rates, the availability of developable sites, market trends, and construction and permanent financing.
- Opportunities for general industrial use may be oriented to marine-services, such as boat storage for hurricane/storm protection and other industrial uses as noted above.
- In conclusion, it is important to understand specific site and market characteristics in order to identify market opportunities (e.g., developable acreage, ownership, access, wetlands). Future analyses, including site-by-site evaluations, could further determine opportunities for

Indiantown to capture some increment of the estimated 726,000 s.f. of countywide demand for general industrial uses over the next eight years (see Table 18 in the Appendix).

Jensen Beach



Jensen Beach is one of Martin County’s most “image-able” places. It is an attractive, quintessential beach town which could be expected to enhance prospects to strengthen its role as a regional destination. Currently, Jensen Beach contains 11,700 residents in its CDP, which reflects an 8% share of Martin County.

According to the CRA, Jensen Beach generates annual retail sales estimated at \$28,000 per capita, which reinforce its destination role in the marketplace. There has been recent investment in a mixed-use prototypes, and significant water views and access to both the ICW and the Atlantic Ocean add value premiums to real estate.

Market concepts identified in the Waterways Plan for Jensen Beach include development of key waterfront sites, such as the parcels adjacent to the Causeway, and expansion of water-related sports concessions, particularly at Riverside Park. Broad market considerations are detailed below.

- As illustrated in Table 27, if Jensen Beach maintains its 2000-2010 growth rate in population of 0.5% per year, net new population growth in the CDP could be expected to yield approximately 1,350 new residents between 2015 and 2035. If Jensen Beach also maintains its current household size of 2.12 persons per household, this could yield demand for more than 630 housing units over the next 20 years, or roughly 12% of countywide demand for housing over this period.
- The recent plan to redevelop within the Town of Ocean Breeze, including the waterfront mobile home property, suggests that land values on the waterfront in the Jensen Beach area are nearing a threshold at which future investment will yield higher value uses.
- Beyond a small amount of professional office space oriented to nearby residents, it is unlikely that Jensen Beach will evolve into an employment center. If any office space is



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developed, it is likely to be located on the second floor in a mixed-use project primarily oriented to retail and food and beverage uses.

A development application to redevelop the former Holiday Inn Oceanside on Hutchinson Island in Jensen Beach was approved by Martin County in April 2014. This project will comprise construction of a four-story, 174-room hotel, restaurant and pool to replace the former hotel, which was destroyed in the hurricanes of 2004-2005. Completion is anticipated in 2016. Given the over-supply of hotel rooms in Martin County, this property is likely to capture market share from existing, underperforming properties, which is characteristic of new product upon entry to an over-saturated market. This is also likely for the proposed Aloft Hotel in downtown Stuart, which reinforces the importance of increasing the number of overnight visitors to Martin County through programmed events such as the Pineapple Festival, Stuart Boat Show, Port Salerno Seafood Festival, and organized sporting activities led by the Sports Commission. .

Rio



Rio is a quiet community with a spectacular waterfront location and views across the St. Lucie River to downtown Stuart. Rio contained 965 residents in 2010, accounting for only 0.7% of Martin County's total population.

Private land acquisition activities have yielded several sites for mixed-use development. This suggests that Rio is on developers' investment radar screens. As a result, as the economy continues its recovery, previous site assembly could accelerate these

sites for mixed-use development. In addition, there has been significant investment in public realm improvements, including the recently-completed Rio Town Center road project, which involved the complete reconstruction and streetscape improvements to a 2,500 foot segment of Dixie Highway/County Road 707, which serves as the primary arterial through Rio, at a cost \$2.2 million.

One of the mixed-use sites, the Stuart Harbor Yacht Club project, was originally proposed in 2009 for development on an 11.6-acre waterfront site. The recession effectively stopped that project until this year. Recently, the project has been resurrected as a mix of live/work units, multi-family rental and for-sale condominium units, office space, and both retail and restaurant uses. It has the potential to jump-start other development activity and strengthen Rio's local economy. The project's first phase is proposed to provide 20,000 s.f. of retail space, 25 residential units, 8,000 s.f. of office space, and 149 parking spaces. The first phase program is sufficiently small as to require only nominal market captures of near-term growth in specific uses. For example, 8,000 sq. ft. of office space accounts for a share of only 1.2% of the 667,400 sq. ft. of countywide office potentials estimated in Martin County through 2020. This would be considered a reasonable capture of near-term growth.

As discussed earlier in this chapter, Rio and Port Salerno are the only two focus areas to have experienced population declines during the 2000-2010 period. Since population was flat/slightly declining between 2000-2010, a straight-line projection would suggest limited opportunities for new residential development. Therefore, new housing in selected locations along Rio's waterfront should maximize water views and provide both densities and heights sufficient to generate land and building price point premiums to induce market demand, particularly for in-fill, for-sale multi-family product such as stacked flats or townhouses. The proposed Stuart Harbor project will serve as precedent for market response to future residential and mixed-use development in Rio.

Fort Pierce—Downtown & Waterfront

Similar to Rio, downtown Fort Pierce has a spectacular waterfront setting along the ICW. Multiple activities along the waterfront, such as the presence of the Fort Pierce City Marina, the farmer's market and others, help to activate and animate the waterfront and reinforce its role as a local and regional destination.

Notably, there exists a significant amount of undeveloped and underutilized land along the waterfront. Field reviews indicate considerable land area potentially available for redevelopment, such as the former H.D. King Power Plant site. In addition, the city's population has increased, with more than 4,000 new residents between 2000-2010 and 2,500+ housing starts between 2004-2012, which accounts for 9% of the county's overall housing activity during this 10-year period. Moreover, the economic recovery is benefitting the city's real estate market, as evidenced by more than 62,700 s.f. of positive net absorption in these sectors, although there remains a sizable amount of vacant office, retail and industrial space. Future occupancy levels will be largely driven by job growth in key sectors of the economy.

Various planning concepts are suggested as part of the Waterways Plan for the Fort Pierce waterfront. These include supporting activities to expand/strengthen deep-sea fishing at the marina, implementing water taxi service, and other potential enhancements that serve to better organize cultural/educational activities that strengthen the destinational role of the city's waterfront and, by extension, its downtown. In particular, this includes consideration of a maritime/logistics academy in conjunction with continued industrial use of the Port of Fort Pierce. That said, the uncertainties over the future role of the port create uncertainties in the market.



The project team understands that the City of Fort Pierce issued a request for proposal (RFP) to solicit developer interest in the former H.D. King Power Plant site. According to city staff, the proposed development program for the site includes: 300 market-rate rental units; 15,000 s.f. of retail/commercial uses; 120 hotel rooms (and 7,500 s.f. of conference/event space); 55 townhouse units; and 635

parking spaces in a four-story garage. As currently proposed, the project's residential component will require a share of approximately 9% of the city's future growth in household units over the next 20 years. This appears reasonable, as a target capture for downtown housing in Fort Pierce should be in the range of 25% to 30% of the city's total growth over the next 20 years as a means to revitalize downtown, increase its population, and help to support existing and attract new businesses.

Notably, the proposed former H.D. King Power Plant site redevelopment will serve as precedent to future market response to other redevelopment initiatives in downtown Fort Pierce.

- If Fort Pierce maintains its 2000-2010 growth rate in population of 1.0% per year (see Table 29), net new population growth could be expected to yield more than 10,000 new residents between 2015 and 2035. If Fort Pierce also maintains its current household size of 2.62 persons per household, this could yield demand for more than 3,800 housing units over the next 20 years, or roughly 22% of demand for new housing in St. Lucie County over this period.
- From a planning perspective, clustering new housing in downtown Fort Pierce and on selected, available sites along the city's waterfront will not only generate premiums in terms of potential property tax revenues, but it will also serve to expand customer markets for downtown's retail businesses.

Table 29: Housing Potentials—St. Lucie County, 2015—2035

	2015 Population	2015-2035 Population Gain/(Loss)	Persons Per Household	2035 Housing Units (1)
St. Lucie County				
County Population	299,400	142,100	2.56	55,514
Port St. Lucie	224,143	37,466	2.70	13,862
Fort Pierce	43,790	10,027	2.62	3,821
St. Lucie County				
Focus Areas:	267,933	47,493		17,683
As % of St. Lucie County				32%

(1) To determine estimates for 2035 housing units, analysis assumes that each jurisdiction and focus area maintains the number of persons per household from 2010.

Source: U.S. Census Bureau; University of Florida, Bureau of Business & Economic Research; ESRI Business Analyst; WTL+a, June 2014.

Table 30 illustrates a fair share allocation for Fort Pierce of future growth in office and industrial demand generated by job growth in St. Lucie County between 2013 and 2021. The full demand analysis for each use is illustrated in Table 17 and Table 18 in the Appendix.

- This analysis suggests market potentials for approximately 340,000 s.f. of office space citywide, based on maintaining the city’s current 45% share of the county’s office market, as well as demand for 300,000 s.f. of general industrial space over the next eight years, based on maintaining the city’s current 64% share of the county’s industrial market.
- To the extent that sites can be identified and financing secured, a reasonable planning target for new office space in downtown Fort Pierce, and/or possibly on selected sites on the waterfront as part of mixed-use projects, ought to be in the range of 50,000 s.f. to 100,000 s.f. of new office space. Currently, the downtown’s office market is anchored by the federal courthouse and city hall, with supporting professional services. A significant increase in residents, targeted business retention and recruitment strategies, and the use of financial and regulatory incentives will be necessary to attract office tenants and increase the downtown’s share of the regional/county office market.

Table30: Allocation of Office & Industrial Potentials—City of Fort Pierce, 2013—2021

	Office	Industrial
St. Lucie County		
Existing Gross Inventory (In SF)	5,363,004	11,058,934
Market Potentials (2021)	755,100	471,200
City of Fort Pierce		
Existing Inventory (In SF)	2,418,096	7,031,480
Share of County	45%	64%
Market Potentials (2021) (1):	340,500	299,600

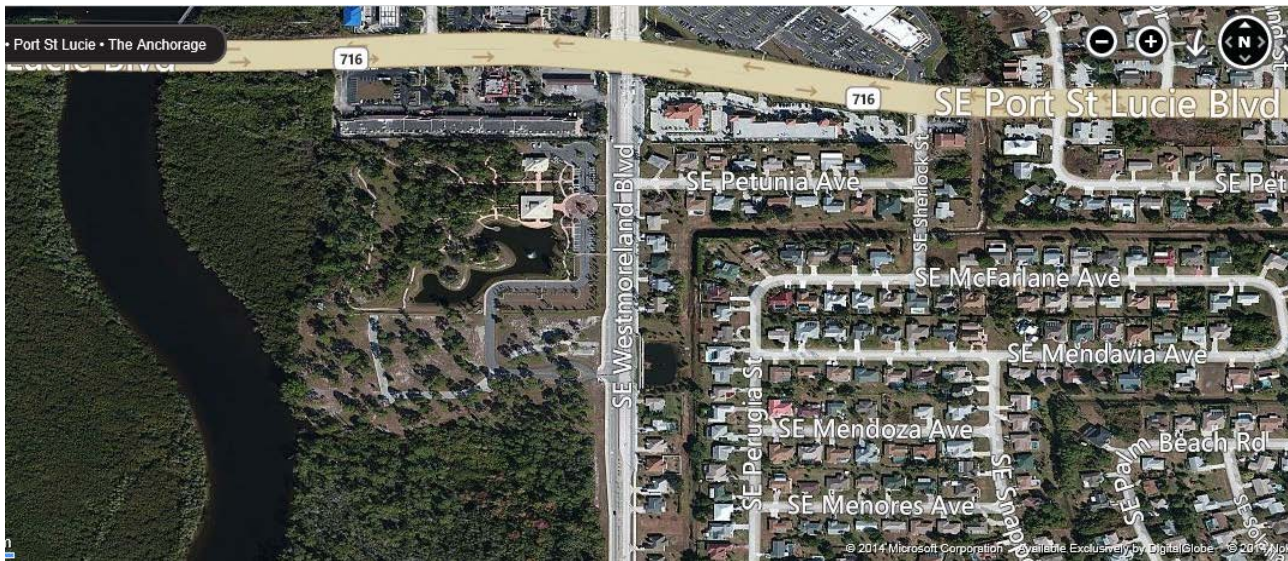
(1) Analysis assumes that each city's current share (also known as "fair share") is maintained in 2021.

Source: CoStar, Inc.; Florida Agency for Workforce Innovation; WTL+a, June 2014.

Port St. Lucie—Waterfront

The project team understands that a vacant site comprising approximately 10 acres of land has been identified by the City of Port St. Lucie as a priority location for a mix of commercial and recreational uses. This site, which is located on Westmoreland Boulevard, has limited frontage on the North Fork of the St. Lucie River. The parcel, which is owned by the city, is located between an undeveloped parcel to the south and the Port St. Lucie Botanical Gardens to the north. It is surrounded to the east by low-density residential development. The site was intended for mixed-use development, but the developer lost the site as a result of the 2007-2009 economic downturn, and it was subsequently acquired by the city. Additional infrastructure may be necessary to accommodate future uses.

Figure 1: Aerial View—Port St. Lucie Site



- From a market perspective, significant population and household growth in Port St. Lucie may bode well for a food and beverage concept. As illustrated in Table 36 in the Appendix, each household in St. Lucie County spends, on average, more than \$3,300 per year on restaurant dining and beverages. This equates to estimated gross annual spending of \$368 million per year irrespective of location.
- However, the site’s limited visibility from a major arterial, extensive lot depth, limited traffic on Westmoreland Boulevard, and distance from Port St. Lucie Boulevard (a major arterial), will necessitate that any food and beverage operator considered for this location be viable such as an existing operator with a successful track record and approved business plan and financing for expansion.
- Importantly, from a market perspective, the project team economists underscore the importance that any operator considered for this site should have a full liquor license. Since a critical portion of a restaurant’s profitability is based on alcohol sales, the overall economic viability of a restaurant will be affected by whether an operator has a license.
- As noted elsewhere in this chapter, new construction will necessitate minimum investment-grade sales in the range of \$400 per s.f. or more to justify the rents necessary to finance the costs of construction. As restaurant fit-out is more expensive (i.e., plumbing, HVAC, grease traps, extensive kitchen equipment), and higher rents (and higher sales performance) are necessary. This reinforces the importance of securing a viable operator capable of generating and sustaining such sales levels and paying threshold rents (typically 10% of sales). It should also be noted that because the profitability of liquor sales is so much higher than food, having the ability to sell alcohol will increase both profitability and potential lease obligations in the form of higher rent as a percentage of gross sales.

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- While a feasibility analysis is well-beyond the scope of this study, assuming a 4,500 s.f. restaurant with sustained annual sales of \$400 per s.f. would yield gross revenues of \$1.8 million. Sales revenues in the range of \$1.8 to \$2.0 million per year can be considered the lower end of a reasonable baseline for a 4,500 s.f., sit-down restaurant with full liquor sales. Given documented resident-based food & beverage sales of \$368 million annually countywide, for this restaurant to be marginally viable will require a 5% capture of total, resident-based food and beverage sales. While visitor spending in St. Lucie County is not documented, it is critical that this site draw substantial additional incremental sales from tourists. As the site is not considered central to tourist destinations in the county, it may be difficult to achieve a required share of tourist expenditures.
- As noted, St. Lucie County's hotel/lodging market is in recovery from the 2007-2009 recession. As illustrated in Table 26, annual occupancies have improved markedly from a low of 41% per year in 2009 to 53.8% in 2013. While this is a significant improvement (with further strengthening during the first-half of 2014), annual occupancies remain *well-below* the minimum 65% annual thresholds typically required by the capital markets to finance new hotel construction. As a result, the site is likely not viable for a lodging concept in the near-term - at least one anchored by a national flag.
- Pending the results of detailed feasibility studies, an independent hotel operator may consider the site for a small specialty/boutique concept, 40 rooms or less. However, the overall viability of such a concept will be predicated on several key issues including: access to a central reservation system; deal terms with the City of Port St. Lucie related to construction and infrastructure costs; annual ground lease terms and costs; and other items to be negotiated upon completion of feasibility studies, issuance of an RFP and securing a prospective operator.

Key Findings and Recommendations

The study has identified a number of key findings in the preceding analysis that examined the Martin and St. Lucie county waterways from a macro perspective and at the smaller unit of analysis, the select waterfront centers. Along the ICW and the St. Lucie River as a whole, the importance of preserving and enhancing existing working waterfronts as well as commercial and recreational uses was noted. Within the select waterfront centers, the analysis identifies opportunities and challenges that would need to be addressed to realize each of the unique development/redevelopment visions proposed. Clearly, striking the right balance between the desire for public access to the waterways and the upland and water-dependent needs of marine industries at working waterfronts is critical.

Key findings noted in the report focus on the lack of consistent, comprehensive data related to several industry sectors. Regarding the tourism industry, both counties are independently working towards a consistent dataset regarding visitor counts, spending patterns, and tourist experiences. A reliable dataset, which could be established across both counties, will help to inform, update and shape the tourism industry and the tourist experience in both Martin and St. Lucie counties. It is also critical to measure tourist-related development potentials and markets.

There is also a lack of consistent, parcel-specific information regarding the amount of net developable land in the select waterfront areas, specifically considering vacant and underutilized parcels vis-à-vis market trends. With respect to the study area's select waterfront centers, the community redevelopment areas in Martin and St. Lucie counties, which contain the select waterfront centers, are varied with regards to complete inventories of vacant developable land, existing and un-built projects, and data on general real estate market conditions. This lack of on the ground data makes it difficult to conduct site-by-site analyses of vacant lands as well as other property or parcels that could potentially be redeveloped within the select waterfront centers.

Finally, the project team's research noted that there is a surprisingly limited amount of information available about the marine industries in general and about the specific component parts of the overall industry, such as recreational boating and fishing. This lack of a comprehensive dataset on the marine industries sector of the study area's economy makes it difficult to ascribe the total economic impact of this industry cluster to the Martin and St. Lucie county economies and to understand how dynamic this sector is. Developing and maintaining a marine industries database to track the trends, employment, and economic activities associated with the marine industries is important to develop an understanding of how important this industry sector is to the Martin and St. Lucie county economies. It would further help each county's response to enhancing this industry cluster through their respective economic development policies and strategies.

The following recommendations are intended to support and enhance the economic development potential of the Martin and St. Lucie waterways as a whole and the economic base immediately surrounding the select waterfront centers. More specifically, the key findings and recommendations are structured to: 1) support the growth and enhancement of marine-related and supporting industries; 2) fully realize, where possible, land use and upland economic

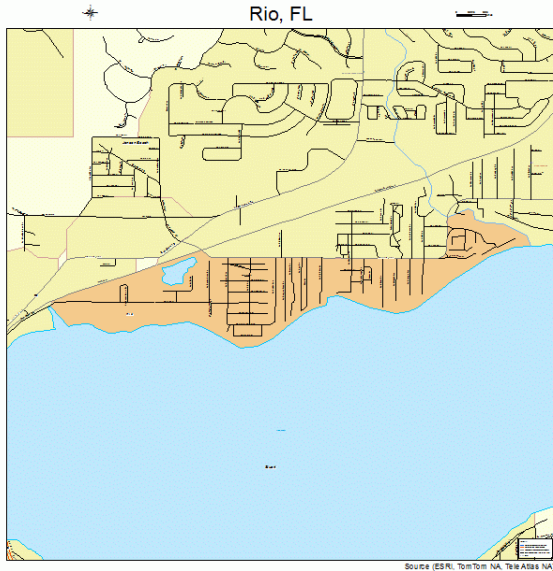
opportunities at select waterfront centers; and 3) enhance other waterways-dependent industry clusters.

Improve Understanding and Enhancement of the Hospitality Industry

- Invest in the creation of a reliable and recurring dataset via surveys, specialty research and other means to obtain the best possible information on visitor/tourism trends in Martin and St. Lucie counties.
- Develop a coordinated marketing program with the TCSC to focus on water sports activities and unique water sports events.
- Develop and maintain an annual special events calendar with existing and new events to build events and sports tourism packages, which can utilize the data assembled in this plan as a baseline inventory.

Improve Understanding and Enhancement of the Marine Industries Cluster

- Identify and examine key industry sub sectors that could comprise a marine-industries cluster.
- Initiate a regional effort to develop a Marine Industries dataset to track the number and classifications of marine-related jobs by North American Industry Classification System Code, industry capacity and expenditures, and related measures over multiple years to develop a better understanding of important trends in this industry cluster. This effort can utilize the data assembled in this plan as a baseline inventory.
- Support the growth and enhancement of the marine industries cluster by:
 - Evaluating and promoting the use of the waterways system to support the movement of freight.
 - Completing a comprehensive inventory and assessment of the existing and planned marine servicing/boat building facilities in the study area.
 - Promoting the expansion and development of marine manufacturing at working waterfront locations and also at commercial/industrial lands located not necessarily waterside.
- Work with Martin and St. Lucie County School Districts, and the Marine Industries Association of the treasure coast to develop a marine industries career track that includes identification of appropriate certifications and local internship opportunities.



- Coordinating and developing a marine industries training program at Indian River State College and CareerSource Research Coast.
- Adopting a standardized system to monitor the impact of the fishing industry within Martin and St. Lucie counties and utilizing the information to assess the overall impact of fishing on the economic activity in both counties.
 - Elevate the status of the marine industry cluster as a prominent industry in Martin and St. Lucie counties that provides unique and varied high-value added jobs that cannot be outsourced.
 - Undertake a detailed marine industries cluster study to determine the strength and growth potential of the cluster.

Support a Highly Skilled and Educated Marine Industries Workforce

- Support regional workforce initiatives designed to assess marine industries workforce readiness and use that information to expand training opportunities for current and future employees.
- Consider creating a region-wide funding mechanism to support the development of specifically targeted marine industry job training programs.
- Develop incentives for marine industry job creation, including:
 - Hands-on internship and apprenticeship programs.
 - Hands-on training workshops (on-site and off-site) to introduce potential employees to marine industry opportunities.
 - Work with the area schools, colleges, and recreational programs to expand youth awareness of and involvement in recreational boating, ecotourism along the waterways, and marine industries on working waterfronts.

Support Implementation of No Net Loss Policies to Discourage Conversion from Marine Industry to Other Uses

- Support continued efforts at the state, regional, and local level to preserve and enhance working waterfronts including:
 - Compilation of working waterfronts inventory in Martin and St. Lucie counties and

Economic Development

- Establishment and continued implementation of “No Net Loss” policies, which would prohibit the rezoning of such property to residential or other non-supportive use.

Adopt Programs to Preserve and Enhance Working Waterfronts

- Support continued efforts at all levels of government to update the Port of Fort Pierce Master Plan and support joint City of Fort Pierce and St. Lucie County efforts to develop a maritime/logistics academy at the Port of Fort Pierce.
- Create a deferred property tax program for working waterfront property.
- Consider developing conditional permitting or rezoning options for working waterfront property. This would allow redevelopment only if it maintains or provides public access or retention/expansion of specific waterfront uses.
- Evaluate benefits of pursuing a working waterfronts designation from the State of Florida for Fort Pierce.

Incorporate and Prioritize Waterways-Related Capital Improvements

- Prioritize key capital investments along the various Waterways that would generate the greatest economic and fiscal benefits for Martin and St. Lucie counties and the select waterfront centers.
- Develop a waterways capital improvements program to support the development of strategic projects including:
 - Maintenance dredging
 - Recreational infrastructure
 - Upland and marine transportation improvements

Martin/St. Lucie Regional Waterways Plan

CHAPTER 7: IMPLEMENTATION



Introduction

This Plan is a multi-tiered, multi-agency document that details and recommends dozens of different projects and programs. Each of the five topic chapters contains a listing of generalized findings and recommendations. The plan supports the continuation of many of the counties’ extensive, on-going programs related specifically to the protection of natural systems, recreation and environmental enhancement, public access, and economic development. This Implementation chapter highlights a series of key activities that go beyond the current ongoing restoration and enhancement activities. These actions should be prioritized in the next five to ten years. While some projects may be initiated immediately, others will require interagency agreements to develop appropriate partnerships, action plans, timeframes, and funding. Select activities may be planned and designed for faster implementation as funding opportunities present themselves. Individual projects may also be more competitive for regional, state, and federal funding as components of this Plan because of the broad public participation documented that occurred in the development of this Plan.

The following acronyms are utilized in this chapter:

BDB	Business Development Board	MIATC	Marine Industries Association of the Treasure Coast
FDEP	Florida Department of Environmental Protection	MPO	Martin Metropolitan Planning Organization
FDOT	Florida Department of Transportation	SFWMD	South Florida Water Management District
FHWA	Federal Highway Administration	TDC	Tourist Development Council
FIND	Florida Inland Navigational District	TCRPC	Treasure Coast Regional Planning Council
FWC	Florida Fish & Wildlife Conservation Commission	TPO	St. Lucie Transportation Planning Organization
FRA	Federal Railroad Administration	USACE	United States Army Corps of Engineers
IRSC	Indian River State College	USCG	United States Coast Guard

Implementation

ACTIONS	LEAD ENTITIES	TIME FRAME
Support funding and implementation for Everglades restoration activities and continue on-going natural resource restoration and enhancement.	Local governments, agencies, congressional & legislative delegations, and community groups	Ongoing
Support actions to facilitate improvements, operations, and maintenance of the Ten Mile Creek Water Preserve Area by the SFWMD , including transfer of project responsibilities from USACE to SFWMD.	St. Lucie County, SFWMD Collaborating entities: community groups	1-5 years
Expand storm water management programs and treatment of discharges including basin mapping, watershed mapping, water quality testing, and baffle box installation.	Local Governments, SFWMD, FDEP Collaborating entities: community groups	Ongoing
Reduce waterways impacts due to septic tank systems , including accelerated connections to public sewer systems, especially in areas of high nutrient discharge and evaluation of funding measures to offset capital costs to residents. Where wastewater utility connections are not available, the use of advanced septic system designs, periodic inspection, and regular maintenance of septic systems should be implemented.	Local Governments, Florida Department of Health	Ongoing
Promote cleaner boating practices to reduce in-water pollution through the installation of more public pump-out facilities and extension of mobile pump-out vessels into St. Lucie County; installation of additional public restroom facilities accessible to boaters; and increased boater awareness and education about these facilities at marinas and boat ramps.	Local Governments, FIND Collaborating entities: FDEP, MIATC	1-5 years
Develop a Regional Environmental Education Work Group to create a multi-year, sequential curricula regarding waterways, maritime/fishing history and heritage education, promote shared agency resources, identify opportunities for efficiency, and help secure funding for broader environmental initiatives.	Martin and St. Lucie County School Districts Collaborating entities: SFWMD, FDEP, Local Governments, Non-profit/Private Education Providers, MIATC	1-2 years

Implementation

<p>Create a Lagoon Partnership Network among agencies, public parks, preserves and organizations along the Lagoon to improve communication, marketing, and sharing of information and resources.</p>	<p>FDEP, SFWMD, Non-Profit Educational Providers Collaborating entities: School Districts</p>	<p>1-3 years</p>
<p>Develop an improved communications protocol among agencies and sheriffs’ departments for special event permitting, particularly as related to sandbar-based events, to ensure awareness of local law enforcement personnel.</p>	<p>Martin and St. Lucie County Sheriff’s Departments, USCG, FWC</p>	<p>2-5 years</p>
<p>Develop a resource book listing various regulatory & management agencies, programs, areas of overlap, and identification of any areas of deficiencies.</p>	<p>Martin and St. Lucie counties Collaborating Agencies: State & Federal Regulatory Agencies</p>	<p>1-5 years</p>
<p>Develop a program to assess the impact of sea level rise on all existing infrastructure adjacent to the waterways and ensure that all new buildings and infrastructure proposed are designed to accommodate future sea level rise.</p>	<p>Local Governments, SFWMD, FDEP</p>	<p>1-5 years</p>
<p>Continue to seek funding and prioritize maintenance dredging of the St. Lucie Inlet</p>	<p>Martin County Collaborating Agencies: USACE, FIND, MIATC</p>	<p>Ongoing</p>
<p>Develop Dredging Work Groups in each county to assess shoaling and dredging needs throughout the waterways, determine desired depths, conduct annual assessments following storm seasons, and identify opportunities to reduce costs by better coordinated dredging activities.</p>	<p>Local Governments, FIND, SFWMD, USACE Collaborating Entity: MIATC</p>	<p>1-2 years</p>
<p>Initiate Water Taxi Working Groups in Martin & St. Lucie to evaluate and advance water taxi networks as appropriate, including further evaluation of station locations, route, scheduling, and opportunities for public/private partnerships. Lead locations for consideration include Port Salerno/Manatee Pocket, Stuart/Rio, and Fort Pierce.</p>	<p>MPO, TPO, Local Governments, TDCs Collaborating Entities: Chambers of Commerce, merchant’s associations, main street organizations, private sector businesses</p>	<p>1-2 years</p>

Implementation

<p>Advance the development of water taxi services in Port Salerno, Stuart, and Fort Pierce to enhance redevelopment activities and waterfront prominence for special events. Consideration should be given to coordinating services with key residential and lodging locations (e.g., Club Med Sandpiper, Hutchinson Island Marriott) and private residential marina developments).</p>	<p>CRAs (Port Salerno, Stuart, Fort Pierce), Local Governments, TDCs</p> <p>Coordinating Entities: MPO, TPO, FDOT</p>	<p>1-2 years</p>
<p>Prioritize the construction of publicly-accessible multi-purpose docks improvements in the Fort Pierce CRA and assist in the programming of water taxi service in conjunction with special events.</p>	<p>Fort Pierce CRA, City of Fort Pierce, TPO</p> <p>Collaborating Entities: FDOT, FIND</p>	<p>1-5 years</p>
<p>Seek funding for the construction of public multi-purpose docks designed to accommodate water taxi vessels, public access, and recreational uses. Priority should be given to initial water taxi services as noted in the plan.</p>	<p>MPO, TPO, Local Governments</p> <p>Collaborating Entities: FIND, FDOT, FHWA</p>	<p>2-5 years</p>
<p>Work with FDOT to evaluate impacts on marine transportation due to railroad bridge impacts, including consideration of freight redistribution, waterborne cargo, and inland logistics centers. Analyses should consider modernization of bridge infrastructure, bridge replacement, regulatory modifications, increased vertical and horizontal bridge clearance, and allocation of funding as appropriate through the FDOT Strategic Intermodal System for improvements</p>	<p>MPO, FDOT</p> <p>Collaborating Entities: Economic Councils, Local Governments, Port of Fort Pierce, FIND, USCG, TCRPC</p>	<p>1-5 years</p>
<p>Assess marine navigational impacts related to the proposed “All Aboard Florida” project and identify mitigation measures to reduce impacts on marine navigation, including the assignment of bridge tenders, improved boater communications, and modified bridge closing schedule in the Code of Federal Regulations to provide guaranteed minimum openings for marine navigation.</p>	<p>MPO, Local Governments</p> <p>Collaborating Entities: FRA, USCG, TCRPC, FIND, MIATC, Stakeholder Groups</p>	<p>1-2 years</p>
<p>Conduct a feasibility study of high-speed ferry service from the Port of Fort Pierce and/or Port Salerno/Stuart, including assessment of possible destinations, headways, and market assessment including consideration of intermittent service.</p>	<p>Port of Fort Pierce, MPO, TPO</p> <p>Collaborating Entity: FDOT</p>	<p>1-2 years</p>

Implementation

<p>Conduct a feasibility study to determine the potential for sea plane accommodations, including possible berths and market assessment, and community support.</p>	<p>MPO, TPO Collaborating Entity: FDOT</p>	<p>2-5 years</p>
<p>Develop and maintain inventories of vacant, underutilized, and pending development activity within CRA districts to improve the ability to forecast market growth, potential, and absorption as well as strengthen positions for investment. This data should be updated annually and utilized to target desired development uses that fulfill waterways goals.</p>	<p>CRA, Local Governments</p>	<p>Ongoing</p>
<p>Enhance the authenticity and function of its “fishing village” heritage by advancing development of a public fish market, improved fishing docks, and public access improvements in conjunction with private redevelopment.</p>	<p>Port Salerno CRA, Martin County Collaborating Entity: FIND, Port Salerno Commercial Fishing Dock Authority</p>	<p>1-5 years</p>
<p>Evaluate the expansion and enhancement of water-oriented uses at Charlie Leighton Park, including expansion of the rowing facilities, dockage for paddle vessels, boat ramp parking, and a multi-use structure with enhanced waterways views and appropriate concessions.</p>	<p>Old Palm City CRA, Martin County</p>	<p>1-5 years</p>
<p>Prioritize waterfront public access improvements in the Old Palm City CRA, including extension of the riverwalk and street-end “pocket parks” as identified in the CRA Plan. Such improvements should include measures to improve stormwater quality.</p>	<p>Old Palm City CRA, Martin County Collaborating Entity: FIND</p>	<p>2-10 years</p>
<p>Prioritize additional waterfront public access opportunities in the Stuart CRA, including expansions to the public floating dock, additional public multi-purpose docks, and additional street-end “pocket parks.” Emphasis should be placed on the ability of public docks to accommodate water taxi vessels.</p>	<p>Stuart CRA, City of Stuart Collaborating Entity: FIND, Martin MPO</p>	<p>1-2 years</p>
<p>Prioritize additional waterfront public access opportunities through the development of greenways along the C-23, C-24, C-25, and C-44 canals.</p>	<p>Indiantown CRA, Martin County, MPO Port St. Lucie, St. Lucie County, TPO Collaborating Entities: SFWMD, FDOT</p>	<p>2-10 years</p>

Implementation

<p>Expand the development of a marine industries district along the C-44/St. Lucie Canal in the Indiantown CRA.</p>	<p>Indiantown CRA, Martin County Collaborating Entity: MIATC</p>	<p>1-5 years</p>
<p>Prioritize additional waterfront public access opportunities in the Jensen Beach CRA, including the development of an Indian River boardwalk and cycling/pedestrian improvements along Indian River Drive.</p>	<p>Jensen Beach CRA, Martin County, MPO Collaborating Entities: FIND, FDOT</p>	<p>1-5 years</p>
<p>Prioritize waterfront public access improvements in the Rio CRA as a component of future redevelopment projects, including water taxi vessel accommodations where appropriate.</p>	<p>Rio CRA, Martin County</p>	<p>1-5 years</p>
<p>Design and advance a development program at the Port of Fort Pierce to physically and visually screen the Port’s industrial uses from incompatible uses and the historic downtown. Interventions could include buildings in support of a maritime & logistics academy or other uses, landscaping, and hardscape improvements.</p>	<p>Fort Pierce CRA, Port of Fort Pierce Collaborating Entities: FDOT</p>	<p>1-5 years</p>
<p>Consider establishment of a “working waterfronts” designation along the shoreline to enhance funding and competitiveness for marine industrial uses, including Taylor Creek and improvements to increase vertical clearance for vessels to access upstream properties, and the adoption of “no net loss” policies in St. Lucie County.</p>	<p>City of Fort Pierce, St. Lucie County Collaborating Entity: MIATC</p>	<p>1-3 years</p>
<p>Evaluate the feasibility of a mixed-use development program at the Westmoreland Tract, including consideration of restaurant, lodging, and recreational concessions and extension of the city’s riverwalk.</p>	<p>Port St. Lucie CRA, TPO</p>	<p>1-2 years</p>
<p>Evaluate roadway networks to identify and prioritize “last-mile” roadway enhancements to waterfront CRAs, including landscaping, enhanced signage, street furniture, and signage to emphasize waterfront character.</p>	<p>MPO, TPO, CRAs, Local Governments Collaborating Entity: FDOT</p>	<p>2-10 years</p>
<p>Evaluate the potential for multi-modal “last mile” connections from marinas and waterfront centers, including infrastructure (e.g., local shuttles, trolleys, micro-transit), bicycle sharing, and car sharing programs.</p>	<p>MPO, Transit Providers, Local Governments/CRAs Collaborating Entity: FDOT, Marina Operators</p>	<p>1-5 years</p>

Implementation

<p>Consider the development of specialty transit routes to facilitate access to/from waterways, waterway centers, and beaches, with special consideration for the transit-dependent and those with economic and physical challenges.</p>	<p>MPO, Transit Providers Collaborating Entities: FDOT, Social Service Agencies</p>	<p>1-5 years</p>
<p>Prioritize greenways and trails connections that provide access to waterways and waterfront centers, including multi-use trails along canal banks as appropriate (e.g., Taylor Creek greenway, Ten Mile Creek greenway).</p>	<p>MPO, TPO, Local Governments Collaborating Entities: FDOT, SFWMD, FDEP</p>	<p>1-5 years</p>
<p>Advance protection of identified “marine transportation routes” in Martin County to further support marine industries and vessel transport to waterways, including adoption of appropriate regulatory language. Special consideration should be given to railroad crossing infrastructure.</p>	<p>Martin County, MPO Collaborating Entities: FDOT, MIATC</p>	<p>1-3 years</p>
<p>Assess the need for marine transportation routes in St. Lucie County, with consideration of desired marine industry locations and future potential railroad crossing improvements.</p>	<p>St. Lucie County, TPO Collaborating Entities: FDOT, MIATC</p>	<p>1-5 years</p>
<p>Improve park accommodations for canoe/kayak/paddle vessel use, including provision of sandy shorelines or “soft launches,” parking, restrooms, fresh water sources, and floating docks as appropriate as well as a paddling trails guide. Key locations are noted in this plan.</p>	<p>Local Governments</p>	<p>1-3 years</p>
<p>Improve boat ramp facilities, including expanding parking, storage docks, and dredging as appropriate. Key locations are noted in this plan.</p>	<p>Local Governments Collaborating Entity: FIND</p>	<p>1-3 years</p>
<p>Support the enhancement of fisheries through water quality improvements, habitat restoration, aquaculture and stock replenishment as appropriate.</p>	<p>Local Governments, FDEP, Local Stakeholder Organizations</p>	<p>Ongoing</p>
<p>Explore the feasibility of designating local fishing tournaments as “qualifiers” for larger-scale, larger-purse tournaments to increase potential economic impacts.</p>	<p>TDC, Sports Commission, Local Tournament Organizers</p>	<p>Ongoing</p>
<p>Increase safety by expanding access to swimming instruction, especially for low-income children, through partnerships with social service providers and local instructors as appropriate.</p>	<p>Local Governments, Social Service Agencies</p>	<p>Ongoing</p>

Implementation

<p>Consider the development of a Treasure Coast Water Sports Industry Cluster, including an inventory of ongoing water sports activities, competitions, special events user groups, trends, market depth, and facility needs. Special consideration should be given to thematic marketing and promotions, synchronized events, and competitive training (e.g., Olympic, collegiate, masters).</p>	<p>Treasure Coast Sports Commission, TDCs, Local Governments</p>	<p>1-5 years</p>
<p>Develop a regional Hospitality Industry dataset to determine visitor/tourism trends, preferences, expenditures, and market strength. Initial data from Martin County can be augmented by the pending IRSC/St. Lucie County tourism effort to better inform tourism/marketing related to the waterways and related activities (e.g., water sports, fishing, special events).</p>	<p>TDCs, Local Governments</p>	<p>1-3 years</p>
<p>Develop and maintain an annual waterways-focused special events calendar, including festivals and sports competitions, the MIATC boat show, and similar events to further inform marketing efforts, enhance redevelopment activities, and identify opportunities for alternative transportation needs (e.g., water taxis, transit, bicycle/car sharing).</p>	<p>TDCs, Local Governments, Chambers Collaborating Entity: MIATC</p>	<p>Ongoing</p>
<p>Develop a regional Marine Industries dataset to further develop knowledge of the industry, workforce and training needs, and geographic clusters.</p>	<p>Local Governments, Workforce Alliance Collaborating Entities: MIATC, Economic Councils, BDBs</p>	<p>Ongoing</p>
<p>Develop a “Marine Industries Career Track” at the high school level to enhance the local workforce and augment a potential maritime/logistics academy, including identification of appropriate certifications, business partners, and opportunities for field training. Advanced career training should be explored with Indian River State College and CareerSource Research Coast.</p>	<p>School Districts, IRSC, Workforce Alliance Collaborating Entity: MIATC</p>	<p>1-3 years</p>

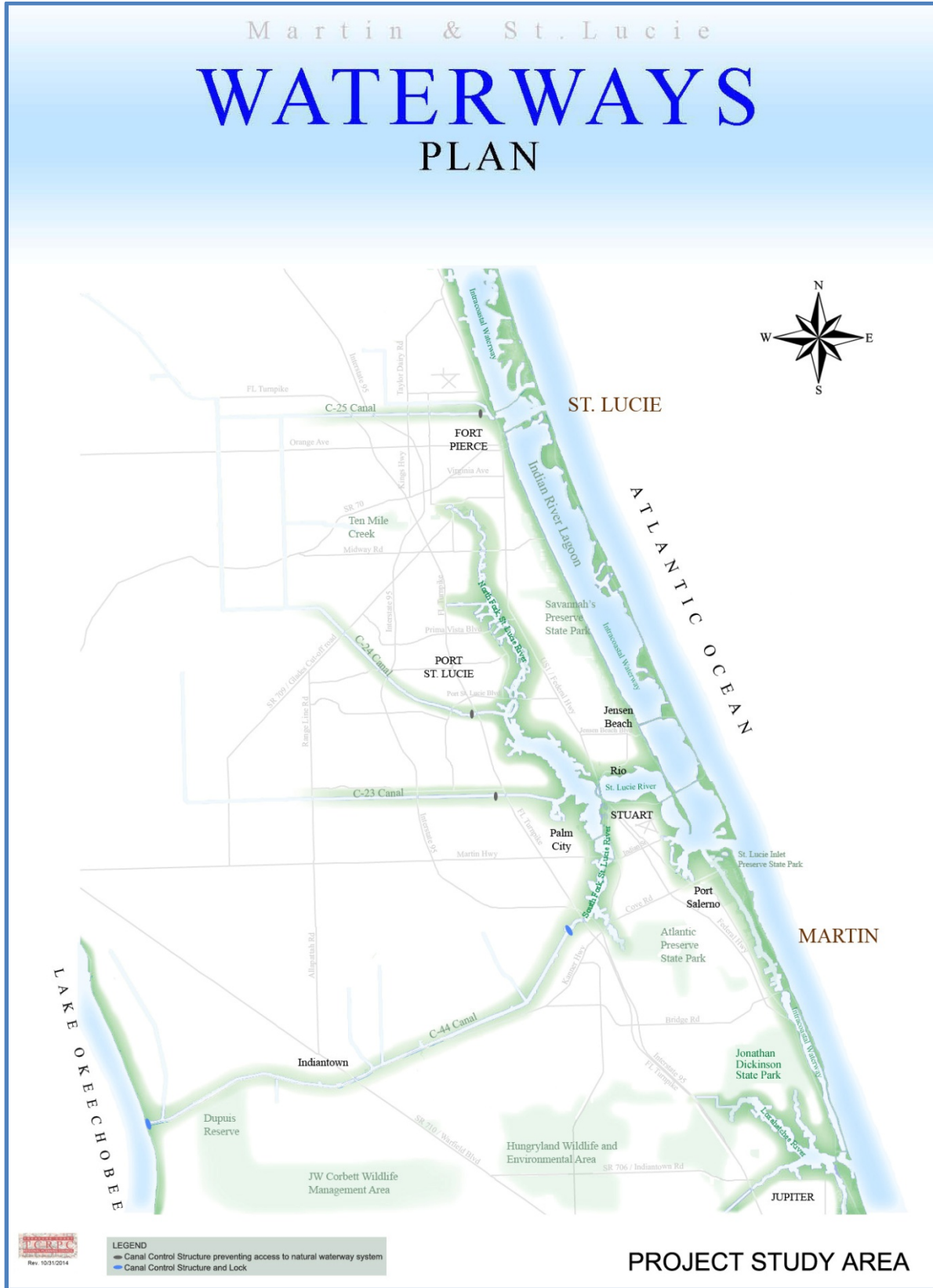
Implementation

<p>Conduct a market assessment for the Port of Fort Pierce to identify and define priority markets and evaluate current and projected demand for cargo transport for targeted industries, passenger operations, assessment of waterside properties that could support related industries, and a maritime/logistics academy. Demand should be translated into necessary infrastructure improvements to be programmed by the TPO and FDOT.</p>	<p>Port of Fort Pierce, FDOT Collaborating Entities: City of Fort Pierce, St. Lucie EDC</p>	<p>1-2 years</p>
<p>Identify infrastructure improvements program for the Port of Fort Pierce to advance priority recommendations from market assessment.</p>	<p>Port of Fort Pierce, TPO Collaborating Entities: City of Fort Pierce, FDOT</p>	<p>2-5 years</p>
<p>Develop a maritime/logistics academy at the Port of Fort Pierce, including review of FDOT’s study, prioritization of facility improvements, and capacity to utilize IRSC and other local training institutions to supplement Port-based programming. Additional regional discussions are necessary to determine desired program (e.g., certification, trade school, four-year degree).</p>	<p>Port of Fort Pierce, Local Governments, TPO, FDOT Collaborating Entities: EDC, MPO</p>	<p>1-3 years</p>
<p>Develop of Walton Road Scenic Overlook project, including property acquisition, upland and waterside improvements, and integration as component of Indian River Lagoon Scenic Highway.</p>	<p>City of Port St. Lucie, St. Lucie County, TPO, FDOT</p>	<p>3-5 years</p>

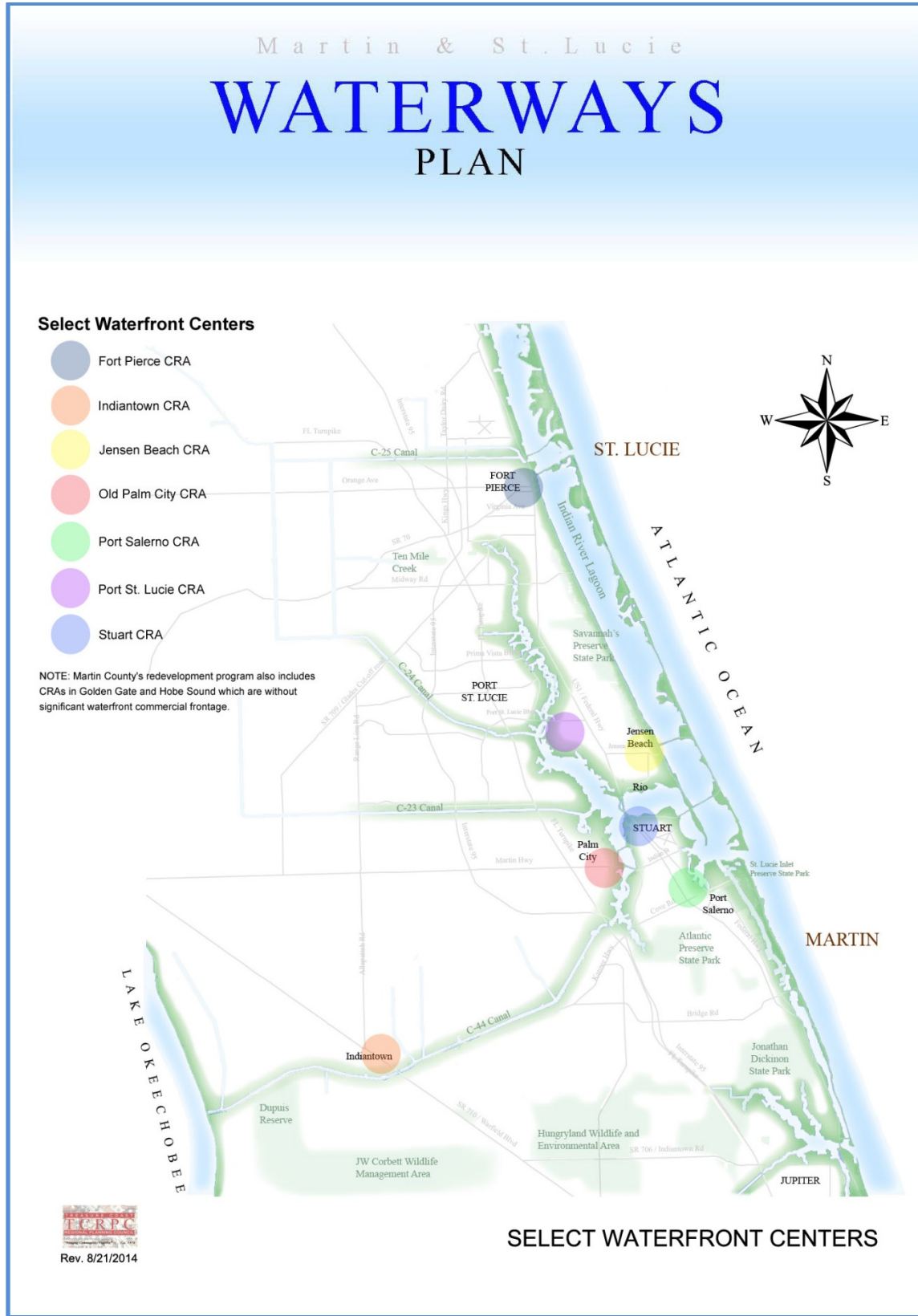
APPENDICIES

1. Maps
2. Summary of Educational Forums
3. Regulations
4. Market Study Support Data

Appendix 1A. Project Study Area



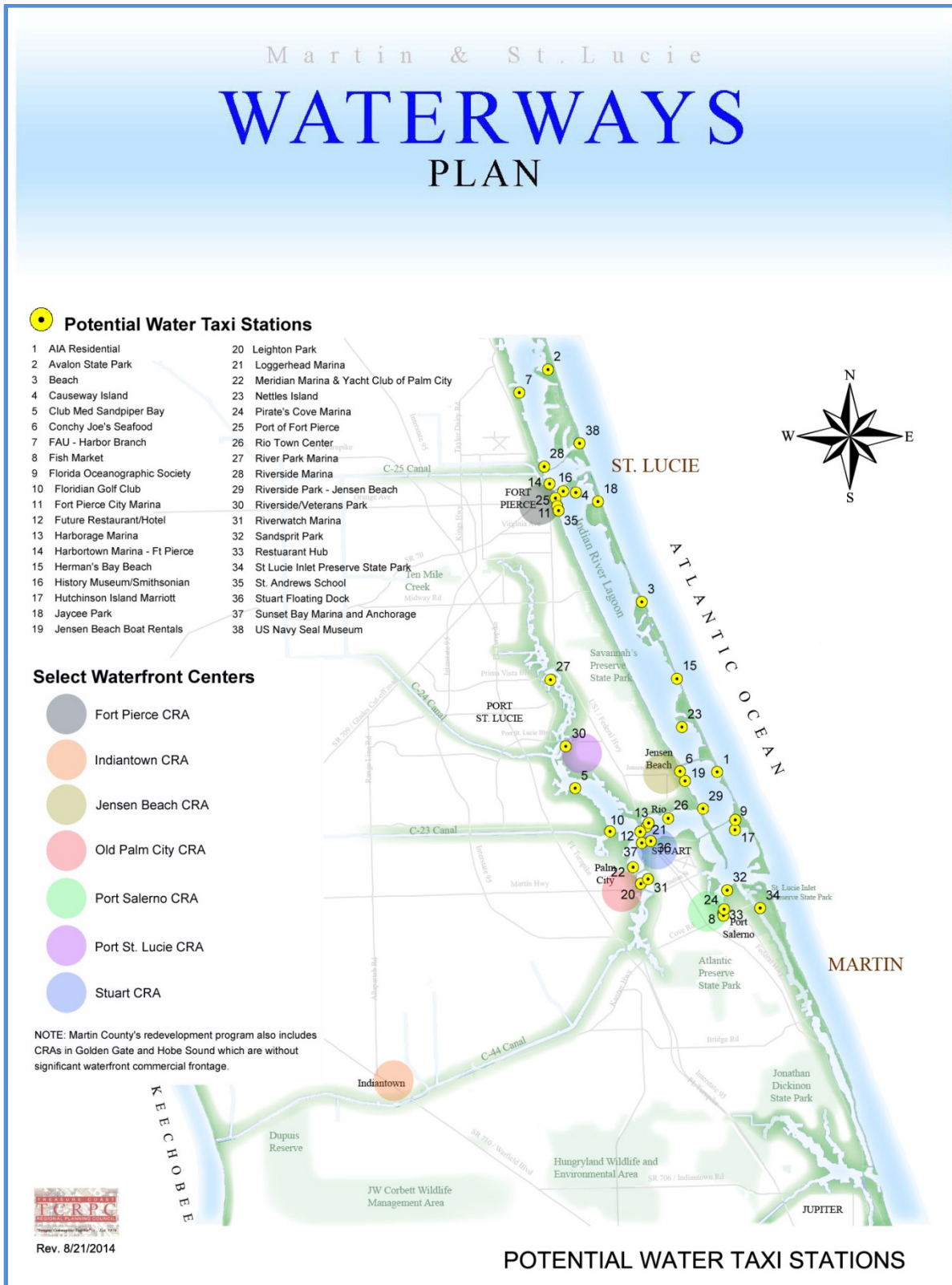
Appendix 1B. Select Waterfront Centers



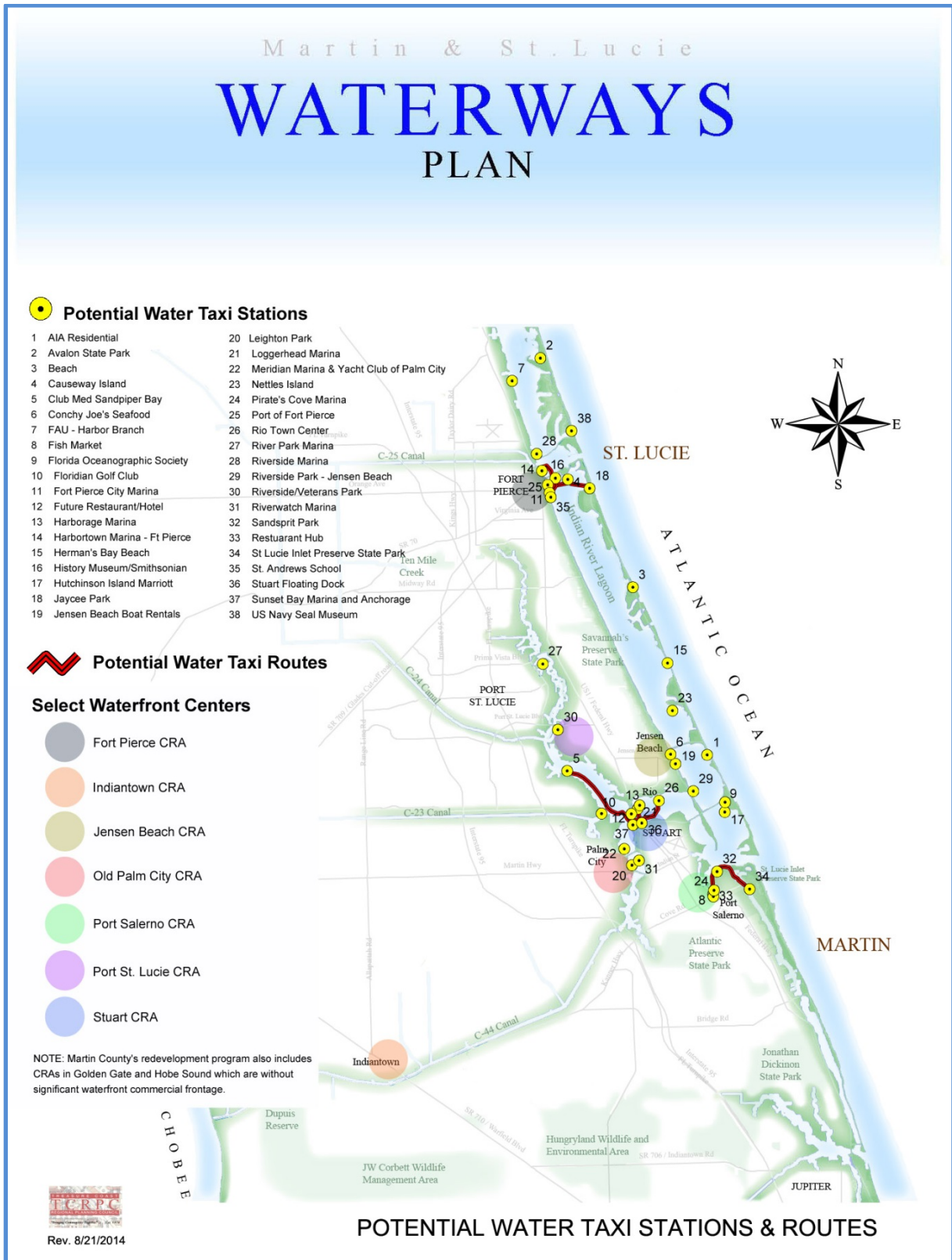
Appendix 1C. Select Cultural, Educational, and Recreational Facilities



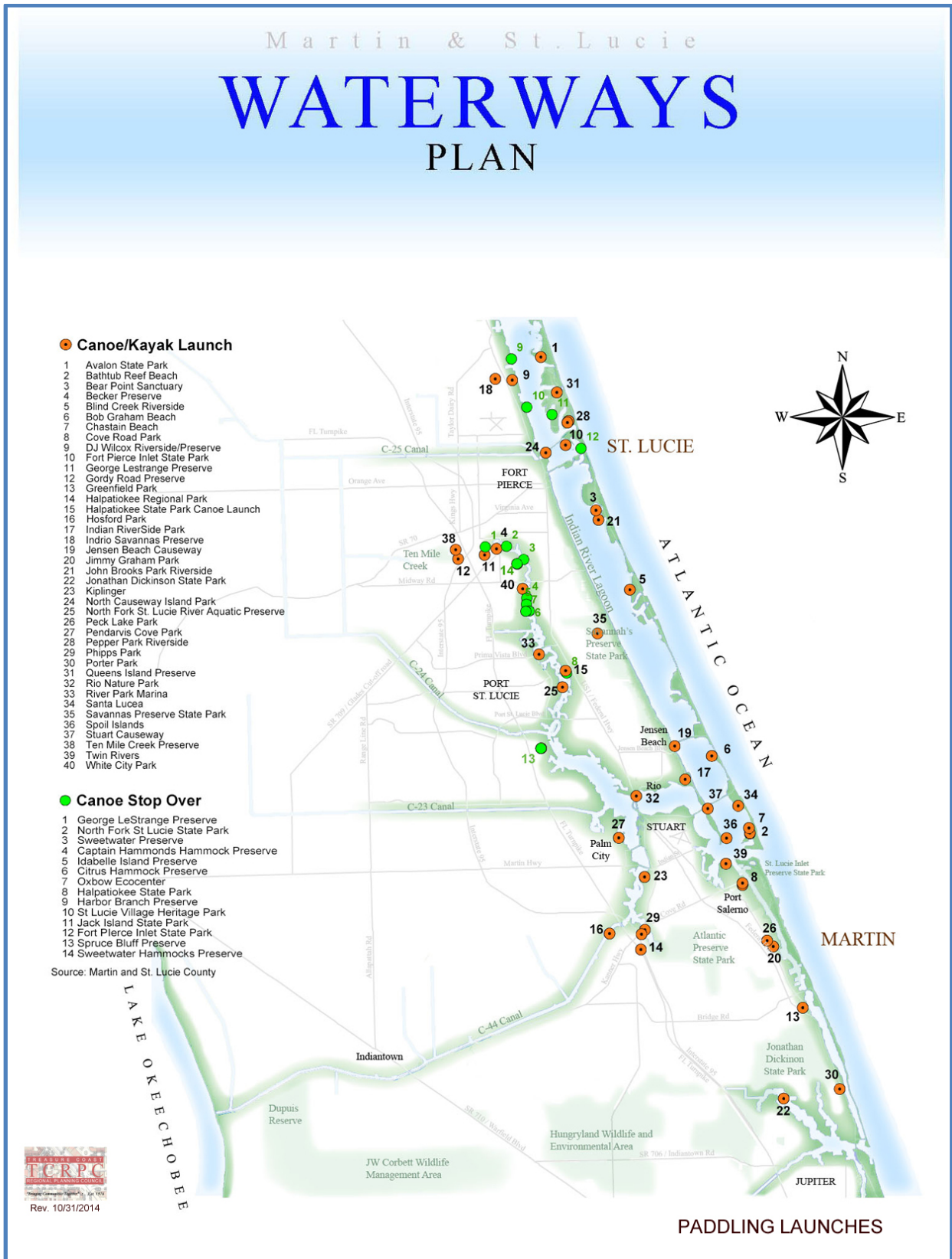
Appendix 1D. Water Taxi Stations



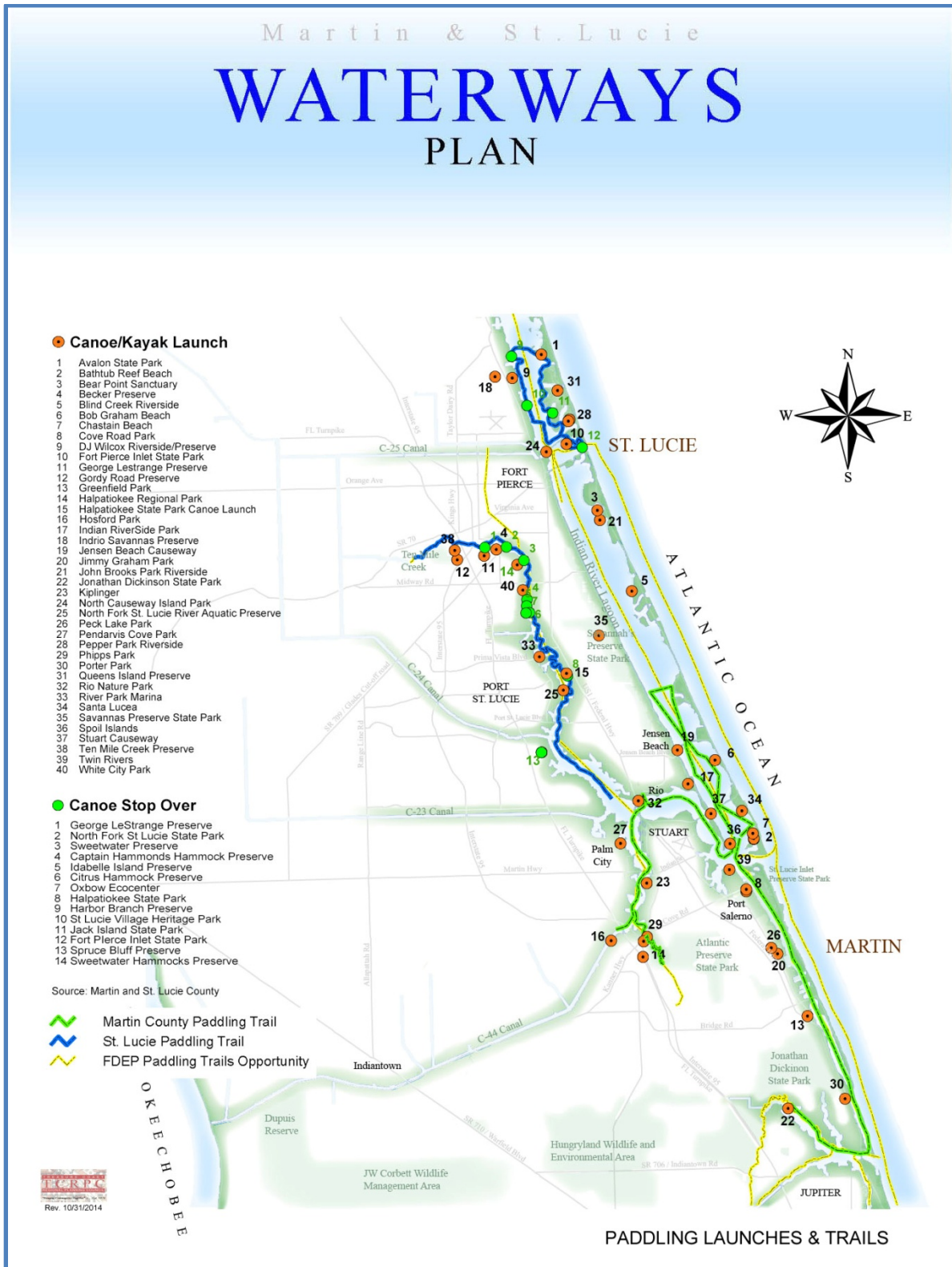
Appendix 1E. Potential Water Taxi Stations & Routes



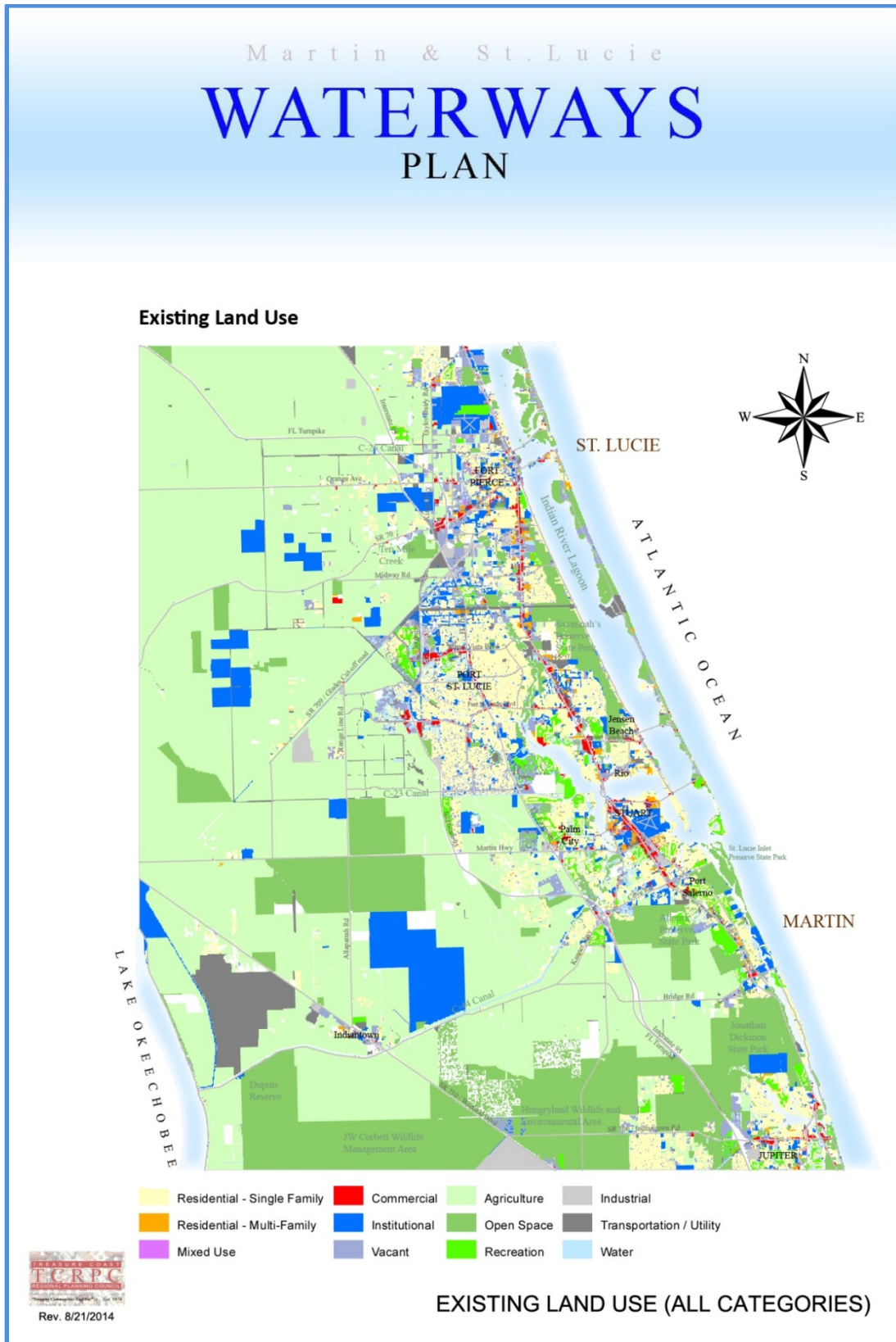
Appendix 1F. Paddling Launches



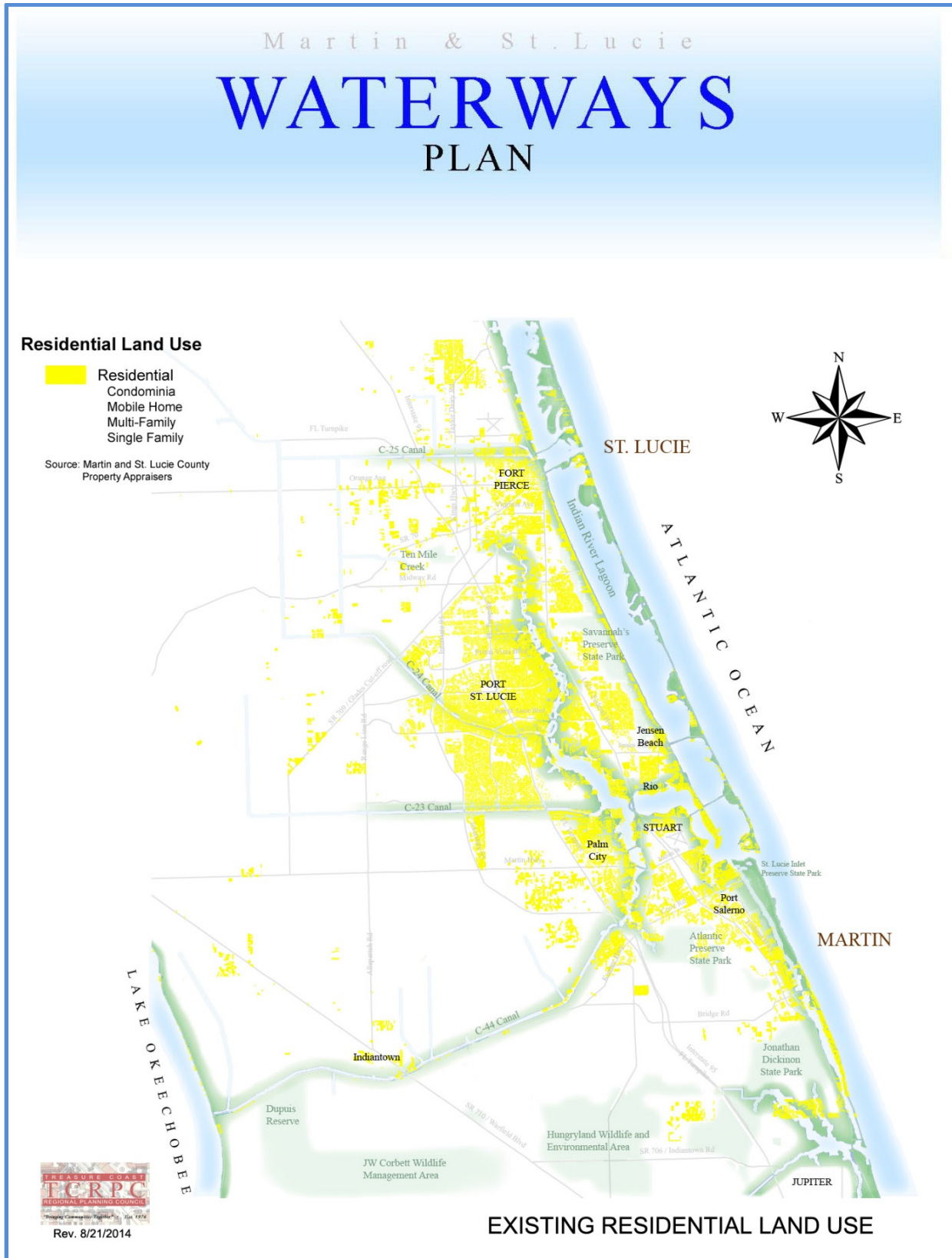
Appendix 1G. Paddling Launches and Trails



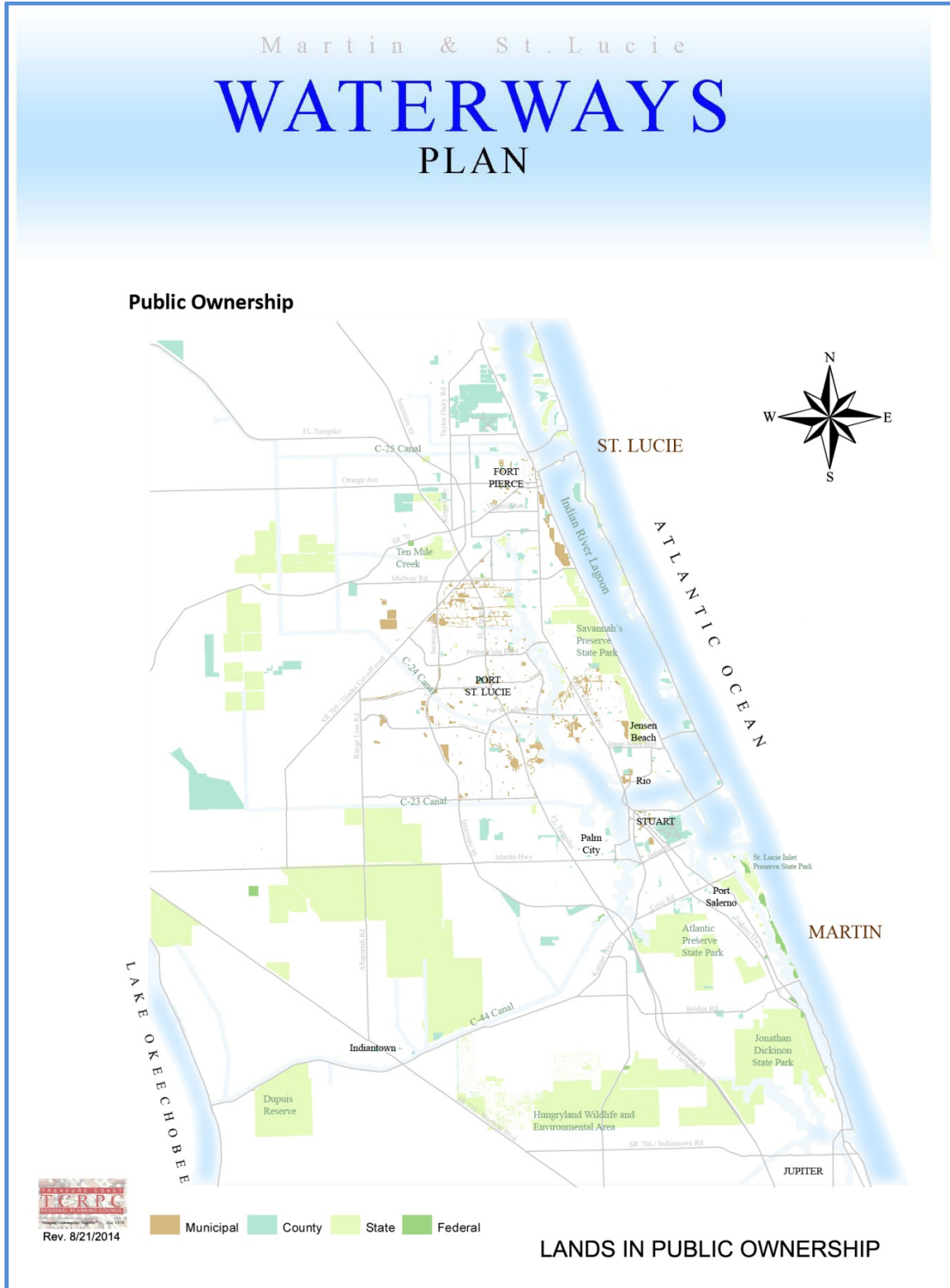
Appendix 1H. Existing Land Use (All Categories)



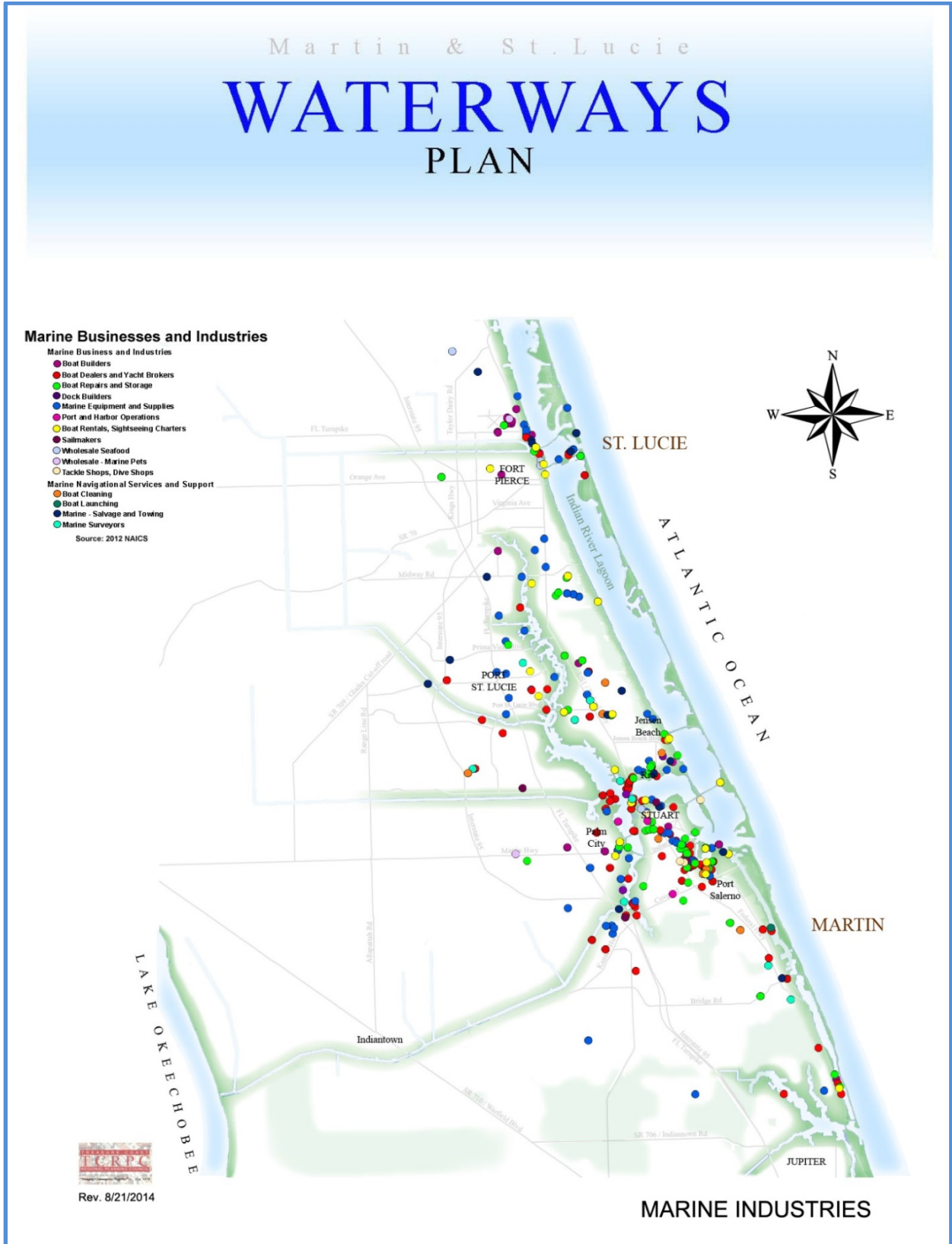
Appendix 1I. Existing Residential Land Use



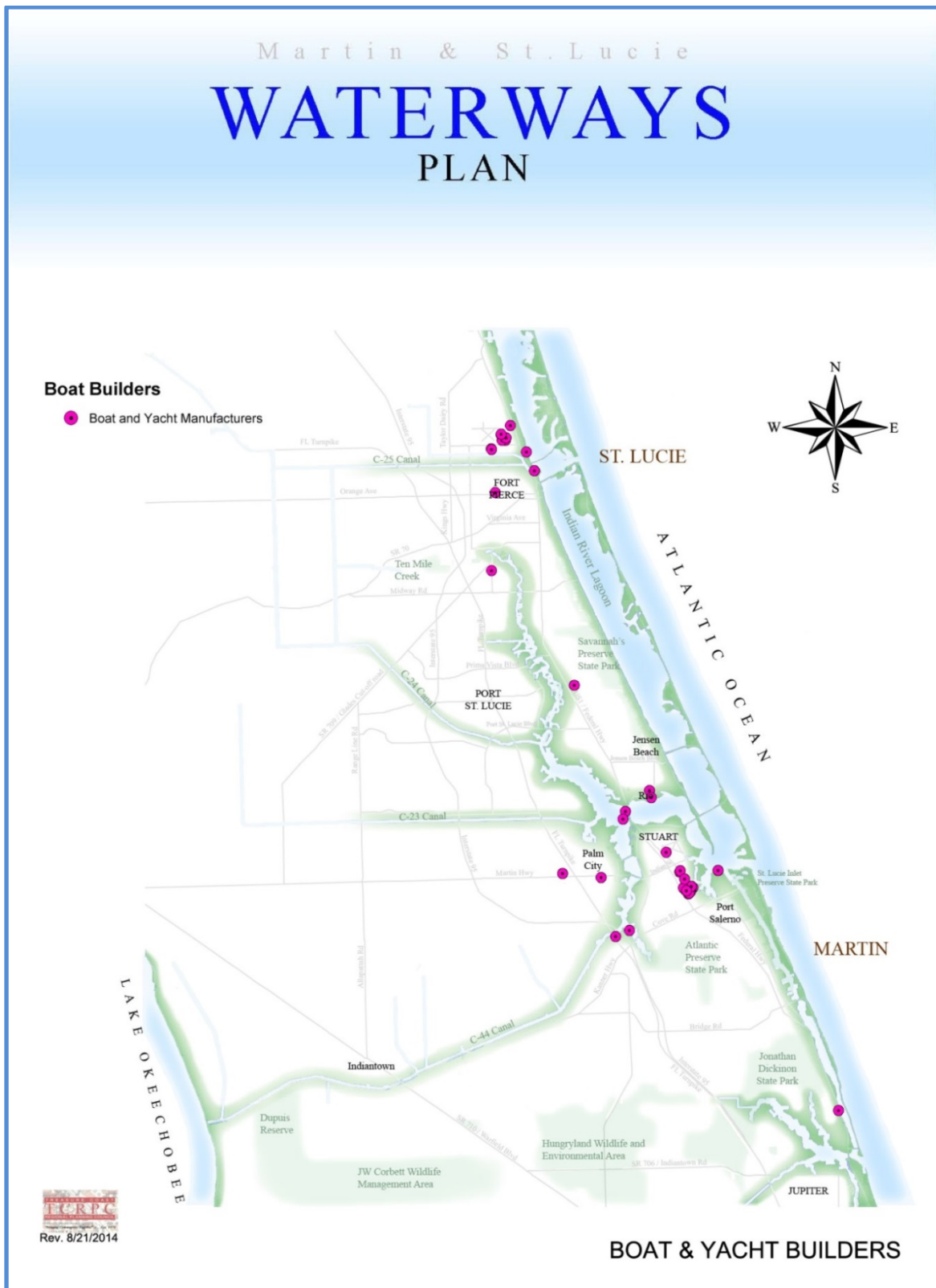
Appendix 1J. Lands in Public Ownership



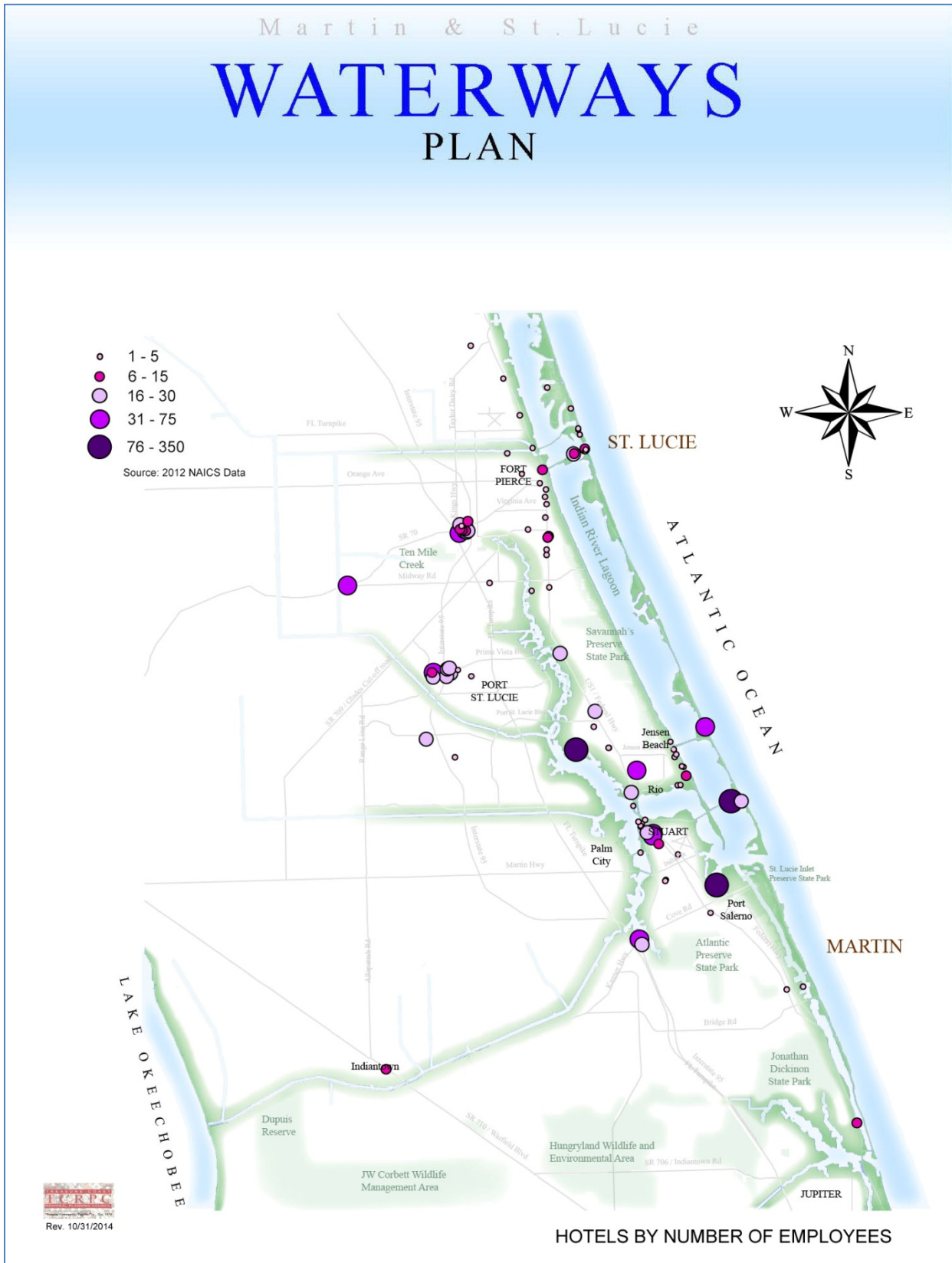
Appendix 1K. Marine Industries



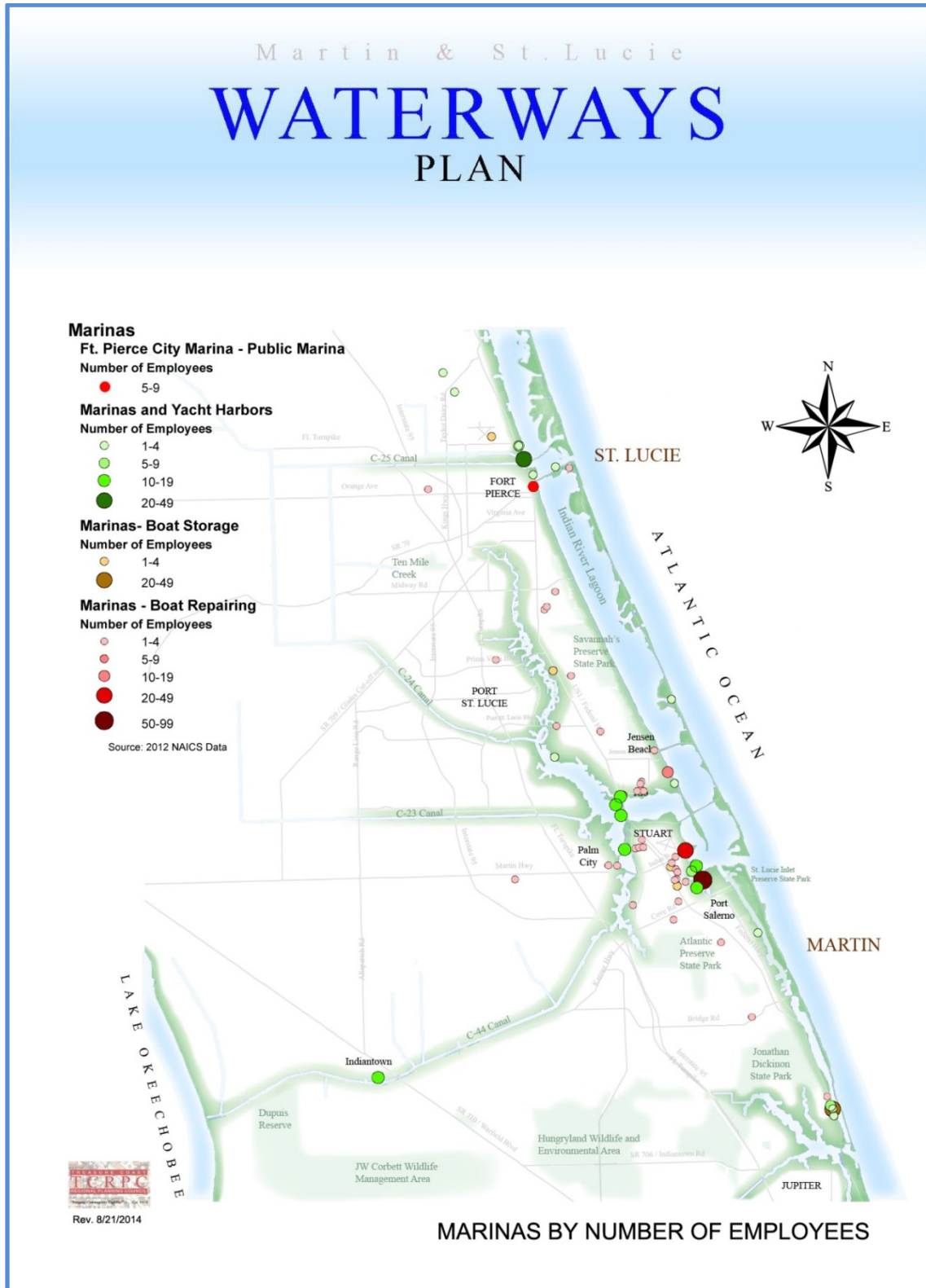
Appendix 1L. Boat & Yacht Builders



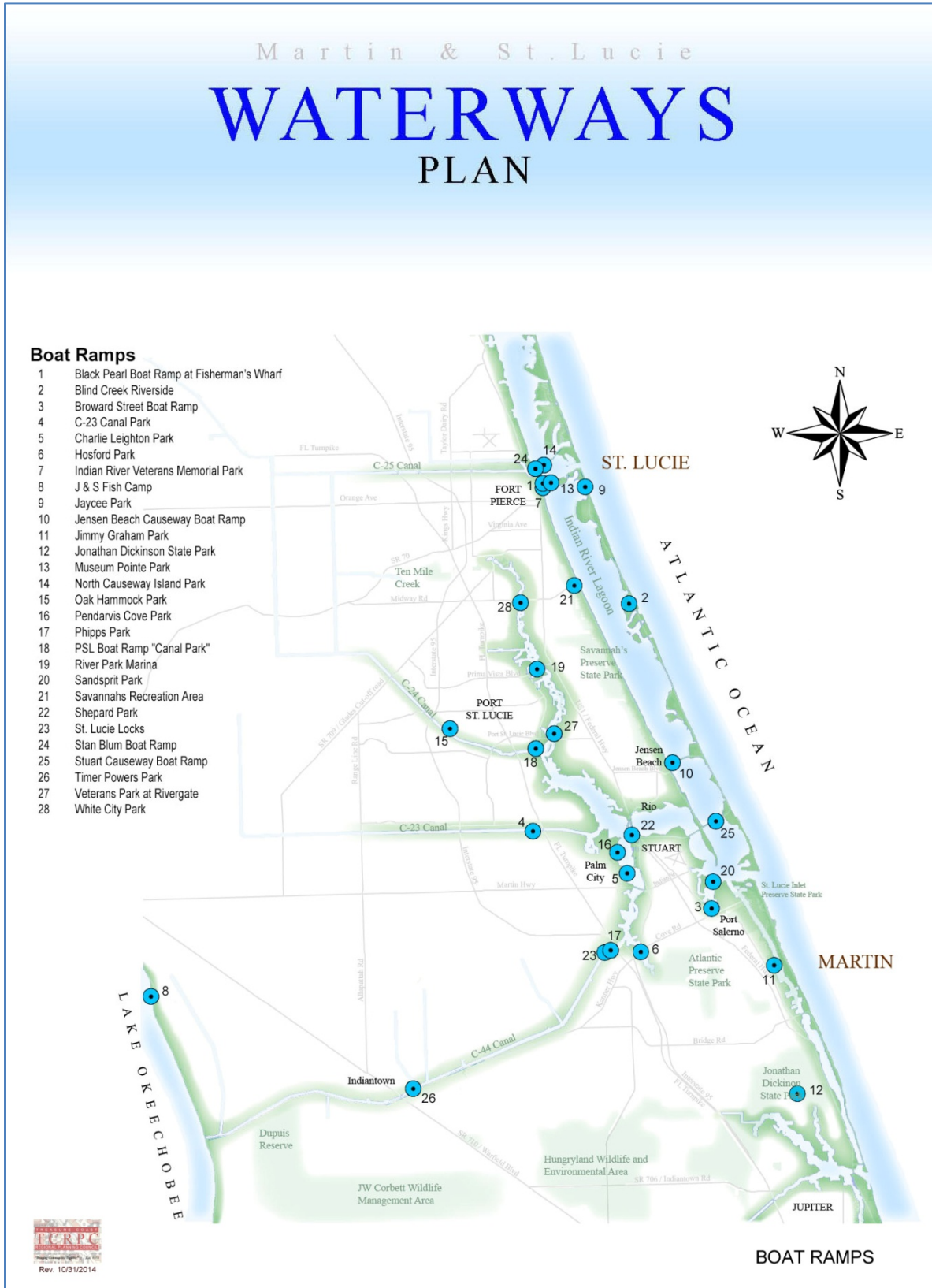
Appendix 1M. Hotels by Number of Employees



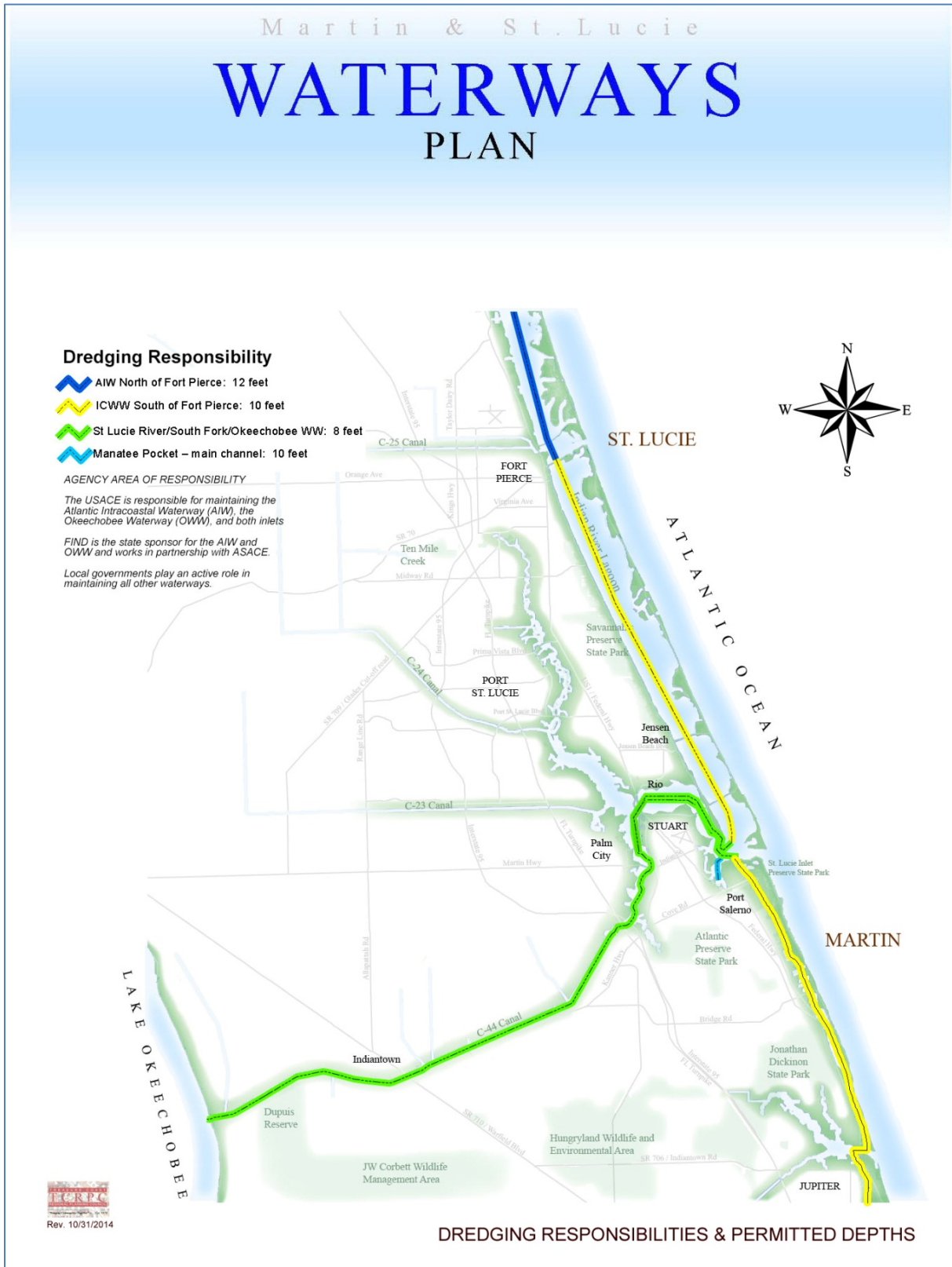
Appendix 1N. Marinas by Number of Employees



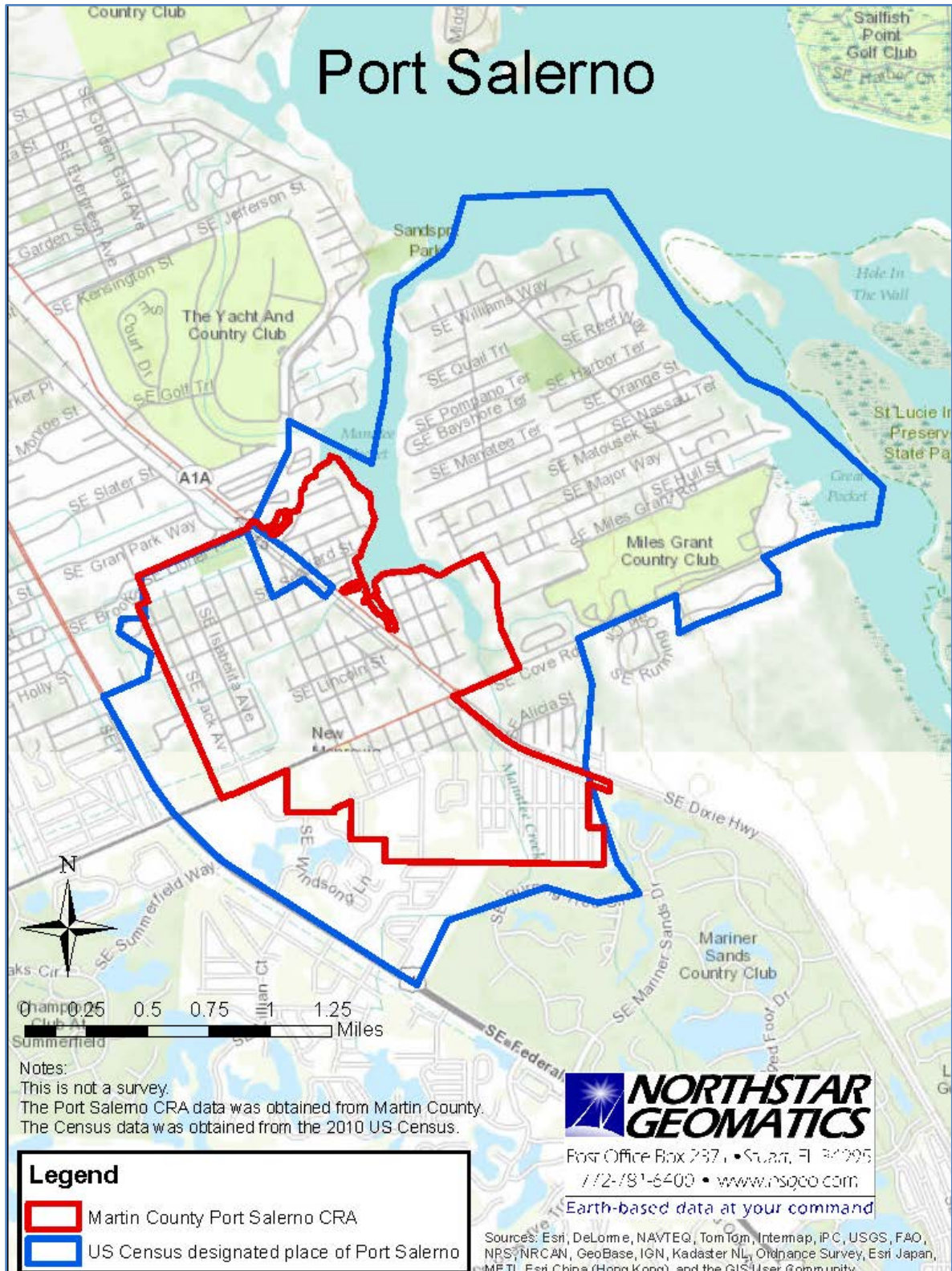
Appendix 10. Boat Ramps



Appendix 1P. Dredging Responsibilities and Permitted Depths



Appendix 1Q. Port Salerno CRA Boundary Map



Appendix 2A. Forum 1: Marine Transportation

THURSDAY, DECEMBER 19, 2013

2:00 P.M.

*Indian Riverside Park * Frances Langford Dockside Pavilion (2nd floor)
1707 NE Indian River Drive, Jensen Beach, FL 34957*

Forum arranged by the Treasure Coast Regional Planning Council (TCRPC)
as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes and key questions and points of discussion raised during the Forum on Marine Transportation that occurred on Thursday, December 19, 2013. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 2:10 p.m. by Dr. Kim DeLaney, TCRPC. Meeting participants introduced themselves (copies of the forum sign-in sheet are included with these notes). Tom Lavash, WTL & Associates, an economic consultant for the Waterways Plan Project Team, participated by phone.

(NOTE: Each speaker, beginning with Dr. DeLaney and following with all other presenters, utilized power point slides. A copy of the merged presentation is included with these meeting notes.)

Project Overview:

Dr. DeLaney introduced the Waterways Plan project, indicating it was a planning effort funded by the Martin Metropolitan Planning Organization (MPO), St. Lucie Transportation Planning Organization (TPO), and Florida Inland Navigational District (FIND). The Forum on Marine Transportation is the first in a series of six educational forums on various topics related to the waterways. The forums are intended to broaden the general knowledge of waterways-related issues – for the project team, the steering committee, and the general public – and help inform the development of the Waterways Plan. Dr. DeLaney noted that she is the project manager for the Waterways Plan, and the project will be guided by the MPO, TPO, and a ten-member steering committee appointed by those organizations. The project covers the waterways in both Martin and St. Lucie counties (about 120 miles of waterways, including roughly 44 miles of Intracoastal Waterway, 25 miles of St. Lucie River, and 25 miles of canals). The genesis for the plan comes from the Martin MPO and St. Lucie County TPO. Each organization is responsible for guiding long-term transportation investments with a goal of maintaining high quality of life, high level of mobility, strong economic development, and sustainability.

Dr. DeLaney noted this is the first regional waterways plan in Florida to be funded by transportation agencies (the MPO and TPO) and FIND. FIND has enabled its funding to assist in the development of regional plans like the subject plan so they as an agency can have a better

Appendix 2. Summary of Educational Forums

understanding of the broad opportunities that exist on the waterways and to help further inform the agency regarding its funding and investment decisions.

The focus of the plan will be upon economic opportunities as well as land use patterns along the waterways, environmental systems, multi-modal transportation (not just on the water but people can get to the water), natural resources, parks and recreational facilities, and public access. Those main themes have been reviewed by the MPO, TPO, FIND, and project steering committee, and they are being used to frame the series of informational forums that are scheduled through mid-2014 as follows:

<i>FORUM 1</i>	Marine Transportation	December 19, 2013 Thursday (2 PM)	Indian Riverside Park Frances Langford Dockside Pavilion (2 nd Floor) 1707 NE Indian River Drive; Jensen Beach, FL 34957
<i>FORUM 2</i>	Land Use & Upland Transportation	January 8, 2014 Wednesday (2 PM)	Historic City Hall 315 Avenue A; Fort Pierce, FL 34950
<i>FORUM 3</i>	Regulation & Management of Waterways	January 29, 2014* Wednesday (2 PM)	Stuart City Hall (City Commission Chambers)* 121 SW Flagler Avenue; Stuart, FL 34994
<i>FORUM 4</i>	Natural Resources	February 19, 2014* Wednesday (2 PM)	Morningside Library* 2410 SE Morningside Blvd. (Room 103); Port St Lucie, FL 34952
<i>FORUM 5</i>	Recreation/Cultural/Educational Activities	March 6, 2014* Thursday (2 PM)	Port Salerno Community Center* 4950 SE Anchor Avenue; Stuart, FL 34997
<i>FORUM 6</i>	Economic Development	April 10, 2014* Thursday (2 PM)	Port St. Lucie Civic Center* 9221 SE Civic Center Place (Room Ruby 1-2); Port St. Lucie, FL 34952

Upon completion of the waterways forums, the next component of the plan will be a broader public input process with a series of public workshop charrettes anticipated in late April or early May 2014. These events will be scheduled in Martin and St. Lucie counties, and subsequently, the project team will utilize all the information garnered during the forums and the public workshops to develop the actual narrative and illustrative plan for the waterways. The main concepts, findings, and recommendations are scheduled to be presented back to the public by early June. A handout of the project schedule (copy attached) was made available to the participants and will be available on the project website.

Presentations on Marine Transportation

Mark Crosley, Executive Director, Florida Inland Navigation District

Mark Crosley provided an overview presentation (copy attached) of the Florida Inland Navigation District (FIND), which has authority in the counties along Florida's east coast with the exception of Monroe County. The FIND Board includes twelve commissioners (one appointed for each county by the governor), and the agency has six staff members. Agency funding is provided by a small ad valorem tax across the twelve counties. FIND operates four main programs: land management and acquisition, operations, a grants program, and public information. Mr. Crosley provided a history of the Intracoastal Waterway (ICWW) and noted the basic philosophy of the agency was to maintain the ICWW and expand access to and use of this resource.

Appendix 2. Summary of Educational Forums

FIND's main focus is managing land for the federal government. The agency helps manage 22,000 acres of right of way that are in public ownership; 35,000 acres of dredge material; and 3,500 acres that are dredge material management sites. Mr. Crosley described the agency's long-range dredge material management plan, marine commercial activity in Florida, boating activity, and mega-yachts and their economic benefit. Other FIND-funded activities include waterway access and projects requested by local governments and agencies. FIND also removes debris, litter, and derelict vessels; funds spoil island enhancements, and distributes extensive literature regarding safe boating, protection of listed species such as the manatee. Through the waterways planning effort, Mr. Crosley noted FIND's interest in the opportunities to increase commercial traffic on the waterways and identify additional boating destinations.

Discussion topics following Mr. Crosley's overview focused on the number of registered boats in Martin and St. Lucie Counties, cargo volumes, freight movement and distribution, and the potential need to deepen the waterway to move larger vessels and increase boating opportunities. Mr. Crosley noted projects to deepen waterways are long-term in nature due to the extensive planning and permitting requirements. Additional discussion focused on the needs of recreational boaters and discharge of waste materials. Mr. Crosley noted although FIND does not focus on water quality, the agency does operate programs to support proper discharge and waste management. Dr. DeLaney noted this issue would be addressed as part of the waterways plan.

A. Jeffrey Weidner, Strategic Development Manager, Florida Department of Transportation (District IV)

Jeff Weidner talked about the Florida Department of Transportation's Strategic Intermodal System (SIS), which is a statewide network of transportation facilities including airports, seaports, railroads, waterways, and highways identified as key economic drivers. The ICWW is identified as an existing SIS facility, with the Okeechobee waterway as an emerging SIS facility. Mr. Weidner discussed the types of projects that can be funded through the SIS program as well as the small county dredging program. Mr. Weidner also provided a brief overview of the Port of Fort Pierce, its recent master planning activities, and the Port's maritime industries, including an overview of U.S. maritime academies and the related potential at the Port of Fort Pierce. He discussed the potential for ferry service operations, public/private land development opportunities, barge operations, and mega-yachts, with emphasis on the potential for FDOT funding to assist in the development of economic engines. In addition, Mr. Weidner identified a variety of recreational and tourist-based activities, such as Olympic-scale events, that could potentially be considered as part of the waterways planning effort.

Discussion topics following Mr. Weidner's included further detail regarding the characteristics of maritime academies, their similarities to college programs as well as vocational academies, and the potential for a Fort Pierce-based academy to emphasize rail, logistics, and port-related activities. Mr. Weidner emphasized FDOT's support and interest in participating in the waterways planning effort, as well as the opportunity for the plan to help identify key infrastructure improvements that could receive FDOT funding for their implementation.

Appendix 2. Summary of Educational Forums

Michelle Miller, Director of Operations, Marine Industries Association of the Treasure Coast

Michelle Miller provided an overview of the Marine Industries Association of the Treasure Coast (MIATC). The association exists to serve, protect, and promote the marine industry. While a primary focus is recreational boating, MIATC also serves commercial fishing and boating, freight and cargo, and commercial hospitality. In addition, MIATC promotes maritime education, marine research, engineering, and eco-tourism. The association provides member training regarding business operations and sponsors events to encourage boating activity. In coordination with FIND, MIATC helps clean 125 miles of waterway from Martin to Indian River.

Ms. Miller discussed the MIATC's noted transportation concerns regarding boat building, as the transport of boats from inland locations often requires FPL to temporarily relocate power lines. Accordingly, prior discussions have focused on the potential for a marine transportation route from the boat builders to the waterways. MIATC has also noted concerns regarding the loss of marine service areas. Ms. Miller described the association's work regarding sea grass mitigation, and the MIATC has expressed strong interest in a more clear delineation of navigable areas to enable stronger protection of sensitive areas.

MIATC offers marine career education and training, with an interest in promoting and training individuals in the marine industries. The association supports clean boater programs and clean marina programs, both of which emphasize proper boating, pump outs, and highlight water quality. Ms. Miller noted the association's concerns regarding development policies that restrict marine construction, emphasizing the desire for streamlined permitting for these uses. Ms. Miller provided marine industry links in her presentation, including the state Marine Industries Association, National Marine Manufacturers Association, and Association of Marina Industries.

Don Donaldson, P.E., County Engineer, Martin County

Don Donaldson discussed a variety of projects completed by Martin County, including beach renourishment, dredging improvements, as well as the on-going challenges the County faces regarding its dredging priorities. These challenges included management of the St. Lucie inlet, its shallow draft characteristics, and the strong recreational nature of inlet use, which does not provide the type of economic benefit required by federal funding criteria. Mr. Donaldson noted the high cost of dredging, and further, the dredge material failed to provide a beneficial use of the muck sediment, limiting its viability for economic use.

Don West, P.E., County Engineer, St. Lucie County

Don West noted that St. Lucie County's role regarding to water transportation is highly limited, and further, the County lacks a funding source for those types of maintenance operations or even to build a facility. He noted that the inlet and turning basin in Fort Pierce are federally designated, and therefore, federally maintained. Because the Army Corps of Engineers is the primary agency, St. Lucie County does not play a key role in dredging activities. Historically, St. Lucie County has not been highly active regarding transportation on the waterways, but Mr. West highlighted the extensive opportunity presented by the waterways planning effort and noted the County's desire to stay involved.

Michael Williamson, Principal, Cambridge Systematics, Inc.

Mike Williamson introduced himself as a member of the project team who would be working with TCRPC, the MPO, TPO, and others in the development of the plan. Mr. Williamson posed a series of broad questions regarding waterway planning, including the scope of visioning, various decision factors to help inform the plan, different types of uses and marine transportation options, navigational limitations, and cargo/freight opportunities.

Mr. Williamson described different types of ports in Florida, including the Port of Fort Pierce as well as Port Everglades (Fort Lauderdale), Port of Palm Beach, Port of Panama City, and Port of Pensacola. Many of the showcased ports are located within downtowns and constrained within the urban environments. Mr. Williamson also provided an overview of water taxis and ferries, the mega-yacht industry, and tourist-related opportunities.

Panel Discussion

Participants were assembled into a panel for discussion amongst themselves and an opportunity to field questions from forum attendees. (Janet Zimmerman, FIND Assistant Executive Director, replaced Mr. Crosley for the panel discussion.) Dr. DeLaney initiated the panel discussion with a general question regarding the most beneficial outcomes (projects and/or programs) that could be provided by the waterways plan to best advance the mission of the individual agencies, increase productivity, efficiency, and quality of life.

Mr. Weidner (FDOT) identified economic development and good paying middle class jobs. Ms. Zimmerman (FIND) indicated maintenance of the waterways and the land facilities necessary for the accommodation of dredge material. She further suggested the FIND grants program places high priority on maintaining or increasing access to the waterway, and measures to promote access by non-boat owners as well – such as eco-tours, boat rental operations, and waterfront parks – would help expand public access. Mr. Donaldson (Martin County) suggested this plan could help identify links to other modes of transportation, opportunities for eco-tourism, commercial fishing, and water taxi access to key destinations and natural areas. While Martin County does not desire a commercial port facility, the plan could help identify what should be preserved, how to optimize existing resources and strengths, and how to relate all the different players (e.g., FDOT, FIND, Martin County, local governments) for collaborative projects and work together. Ms. Miller (MIATC) suggested economic development, jobs, and a well trained workforce. Mr. West (St. Lucie County) suggested streamlining to avoid permitting challenges and the need for funding non-ICWW maintenance and dredging, which are outside FIND's jurisdiction and have deteriorated in recent years.

Dr. DeLaney indicated these are the types of ideas that make sense for evaluation in the waterways plan. Further, she noted the waterways plan will include a series of map layers to understand navigational depths and navigational restrictions to help inform which types of users are able to use different portions of the waterways. Additional discussion focused on revenue sources and the lack of indexing certain infrastructure sources, which has constrained revenues. Dr. DeLaney indicated the plan would include a broad evaluation of funding sources and make realistic projections as to funding and project implementation.

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Regarding the Port of Fort Pierce, public discussion raised questions regarding the broader regional economic impact of the Port and the potential impact on the roadway network that could result from increased activity. Mr. Weidner indicated preliminary evaluations had been conducted that acknowledged the high value of Port property. The resulting recommendations focused on residential and commercial uses. Increased rail activity could offset roadway impacts.

A focused question was raised regarding an identification of a key activity that could jump start redevelopment in the City of Fort Pierce and the Port of Fort Pierce in particular given its characteristics. Mr. Williamson suggested taking advantage of the planning effort to help build consensus for a plan of action. Further, the City could maximize the use of publicly-owned property to expedite the initiation of a non-controversial business. With City partnership, a near-term business opportunity could be tied to the Port, which could create broader opportunity for expanded economic activity. Regarding zoning, Rebecca Grohall, Planning Manager for the City of Fort Pierce, explained the City's control over most of the zoning and land use. Mr. Donaldson noted the Waterways Plan is not intended to become a port master plan, which has already been created by the port. Instead, it has a different and broader purpose. Additional discussion focused on the differences between publicly and privately owned marinas, the economic benefits provided by each, and their points of contrast.

Additional discussion focused on boating traffic within each county and across county lines, with a request for additional information regarding the type of boating traffic that exists within each county and how that traffic crosses counties to different hubs and destinations.

Dr. DeLaney indicated one of the tasks to be addressed in the waterways planning effort is the identification of the various destinations and how they vary by scale, market, type of boater, and type of access. The team will map and try to quantify the destinations for motorized traffic and non-motorized traffic, identifying the locations of hubs, and then try to determine the reasonable ranges – or catchment areas - for individuals wanting to access those destinations. Mr. Williamson noted the varying channel depths and characteristics could limit access by certain types of vessels. For a water taxi analysis, the evaluation will include destination points, main attraction points, navigational considerations, and then estimates of what could potentially be accessed via a water taxi service.

Dr. DeLaney mentioned one of the tasks in the plan is to look at marina villages and marina nodes. The project team includes Tom Lavash who will determine the reasonable demand for development of different types in those nodes. She noted the focal redevelopment areas in St. Lucie County and Martin County have existing robust redevelopment plans, and the challenge of the plan will be to determine what quantity of development is reasonable, what would the demand be for patrons, and how they might access these areas.

Dr. Peter Merritt pointed out that Martin and St. Lucie County produced Manatee Protection Plans several years ago. These plans included boating activity data, which was taken from other reports referenced in these plans.

There was additional discussion regarding statewide challenges for parking along the waterfront to provide access to potential water taxis as well as upland transit access. Florida's insurance

Appendix 2. Summary of Educational Forums

restrictions were also discussed, particularly with regards to insurance impacts during hurricane season that encourage boaters to relocate vessels out-of-state.

Mayor Linda Hudson, City of Fort Pierce, asked about the bridge openings on the north bridge in St. Lucie County, as the bridge currently opens on demand, and she questioned whether or not it could become a timed opening. Mr. Donaldson noted that approval would be necessary from the Captain of the Coast Guard in Miami, which is highly difficult to obtain. Dr. DeLaney noted to the Mayor that the third forum will focus on regulation and management and the Coast Guard would be invited to participate on a panel along with the other agencies that help regulate the waterways.

Mr. Donaldson suggested the plan should address transportation on the waterway as well as how the waterway relates to the commercial fishing industry, how people connect to the waterway, and consider how limited access to the waterway is for the general public.

In concluding the forum, Dr. DeLaney directed participants to the project schedule and pending forums. She indicated the steering committee had selected “Marine Transportation” as the most appropriate topic to begin the forum series, and the next forum would be focused on Land Use and Upland Transportation, scheduled for January 8, 2014 (2 p.m.) at the Historic City Hall, 315 Avenue A, Fort Pierce, Florida.

The meeting forum adjourned at 4:46 p.m.

Appendix 2B. Forum 2: Land Use & Upland Transportation

WEDNESDAY, JANUARY 8, 2014

2:00 P.M.

*Historic City Hall * 315 Avenue A * Fort Pierce, FL 34950*

Forum arranged by the Treasure Coast Regional Planning Council (TCRPC)
as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes and key questions and points of discussion raised during the Forum on Land Use & Upland Transportation that occurred on Wednesday, January 8, 2014. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 2:10 p.m. by Dr. Kim DeLaney, TCRPC. Meeting participants introduced themselves (copies of the forum sign-in sheet are included with these notes). The members of the Steering Committee identified themselves. It was noted that the Towns of Sewall's Point and Jupiter Island were not able to attend due to a shortage of staff but they will keep informed of the process. Tom Lavash and Tom Moriarity, both of WTL & Associates which is an economic consultant for the Waterways Plan Project Team, participated by phone. It was noted that Mr. Lavash and Mr. Moriarity would attend the final forum scheduled in April on Economic Development.

(NOTE: Each speaker utilized power point slides, and a copy of the power point presentation is included with these meeting notes.)

Project Overview:

Dr. DeLaney provided a brief introduction on the Waterways Plan project. The project covers the waterways in both Martin and St. Lucie counties (about 120 miles of waterways, including roughly 44 miles of Intracoastal Waterway, 25 miles of St. Lucie River, and 25 miles of canals). The plan is funded by the Martin Metropolitan Planning Organization (MPO), St. Lucie Transportation Planning Organization (TPO), and Florida Inland Navigational District (FIND). Each organization is responsible for guiding long-term transportation and capital investments with a goal of maintaining high quality of life, high level of mobility, strong economic development, and sustainability.

This is the second forum in a six-forum series. The forums are intended to broaden the general knowledge of waterways-related issues – for the project team, the steering committee, and the general public – and help inform the development of the Waterways Plan.

Dr. DeLaney reviewed the upcoming series of educational forums that will take place over the next couple of months, and she provided an overview of the pending charrette public workshops,

Appendix 2. Summary of Educational Forums

additional opportunities for public input, and the project schedule. Information on the project is posted on the TCRPC website at http://tcrpc.org/special_projects/Waterways/waterways.html

The four remaining forums are scheduled as follows (editor's note: dates, times and locations have been updated to reflect most current schedule as of 1/29/2014):

<i>FORUM 3</i>	Regulation & Management of Waterways	January 29, 2014 Wednesday (2 PM)	Stuart City Hall (City Commission Chambers) 121 SW Flagler Avenue; Stuart, FL 34994
<i>FORUM 4</i>	Natural Resources	February 27, 2014 Thursday (2 PM)	Port St. Lucie Community Center 2195 S.E. Airoso Boulevard; Port St. Lucie, FL 34984
<i>FORUM 5</i>	Recreation/Cultural/Educational Activities	March 12, 2014 Wednesday (2 PM)	Port Salerno Community Center 4950 SE Anchor Avenue; Stuart, FL 34997
<i>FORUM 6</i>	Economic Development	April 2014 TBD*	TBD

Table reflects most current schedule as of 1/29/2014

Dr. DeLaney noted that a panel of eight experts on Land Use and Transportation were in attendance and each would give a brief presentation.

Land Use & Upland Transportation Panel

Beth Beltran, MPO Administrator, Martin County Metropolitan Planning Organization

Ms. Beltran provided an overview of the Martin MPO, which is governed by a board of elected officials. The MPO is responsible for guiding long-term transportation investments and working with FHWA, FDOT, and local governments. MPOs are established by federal legislation, and their decision-making follows a “3-C” process, which is continuing, comprehensive, and cooperative. The MPO addresses all modes of transportation, including automobile, pedestrian, transit, and trains as well as airports. The long-range planning document that guides MPO decisions is the 2035 Regional Long Range Transportation Plan that was developed collaboratively with the St. Lucie TPO. Short-term guidance is provided by the Transportation Improvement Program, which has a five-year horizon.

Martin County is the host agency for the Martin MPO, and the concept for the Waterways Plan was born in the engineering department, as the County was evaluating means to improve the waterways and their broader economic benefit. The County learned that Palm Beach County had developed an Intracoastal Plan, and the Martin MPO utilized that model to frame the Waterways Plan as a way to include the waterways in the MPO planning process.

The MPO planning process begins with the long-range transportation plan and the review of priorities, which are adopted by the MPO Board annually. MPO priorities must be consistent with the State's work program as well as the MPO's federally required documents. The MPO's long-range transportation plan must be consistent with local comprehensive plans as well. Although FDOT tends to allocate significant funding for deepwater ports, the state has included the Intracoastal Waterway as part of Florida's Strategic Intermodal System, which creates the opportunity to access FDOT funding for Intracoastal improvements.

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Darryl Deleeuw, Environmental Administrator, Martin County

Mr. Deleeuw provided an overview of Martin County's land use regulatory approach, describing the Growth Management Department and its responsibilities regarding development review and zoning, comprehensive planning, and the environmental division, which is Mr. Deleeuw's primary focus. The County's environmental division conducts reviews of site plans, issues certain permits, and provides compliance staff for field reviews during construction to confirm compliance with permit approvals. The County's comprehensive plan focuses on protection of natural resources and planning for water-related and water potential uses among its key foundations. Key areas of regulation include wetland protection, shoreline protection along estuaries, and upland protection, which were first adopted into the County's comprehensive plan in 1982, and additional upland habitat protections were added in 1990. County staff is also responsible for regulating the vessel removal program.

Mr. Deleeuw provided an overview of the impact of Martin County's regulatory approach on protected lands throughout the County. For the past three-plus decades, development has been required to set aside wetland buffers as well as native upland habitat for larger developments, yielding considerable area in preserve. The County has more than 650 "Preserve Area Management Plans" (PAMPs), which require perpetual maintenance of these conservation areas that now total nearly fifteen square miles. Mr. Deleeuw noted for perspective the City of Stuart is nine square miles.

More recently the County conducted a shoreline inventory analysis of the estuarine areas regulated under the County's shoreline protection rules, and new rules are being considered. In Martin County, estuarine water bodies regulated under the shoreline protection zone regulations are primarily this area east of the Florida Turnpike. Martin County has three Florida designated aquatic preserves (North Fork of the St. Lucie River, the Indian River, and the Loxahatchee River). Not only are those areas regulated but all the estuarine waters that are connected and navigable to these systems are regulated with shoreline protection zone regulations, including manmade canals which are also protected. The County recently inventoried properties regulated under the shoreline protection rules. Conservation and recreational lands were excluded in the analysis, yielding 4,820 waterfront parcels – mostly residential (95 percent of the total) – and mostly developed residential (88% of the total).

Kevin Freeman, Community Development Director, Martin County Community Redevelopment Agency

Mr. Freeman indicated Martin County has seven community redevelopment areas, regulated under the County's community redevelopment agency (CRA). They are spread throughout the County and include the County's main urban areas. Martin County's comprehensive plan supports the CRAs and targeted investments to those areas. All seven CRAs are connected to the waterways, and the agency maintains a focus on the transition between the waterways and the upland. Mr. Freeman noted several key questions regarding types and form of access, activity, and protection and their influences upon the type of development and redevelopment in these areas.

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A core conflict within the implementation of the CRA is the balance between individuals promoting redevelopment or development and wanting to enhance the waterway, and on the other point of view, residents and citizens and keepers of the waterways focused on protection exclusively. Focusing on transportation, Mr. Freeman noted there is a significant opportunity to link the County's CRAs together, which will expand their modes of access and potentially influence the types and form of development and redevelopment. This balance underscores a tension between access and protection and development and protection, which is a central component of regulation in Martin County.

Terry O'Neil, Development Director, City of Stuart (and Stuart Community Redevelopment Agency)

Mr. O'Neil described the characteristics of the City of Stuart, with a focus on the City's community redevelopment agency (CRA). He indicated the City's population is roughly 15,000; however, the daytime population climbs to approximately 30,000. The CRA has been in place for about 25 years and has been very successful. An urban code governs development within the district and permits a wide variety of uses. Stuart's elected officials have acknowledged that access to the waterfront is key to the CRA's success. Stuart has maintained a long-standing partnership with FIND, which has funded numerous projects in the City (e.g., Sheppard Park Fish Walk, Riverwalk). The City also operates an anchorage and marina facility at the base of the Roosevelt Bridge.

Over time, Mr. O'Neil described the City's utilization of zoning and land use incentives to expand public access along the waterfront. He noted the Harborage development, which is a mixed-use condominium with restaurants and other commercial uses on the north side of the CRA. Utilizing incentives, the City allowed increased density of 22 du/ac, and in exchange for the increased density, the developers provided the City with a public easement that provided more than 2000 feet of public promenade. More recently, Stuart has worked with property owners on Seminole Street to secure an eastern extension of the riverwalk. In exchange, property owners were provided parking credits, grandfathered status for select older buildings to enhance their ability to be developed.

Mr. O'Neil emphasized the City's strong interest in the Waterways Plan, noting the extensive relationship between the City and the waterways. He noted the City's interest in water taxis among key points in the CRA, both north and south of the bridge. Among the City's unique opportunities is the FEC corridor and pending "All Aboard Florida" passenger rail project. Due to track curvature and single-tracked bridge over the St. Lucie River, the All Aboard Florida trains will nearly stop in downtown Stuart, creating a strong opportunity for a station in downtown Stuart. Mr. O'Neil also suggested the potential for sea plane landings and berths in downtown Stuart, noting the City's existing floating dock which could potentially accommodate sea planes.

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Marceia Lathou, Transit Program Manager/Title VI-ADA Coordinator, St. Lucie Transportation Planning Organization

Ms. Lathou described the structure, purpose and mission of the St. Lucie TPO, with strong emphasis on multi-modal transportation and public outreach. She described her role regarding public participation, coordination, and securing public input. The TPO board includes elected officials, school board representation, and a representative of community transit, and the agency also receives input from its three advisory committees (TAC, CAC, and BPAC).

The three main functions of the TPO are planning, project selections, and coordination. These are illustrated by the Long-Range Transportation Plan, which includes a forecast of needed transportation improvements and revenues over a twenty-five year planning horizon.

Ms. Lathou described the major components of the TPO's transportation network, including major roadways (e.g., Florida Turnpike, I-95, US1, east/west corridors), transit routes, bicycle/pedestrian facilities, and noted the long-range plan also takes the waterways into consideration. She emphasized the need for expanded transportation options and transit to facilitate access to the waterways.

Leslie Olson, Planning Manager, St. Lucie County

Ms. Olson described the geography of St. Lucie County, which covers an area of 570 square miles with a population of approximately 277,000. The County's coastal planning area includes approximately 13,000 square acres, with frontage along the Indian River Lagoon, North Fork of the St. Lucie River, Atlantic Ocean, Taylor Creek, and Ten-Mile Creek. Ms. Olsen indicated the County's coastal planning area includes mostly public lands (35%) and conservation lands (26%), with 33% residential lands, and 6% commercial. St. Lucie County has acquired extensive environmental lands and placed them in conservation. The net result yields approximately 15% vacant undeveloped land in the area.

Ms. Olson described the County's different general planning areas along the waterways. In the north Hutchinson area (including the inlet, Indian River Lagoon, Taylor Creek, Port planning area, and spoil islands); South Hutchinson Island, which includes the Indian River Lagoon with mostly public and residential land uses; the North Fork section, which includes the City of Port St. Lucie and efforts to reconnect oxbows and establish a blueways/greenways system; and The Savannahs, which include a water body but have limited external access.

Ms. Olson emphasized the County's high priority on economic recovery from the recession, with motivation to find ways and projects that will help leverage the County's greatest asset, which is the waterway system. Water quality is of primary importance as well, and the County has prioritized projects and funding to assist in water quality improvements as well.

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Daniel Holbrook, Director of Planning & Zoning, City of Port St. Lucie

Mr. Holbrook described the City of Port St. Lucie as the largest city in the Treasure Coast, consisting of 120 square miles. It is a predominately low density residential community, with additional emphasis on conservation and recreational uses. Mr. Holbrook indicated the City has maintained a strong history on environmental responsibility regarding the waterways, with water and utility expansions in the 1990s that significantly improved water quality.

Mr. Holbrook indicated the waterways issues for the City as water quality, public access, and mechanisms to improve both. He described a City-owned commercial planned unit development site that designed by City staff with emphasis on public water access. The site remains undeveloped, owned by the City, and is an opportunity to explore in the Waterways Plan.

Mr. Holbrook also described the canal park, boardwalk extension, and Westmoreland Tract as opportunities to expand public access. Additional sites to be considered should include the Botanical Garden, which is publicly owned and could include additional trails as well as the potential for multi-purpose paths along the C23 and C24 canals. These provide opportunities for waterside access without significant roadway and driveway conflicts, which creates a safer and more enjoyable facility. He also noted the opportunity to connect sidewalks along Port St. Lucie Boulevard ultimately to the boardwalk to facilitate bicycle/pedestrian access and reduce the need for driving.

Rebecca Grohall, Planning Manager, City of Fort Pierce (and Fort Pierce Community Redevelopment Agency)

Ms. Grohall described the City of Fort Pierce's transition from 1888 to the current condition utilizing a variety of slide images. The City has always maintained a strong waterfront focus, with its core downtown along the water's edge. The City is actively engaged in and pursuing redevelopment opportunities, which include the community redevelopment area, port property, and other key parcels in the downtown area. She described the City's potential interest in a maritime academy which could be located at the port and complement the range of industrial uses currently in the vicinity.

Panel Discussion

Dr. DeLaney posed an initial question to the panelists: Is there a specific capital improvement or project that could be included in – or prioritized in - the Waterways Plan that would best help your agency achieve its mission?

Ms. Beltran (Martin MPO) indicated improved access of varied forms would be the priority, including access to uplands and interior destinations from marinas as well as transit facilities at marinas. Additionally, ferry boat access to the St. Lucie Inlet Park, which is accessible only by boat, would be a benefit, with potential launching at the end of Cove Road. Ms. Beltran also noted the drawbridge over the St. Lucie River, which is old and very low, could use significant improvement, especially with the advent of the All Aboard Florida passenger rail project and the potentially adverse effects on marine transportation in that area.

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Mr. Deleeuw (Martin County) indicated the restoration of the Indian River Lagoon and maintenance of the St. Lucie Inlet for ocean access would be the key improvements, both for unincorporated Martin County as well as the City of Stuart.

Mr. Freeman (Martin County CRA) indicated a coordinated waterways-oriented transportation plan highlighting complementary projects that could be achieved at various benchmarks (five years, ten years, etc.) would be a desired outcome.

Ms. Lathou (St. Lucie TPO) identified the Crosstown Parkway, potential recreational opportunities below the pending bridge, expanded transit service to the waterfront and ocean, and the establishment of the East Coast Greenway would be the most desired outcomes.

Mr. O'Neil (City of Stuart) identified access to and on the waterway, with boating activities, potential water taxis – and a feasibility study for their success, and the ability to bring more people to the downtown by water as the key outcomes.

Ms. Olson (St. Lucie County) indicated improved water quality with a regionally-based plan to address water releases from Lake Okeechobee along with the establishment of a maritime academy as the most desired outcomes.

Mr. Holbrook (City of Port St. Lucie) indicated improved water quality as the primary goal for the City, followed by public access – for those with and without boats, expanded transportation opportunities, and the extension of the City's Boardwalk as the most desired outcomes.

Ms. Grohall (City of Fort Pierce) indicated water quality and access, restarting the economy, unlocking key waterfront redevelopment parcels such as the Port of Fort Pierce as the key outcomes.

Additional questions raised by participants included the need for additional boat ramps with additional parking and the redevelopment of the Port of Fort Pierce. Mr. Holbrook indicated the boat ramp facilities at Canal Park and the Westmoreland concept provided potential expansions. Mr. Freeman indicated the Martin County CRA is evaluating ways in which properties by the boat ramps can be utilized for greater economic return. Dr. DeLaney indicated the plan will include an inventory, evaluation, and recommendations regarding boat ramps as a focal issue. Questions about All Aboard Florida and the potential impact on the St. Lucie River bridge and coastal transportation patterns were raised and discussed.

The canal system was discussed, including the potential for additional public access through locks instead of water control structures, and it was noted the water levels within canals are maintained at certain depths to maintain proper salinity, thereby requiring water control structures. Only the C-44 canal is connected to Lake Okeechobee, which includes a lock system.

Transportation access to and from marinas was discussed, with a focus on the need to allow boaters (who come by boat and do not have access to cars) to access upland destinations. Accordingly, there is a need for increased transit, bicycle/pedestrian access, and alternative

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modes such as zip cars to enable access for these individuals. It was suggested the Plan could identify a variety of marina locations among the two counties to evaluate the potential for a private sector provider to provide upland access modes (e.g., bike-share, car-share, zip car), if sufficient economies can be identified and established.

It was noted the next forum will focus on Regulation and Management of Waterways, scheduled for Wednesday, January 29, 2014 (2 p.m.) at Stuart City Hall (City Commission Chambers); 121 SW Flagler Avenue; Stuart, Florida.

The meeting forum adjourned at 3:49 p.m.

STEERING COMMITTEE MEETING
Waterways Plan for Martin & St. Lucie Counties

Waterways Forum 2: Land Use & Upland Transportation

WEDNESDAY, JANUARY 8, 2014

4:00 P.M.

*Historic City Hall * 315 Avenue A * Fort Pierce, FL 34950*

Forum arranged by the Treasure Coast Regional Planning Council (TCRPC)
as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes and key points of discussion raised during the Project Steering Committee meeting held on Wednesday, January 8, 2014. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 4:00 p.m. by Dr. Kim DeLaney, TCRPC. Materials distributed to committee members included agendas, meeting notes from Forum 1 and the steering committee meeting held on December 19, 2013, along with copies of the power point presentation from that forum. Self-introductions were provided by attendees.

Waterways Forums – Review & Discussion

Dr. DeLaney noted the format for the forums was modified slightly at the recommendation of the MPO and TPO, with a panel format that reduced the length of presentations to enable greater steering committee and public Q&A. Following the panel, after a formal adjournment, the steering committee was convened to provide a focused discussion by the committee, debrief the information from the panel discussion, and provide direction to the project accordingly. Committee members concurred with the modified format and requested it be utilized for the remaining forums.

Committee members discussed the first two forums – Forum 1 (Marine Transportation) and Forum 2 (Land Use & Upland Transportation). Each forum attracted forty individuals in attendance, which committee members felt was a successful turnout. The Committee discussed the balance between existing plans that presume a certain balance of land use (e.g., quantity of lands to be held in preservation versus lands for development) and the opportunity for the Waterways Plan to evaluate existing conditions, future land use and zoning plans, and provide recommendations where appropriate about potential modifications in approach. The differences in approach between Martin and St. Lucie Counties were discussed and noted.

Mr. Donaldson noted the Waterways Plan provides an opportunity to take advantage of existing local government plans and the existing opportunities. While some communities have substantial capacity for development, access to those lands is limited. Mr. Freeman noted the land use forum provided substantial insight about the variety of approaches and priorities among

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the different jurisdictions. Dr. DeLaney noted the purpose of the forums – at this stage of the project – is to help inform the project team, the steering committee, and the public – to raise issues for discussion and begin to identify opportunities.

Committee members discussed the concept of barge traffic on the waterways and the potential for small barge terminals, sea plane opportunities in Stuart and Fort Pierce, and the need to evaluate marina conditions, needs, and trends to expand their economic benefits. There was additional discussion about the potential for water taxis and expanded mobility utilizing the waterways, with a focus on the capital costs to establish the necessary infrastructure. Ms. Beltran noted those questions – and the opportunity to access state funding – are among the key reasons the plan is being developed. The inclusion of the waterways on the FDOT Strategic Intermodal System (SIS) opens the door for potential funding beyond deepwater ports. Mr. Hymowitz of FDOT noted the Department also administers obscure funding sources, such as the ferry boat grant program, that are less apparent.

The Committee discussed the benchmarks and measures for economic conditions, both current and forecast, to determine the success of the plan. Dr. DeLaney indicated the economics section of the Plan will include a variety of measures, such as jobs, local government revenues, wages, property value increases, sales tax revenues, and other revenue sources and measures to help evaluate current waterways-related industries and inform the Plan’s recommendations. Committee members also discussed the balance – or “tension” – between quality of life considerations and economic development potentials, and the strong desire and expectation that a careful balance be maintained.

Committee members discussed the concept of guiding principles in the Plan, and it was noted the three funding entities (MPO, TPO, and FIND) each maintains a mission statement and guiding principles for their individual planning efforts.

The issue of discharges into the waterways was raised along with bilge pumps and pollutants entering the waterways. Mr. Donaldson noted the nutrient analysis of pollutants in the waterways has indicated urban runoff (from neighborhoods and roadways) and agriculture to be the primary sources, not bilge discharges. Pump-out facilities are available in marinas to contain bilge effluent, with several pump-outs noted as free to residents. Dr. DeLaney indicated the issue of pollution, including pump-out facilities, will be evaluated in the Plan. Location mapping and needs assessments for additional facilities, based on population growth, will be included as well. Mr. Kubitschek noted the emphasis on enforcement provided by marina operators, including free pump-outs for boaters.

Updated Project Schedule – Review & Discussion

Dr. DeLaney distributed an updated project schedule and detailed schedule of the remaining four forums. Members of the Committee reviewed the schedules, and the need to adjust the schedule to avoid certain public meetings was noted. Dr. DeLaney indicated new dates would be determined, avoiding those conflicts, and circulated to the Committee.

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The charrette schedule was discussed, with interviews targeted in April, following the Economic Development Forum. Public workshops are scheduled late April or early May, with a charrette studio to follow in May. Dr. DeLaney noted the MPO and TPO staff suggestions for public workshops to be held weekday afternoons (2-6 PM) where possible for greater public participation, and Committee members concurred with this approach. The Committee discussed potential venues for the public workshops, including downtown Stuart's Flagler Center, Fort Pierce's Historic City Hall, Morningside Library, Port St. Lucie's Civic Center, and Fort Pierce's Riverwalk Center with trolley access.

Other Discussion & Comments

Mr. Pollard suggested the Committee's benefit of touring the waterways by boat to look at waterways opportunities first-hand and better inform ideas for the Plan. Dr. DeLaney concurred, noting the Committee had discussed the potential for several tours – such as Fort Pierce, Port St. Lucie along the North Fork, Jensen Beach to Stuart, Port Salerno, and Palm City. Caution regarding public notice was noted, acknowledging the Steering Committee is not subject to the Florida Sunshine Law; however, notice requirements to enable multiple FIND Board members were being maintained. Dr. DeLaney suggested tours be scheduled in April, after the forums but before the public workshops/charrette, and the Committee concurred.

The meeting was adjourned at 4:51 p.m.

Appendix 2C. Forum 3: Regulation and Management of the Waterways

WEDNESDAY, JANUARY 29, 2014

2:00 P.M.

*Stuart City Hall (Commission Chambers) * 121 SW Flagler Avenue * Stuart, FL 34994*

Forum arranged by the Treasure Coast Regional Planning Council (TCRPC)
as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes and key questions and points of discussion raised during the Forum on Regulation & Management that occurred on Wednesday, January 29, 2014. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 2:05 p.m. by Dr. Kim DeLaney, TCRPC. Meeting participants introduced themselves (copies of the forum sign-in sheet are included with these notes). The members of the Steering Committee identified themselves.

(NOTE: Some speakers utilized power point slides. A copy of the power point presentations is included with these meeting notes.)

Project Overview:

Dr. DeLaney provided a brief introduction on the Waterways Plan project. The project covers the waterways in both Martin and St. Lucie counties (about 120 miles of waterways, including roughly 44 miles of Intracoastal Waterway, 25 miles of St. Lucie River, and 25 miles of canals).

The plan is funded by the Martin Metropolitan Planning Organization (MPO), St. Lucie Transportation Planning Organization (TPO), and Florida Inland Navigational District (FIND). Each organization is responsible for guiding long-term transportation and capital investments with a goal of maintaining high quality of life, high level of mobility, strong economic development, and sustainability.

This is the third forum in a six-forum series. The forums are intended to broaden the general knowledge of waterways-related issues – for the project team, the steering committee, and the general public – and help inform the development of the Waterways Plan.

Dr. DeLaney reviewed the upcoming series of educational forums that will take place over the next couple of months, and she provided an overview of the pending charrette public workshops, additional opportunities for public input, and the project schedule. Information on the project is posted on the TCRPC website at http://tcrpc.org/special_projects/Waterways/waterways.html

Appendix 2. Summary of Educational Forums

The three remaining forums are scheduled as follows:

<i>Forum 4</i>	Natural Resources	February 27, 2014 Thursday (2 PM)	Port St. Lucie Community Center 2195 S.E. Airoso Boulevard; Port St. Lucie, FL 34984
<i>Forum 5</i>	Recreation/Cultural/ Educational Activities	March 12, 2014 Wednesday (2 PM)	Port Salerno Community Center 4950 SE Anchor Avenue; Stuart, FL 34997
<i>Forum 6</i>	Economic Development	April 2014 TBD*	TBD

Table reflects most current schedule as of 1/29/2014

Dr. DeLaney introduced Dr. Peter Merritt, TCRPC, as the panel facilitator. Dr. Merritt provided an overview of the regulatory and management environment for the waterway resources of Martin and St. Lucie Counties, including a sample listing of the types of existing plans and their key focal areas. Activities within and adjacent to the waterways are subject to a broad range of regulation management objectives by many organizations. These include regulations included in local government comprehensive plans, zoning codes, and land development regulations. There are nine local governments in the project study area, each of which has its own set of regulations that will be reviewed during the preparation of the Waterways Plan.

Other types of regulations by state and federal agencies affect many other activities including navigation, bridge operations, boater safety, waste disposal, dock construction, dredge and fill, seagrass protection, mangrove protection, manatee protection, and fishing regulations. In addition to these types of regulations, Dr. Merritt noted the existence of policies and strategies and other types of plans as well. He noted two key examples: (1) the Indian River Lagoon Comprehensive Conservation Management Plan, produced by the Indian River Lagoon National Estuary Program, which includes objectives to protect and restore natural systems in the waterway, and (2) the Basin Management Action Plan for the St. Lucie River and Estuary. Dr. Merritt indicated it was important to be aware of the existing regulations and management policies and strategies as the planning process advances into the development of the Waterways Plan, because these plans can provide some guidance as to what might be appropriately included in the Plan. In the consideration of new opportunities for economic development, transportation, access to the waterways, new recreation opportunities, Dr. Merritt emphasized the value of consistency with existing regulations and the manatee plans.

Dr. Merritt indicated the panel of experts represented five local government agencies, two state agencies, and one federal agency. He noted the panel discussion would include three components:

- (1) each panelist would provide a 3-5 minute overview describing their organization’s regulatory and management responsibilities, including a description of the biggest challenge faced by the agency in its mission to regulate or manage the waterways;
- (2) each panelist would discuss any issues the Waterways Plan could address that would help improve regulation or management of the waterways, including the types of things the Plan can support or new things they would like to see in the Plan; and
- (3) the audience would have an opportunity to ask questions of the individual panelists.

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Dr. Merritt noted at the end of the panel discussion, there would be a five-minute break, after which the Project Steering Committee would meet. The public would be welcome to attend the Steering Committee meeting.

Regulation & Management Panel

Angela Sandoval, P.E., South Florida Water Management District

Ms. Sandoval described the SFWMD, with its main mission to operate and maintain the flood control system, consisting of approximately 2700 miles of canals and levees, 160 major drainage facilities, almost 1,300 control structures, 66 pump stations, and 9 regional field stations. The SFWMD regulatory area is roughly equal to the size of Connecticut, Maryland and Delaware together.

She noted the District's infrastructure continues to increase, with a 146% increase in the past ten years. SFWMD manages drinking water, water supply, permitting, irrigation, and the overall protection of the wetlands and the Everglades. Primary SFWMD facilities in the subject counties include the C-23 Canal, C-24 Canal, C-25 Canal, L-65 Canal, L-64 Canal, and L-47 Canal.

SFWMD waterways were established for flood control; however, Ms. Sandoval noted the public often wants boating access within District canals. The SFWMD tries to accommodate public access where possible so long as it does not impede the primary mission of the agency. Ms. Kathy LaMartina, also of SFWMD, added that the District's operable gates are for flood control, but the weirs are to prevent saltwater intrusion and well protection. The C-23, C-24 and C-25 canals are all used for agriculture, so the SFWMD helps maintain suitable water levels for irrigation. SFWMD also is responsible for, in conjunction with FDEP, storm water permitting and some environmental resource permitting.

Ms. LaMartina noted the C-44 is controlled by the U.S. Army Corps of Engineers (USACE), which is responsible for permitting activities related to that facility while the SFWMD is responsible for permitting along other canals such as C-23, C-24 or C-25. She also noted the public is often confused because different agencies are responsible for permitting some facilities, such as docks, depending on type of use (e.g., single family residential to FDEP, industrial to SFWMD).

Dr. Merritt noted that the USACE was unable to make the forum today, but the agency would be invited to attend the next forum.

Lieutenant Steve Arcuri, Florida Fish & Wildlife Conservation Commission (FWC)

Lt. Arcuri indicated he is the staff lieutenant for Broward, Palm Beach, Martin, St. Lucie, Okeechobee, and Glades counties and Lake Okeechobee. The agency has broad oversight in managing fish and wildlife for the benefit of all citizens of Florida, including law enforcement as well as rule-making authority. FWC also maintains extensive responsibility regarding boating safety and patrolling waterways, noting the inland waterways, Intracoastal Waterway (ICW), and Atlantic Ocean. The agency also engages with its federal partners for enforcement of federal rules relating to fisheries management. FWC's boating and waterways division in Tallahassee

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handles a lot of the rulemaking for boating safety zones, and manatee protection zones are based on data supplied by the agency's manatee biologist throughout the state.

Lt. Arcuri also noted that FWC's boating and waterways section provides grants for improving access for boaters. For example, the recent improvements at DuBois Park in Jupiter for expanded boating access were funded in part by FWC. He identified FWC's biggest challenge as the state's population increases, especially in Southeast Florida. Florida has more than one million registered boats in the state, with an additional 580,000 between November and March from outside the state. While the boating population is growing, waterways cannot be widened to accommodate additional traffic. Further, he noted the agency has not grown sufficiently to meet the increased needs, with personnel and assets.

Gene Stratton, Bridge Management Specialist and Jennifer Zercher, Sector Miami Waterways, U.S. Coast Guard

Jennifer Zercher, who is based in "Sector Miami," described the Coast Guard's key responsibilities, including marine event permitting, boating safety in conjunction with state and federal agencies, and the provision of aids to navigation. The Coast Guard maintains a waterways analysis management system, which is reviewed every five years, that indicates how waterways are working: Is boating traffic increasing? Are additional aids to navigation needed? Are private aids to navigation needed? She noted the biggest challenge is environmental issues and the agency's desire to work with partner agencies to ensure good environmental stewardship.

Mr. Stratton indicated his responsibilities are for the southeastern United States, and his office focuses on bridge permitting and regulation of movable bridges. Mr. Stratton indicated the Coast Guard's view that every bridge over navigable waterways is an obstacle to boating traffic. Permits are only issued when it can be determined the obstruction does not impede navigation by boaters. Regarding movable bridges, the USCG regulates them more closely, focusing on bridge openings (e.g., causing impacts to upland traffic movements). He indicated the agency serves primarily as an advocate for the mariner, balancing those needs with land-based transportation.

Mr. Stratton distinguished his role and division from that of Ms. Zercher. Mr. Stratton indicated he was responsible for a very specific and narrow practice of permitting and regulating bridges, which are the primary obstruction navigational waterways while Ms. Zercher and her staff focus on the general waterway access and control movement.

Peter Merritt pointed out that the USCOE was invited, and although they were unable to attend the subject forum, they would be invited to participate in a future forum.

Dianne Hughes, Senior Ecosystem Specialist, Martin County

Ms. Hughes described Martin County's regulatory approach to water quality standards, conservation efforts, and stormwater permitting. The County has installed extensive stormwater retrofit projects and innovative stormwater management techniques, which are consistent with the County's high priority as an environmental champion.

Three key challenges for maintaining stormwater quality are discharges from Lake Okeechobee, knowledge by local citizens as to how the watershed flows (e.g., public misconception that C-23, C-24 and C-25 canals are connected to Lake Okeechobee and "pointless personal pollution")

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(e.g., fertilizer, pet waste, car washing, landscape debris in storm water drains). Kathy LaMartina noted for clarification that the C-44 Canal has local drainage water from a basin that drains into that canal, and the canal also transports water from Lake Okeechobee.

Ms. Hughes described the Florida Watershed Restoration Act (1999) which established the Total Maximum Daily Load (TMDL) Program, including numeric water quality goals to restore the health of lakes, rivers, streams and estuaries. Martin County's Storm Water Ordinance was adopted in 2006, which incorporated the National Pollutant Discharge Elimination System Program (1990), requiring the County to hold a permit for stormwater. Ms. Hughes explained how the County educates the public, provides outreach about the program and its intent to meet water quality goals, and the specific actions necessary for the County to prevent and reduce pollution from getting in the waterways. For example, during construction activity, the County requires black silt fencing around construction sites, which helps keep sediment out of the waterways.

The Northern Everglades and Estuaries Protection Program (2007) expanded the Lake Okeechobee Protection Act to include the Caloosahatchee River and St. Lucie River estuaries. This program required the adoption of River Watershed Protection Plans. Martin County is a stakeholder in these efforts, and it has committed to implementing projects within the County to help clean up the waterways. The County prohibits the application of biosolids and is implementing a Research and Water Quality Monitoring Program.

Martin County recently adopted a fertilizer ordinance in 2011, which requires low-phosphorous fertilizers and more significant restrictions during rainy seasons. Martin County's ordinance is strict; however, Ms. Hughes noted there are stricter ordinances in place in other counties.

Ms. Hughes identified the key challenges to the County's regulation and management to be the need for additional basin storage (e.g., along the C-23, C-24 and C-25 canals) as well as actions to be taken by individuals to help prevent pollution in the waterways.

Don Plant, Sergeant, Martin County Sheriff's Office

Sergeant Plant described his role with the Martin County Sheriff's Office (MCSO), which is focused upon emergency management as first responders and providing assistance to FWC and other agencies. The MCSO's key responsibilities include the enforcement of crowd control, manatee zones, derelict vessels, and boating safety, with a primary goal of law enforcement. The Office works seven days per week, with five vessels and five staff covering the entire County. Personnel are always on the water during daylight hours, patrolling approximately 100 miles of coastline as well as providing on-demand response. He noted this was a large area to cover with few people. The biggest challenge faced by the MCSO, with multiple tasks, the absence of Coast Guard stations in Martin County (as they are in Fort Pierce and Palm Beach County), and as first responders, is the need for additional personnel and resources.

Jennifer Evans, Senior Environmental Planner, St. Lucie County

Ms. Evans indicated her department is divided into three divisions – cooperative extension, environmental regulations division (responsible for the land development code and

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comprehensive planning), and environmental lands division (which manages more than 7,000 acres of environmentally sensitive lands).

The environmental regulations division is responsible for vegetation removal permits and exemptions, tree mitigation, dune trimming, wetland protection, shoreline and coastal protection, environmentally sensitive habitat protection, endangered species protection, and landscaping requirements. Ms. Evans highlighted the two regulations as especially pertinent to the Forum, including (1) the River Shoreline Protection Standards for the St. Lucie River shoreline and associated tributaries, and (2) the Indian River Lagoon Shoreline protections, which also addresses the shoreline buffer and native vegetation.

The establishment of a hardened or armored shoreline in unincorporated St. Lucie County requires a variance, and Ms. Evans detailed the standards for granting a variance. Looking forward, Ms. Evans noted the County anticipates additional regulatory revisions to the resource protection and vegetation policies in the comprehensive plan and land development code as well as updates to the Manatee Protection Plan.

The greatest challenge facing regulation of the County's waterways is balancing economic development with environmental sustainability, public perception, and existing developed conditions. Ms. Evans also indicated through the Waterways Plan effort, the County hoped to increase public awareness of the sensitive habitats and ecosystems located in and around the County's waterways and increase sustainable development practices.

Dennis Devaney, Deputy, St. Lucie County Sheriff's Office

Deputy Devaney indicated law enforcement is the focus of the St. Lucie County Sheriff's Office (SLCSO), which works in partnership with its partner agencies. The office has three vessels and two staff to cover the entire St. Lucie County waterway system from Martin to Indian River County. The office is spread thin, but FWC has a large presence along with a Coast Guard office in Fort Pierce.

Sam Amerson, P.E., Public Works Director, City of Stuart

Mr. Amerson described the City as a full-service City, providing a range of traditional and innovative services to its population within the City's six-square-mile jurisdiction. The City's storm water utility, established in 1994, generates funding to address storm water discharges and improvements for water quality. The City maintains 34 outfalls to the river, each of which is treated with baffle boxes and sediment traps. The City also implements fertilizer regulations, is a stakeholder in the basin action management plan, and is focused on the TMDLs, having reduced the discharge of nitrogen and phosphorous. Storm water discharge regulations apply to all properties within the City limits.

Mr. Amerson indicated the greatest challenge for the City regarding regulation of the waterways has been live-aboard boaters. This issue became more apparent when the City established its mooring field. The City developed the managed mooring field with buoys installed in a project developed in partnership with FIND and FDEP. The project also includes a pump-out facility as well. North of the bridge, privately maintained marinas now appear to be increasing in their population of live-aboards as well.

Panel Discussion

Panelists were asked to respond to a question posed by Dr. Merritt: Are there any issues that the Waterways Plan can address that will help regulation or management of the waterway?

Ms. Sandoval (SFWMD) indicated the Plan provided an opportunity to think about storm water management early in the process, including management of water quality and attenuation early in the development process.

Dr. Merritt noted the Waterways Plan could highlight what those regulations are, and Ms. LaMartina (SFWMD) added the Plan could identify the complicated permitting and storm water regulatory scenario, indicating “who needs to go where for what.” Ms. Sandoval noted it would be either FDEP or SFWMD, one of the two agencies from the state level, depending on the type of development.

Lt. Arcuri (FWC) indicated the need for the Plan to address live-aboard vessels and the need for improved access to pump out facilities for live-aboards. Easier access to pump-out stations would be helpful as well as more designated mooring fields, which would help in the removal of derelict vessels (easier to remove when moorings are designated). He noted the Lake Worth Lagoon Keepers is a nonprofit organization in Palm Beach County that has assisted with funding for removal of derelict vessels.

Ms. Zercher (USCG) identified the problems of unregulated anchorages, derelict vessel removal, and the removal of debris in the waterways (e.g., old pilings, large vegetation) would be the greatest help to the Coast Guard. Designated anchorages could be located in areas where navigation would not be affected. Dr. Merritt indicated that the subject of anchorages would be discussed later during the development of the Waterways Plan.

Mr. Stratton (USCG) noted that bridge permits are often submitted late in the process, and the USCG’s responsibility is to ensure compliance with the National Environmental Policy Act. The Plan could encourage bridge work permitting to be submitted early in the process due to the long lead time for permit review, which would reduce overall delays for projects. Each permit is viewed as individual bridge on a waterway, and to expedite the process, it would be beneficial for any bridge work to be viewed as one component of an entire system and not just a standalone facility.

Ms. Hughes (Martin County) suggested the Plan could advocate for greater local involvement for people to understand how the watershed functions and how regulatory ordinances help reduce pollution in the waterways. Like to see regulations pointed out in the waterways plan. If we don’t have good water quality in the watershed, we lose recreation, economics, and everything else.

Dr. DeLaney (TCRPC) indicated one of the background tasks for the development of the Plan will be a review, organization, and summary of existing regulations across the two counties. Through this process, public input can be received as to where different regulation is necessary, and the Plan can communicate that to the elected officials.

Sergeant Plant (MCSO) noted that increased public access points for boaters will increase boating activity on the waterways, which creates more need for law enforcement. Also, he noted

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the need for increased derelict vessel removal, indicating the removal of 25 vessels annually in Martin County.

Ms. Evans (St. Lucie County) indicated St. Lucie County was utilizing a grant for removal of derelict vessels, which is being managed by the parks and recreation department.

Sergeant Devany (St Lucie County Sheriff) indicated the Plan could best help with the challenge posed by unregulated anchorages and live-aboard vessels, noting the need for more regulation for where unregulated moorings occur and how they function. He noted there are extensive areas throughout St Lucie County waterways where unregulated anchoring is occurring.

Mr. Amerson (Stuart) indicated the Plan could best help by addressing anchorages, specifically noting the need for better regulation of unregulated anchorages and the need for more pump-out facilities. Mr. Amerson also suggested the need for improved coordination among agencies, noting the City's success in enabling mobile pump-outs with discharge available at Shepard Park for mobile pump-out vessels.

General Questions & Answers

Melissa Carter, consultant for St. Lucie TPO asked why St Lucie County had fewer law enforcement officers than Martin County. Sergeant Devany pointed out that all law enforcement agencies are understaffed.

The panel discussed the volume of traffic on the waterways and especially high volume of "marine events" on the Martin County waterways without sufficient communication with local law enforcement. It was noted that although a marine event may not impact navigable waterways, it may still impact recreational waterways.

Dr. DeLaney asked how the marine event permitting process worked. Sgt. Plant indicated there was not a permitting process for events occurring on the local waterways outside of the areas regulated by the Coast Guard. Existing laws enable the regulation of certain events; however, from a permitting standpoint, the MCSO/County lacks the jurisdiction to regulate or permit events on the ICW or close to points of beach access. The key challenges for law enforcement are events that focus on the sandbars and semi-submerged lands on the ICW and navigable waterways. Further discussion indicated a variation in permit reviews, wherein larger events requiring formal permits are communicated through broad channels with other agencies while smaller events may be provided letters indicating "no permit required." These events still tend to attract large crowds, often triggering the need for local law enforcement; however, no formal communication process appears to exist to inform local law enforcement that a smaller event, below the permit threshold, will be occurring.

The consensus of the panel was the need to develop a standard communication protocol to provide notice to local law enforcement for all permit requests, whether they are above or below the permit threshold. Dr. DeLaney indicated this issue could be addressed in the Waterways Plan.

Bonnie Landry, of the Martin MPO, asked about the All Aboard Florida project and the impacts upon the St. Lucie River Bridge, given the proposed train schedule and need for additional bridge openings.

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Mr. Stratton (USCG) indicated the bridges along the Florida East Coast (FEC) rail corridor are existing bridges. The USCG is reviewing bridge permits, double-tracking, and the additional trains planned for the corridor regarding impacts on the navigability of the waterway. He indicated the agency is in discussions with All Aboard Florida's corporate representatives and the FEC Railroad, who owns the bridges.

Ms. Landry noted the company's plans to run 32 trains per day represented a substantial increase in traffic across the bridge. Further, Martin County, and the City of Stuart, would be heavily affected due to the single track running through the downtown Stuart area and the extreme curvature of the railroad track both north and south of the bridge.

Mr. Stratton indicated the USCG is reviewing impacts on the bridge, with a special focus on the number of openings required by the proposed service. He noted that unmanned bridge crossings are triggered by electronic communications, which produces a longer cycle time. Bridges manned by bridge tenders have a shorter cycle time. The USCG permit is contingent upon a review of impacts to navigation, with navigation as the agency's highest priority.

Dr. DeLaney noted the impacts to the St. Lucie River bridge could be especially severe during peak traffic times, particularly weekends and holidays, and she questioned whether or not the USCG could consider adding a bridge tender during those peak times to mitigate the impact of bridge openings. She noted the increasing public concern regarding the impacts upon the bridge and navigation through the waterway.

Mr. Stratton (USCG) indicated that applicants begin the process with the Coast Guard and submit applications for bridge permits. Those applications require applicants to meet all of the regulations for Coast Guard permits on a subject waterway, and then procedurally, the Coast Guard goes out for public comment. Once the public comment period is opened, the Coast Guard has to resolve all of the objections to a bridge permit being issued, such as the additional burden placed upon navigation on the waterway. He indicated the Coast Guard is required to resolve what the district considers reasonable. Further, if the agency cannot come to an agreement with the permit applicant, then the permit will not be issued, and the applicant cannot build or modify that bridge.

Dr. DeLaney asked Mr. Stratton to clarify the various types of permits and explain the relationship between a bridge permit for the St. Lucie River bridge and the larger Environmental Impact Statement (EIS) for the entire project.

Mr. Stratton indicated the Coast Guard has its own responsibilities. The agency can adopt an EIS done by another agency if it meets the Coast Guard's needs for a particular project. If that EIS included the bridge crossings as part of its analysis, the agency could adopt that permit to reduce the paperwork and processing necessary for an action. However, if the EIS does not specifically address bridges, then a separate Coast Guard bridge permit is required.

Dr. DeLaney also asked whether or not the inclusion of a bridge tender, either full-time or during peak hours, could be considered a mitigating factor regarding a bridge permit. Mr. Stratton (USCG) indicated the addition of a bridge tender could be a mitigating action to reduce impacts.

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Additional panel discussion focused on the Coast Guard presence in St Lucie County, given the agency's office and staffing. Further, Fort Pierce also has a U.S. Customs Office as well as an active Coast Guard Auxiliary. These additional offices and staff create a strong presence on the waterways in the area.

Ms. LaMartina (SFWMD) noted there had not yet been discussion regarding fishing regulations, such as commercial fishing versus private, recreational fishing. Dr. DeLaney indicated the steering committee had suggested this topic be included in Forum 5, which would address recreational, cultural, and educational issues.

Fred Cook (Steering Committee member) expressed concern regarding live-aboards, boating traffic, and waste disposal. Lt. Arcuri (FWC) indicated the agency regulated illegal waste disposal, utilizing equipment such as "marine sanitation devices" to determine whether or not illegal waste disposal had occurred.

Dr. Merritt asked whether or not there were existing studies regarding waste disposal, especially with smaller boats.

Lt. Arcuri (FWC) indicated that past studies have not focused on a micro-level, but rather, studies of waste disposal have maintained a broader view. He noted that smaller vessels may present waste disposal issues, especially with beverages and hours on the sandbar. Lt. Arcuri was not aware of any studies focusing on the sandbar or similar areas.

Dr. DeLaney indicated the Plan would address the issue of waste disposal, including an inventory of pump out facilities, calculations of demand based on number of boaters, calculations of capacity for pump outs, adding projection for additional needs, and identify any shortfalls in capacity if evident. In addition to a capital analysis, the Plan could also address programmatic issues, such as evaluating whether or not boaters are aware that pump out facilities are available, the role of law enforcement, and ways in which boaters can be further informed about utilizing the pump out facilities. We can evaluate needs and determine if additional infrastructure is necessary, and also programmatically, identify any activities that could help encourage more responsible boating.

Additional panel discussion focused on the removal of mangroves without permits, whereby ruts left by mangrove removal require the installation of riprap. Ms. Evans (SLC) indicated any shoreline restoration requires variance in St Lucie County. If vegetation is to be removed, the County would likely require the replanting of vegetation rather than hardening the shoreline. It was noted that both Counties and FDEP have penalties for illegal mangrove removal. Ms. VanVonno (MC) also indicated Martin County utilizes code enforcement with requirements to revegetate and restore mangrove if removed illegally.

Dr. Merritt thanked all the panelists. It was noted the next forum will focus on Natural Resources, scheduled for Thursday, February 27, 2014 (2:00 p.m.) at the Port St. Lucie Community Center, 2195 SE Airoso Boulevard, Port St. Lucie, FL 34984.

The forum adjourned at 3:41 p.m.

STEERING COMMITTEE MEETING

WEDNESDAY, JANUARY 29, 2014
4:00 P.M.

*Stuart City Hall (Commission Chambers) * 121 SW Flagler Avenue * Stuart, FL 34994*

Project Steering Committee meeting arranged by the
Treasure Coast Regional Planning Council (TCRPC)
as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes and key points of discussion raised during the Project Steering Committee meeting held on Wednesday, January 29, 2014. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 3:53 p.m. by Dr. Kim DeLaney, TCRPC. Materials distributed to committee members included agendas, meeting notes from Forum 2 and copies of the power point presentation from that forum. Self-introductions were provided by attendees.

Waterways Forums – Review & Discussion

The Committee discussed the key points raised during the panel discussion regarding regulation and management, including:

- Waste Disposal:
 - Pump-out facilities and the current demand and capacity, location of facilities, projected demand, and evaluation of additional capacity
 - Mapping the inventory of publicly-accessible restrooms along the waterways (e.g., marinas, boat ramps, causeways, parks)
 - Increased communication to the boating public, beginning at time of vessel purchase, including signage at boat ramps & marinas

- Unregulated Anchorages & Live-Aboards
 - Concerns raised about several agencies about unregulated anchorages, including impedance to navigation and lack of facilities causing bilge dumping in the waterways
 - Live-aboard concerns raised for unregulated anchorages as well as key marinas (e.g., Stuart’s “North Point” area)
 - Ms. VanVonno noted the County’s recent discussions regarding mooring fields and anchorages included an inventory of areas within Martin County known for mooring activity, with GIS map data available for use in the Waterways Plan.

- Derelict Vessels

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- Successful removal efforts by both counties, but continued concerns, especially after storm events and hurricanes
- Discussion included potential for advance coordination and expanded public outreach to establish safe mooring areas for vessels to be anchored in advance of storms and hurricane boating protocol.
- Committee noted instances where boat owners try to abandon vessels during storm events to collect insurance proceeds
- Discussion of “Lake Worth Lagoon Keepers” in Palm Beach County, which is private non-profit that patrols the Intracoastal Waterway, spotting derelict vessels and assisting with containment of fuel and other discharges

- **St. Lucie River Railroad Bridge**
 - Concerns raised regarding the All Aboard Florida project and increase of passenger rail traffic, thereby requiring additional bridge openings (32 times daily)
 - Bridge permit review process, as described by USCG representatives, indicates need to focus on navigation as key goal, possibly enabling discussion of bridge tender as mitigating factor.

- **Increased Boating Traffic Generally**
 - Concerns raised regarding impacts on already understaffed law enforcement personnel
 - Committee discussed interest in reviewing maps of high boating traffic areas
 - Given the discussion regarding pump-outs, restrooms, boat ramps, and other infrastructure needs, Mr. Williamson suggested the Plan could include discussion of “performance measures” to indicate capacity and demand upon facilities and project additional needs. The Committee noted that although boating traffic was projected to continue to increase, given increased population forecasts, the waterways cannot be widened like roadways and other transportation facilities, increasing the need for law enforcement and facilities to ensure safe boating activity going forward.
 - Committee members also suggested increased “human-powered” waterways access, such as canoe/kayak and paddleboard access points, could absorb a portion of the increased demand with lesser strain on facilities than motorized vessels.

- **Quantity and Communications regarding Marine Events**
 - Concerns raised by sheriff’s offices regarding number and extent of “marine events” (i.e., organized events especially on the sandbars) and communication breakdowns whereby sheriff’s office is unaware of USCG permit reviews wherein a “no permit necessary” decision is determined (events just below the threshold of permit standards)
 - The Committee discussed the need to review permit application protocols and communication channels to identify possible gaps in communication – with potential programmatic recommendation to improve communication, especially between USCG and sheriff’s offices.

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- Mr. Kubitschek noted the Fort Pierce Marina’s weekly newsletter, which contains information on all waterway-related activities, including marine events, which is useful to law enforcement and general communications. A web-based communication point was discussed with respect to the two counties as a location to share data among regulatory and management agencies as well as the boating public.
- Storm Water Management & Discharges
 - The Committee discussed the detailed hydrology of the waterways, distinguishing between the canal connected to Lake Okeechobee (such as the C-44) versus the system of canals that are contained and carrying local polluted runoff into the Indian River Lagoon (e.g., C-23, C-24, and C-25, which carry runoff from agricultural and developed areas).
 - The Committee noted the discussion of storm water management and discharges, including the various infrastructure improvements identified by panelists (e.g., baffle boxes, sediment traps, communication to the public regarding outfall of storm drains).
 - Fertilizer ordinances were discussed, with an acknowledgement that both counties are implementing fertilizer ordinances. Committee members suggested additional outreach and communications regarding fertilizer ordinances (e.g., fertilizer retail outlets such as Home Depot and Lowe’s).
 - Pet waste and its impacts on the waterways was discussed, with focus on increased communications to the general public regarding related storm water impacts.
 - Other homeowner communication needs were identified, and the Committee noted the complexity of storm water discharge and the need to further educate the general public.

Updated Project Schedule – Review & Discussion

Dr. DeLaney distributed an updated project schedule of the remaining three forums, noting new dates for Forum 4 (February 27, 2014), Forum 5 (March 12, 2014), and indicated a new date is being selected for Forum 6 in April. Members of the Committee reviewed the schedules and concurred with the new dates, times and locations. Dr. DeLaney indicated the date, time, and location for Forum 6 would be circulated to the Committee once it is selected in coordination with the funding agencies. Dr. DeLaney also indicated TCRPC is seeking to qualify Forum 6 for credits with the American Institute of Certified Planners (AICP).

For Forum 4 on Natural Resources, Dr. DeLaney indicated TCRPC is identifying the appropriate agency and local government staff to serve on the panel. Committee members noted the need to discuss the aquatic preserve as part of the panel. Ms. Lathau suggested including the Workforce Alliance in Forum 6 on Economic Development. The Committee noted the lack of participation by the U.S. Army Corps of Engineers, and given the significant impacts of Lake Okeechobee discharges upon the health of the waterways, strong emphasis was placed on the need to include the USACE in the forums and process.

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Committee members also discussed the political nature of regulation and management of the waterways, noting the active role of Congressman Murphy, Senator Negron, and other key state and federal leaders. TCRPC indicated outreach and updates would be provided to the members of the Congressional and Legislative delegations as well as the Governor's office, and all efforts would be made to make them aware of the planning process and engage them in these efforts.

The meeting was adjourned at 4:37 p.m.

Appendix 2D. Forum 4: Natural Resources

THURSDAY, FEBRUARY 27, 2014

2:00 P.M.

Port St. Lucie Community Center, 2195 SE Airoso Boulevard, Port St. Lucie, FL 34984

Forum arranged by the Treasure Coast Regional Planning Council (TCRPC)
as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes and key questions and points of discussion raised during the Forum on Natural Resources that occurred on Thursday, February 27, 2014. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 2:07 p.m. by Dr. Kim DeLaney, TCRPC. Meeting participants introduced themselves (copies of the forum sign-in sheet are included with these notes). The members of the Steering Committee identified themselves.

(NOTE: Each speaker utilized power point slides, and a copy of the power point presentation is included with these meeting notes.)

Project Overview:

Dr. DeLaney provided a brief introduction on the Waterways Plan project. The project covers the waterways in both Martin and St. Lucie counties (about 120 miles of waterways, including roughly 44 miles of Intracoastal Waterway, 25 miles of St. Lucie River, and 25 miles of canals). The plan is funded by the Martin Metropolitan Planning Organization (MPO), St. Lucie Transportation Planning Organization (TPO), and Florida Inland Navigational District (FIND). Each organization is responsible for guiding long-term transportation and capital investments with a goal of maintaining high quality of life, high level of mobility, strong economic development, and sustainability.

This was the fourth forum in a six-forum series. The forums are intended to broaden the general knowledge of waterways-related issues – for the project team, the steering committee, and the general public – and help inform the development of the Waterways Plan.

Dr. DeLaney reviewed the upcoming series of educational forums that will take place over the next couple of months, and she provided an overview of the pending charrette public workshops,

Appendix 2. Summary of Educational Forums

additional opportunities for public input, and the project schedule. Information on the project is posted on the TCRPC website at http://tcrpc.org/special_projects/Waterways/waterways.html

The two remaining forums are scheduled as follows:

<i>Forum 5</i>	Recreation/Cultural/ Educational Activities	March 12, 2014 Wednesday (2 PM)	Port Salerno Community Center 4950 SE Anchor Avenue; Stuart, FL 34997
<i>Forum 6</i>	Economic Development	April 2014 (9 AM) (Date TBD)	Port St. Lucie Community 2195 S.E. Airoso Boulevard Port St. Lucie, FL 34952

Table reflects most current schedule as of 2/27/14

Dr. DeLaney noted that the economic consulting team, WTL Associates, out of Washington, DC will attend the Economic Development forum and will present their preliminary findings with respect to market capacity and demand and larger economic indicators. There will also be a similar panel similar to this one to talk through different conditions and find some opportunities.

Dr. DeLaney pointed out the series of public input workshops scheduled for May 7, 8, and 9th. Each of the 3 workshops will be identical in format and run from 1 p.m. to 6 p.m. with an opening presentation summarizing what we learned and early indicators that we have in terms of opportunities and challenges and then broken down into table sessions with maps so folks can give input to different ideas in the development of the plan.

<i>Public Workshop a</i>	Public Input Workshops Open to the Public Identical Formats, Presentations, and Public Input Opportunities	May 7, 2014 Wednesday (1 PM)	Port St. Lucie Civic Center 9221 S.E. Civic Center Place Port St. Lucie, FL 34952
<i>Public Workshop b</i>		May 8, 2014 Thursday (1 PM)	Indian Riverside Park 1707 NE Indian River Drive Jensen Beach, FL 34957
<i>Public Workshop c</i>		May 9, 2014 Friday (1 PM)	City of Fort Pierce River Walk Center 600 North Indian River Drive Fort Pierce, FL 34950

Following the workshops will be a 5-day working public charrette with a multidisciplinary team assembled which will take place at the regional planning council office. The charrette is tentatively scheduled the 3rd or 4th week of May. There will be an opportunity where the public and steering committee come together and see where the process is and give their input. The goal is to have an initial plan together by the end of May to bring back to the various organizations who are participating.

Dr. DeLaney introduced Dr. Peter Merritt, TCRPC, as the panel facilitator. Dr. Merritt provided an overview of the Natural Resources for the waterway resources of Martin and St. Lucie Counties.

Dr. Merritt clarified that natural resources include not only the water in the waterways, but everything else that is naturally occurring, including the biological and non-biological components of the environment. This includes the animals, plants, water, soil, air. Sometimes we

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refer to natural resources in terms of a single species. For example, the West Indian Manatee is an endangered species that is an important natural resource. Sometimes we refer to natural resources in terms of communities, which are distinct assemblages of populations of plants and animals that are naturally associated with each other. Examples of natural communities related to the waterways are seagrass beds, oyster beds, algal beds, tidal marshes, and mangrove swamps. Sometimes we refer to natural resources in terms of ecosystems. An ecosystem is the combination of natural communities and the physical environment, which is interrelated and functions together. The lagoon, the river, and even the entire earth can be considered an ecosystem. Dr. Merritt discussed ways the natural resources in our waterways connect to other areas, including the Kissimmee River Basin, Lake Okeechobee, the Everglades, St. Johns River Basin, the lagoon systems and ocean. As we proceed with the Waterways plan, we want to be aware of all the connections and programs that exist to protect and enhance natural resources in and along the waterway. Dr. Merritt concluded by explaining how the panel discussion would be conducted and introduced the panelists.

Dr. Merritt indicated the panel of experts represented two state agencies, one federal agency, two local governments and one private organization. He noted the panel discussion would include three components:

- (1) each panelist would provide a 3-5 minute overview describing their organization's role in the protection and enhancement of natural resources, including a description of the biggest challenge faced by the agency in its mission to protect and enhance natural resources and waters;
- (2) each panelist would discuss any issues the Waterways Plan could address that would help protect natural resources of the waterways.
- (3) the audience would have an opportunity to ask questions of the individual panelists. Dr. Merritt noted at the end of the panel discussion, there would be a five minute break, after which the Project Steering Committee would meet. The public would be welcome to attend the Steering Committee meeting.

Natural Resources Panel

Patti Gorman, Science Supervisor, South Florida Water Management District

Ms. Gorman addressed the challenges of ecosystem restoration. She pointed out the 16 counties with huge variability of environmental resources and the historical problems such as hurricanes and flooding leading to the construction of the C&SF project that Congress authorized in 1948. She noted some of the major features of the project in place are river channelization, Herbert Hoover Dike, water conservation, protective levies and drainage network. The District added additional levies, pumps, about 1800 miles of canals, 160 major drainage basins, over 2000 control structures, pump stations and everything from the large structure to the top to smaller culverts that join farms and very large pump stations.

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She pointed out the ongoing challenges such as never the right amount of water in south Florida (too much or too little). Billions of gallons of water gets lost to tide and not only affects our natural systems but a huge loss of drinking and irrigation water. An additional challenge is protecting the endangered species which sometimes impede the restoration effort.

In 1999, the Comprehensive Everglades Restoration Plan was created. The plan features 68 components and will be implemented over the next 35 years. The plan in its 15 year is moving forward slowly. The district also has to balance the other water needs to agriculture in urban areas as flood control.

She explained some of the restoration features (Indian Lagoon south project, wetland restoration, watershed of St. Lucie, planned reservoirs and stormwater treatment areas). She talked about the program RECOVER (REstoration COordination VERification).

She discussed the monitoring and assessment plan which is a large part of the science that affects this area. It is organized by region and the District covers 4 major regions (Lake Okeechobee, Greater Everglades, southern and northern estuaries). She also mentioned that the district covers approximately 46 miles of the Indian River Lagoon. She noted Seagrass monitoring and mapping, oyster monitoring, and the Marine Biotic Index

Patrick A. Pitts, Biologist, U.S. Fish and Wildlife Service

Mr. Pitts complemented Ms. Gorman on her overview and the status of CERP and particularly the RECOVER program for which Patti and he are both involved. Mr. Pitts is the regional coordinator for the southern end of the system around Biscayne Bay and Florida Bay, and the Southwest Florida Shelf.

He pointed out that their agency is responsible for carrying out certain legislative acts. The two that get the most attention is the Endangered Species Act and the U.S. Fish and Wildlife Coordination Act. The Endangered Species Act is charged with protecting threatened and endangered species.

The U.S. Fish and Wildlife Coordination Act is charged with reviewing large water resource projects for which there is a federal nexus and he noted that the best example is the Comprehensive Everglades Restoration Plan. He noted that their agency is required to provide a Fish and Wildlife Coordination Act report on every CERP project.

He pointed out that the Migratory Bird Treaty Act is applicable to the waterways plan, the Indian River Lagoon, St. Lucie Estuaries and St. Lucie River. An example is the migratory shorebirds. Marine Mammal Protection Act, highest on their list is the manatee. The Bald and Golden Eagle Protection Act – the Bald Eagle is no longer threatened or endangered but still protected through this Act. He noted that there are 69 listed endangered species in south Florida and three species relevant to the waterways plan is the wood stork, manatee and green sea turtle.

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He also mentioned other Trust Resources which is entrusted with the protection of migratory birds, Bald eagles, and habitats for all fish and wildlife resources and for the waterways plan. Their agency is also charged in protecting seagrasses and mangroves.

He pointed out some of their concerns such as the discharges from Lake Okeechobee which affects the health of the St. Lucie Estuary and the Southern Indian River Lagoon. Other concerns are storm water runoff, septic tank leaching, climate change, over drainage of watershed, boating impacts, and habitat fragmentation. He pointed out that lack of funding and staffing is also a challenge.

Brian Sharpe, Indian River Lagoon Aquatic Preserve Manager, Florida Department of Environmental Protection

Mr. Sharpe pointed out the interagency coordination among the group and how interlinked all the different agencies are.

He noted they are part of the Florida Department of Environmental Protection in the Florida Coastal office known as Coastal and Aquatic Managed Areas or CAMA. The Indian River Lagoon Aquatic Preserves consists of seven separate, yet connected Aquatic Preserves.

The Aquatics Preserve was first established with the Florida Aquatic Preserve Act of 1975. Areas that were set aside to preserve the areas for the benefit of future generations due to their exceptional scientific esthetic and biological values. He indicated they manage over 108,000 acres of submerged resources and he pointed out the management boundaries and all the submerged resources within those areas. He also noted they manage over 120 spoil islands.

One of their biggest challenges is staffing. He pointed out the challenges of balancing the needs and desires of the community as well as protecting the environment. He pointed out the seagrass monitoring and oyster reef restoration.

He pointed out some of the key challenges such as dealing with decreased state and federal funding and fewer/smaller grants. He noted that his office is trying to balance the public recreation rights with the needs of the environment and trying to enhance key spoil islands for the public to enjoy.

Dr. Merritt pointed out how the different state agencies and the federal government is complementing each other, in dealing with natural resource issues.

Deborah Drum, Manager, Ecosystem Restoration & Management Division, Martin County

Ms. Drum pointed out the lands that are managed by Martin County to help protect and restore natural resources and conversation land as well as complete water quality improvements. They are challenged with creating appropriate public access to and through conversation lands. This represents about 35,000 acres in the county that are managed. She pointed out the highest priority is to complete the Indian River Lagoon south project. There are components of that

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project that include water quality, oyster restoration, and muck removal, all of these key elements to regional restoration that involves Everglades Restoration.

She pointed out three key issues related to natural resources. Everglades restoration, water quality protection and enhancement and exotic species contract.

She pointed out natural resource challenges such as are funding opportunities (federal, state, and local level), Lake Okeechobee releases to the St. Lucie, public awareness of watershed connections, and mutli-generational implementation

She pointed out the potential solutions to the address those challenges such as support for recurring funding for water quality protection and enhancement and natural resource management at all levels, sustained public support throughout the life cycle of project implementation, awareness through educational outreach to natural resource challenges and opportunities to make a difference locally.

Dr. Merritt noted how interesting to see how the local government departments are coordinating with the state and federal agencies.

Steve Fousek, Environmental Lands Coordinator, St. Lucie County

Mr. Fousek discussed the management plan process (state lands) and the Management Plan/Acquisition Process (FCT Lands). He pointed out that they manage 1232 acres mostly in the North Fork. He discussed mosquito control. The County manages about 5,000 acres on the island and some west of the lagoon. Develop a needs assessment; how you manage those resources. Draft a master plan, have a 9-member advisory committee who analyzes the plans and make sure all the concerns are addressed.

John Nelson, President Elect, Audubon of Martin County

Mr. Nelson showed an educational video.

He noted the challenges are to get the public involved and aware of what we are doing. He pointed out that he hosts a public radio program called the Audubon Moment and recently received a grant from Toyota Corporation and Natural Audubon to promote the program to other public radio stations throughout the state of Florida. The whole premise of the Audubon moment is to simply say discover what's in your backyard. Dr. Merritt noted there will be an opportunity for Audubon to step up and help get the public more involved and they can assist at the public workshops in May.

Panel Discussion

Panelists were asked to respond to a question posed by Dr. Merritt. Is there one thing that could be put in the waterways plan that would assist their efforts?

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Ms. Gorman (South Florida Water Management District) suggested a good summary of all the different efforts that are going on in the waterways and point out the individual agencies and their mission.

Mr. Pitts (U.S. Fish and Wildlife Service) noted that he was not clear on the purpose and objective of the waterways plan and it is really important to make that clear in the plan. Dr. DeLaney explained the purpose and objective of the waterways plan. Mr. Pitts asked if the plan would address economic benefits that are provided through ecosystem services. Dr. DeLaney noted that one of the things they have been asked to do is try and value the waterways and she pointed out they have economists and an economic team who is working on various economic indicators related to the waterways.

Mr. Sharpe (Florida Department of Environmental Protection) pointed out that funding is becoming limited and it is important to get that funding. Grants are more limited and competitive so, it is important that everyone is on the same page and with the same goal in mind. Focus to get people out to the existing facility rather than concerns about putting in a boat ramp and impacting mangroves and other habitat.

Dr. Merritt pointed out one of the things they will do is try and look at level of service at the existing access points.

Ms. Drum (Martin County). In natural resource management it has always been a challenge to put a value on what the improvement is to the community and I could see a similar thing with a plan like this where I think it is important to look at that not only beyond the level of service. How well can an accessible clean waterway, what does that do for the quality of life and having value of quality of life in communities and I think if you even attempt to get kind of answer that question or put your arms around it. It will help people understand the value of supporting something like this within their own community as opposed to having well that's a great thing for somebody else. I don't want a ramp at the end of my street. Not in my back yard mentality. To overcome that it is important to talk about the overlay value of having integrated access points with good natural resources.

Mr. Fousek (St. Lucie County). Some studies out there as far as value of green space.

Dr. Merritt pointed out the value to the waterways of lands that are totally inland, totally appear to be disconnected but in reality they are connected through stormwater, groundwater and drainage. We need to make that point clear as well.

Dr. Merritt asked the speakers if they could help with the plan.

Mr. Nelson (Audubon of Martin County). Using our waterways through ecotourism and responsible ways of being able to utilize this resource.

General Questions and Answers

A member of the audience asked about the status of the Kissimmee River Preservation Plan. Ms. Gorman said the plan was about 2/3 done.

It was asked if a waterway suitability map had ever been done. Mr. Sharpe was not aware of a map. He noted the focus on seagrass mapping and oyster reef mapping. He noted the WMDs are doing oyster reef mapping and muck mapping.

Dr. DeLaney noted to have an appropriately managed conversation with the public in this area, those baseline maps are maps we are going to want to piece together in a GIS format and make them easy to digest for the public because you don't want the public to be intimidated.

In terms of development opportunity, I am not sure what we are going to hear. We heard some different things when we had the cities and counties present their land use perspectives and so I think we may see some locations perhaps more so maybe in St. Lucie and the CRAs in Martin County where development opportunities seem more robust and likely and they are consistent with the existing planning efforts that are underway so again that type of baseline mapping I think will help inform what other types of ancillary activities make sense and we only have so much land area to work with.

Melissa Carter asked what the citizens could do to help. Ms. Gorman stated lobby, lobby, lobby. Ms. Drum noted the sample letters on Martin County's website at www.martin.fl.us.

Ms. Gorman noted that water management districts are divided and pointed out that the map for St. Johns is separate from theirs. She pointed out they coordinate closely with St. Johns as far as the environmental monitoring assessment activities but the way the state and the DEP does the TDLs are segmented.

Mr. Marty Lavin asked if some sort of agreement on matrix evaluation and types of things we are talking about give us more of the tools that we need to make those informed decisions and not duplicate things and not have the disconnect. Mr. Donaldson pointed out the differences between the two areas because they access the St. Lucie estuary.

Ms. Drum noted they are setting the TDMLs consistently but if there is any disconnect to the TDML program it is how agricultural lands are treated versus municipal global government in terms of what we are required to do to clean up the water. I would say that is the biggest disconnect in the B map program is there being a huge disconnect between how the two entities are treated.

The other really big disconnect with the St. Lucie B map is that the DEP adopted that B map under the assumption that Lake Okeechobee was clean water and that we would not be getting releases. And here we are 8 years later getting releases. That is a complete ignoring reality that we have to deal with. There is no way the County or City of Stuart or St. Lucie is going to be able to meet our TMDL requirements as long as we are getting Lake Okeechobee.

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Make sure that fisheries are covered because there is extreme value to the industry. Dr. Merritt noted at the next forum there will be discussion on fishing with recreational opportunities.

Dr. DeLaney thanked the panel. The meeting forum adjourned at 3:41 p.m.

STEERING COMMITTEE MEETING
Waterways Plan for Martin & St. Lucie Counties

Waterways Forum 4: Natural Resources

THURSDAY, FEBRUARY 27, 2014

2:00 P.M.

Port St. Lucie Community Center, 2195 SE Airoso Boulevard, Port St. Lucie, FL 34984

Forum arranged by the Treasure Coast Regional Planning Council (TCRPC)
as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes and key points of discussion raised during the Project Steering Committee meeting held on Thursday, February 27, 2014. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 4:32 p.m. by Dr. Kim DeLaney, TCRPC. She pointed out the updated schedule for the next forums and also talked about the upcoming workshops in May. She noted that the steering committee did not have to attend all the workshops but it would be helpful if they could attend at least one.

Waterways Forums – Review & Discussion

The Committee discussed the key points raised during the panel discussion regarding natural resources, including:

Dr. DeLaney talked about outreach to the local governments, advisory board members, stakeholder organizations, chambers, marine industries, realtors, etc. for the upcoming workshops. She noted that the workshops will be advertised in the newspaper and also try and use public access channels. Ms. Lathou mentioned advertising through WPSL radio. Dr. DeLaney also noted that flyers will be distributed city/county department heads and city/county managers.

Ms. DeLaney noted the discussion from today's meeting included education outreach to build advocacy, need for resources and staffing, special focus on the interconnectedness of the systems, and watershed.

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Ms. Landry suggested a good visual for the upcoming workshops would be to show the way the flow used to be versus the way it is today.

Mr. Donaldson liked the idea of working the data on terms of the spoil islands or various public lands along the way, who is responsible for this. It is not a main focus of this plan but could be incorporated in the plan. Need to advocate our federal projects, the IRL programs and support your local community.

Dr. DeLaney noted that they are dealing with such an issue with Lake Okeechobee. She said the emphasis should be on the local fishery, local resources and our local responsibilities.

With natural resources there are good plans in place. Inventory of what's out there is a due diligence, research document lay it out and see what we tasks ourselves with. Summarizing the planning efforts that are out there. Illustrating that we know what these regulatory activities stay put.

_____. One of the things it would be difficult to map some of those things that Jim was talking about especially when I am thinking about seagrass because maybe we can map where they potentially were but they continue to change dramatically from year to year. Something that we have to deal with in that maybe we could think about seagrass restoration or mitigation

Mr. Donaldson pointed out that you could have the maps there, but who is keeping the seagrass data, I think it is the WMD. That is what I was thinking too that this is important to basically who is responsible for maintaining this data, the spoil islands and its passive recreation and this other spoil island is not recreation. That is what I was thinking of. Where we have done restoration and habitat, examples of things that are good.

Michael Williamson (Cambridge Systematics, Inc.) pointed out the following from the meeting.

Using the plan to support showing grant applications to increase competitiveness and funding, one of the key things that came up.

Crystal clear on what the purpose and objective of the plan is and your response was a little bit of everything.

I am thinking as we go through the rest of the sessions and the public outreach when we come up with the final plan there may be key things that everybody agrees to that really communicates what the plan is and a whole bunch of other stuff that is really important but just to have a little bit more focus there.

We talked about the matrix resource. It seems like people are thinking about that a little bit differently so if you want it to be a resource for the professionals as far as what every parcel is owned by and what you can do versus a functional perspective where you wanted to communicate a public some key resources that need to be noted as far as what parts of the waterways that you use ...here is the location of facilities, here is the without getting into the

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same level of detail that folks at the table would need to know to actually implement detailed plans.

Dr. DeLaney pointed out that there is a lot of information that needs summarizing and she suggested displaying 11 x 17 matrices that lay those kinds of things out for the public. Do we want to know who owns the land and that is an important data base. Who owns what on the waterways, all this public land and this does not include the FIND properties and water management district properties. I think it is valuable for the public to know the challenges on how we are going to maintain those things going forward.

The meeting was adjourned at 5:02 p.m.

Appendix 2E. Forum 5: Recreation, Cultural, Educational Facilities

WEDNESDAY, MARCH 12, 2014
2:00 P.M.

Port Salerno Community Center, 4950 SE Anchor Avenue, Stuart, FL 34997

Forum arranged by the Treasure Coast Regional Planning Council (TCRPC)
as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes and key questions and points of discussion raised during the Forum on Recreational, Cultural & Educational Facilities that occurred on Wednesday, March 12, 2014. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 2:08 p.m. by Dr. Kim DeLaney, TCRPC. Meeting participants introduced themselves (copies of the forum sign-in sheet are included with these notes). The members of the Steering Committee identified themselves.

(NOTE: Each speaker utilized power point slides, and a copy of the power point presentation is included with these meeting notes.)

Project Overview:

Dr. DeLaney provided a brief introduction on the Waterways Plan project. The project covers the waterways in both Martin and St. Lucie counties (about 120 miles of waterways, including roughly 44 miles of Intracoastal Waterway, 25 miles of St. Lucie River, and 25 miles of canals). The plan is funded by the Martin Metropolitan Planning Organization (MPO), St. Lucie Transportation Planning Organization (TPO), and Florida Inland Navigational District (FIND). Each organization is responsible for guiding long-term transportation and capital investments with a goal of maintaining high quality of life, high level of mobility, strong economic development, and sustainability.

This was the fifth forum in a six-forum series. The forums are intended to broaden the general knowledge of waterways-related issues – for the project team, the steering committee, and the general public – and help inform the development of the Waterways Plan.

Dr. DeLaney reviewed the upcoming series of educational forums that will take place over the next couple of months, and she provided an overview of the pending charrette public workshops, additional opportunities for public input, and the project schedule. Information on the project is posted on the TCRPC website at http://tcrpc.org/special_projects/Waterways/waterways.html

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The one remaining forum is scheduled as follows:

<i>Forum 6</i>	Economic Development	May 2, 2014 (9:00 a.m.)	Fort Pierce – Historic City Hall 315 Avenue A Fort Pierce, FL 34950
<i>Table reflects most current schedule as of 3/12/14</i>			

Dr. DeLaney pointed out the series of public input workshops scheduled for May 7, 8, and 9th. Each workshop will be identical in format and run from 1 p.m. to 6 p.m., with an opening presentation summarizing what has been learned to-date and early indicators of opportunities and challenges, followed by table sessions with maps so participants can provide input as to different ideas for the development of the plan.

<i>Public Workshop a</i>	Public Input Workshops Open to the Public Identical Formats, Presentations, and Public Input Opportunities	May 7, 2014 Wednesday (1 PM)	Port St. Lucie Civic Center 9221 S.E. Civic Center Place Port St. Lucie, FL 34952
<i>Public Workshop b</i>		May 8, 2014 Thursday (1 PM)	Indian Riverside Park 1707 NE Indian River Drive Jensen Beach, FL 34957
<i>Public Workshop c</i>		May 9, 2014 Friday (1 PM)	City of Fort Pierce River Walk Center 600 North Indian River Drive Fort Pierce, FL 34950

Following the workshops will be a five-day public design studio with a multidisciplinary team assembled which will take place at the regional planning council office. The charrette is scheduled the week of May 19th. There will be an opportunity where the public and steering committee come together, see where the process is, and provide additional input. The goal is to have an initial plan together by the end of May ~ a “work-in-progress” ~ to bring back to the various organizations who are participating.

Dr. DeLaney introduced the panel and provided an overview of the recreational, cultural & educational facilities and resources along the waterways of Martin and St. Lucie Counties. She noted the format as follows:

- (1) each panelist would provide a 3-5 minute overview describing their organization’s role in the protection and enhancement of recreation, cultural & educational facilities, including a description of the biggest challenge faced by their agency; and
- (2) the audience would have an opportunity to ask questions of the individual panelists. Dr. DeLaney noted at the end of the panel discussion, time permitting, there would be a five-minute break, after which the Project Steering Committee would meet. The public would be welcome to attend the Steering Committee meeting.

Recreational Facilities Panel

Jim Lopilato, Parks Superintendent, Martin County Parks & Recreation

Mr. Lopilato described the role of the Martin County Parks and Recreation Department, and the County's broad role in providing and maintaining facilities. He noted Martin County manages 75-plus parks, many of which are along the waterways. Activities offered include fishing, boating, canoeing, kayaking, swimming, and any activity you can do on the water. The County's park and recreational facilities are also locations for fishing camps, surf camps, paddle board camps, and similar water-sports camp activities. He noted that the Martin County BOCC adopted a resolution to create a waterways trail, with 32 different sites along the trail. Along with the Martin MPO, the County has created a bicycle/pedestrian committee which has focused on this concept. The key challenges to the County are educating the public about the opportunities available, pollution (water quality and litter), and expanding the network.

Mark Nelson, Park Manager, Jonathan Dickinson State Park

Mr. Nelson provided an overview of Jonathan Dickinson State Park, which is a full-service state park that comprises approximately 10,500 acres. The park averages 200,000 visitors a year and offers a myriad of opportunities, including hiking, biking, equestrian trails, canoeing, kayaking, and boating among others. The park is considering expansion of its concessions and camping facilities. There are seven miles of federally designated wild and scenic rivers and an education center with a visitor center. Mr. Nelson noted they are also involved with the Martin County Environmental Studies Center.

William Miller, Refuge Manager, Hobe Sound National Wildlife Refuge

Mr. Miller provided an overview of the Hobe Sound National Wildlife Refuge, which is one of twenty-nine in the state of Florida. The Refuge was established in 1969 with 1,035 acres. He highlighted two tracts of land – the mainland, which is across from Jonathan Dickinson Park, and the Jupiter Island tract. Primary habitats on the Jupiter Island tract are mangroves, coastal hammock, beach and dune, and the focal species include sea turtles and shorebirds. The primary habitats on the mainland tract include mangroves, coastal hammock, and sand pine scrub, and the focal species are gopher tortoise, Florida scrub jay, and Lakela's mint.

Mr. Miller noted the Indian River Lagoon is abutted by the Refuge, but the Refuge does not have jurisdiction in the Indian River Lagoon. There are ten miles of coastal resources managed by the Refuge. The Refuge offers wildlife-dependent recreation and environmental educational opportunities, which includes a curriculum focused on the biotic communities of the Indian River Lagoon. The Refuge averages 60,000 visitors to the wildlife refuge headquarters and the Hobe Sound Nature Center. The Hobe Sound Nature Center's focal areas are adult education, children's presentations, family oriented events, visitor contact, and sea turtle walks.

Some of the biggest challenges faced by the Refuge are a lack of focus on the waterways, access to the Lagoon, funding and capacity, engaging non-traditional users, and lack of a Lagoon partnership network.

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Mr. Miller pointed out opportunities such as enhancing public awareness through media and increased messaging, the development of a lagoon partnership group, and increasing awareness of Indian River Lagoon recreational attributes.

John Lakich, Park Manager, St. Lucie Inlet Park & Seabranck Preserve State Park

Mr. Lakich provided an overview of St. Lucie Inlet Park and Seabranck Preserve State Park. He explained the park's mission statements and described the parks' services. Mr. Lakich noted the recreation at a preserve was different than what users expect at a full service state park. He pointed out they manage 920 acres of Seabranck preserve south of Cove Road and 946 upland acres of the St. Lucie Inlet Preserve State Park, noting the Inlet Preserve Park is accessible only by boat or kayak. He noted the biggest issue is access. The parks average 15,000 visitors per year. Mr. Lakich provided imagery in his presentation that denoted the unusual access facilities at St. Lucie Inlet Park, with a docking facility, thirty-slip boat ramp, floating dock, and ten-foot wide boardwalk that goes half a mile across the park through the mangroves towards the beach.

Alan Jenkinson, Executive Director, U.S. Sailing Center of Martin County

Mr. Jenkinson provided an overview of the U.S. Sailing Center of Martin County, which is a community sailing center offering recreational, competitive, and learn-to-sail opportunities for youth and adults of all ages. The Center is a membership-based 501(c)3 non-profit organization, promoting sailing through camps and education. The Center also works with the children of the ARC, Boys at Samaritan, Girl Scouts, Boy Scouts, and any other organization that comes in and wants to get involved. Mr. Jenkinson indicated the biggest challenge is public awareness regarding the Center. The facility is located at the north end of Indian Riverside Park. He said another challenge is shoals and shallow areas and would like these areas to be marked or even eliminated. Dr. DeLaney asked how his organization was funded, and Mr. Jenkinson indicated user fees and donations fund the operations.

Ed Stout, Owner, South River Outfitters

Mr. Stout provided an overview of his business, South River Outfitters, as well as that of a water sports concessionaire. South River Outfitters rents canoes, kayaks, and bicycles at Halpatokee Regional Park in Stuart, Florida. The company provides a positive recreational opportunity for everyone to come out and experience the last four miles of the south fork of the St. Lucie River. The business averages roughly 1,400 visitors per year. Mr. Stout noted the company partners with Martin County Parks and Recreation, and they offer five summer camps per year. Their biggest challenge is the water quality and accessibility, and Mr. Stout also noted the need for a parking lot with a sandy beach. He suggested a better time to participate in a forum like this would be a weekend or at night so others could contribute their ideas. Dr. DeLaney pointed out the challenge of trying to figure out the best time to get everyone together. Mr. Stout also noted that their business suffered a 25% loss last year due to the releases. Dr. DeLaney mentioned trying to engage a meeting with the ACOE but has not managed to have any staff that is available.

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Steve Fousek, Environmental Lands Coordinator, St. Lucie County

Mr. Fousek provided an overview of St. Lucie environmental, parks, and recreational opportunities. He noted nineteen sites on the North Fork that are managed by the County, primarily including beach sites and sites fronting the inlet. Mr. Fousek discussed the available educational facilities/programs, hiking trails, boat slips, cultural/historic sites, fishing piers/docks, canoe launches, observational towers/decks, interpretive trails, birding, and picnic facilities. He pointed out all the public sites that are adjacent to the waterway and discussed the County's proposed paddling trails. Mr. Fousek described the Statewide Comprehensive Outdoor Recreation Plan (SCORP), which is the state's official document regarding outdoor recreation planning. Every five years, the Florida DEP inventories, develops interviews/questionnaires, and evaluates trends using census data. Mr. Fousek also provided an overview of select educational facilities on the waterways, including the Backus Gallery, Manatee Center, Smithsonian Marine Station, and Seven Gables.

Dylan Gavagni, Park Manager & Wren Underwood, Park Services Specialist, Savannahs Preserve State Park

Mr. Gavani provided an overview of the Savannahs Preserve State Park. He discussed the management plan for a large portion of the North Fork of the St. Lucie River that is inaccessible as far as the portion of the North Fork of the St. Lucie River at this point. The park averages 45,000 visitors a year. The Savannahs also has an environmental education center, and the park offers canoeing kayaking, and fishing. They manage endangered habitat along the Atlantic Coastal Scrub Ridge and the largest intact freshwater marsh in Southeast Florida. He pointed out the challenges such as funding, maintenance and access.

Opportunities and Challenges

Dr. DeLaney asked the panel to discuss the opportunities that could be provided by the Waterways Plan as well as the challenges individual organizations and programs face. She noted the challenge of the plan in balancing the environmental qualities of the waterways resources with a desire to further communicate these assets to the public. She further noted that funding and a lack of resources has been noted consistently through the forums.

Mr. Lopolito suggested the Plan could help inform users about the interconnectedness of the waterways. For kayakers, the Lagoon offers the opportunity to put-in in Martin County and paddle into St. Lucie County. The Plan can identify stops and informational opportunities along the way so users can experience different things. Kayaking on the Lagoon could be a more developed experience that could bring in users from around the state and nation who would want to stay for several nights to experience different aspects and experiences on the Lagoon and in the waterways.

Mr. Nelson suggested the Plan could provide an opportunity to educate the community in the two county areas to our different mission statements. The Plan can include emphasis on preserving these areas for future generations so the kids can come and see the manatees, birds or other

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wildlife. Further, the Plan could help establish a clearinghouse about environmental qualities, resources, and different available recreational opportunities.

Mr. Stout suggested the Plan can help with funding and access. With improved access, more people can utilize the waterways, which will provide economic value, which can help provide funding to help maintain the health of the waterways.

Mr. Fousek indicated the economic split between active and passive recreation, and both counties need to protect green spaces as well as increase the opportunity for active recreational boaters.

Mr. Nelson also emphasized the opportunity for the Plan to indicate connectivity among the various waterways destinations, with maps how connections occur. Dr. DeLaney noted the Plan's ability to include multi-use trail connections as well as potential access through easements.

Dr. DeLaney questioned the impact of the East Coast Greenway through Seabranche Preserve State Park, noting the mention of doubled attendance since the installation of the greenway. Mr. Lakich indicated although the attendance had increased substantially, with many more park attendees riding bikes to and through the preserve, there had not been significant impacts thus far.

Participants also asked about environmental education programs, discussing the environmental curricula in the school systems of both counties. Participants indicated there would be benefits from consistent environmental education programs in both counties, to track kids from kindergarten forward, using the public parks and preserves as a basis for that education.

Dr. DeLaney thanked the Recreational Facilities Panel. The meeting forum adjourned at 4:10 p.m.

Cultural & Educational Facilities Panel

The meeting started at 4:15 p.m. Dr. DeLaney introduced the panelists, who proceeded with presentations about their organizations and areas of interest.

Nancy Turrell, Executive Director, The Arts Council

Ms. Turrell provided an overview of The Arts Council, indicating the organization provides service to visual and performing artists, arts organizations, students, and the public. She noted the region's downtowns are centers of cultural activity, and most have developed along our waterways. The Arts Council is the designated local arts agency for Martin County, and she indicated the parallel agency in St. Lucie County was undergoing some leadership shifts. She gave examples of public art - Sailfish Splash Park Murals and Stuart Beach - Mosaic Tile Mural project. She also noted that EcoArt is a new and interesting concept, which describes a condition where art, environment and community engage. Ms. Turrell gave a specific example of EcoArt with the Poppleton Creek project that focuses on mangrove plantings.

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Dianne Pierce, Administrator, Environmental Studies Center

Ms. Pierce provided an overview of the Environmental Studies Center, indicating the Center has been in operation for 41 years and is primarily funded through the Martin County Public School District. The Center is used for educational programs for students in kindergarten through 7th grade, and subsequently, marine biology and environmental classes are offered to high school students. The Center includes on-site educational resources as well as provides coordinated trips into the waterways for seining, water quality testing, and other hands-on educational experiences.

Jannn Widmayer, Curator, Manatee Observation & Education Center

Ms. Widmayer provided an overview of the Manatee Observation and Education Center. She indicated the Center opened in 1996 as St. Lucie County's first environmental center and was built through the business community with individual donors and a grant from FIND. She noted that education and marine environment are the main focus of the Center. The Center averages 40,000 visitors per year. In addition, they teach about 5,500 school children from St. Lucie County (public and private) as well as students from Indian River County and Jupiter. The Center has a number of volunteers and four paid staff members. Dr. DeLaney asked if there is a regular relationship between the school district and the Manatee Observation Center. Ms. Widmayer noted that when the Center first opened, the St. Lucie County School District gave them a grant each year, but with the economic turndown, the Center no longer receives a grant from the school district. The Center also applies for other grants.

Panel Discussion

Panelists were asked to respond to a question posed by Dr. DeLaney. What is the biggest challenge as an organization that you face?

Ms. Widmayer noted two challenges: water quality and the presence of public boat ramps in the middle of the property where the center is located, adjacent to the parking area. Dr. DeLaney pointed out there are tremendous issues facing the waterways, water quality being the lead one. This type of planning document can really help explain why dollars should be allocated to remedy this problem because the waterways has a value and can be measured in these different ways.

Ms. Pierce pointed out their biggest challenge is preservation and access. She indicated that with development opportunities, it is critical to preserve some of the pristine areas that can be used for teaching our young people. Any planning that we do we have to think in terms of preserving the good nature of our natural resources, making sure we make it as easy as possible and obvious for people to clean up after themselves. Trash receptacles are necessary to make it easier for waterways users. Access to the waterways is the other key challenge.

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Ms. Turrell pointed out sustainability, the seasonality of our community and I think it addresses having activities and engaging opportunities. The Plan can also try to advance community engagement and broaden the understanding about the importance of water quality and what can be done to help it.

Dr. DeLaney asked panelists to identify the types of activities and investments the Plan could emphasize to help advance what each organization is seeking to accomplish. Panelists suggested assistance with funding to broaden access to programs, the utilization of EcoArt as a theme; balancing the tension between natural resources needing protection and the attraction of the public to experience the natural resource; the balance between different types of users (human-powered footprints versus active recreational activities); expanded access to the waterways; and opportunities for expanded environmental education, especially for kids, to build stronger environmental stewards in the future.

Dr. DeLaney pointed out that Lucie County does not have as much consistency with the environmental educational curriculum as Martin County, noting the programmatic opportunity to replicate the program where appropriate. Participants also noted Westwood High School's Marine and Oceanographic Academy of the St. Lucie County School District. The academy is located at Harbor Branch Oceanographic Institute.

Ms. Widmayer indicated the opportunity for a more vibrant partnership with the marine industry, emphasizing the broad range of employment opportunities and career paths with the industry. The school districts could utilize an advisory committee to help advance the discussion, detail the types of technologies, marine biology, and engineering opportunities. She suggested both the marine and boat industries would be very well served symbolically with a more formal school district relationship and broader knowledge among the students. Dr. DeLaney suggested the Plan could explore the opportunity for a marine industries career track, coordinated through the school districts.

Participants also noted there are large portions of the populations in the two counties that do not know how to swim, and the inability to swim could limit the interest or desire to learn about the water. The need of water safety classes and expanded swimming instruction was discussed by participants and the panel.

Dr. DeLaney thanked the Cultural & Educational Facilities panel. The meeting forum adjourned at 5:00 p.m.

Given the volume of materials covered in the forum, the Project Steering Committee chose not to meet following the forum.

Appendix 2F. Forum 6: Economic Development

FRIDAY, MAY 2, 2014

9:00 A.M.

Fort Pierce Historic City Hall, 315 Avenue A, Fort Pierce, FL 34950

Forum arranged by the Treasure Coast Regional Planning Council (TCRPC) as part of the Waterways Plan for Martin & St. Lucie Counties.

NOTE TO READERS: This document reflects general meeting notes, including key questions and points of discussion raised during the Forum on Economics of the Waterways that occurred on Friday, May 2, 2014. General meeting notes were prepared by TCRPC.

General Meeting Notes

The meeting was opened at 9:00 a.m. by Dr. Kim DeLaney, TCRPC. Meeting participants introduced themselves (copies of the forum sign-in sheet are included with these notes). The members of the Steering Committee identified themselves.

(NOTE: Each speaker utilized power point slides, and a copy of the forum power point presentation is included with these meeting notes.)

Project Overview:

Dr. DeLaney provided a brief introduction on the Waterways Plan project. The project covers the waterways in both Martin and St. Lucie counties (about 120 miles of waterways, including roughly 44 miles of Intracoastal Waterway, 25 miles of St. Lucie River, and 25 miles of canals). The plan is funded by the Martin Metropolitan Planning Organization (MPO), St. Lucie Transportation Planning Organization (TPO), and Florida Inland Navigational District (FIND). Each organization is responsible for guiding long-term transportation and capital investments with a goal of maintaining high quality of life, high level of mobility, strong economic development, and sustainability.

This was the final forum in a six-forum series. The forums were intended to broaden the general knowledge of waterways-related issues – for the project team, the steering committee, and the general public – and help inform the development of the Waterways Plan.

Dr. DeLaney pointed out the series of public input workshops scheduled for May 7, 8, and 9th. Each workshop will be identical in format and run from 1 p.m. to 6 p.m., with an opening presentation summarizing what has been identified to-date and early indicators regarding opportunities and challenges. The presentations will be followed by table sessions

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with maps for participants to evaluate various conditions, identify locations of challenges and potential improvements, and enhance the discussion by the public. Ideas generated in the public workshops will be utilized to inform the development of the Waterways Plan. The dates, times, and locations of the workshops are as follows:

<i>Public Workshop A</i>	Public Input Workshops Open to the Public Identical Formats, Presentations, and Public Input Opportunities	May 7, 2014 Wednesday (1 PM)	Port St. Lucie Civic Center 9221 S.E. Civic Center Place Port St. Lucie, FL 34952
<i>Public Workshop B</i>		May 8, 2014 Thursday (1 PM)	Indian Riverside Park 1707 NE Indian River Drive Jensen Beach, FL 34957
<i>Public Workshop C</i>		May 9, 2014 Friday (1 PM)	City of Fort Pierce River Walk Center 600 North Indian River Drive Fort Pierce, FL 34950

Following the workshops will be a five-day open design studio with a multidisciplinary team assembled to further evaluate the ideas obtained through the plan’s public outreach component and recommend improvements and interventions. The studio will be held at the Treasure Coast Regional Planning Council office during the week of May 19-23. The studio will be open to the public from 9 a.m. until at least 6 p.m., and the public is encouraged to attend. The studio offers another opportunity for the public and steering committee come together and see where various aspects of the plan are and to provide additional input. The goal is to have an initial plan together ~ a “work-in-progress” by the end of May to present for feedback from the project steering committee, the involved organizations, and the public.

TCRPC is also scheduling presentations of “work-in-progress” for the various advisory boards and committees of the MPO and TPO, which will be followed by presentations to the boards of those agencies. Those presentations are anticipated to begin in June, and they will provide a snapshot of we have heard to-date, the information reviewed in due diligence, and the preliminary findings and recommendations. Following those presentations and additional public input, the plan document will be drafted for circulation in the month of July, which will allow the plan to be completed by its conclusion date in September 2014. Dr. DeLaney indicated the forum presentations would include the preliminary economic and market findings as well as FDOT’s evaluation regarding maritime academies. Following the presentations and related discussion, the forum would conclude, and the project steering committee would convene its meeting. Dr. DeLaney noted the public was welcome to attend the steering committee meeting as well, as the meeting was open to the public as are all waterways plan-related events.

Overview of Preliminary Economic and Market Findings: Presentation by W. Thomas Lavash (WTL+a) and Tom Moriarty (RDS)

W. Thomas Lavash and Tom Moriarty presented an overview of the Preliminary Economic and Market Observations utilizing a power point format. The presentation contains

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extensive data assembled for the two counties regarding economic conditions, demographics, growth and development trends, and a preliminary evaluation of key waterways-related industries including marine industries, fishing, hospitality, and land development, and preliminary market demand for

various uses. The presentation included a general overview of each of the waterfront redevelopment areas that will be the focus of the market potentials analysis, including Port Salerno, Stuart, Rio, Jensen Beach, Palm City, Indiantown, and Fort Pierce as well as the City of Port St. Lucie. A copy of the presentation is included with these meeting notes.

General Questions and answers

Questions were raised regarding the projections contained in the presentation, including the percentage of built but unoccupied retail and office space. Regarding conditions in neighboring communities, Mr. Lavash and Mr. Moriarity indicated the vacancies present in Martin and St. Lucie County are somewhat similar to trends evident in other communities in Florida and across the southeast. They noted a trend of declining concentration, with a shift of built space from the coast to the interior of the two counties, which varies from community to community.

Forum participants discussed the demographic trends and indicators contained in the presentation. Mr. Moriarity described the current market behavior as somewhat different than the past several decades. He noted that for the past fifty years, given land values and low energy costs, many parts of the country, including Florida specifically, has experienced outer growth spreading into undeveloped areas, with infrastructure extensions typically subsidized by the stability of the tax base in older parts of cities. Market behavior is now shifting where this historic trend of continued outward expansion is being replaced by consumers indicating they don't want to live on the outer edge of cities. Instead, they want to live closer in, with a desire to bike and walk rather than always drive. Mr. Moriarity indicated this trend is affected even in employment markets, while it does vary around the, given the millennial job base, many companies are saying they don't want to locate far out in suburbia anymore. They want great road access and walkable environments because that is what our employees want.

Participants indicated there is substantial permitted but unbuilt development available in the two counties, with thousands of permitted but unbuilt housing units in Port St. Lucie, hundreds if not millions of square feet of commercial and industrial space, and three or four DRIs in addition to significant numbers of development orders in Martin County that remain valid. Therefore, much of the potential demand for new uses will be absorbing that unbuilt capacity.

Mr. Lavash acknowledged the approved but unbuilt inventory, noting much of what has been approved thus far may not be in desirable locations for market-based development. He further indicated every community and region are competing against others for the smaller slice of economic development, which emphasizes the need for well-thought economic development strategies that focus on unique qualities of communities that make them competitive – such as waterfront development and character.

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Participants asked about the conflict between unbuilt inventory and growth projections forecasting additional development demand.

Mr. Lavash indicated the market study presents the available market characteristics and the reality of the products available now. There are segments of the population who prefer a lifestyle option that doesn't exist yet in portions of the study area. Fort Pierce is a good example where there is property that is underutilized and underappreciated in some ways. Assets include waterfront views, water access, water proximity, and water recreation, which are highly desirable, but the real estate product is now catching up with that. Mr. Moriarity added that an analog to the existing condition is to evaluate expenditures. There are statistics that indicate what office workers will spend if the market provides the opportunity, for example buying lunch, clothes, shoes, and similar goods. However, if the stores aren't available, the money simply isn't spent. At a larger scale, for market-based development, there are consumers who want a particular kind of character of waterfront development with a walkable-scale community. However, there is not much of that project today in these focal areas. That is an emerging market opportunity that the developer side will catch up to and it is going to need numbers like this to say is my risk warranted for an appropriately scaled product.

Participants raised questions regarding lease rates. Mr. Moriarity indicated that leading up to the recession, there is a general sense the nation's economy was heavily and probably overly dependent on consumer expenditures. Credit markets were loose with lots of spending on discretionary items. In the United States, there is an average of 40 to 50 square feet per capita of retail space, which is high by international standards. In the UK by contrast, retail averages around 10 feet per person. Following that pattern of what makes it justifiable retail development, there is a relationship between sales - what people choose to spend and where they choose to spend it - and retail real estate as an investment. There is a threshold for retail referred to as investment grade retail, which tends to require rents of roughly \$20/square foot. Generally, retail rents should run between 8-12% of total sales, with an average of 10%.

Participants discussed hospitality and lodging as a focal industry, with questions directed to the economists regarding the types of hotels – bed and breakfasts, smaller family-run hotels, and other included in the analysis. Mr. Lavash indicated the primary source of hospitality data is a firm with national experience that tracks hospitality statistics across the country. The firm aggregates the data and is highly selective in how it is made available. Regarding atypical lodging institutions such as bed and breakfasts, Mr. Lavash indicated they are a component of the evaluation, and he further noted the area's complications regarding seasonal housing markets. Mr. Lavash indicated the hospitality metrics are based solely on the available data. After the data is collected for both counties, he indicated they would revisit the available data, and if gaps were apparent, they would try to assemble data in other means. He further noted the two counties represent a significant lack of typical data utilized for tourist development – where visitors are traveling from, why they are visiting the area, what additional products or services are desired, and what would compel them to return. This type of data is essential to meaningfully grow a hospitality industry, with many competing communities investing millions of dollars into hospitality data. The lack of local data will narrow the projections, but the analysis will provide a baseline that can be built upon over time.

**Overview of FDOT Maritime Academy Feasibility Study
Presentation by Lauren Rand, FDOT**

Ms. Rand presented an overview of the FDOT analysis currently underway regarding the potential for a maritime academy – or academies – to be developed within the state of Florida. While there are seven maritime academies in the United States, none is in Florida. The study is analyzing the market potential, curriculum opportunities, locational and infrastructure requirements for various types of programs. The evaluation will include an overview of the seven existing academies, including their curricula, enrollment, and trends. She noted the Port of Fort Pierce is one of several locations that have been submitted for consideration. The study will recommend types of programs and types of locations, but it is not anticipated to recommend specific types of academies to be located in a single location. Rather, she indicated the state is likely to recommend several locations in which a maritime academy – or components of one - could be located. Ms. Rand indicated FDOT anticipates to conclude the study in May 2014.

Participants asked about the timing of the study and its exclusivity to the Port of Fort Pierce location. Ms. Rand indicated several locations around the state have expressed interest in accommodating maritime academy activities. Participants also asked whether or not the study would include an evaluation of industry salaries. Ms. Rand indicated that information would be addressed in a follow-up study.

Dr. DeLaney thanked the presenters and participants, and she noted the public workshops were scheduled for May 7, 8 and 9 in the locations noted on the workshop flyer.

The forum adjourned at 11:10 a.m.

STEERING COMMITTEE MEETING

Waterways Forum 6: Economics of the Waterways

FRIDAY, MAY 2, 2014
11:15 AM

Fort Pierce Historic City Hall, 315 Avenue A, Fort Pierce, FL 34950

General Meeting Notes

The meeting was opened at 11:15 a.m. by Dr. Kim DeLaney, TCRPC. Materials distributed to committee members included agendas and workshop flyers. Self-introductions were provided by attendees.

Waterways Forums – Review & Discussion

The Committee discussed the key points raised during the panel discussion regarding economic and market observations, including:

- Data Concerns and the “Data Desert”
 - Committee members, Mr. Lavash, and Mr. Moriarity discussed the absence of consistent, longitudinal data regarding various aspects of market conditions, especially evident regarding the hospitality industry, which is a focal industry in economic analysis for the plan. Historic data is lacking for all land use types, which shifts the data source from a comprehensive one to anecdotal data for historic rental rates and occupancies.
 - Committee members noted the tourist development councils in both counties have historically focused more on marketing than data.
 - Given the lack of data
- Marine Industries Workforce Needs
 - MIATC representatives noted the distinction of salaries between marine industrial employees (\$50,500 average annual wages) versus commercial/retail sales (\$29,700 average annual wages). Mr. Lavash and Mr. Moriarity concurred with this general variation in income. MIATC representatives indicated the lack of a trained workforce is a need that crossed industry sub-clusters, including the moving of cargo, basic marine servicing, and marine manufacturing. Board-level discussions related to the plan have emphasized the workforce training and education needs of the industry.
 - Committee members discussed the potential for a high school and possibly a college career track in the marine industries. Related career training opportunities in Broward and Miami-Dade Counties were noted.
 - The marketing of marine industries employment benefits was also discussed by the committee. Recent job fairs have indicated the job sector lacks the

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awareness of other professions, and further, the most recent job fair failed to produce any potential employees with relevant training, underscoring the need for high school career training for the basic job skills at a minimum.

- Cargo Opportunities
 - The committee discussed the potential for cargo shipping on the ICWW. Mr. Williamson indicated most modern barges cannot fit through the ICWW bridges. For the Port of Fort Pierce, there are several key niche opportunities, such as niche cargo (e.g., bulk or break-bulk items, local construction materials), megayachts, and trans-shipments.
- Public Access / Walton Road & Indian River Drive
 - Committee members noted the strong need for public waterways access, especially in St. Lucie County, and the Walton Road/Indian River Drive location was identified as a unique opportunity regarding access, which could also include an educational component. The ongoing TPO study regarding Walton Road widening was noted, along with historic discussions of the site's intermodal potential.
- Land Development Potential
 - Committee members discussed the need for the market study data to include permitted but unbuilt development opportunities, which was acknowledged by Mr. Lavash and Mr. Moriarity.
 - Committee members concurred with the focal areas for analysis regarding land development potentials, with the presence of active redevelopment programs in Port Salerno, Indiantown, Stuart, Rio, Jensen Beach, Old Palm City, and Fort Pierce. In addition, the potential growth demand for the City of Port St. Lucie was discussed, with an acknowledgement the City tended to lack waterfront parcels for redevelopment.
- Extent of Waterfront Recreational/Cultural/Educational Uses
 - Committee members discussed the expanse of waterfront recreational, cultural, and educational uses in the two counties, noting high number of public parcels provided some limitations on the development potential. It was noted these facilities provided indirect benefits to other land use types.
 - Committee members requested the plan include an inventory of these different types of uses.
 - There was also discussion regarding educational programs in the two counties, and committee members noted the consistency of the Martin County Environmental Studies Center program and its benefits towards environmental stewardship. St. Lucie County's programs were discussed as well, with concerns raised regarding the lack of long-term funding to continue the recent programs offered. Committee members discussed the benefits of a two-county education program, given the consistency of environmental resources and efficiencies that could be gained by broader programming.
- Marine Navigation Concerns
 - Committee members noted the continued broad public concerns regarding the impacts of the proposed All Aboard Florida project upon properties as well as the increased number of closures anticipated for the St. Lucie River Bridge.

Updated Project Schedule – Review & Discussion

Dr. DeLaney distributed an updated project schedule and flyers for the pending public workshops and design studio. Workshop dates and locations were noted as Wednesday, May 7 – Port St. Lucie Civic Center; Thursday, May 8 – Indian RiverSide Park; and Friday, May 9 – Fort Pierce River Walk Center. Each workshop would occur from 1-6 p.m., beginning with an opening presentation followed by table sessions, each of which would be facilitated by a project team member. Subsequently, a design studio would be hosted at the TCRPC office from Monday, May 19 through Friday, May 23, which would be open to the public from 9 a.m. until 6 p.m. Members of the Committee reviewed the schedules and concurred with the new dates, times and locations.

The meeting was adjourned at 12:20 p.m.

Appendix 3A
Summary of Waterways Permitting and Regulatory Responsibilities

Activity	Location	Agency
Boating Safety	Waterways	FWC; Sheriff's Offices
Boating Speed	Waterways	FWC; Sheriff's Offices
Boat Ramps	Waterways	SFWMD; FDEP; Local Governments
Boat Ramps	C-23, C-24, C-25 canals	SFWMD
Bridge Operations - Railroad	Waterways	USCG
Bridge Operations - Vehicular	Waterways	USCG
Dock Construction	Waterways - Residential	FDEP; Local Governments
Dock Construction	Waterways - Industrial	SFWMD; FDEP; Local Governments
Dock Construction	C-44 canal	USACE; FDEP
Dock Construction	C-23, C-24, C-25 canals	SFWMD; FDEP
Dredge and Fill	Waterways	FDEP; USACE
Dredge and Fill	C-44 canal	USACE; FDEP
Dredge and Fill	Wetlands	SFWMD; FDEP; USACE
Fertilizer	Uplands	Local Governments
Fishing	Uplands and Waterways	FWC
Manatees	Waterways	FWC; USFWS
Mangrove Removal/Trimming	Wetlands; Waterways	FDEP; Local Governments
Marina Siting	Uplands; Waterways	FDEP; Local Governments
Navigation	Waterways	FIND; USCG; USACE
Seagrass Removal	Waterways	FDEP
Septic Tanks	Uplands	FDOH; Local Governments
Shoreline Development	Uplands	FDEP; Local Governments
Shoreline Stabilization	Wetlands; Waterways	SFWMD; FDEP
Stormwater Management	Uplands	SFWMD; Local Governments
Waste Disposal	Uplands	FDOH; Local Governments
Waste Disposal	Waterways	FWC; FDEP; Local Governments

Appendix 3B Local Government Regulations Selected Online Links to [Municode](#) Code Library

Martin County, St. Lucie County, and five of the seven municipalities in these counties utilize Municipal Code Corporation (Municode) to publish consolidated listings of laws and regulations on the Internet. These are organized into codes of ordinances, comprehensive plans, and land development codes. Each local government has a unique way of organizing the laws and regulations, and not all local governments present a complete listing of their regulations on the Internet. The following outline presents links to the local government regulations published by Municode related to the waterways in Martin and St. Lucie counties. Only the links to regulations that are most relevant to the waterways are included. The local government regulations for the Town of Ocean Breeze and Town of St. Lucie Village are not provided in the listings offered by Municode. These local governments should be consulted directly for information related to their regulations.

Martin County

- [Code of Ordinances](#)
 - Chapter 8 [Anchoring and Mooring](#)
 - Article 1. [Regulation of Mooring Fields](#)
 - Article 2. [Anchoring and Mooring Pilot Program](#)
 - Chapter 67 [Environmental Control](#)
 - Article 5. [Loxahatchee River Environmental Control District](#)
 - Article 8. [Vessel Control, Water Safety and Manatee Protection](#)
 - Article 9. [Loxahatchee River Preservation](#)
 - Article 13. [National Pollutant Discharge Elimination System](#)
 - Article 14. [Fertilizer Use](#)
 - Chapter 83 [Fish and Wildlife](#)
 - Article 2. [Fishing](#)
 - Article 4. [Wildlife](#)
 - Chapter 159 [Water and Sewers](#)
 - Article 1. [In General](#)
 - Article 4. [Septage and Residual Disposal](#)
 - Article 7. [Stormwater Management](#)
 - Article 8. [Industrial Pretreatment Program](#)
- [Comprehensive Plan](#)
 - Chapter 4 [Future Land Use Element](#)
 - Chapter 7 [Recreation Element](#)
 - Chapter 8 [Coastal Management Element](#)
 - Chapter 9 [Conservation and Open Space Element](#)
 - Chapter 10 [Sanitary Sewer Services Element](#)
 - Chapter 13 [Drainage and Natural Groundwater Aquifer Recharge Element](#)

Appendix 3. Regulations

- [Land Development Code](#)
 - Article 4 [Site Development Standards](#)
 - Division 1. [Wetlands and Shoreline Protection](#)
 - Division 2. [Uplands Protection](#)
 - Division 3. [Mangrove Protection](#)
 - Division 4. [Barrier Island and Sea Turtle Protection](#)
 - Division 7. [Wastewater Disposal Systems](#)
 - Division 9. [Stormwater Management and Flood Control](#)

St. Lucie County

- [Code of Ordinances](#)
 - Chapter 1-5 [Boating](#)
 - Article I. [Vessel Control and Water Safety](#)
 - Chapter 1-7.6 [Environmental Protection](#)
 - Article II. [Marine Sanitation](#)
 - Article III. [On-site Sewage Disposal systems on Hutchinson Island](#)
 - Article IV. [Florida Friendly Fertilizer Use](#)
 - Chapter 1-7.7 [National Pollutant Discharge Elimination Systems](#)
 - Article I. [In General](#)
 - Article II. [Construction and Site Erosion and Sediment](#)
 - Article III. [Illicit Stormwater Discharge and Connection](#)
 - Chapter 1-8 [Fish and Game](#)
 - Chapter 1-10 [Health and Sanitation](#)
 - Article II. [Sludge, Septage and Sewage Disposal](#)
 - Article III. [Sewage Disposal Capacity](#)
 - Chapter 1-20.5 [Water and Sewer](#)
 - Article IV. [Uniform Water and Sewer Service Policy](#)
 - Chapter 2-4 [Boats and Waterways](#)
 - Chapter 2-7 [Fish and Game](#)
- [Land Development Regulations](#)
 - Chapter VI [Resource Protection Standards](#)
 - 6.00.00 [Vegetation Protection and Preservation](#)
 - 6.01.00 [Mangrove Protection](#)
 - 6.02.00 [Environmentally Sensitive Lands](#)
 - 6.04.00 [Habitat of Endangered or Threatened Species](#)
 - Chapter VII [Development Design and Improvement Standards](#)
 - 7.07.06 [Stormwater Management Requirements](#)
 - 7.08.00 [Utilities](#)

City of Fort Pierce

Appendix 3. Regulations

- [Code of Ordinances](#)
 - Chapter 17 [Streets and Sidewalks](#)
 - Article VI. [Florida-Friendly Fertilizer Use on Urban Landscapes](#)
 - Chapter 21 [Waterways and Bulkheads](#)
 - Article I. [General](#)
 - Article II. [City Marina](#)
 - Article III. [Boating Safety](#)
 - Article IV. [Bulkheads](#)
 - Article V. [No Wake and Minimum Wake Zones](#)
 - Article VI. [Idle Speed and Slow Speed Zones](#)

City of Port St. Lucie

- [Code of Ordinances](#)
 - Title IV [Property Maintenance](#)
 - Chapter 44 [Florida-Friendly Fertilizer Use](#)
 - Title VI [Public Utilities](#)
 - Chapter 63 [Utility Service Availability and Extension Rules](#)
 - Chapter 64 [The Port St. Lucie Wastewater System User Rules](#)
 - Title XV [Land Usage](#)
 - Chapter 152 [Floodplain Regulations](#)
 - Chapter 157 [Natural Resource Protection](#)
 - Article II. [Wetland Protection](#)
 - Article III. [Wildlife Protection](#)
 - Article IV. [Habitat Protection](#)
 - Article V. [Mangrove Protection](#)
 - Article VII. [Soil Erosion and Sediment Control](#)
 - Article IX. [Shoreline Use](#)
 - Article X. [Marina Siting Criteria](#)
 - Article XI. [Stormwater Management](#)

City of Stuart

- Comprehensive Plan
 - Element I Future Land Use Element
 - Goal Statement A
 - Element IV Infrastructure Element
 - Goal Statement A
 - Element V Conservation Element
 - Goal Statement A
 - Element VI Recreation and Open Space Element
 - Goal Statement A. Recreation
 - Element IX Coastal Element
 - Goal Statement A
- Code of Ordinances
 - Chapter 10 Buildings and Building Regulations
 - Article VII. Marine Construction; Docks, Seawalls and Bulkheads
 - Chapter 20 Environment
 - Article VIII. Fertilizer
 - Chapter 30 Parks and Recreational Areas
 - Chapter 42 Utilities
 - Article I. In General
 - Article III. Stormwater
 - Article IV. Sewers
 - Article V. Industrial User Wastewater Pretreatment
 - Article VI. Wastewater Utility Extension and Connection Policy
 - Article VII. Reclaimed Water
 - Chapter 44 Waterways
 - Article II. Vessels

Town of Jupiter Island

- Code of Ordinances
 - Chapter 7 Marine Activities
 - Chapter 16 Vegetation
 - Article II. Protection of Mangroves
 - Chapter 18 Environment
 - Article II. Fertilizer
 - Appendix A Land Development Regulations
 - Article IV. Supplemental Regulations
 - Division 3. Development Standards
 - Article VII. Construction and Floodplain Management
 - Division 3. Flood Damage Prevention
 - Article XIII. Coastal and Wetlands Management

Town of Sewall's Point

- Code of Ordinances
 - Chapter 22 Environment
 - Article VII. Fertilizer
 - Chapter 52 Stormwater Control Regulations
 - Article II. Purpose and Intent
 - Chapter 58 Floods
 - Article II. Flood Damage Prevention
 - Division 3. Standards for Flood Hazard Reduction
 - Chapter 62 Marine Activities, Facilities and Structures
 - Article II. Activities
 - Division 2. Seaplanes
 - Division 3. Boats and Other Watercraft
 - Article III. Marine Structures
 - Division 2. Docks
 - Subdivision I. In General
 - Subdivision II. Permit
 - Subdivision III. Standards
 - Chapter 70 Habitat Management
 - Article VI. Protection of Shorelines

Appendix 3C. Martin Boating Safety Zone Law

68D-24.143 — Martin County Boating Restricted Areas.

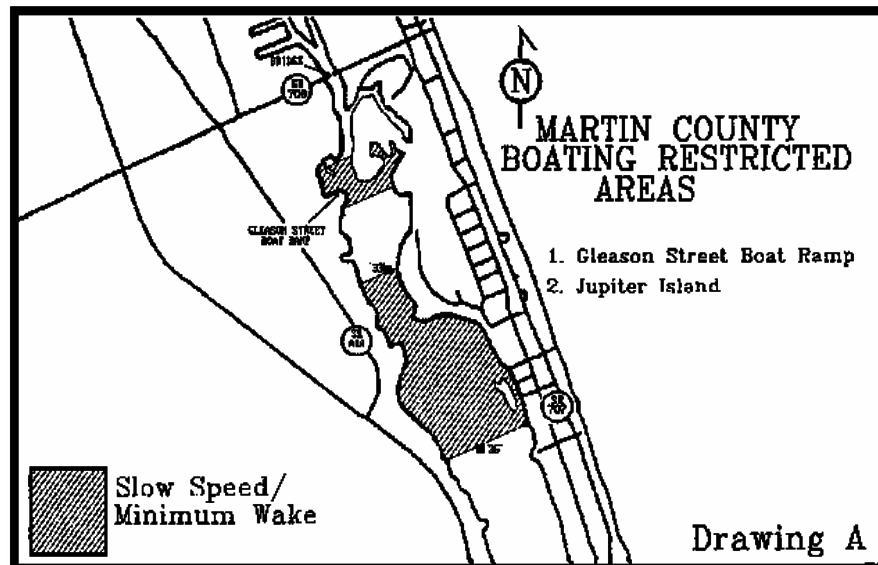
(1) For the purpose of regulating the speed and operation of vessel traffic on and adjacent to the Intracoastal Waterway in Martin County, Florida, the following Boating Restricted Areas are established for vessels 35 feet or more in length:

(a)1. Gleason Street Boat Ramp — A Slow Speed Minimum Wake zone from shoreline to shoreline, in and adjacent to the Intracoastal Waterway, bounded on the north by a line drawn perpendicular to the centerline of the Florida Intracoastal Waterway 600 feet north of the Gleason Street Boat Ramp and on the south by a line drawn perpendicular to the centerline of the Florida Intracoastal Waterway 300 feet south of said boat ramp, as depicted in drawing A. If the Gleason Street Boat Ramp is closed and its use as a transportation facility discontinued, the zone established in this paragraph shall no longer be in force or effect.

2. Jupiter Island — A Slow Speed Minimum Wake zone from shoreline to shoreline, in and adjacent to the Intracoastal Waterway, bounded on the north by a line drawn perpendicular to the centerline of the Florida Intracoastal Waterway 4,350 feet south of the Hobe South (State Road 708) Bridge (at marker number 33) to the centerline of the Florida Intracoastal Waterway 8,295 feet south of said bridge (at marker 35), as depicted in drawing A.

(b) The Town of Jupiter Island is authorized to install and maintain appropriate regulatory markers as directed by the Division of Law Enforcement within such boating restricted area.

(2) The boating restricted areas described in 68D-24.143 are depicted on the following drawing:



Specific Authority 327.04,

327.46 FS. Law

Implemented 327.46 FS.

History — New 2-25-96, Formerly 62N-24.143.

Appendix 3D. Martin County Manatee Protection Zone Law

68C-22.024 — Martin County Zones.

(1) For the purpose of regulating the speed and operation of motorboats year-round, the Martin County zones are established as follows:

(a) SLOW SPEED ZONE —

1. All navigable inland waters within Martin County within 600 feet waterward of the general contour of the shoreline, unless otherwise designated or excepted, inclusive of all associated backwaters, bayous, creeks, and canals (unless specifically excluded or otherwise designated), and excepting marked or maintained navigation channels unless otherwise designated. The following areas are specifically excluded from this designation: the C-23 Canal west of the South Florida Water Management District water control structure "S-48"; the Lake Okeechobee Waterway southwesterly of St. Lucie Locks; the Lake Okeechobee rim canal; and nearshore waters immediately adjacent to the "Jensen Beach Causeway Islands" (under the Jensen Beach Bridge, on the easterly side of the Atlantic Intracoastal Waterway) and immediately adjacent to the "Stuart Causeway Islands" (under the Ocean Boulevard (Stuart Causeway) Bridge, on the easterly side of the Atlantic Intracoastal Waterway) except as provided under (a)(9) hereunder. Waters so regulated within this designation shall include, but not be limited to, the following:

a. That portion of the St. Lucie River within Martin County, westerly to the St. Lucie County/Martin County line (and inclusive of those waters westward in the C-23 Canal to the South Florida Water Management District water control structure "S-48"), southerly (in the South Fork) to the centerline of the Palm City Bridge, and easterly/southeasterly to an east-west line drawn from Hell Gate Point to the eastern shore of the St. Lucie River, excluding that portion of the North Fork of the St. Lucie River known as "Ski Point, " or "Speedy Point, " northwesterly of the Roosevelt/U.S. 1 Bridge (beginning at a line running through day mark "R 2" and the southwesterly extreme of said point, running northerly for a distance of 500 feet following the general contour of the shoreline), and excluding the main marked channel of the St. Lucie River.

b. In the "cross roads" area of the intersection of the St. Lucie River and the Indian River, that portion from an east-west line drawn from Hell Gate Point to the eastern shore of the St. Lucie River, thence:

(I) Southerly, southeasterly, and northerly, following the contour of the shoreline, to a northern boundary represented by an east-west line drawn from daymark "G 235" (lat 27° 10' 38.477" N, long 80° 11' 03.939" W) to the western side of the Indian River, excluding the main marked channel of the St. Lucie River; and

(II) Southerly and easterly, along the western and southern shoreline, to the western boundary of the main marked channel of the Atlantic Intracoastal Waterway, excluding the main marked channel of the St. Lucie River.

c. On the east side of the Indian River, that portion northerly of an east-west line, drawn from day mark "R 230" (lat 27° 11' 53.51" N, long 80° 11' 16.28" W) to the eastern shore of the Indian River, north to the Martin County/St. Lucie County line, excluding that portion of the waterfront area commonly known as "Cat Cove" lying within 600 feet of the shoreline with the southerly limit being 200 feet northeasterly of the Ocean Boulevard (Stuart Causeway) Bridge and the northerly limit being .25 mile northerly of the Ocean Boulevard (Stuart Causeway) Bridge.

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2. All waters of the St. Lucie River/Okeechobee Waterway, outside of the main marked navigation channel, from the centerline of the Palm City Bridge southward to the St. Lucie Locks.

3. All waters lying outside of the marked Atlantic Intracoastal Waterway channel from the St. Lucie Inlet southward to the Martin County/Palm Beach County line, inclusive of those waterbodies commonly known as "Peck Lake, " "Hole in the Wall, " and "The Narrows, " unless otherwise designated or excepted.

4. All waters within that waterbody commonly known as "Manatee Pocket, " inclusive of "Manatee Creek."

5. Those portions of the Atlantic Intracoastal Waterway within its main marked channel, as follows:

a. Between day marks "G 13" (lat 27 ° 08" 30.120" N, long 80 ° 09" 43.590" W) and "R 16" (lat 27 ° 07" 39.560" N, long 80 ° 09" 05.720" W);

b. Between an east-west line drawn perpendicular to the centerline of the Atlantic Intracoastal Waterway 50 feet north of day mark "R 44" (lat 29 ° 00" 26" N, long 80 ° 05" 45" W) and day mark "G 49" (lat 26 ° 59" 16.060" N, long 80 ° 05" 26.820" W); and

c. From day mark "G 21" (lat 27 ° 06" 31" N, long 80 ° 08" 30" W) south to the north end of the fender system of the SR 708 Bridge.

6. All waters of the Loxahatchee River lying outside of the marked navigation channel from the Martin County/Palm Beach County line northward through the boundaries of the Jonathan Dickinson State Park.

7. All waters within Martin County westerly of the marked Atlantic Intracoastal Waterway channel in the Indian River from day mark "G 235" (lat 27 ° 10" 38.477" N, long 80 ° 11" 03.939" W) northward to the Martin County/St. Lucie County line.

8. All waters within Martin County near the "cross roads" area of the intersection of the Indian River and the St. Lucie River lying easterly of the marked Atlantic Intracoastal Waterway channel of the Indian River, with the southerly limit being a line running eastward from day mark "G 235" (lat 27 ° 10" 38.477" N, long 80 ° 11" 03.939" W), the northerly limit being a line running eastward from day mark "R 230" (lat 27 ° 11" 53.510" N, long 80 ° 11" 16.280" W), and the easterly limit being the eastern shoreline of the Indian River. (The actual legal and enforceable boundaries of this zone will be established by markers or buoys, upon marking and posting of the area.)

9. All waters within Martin County within the immediate vicinity of, and within 200 feet of all faces of, all bridges, locks and other water control structures, unless otherwise designated.

10. All waters within the north and south 100 feet of the "oxbow" adjacent to the main section of the old St. Lucie River, South Fork as described in (1)(b)5., hereunder. (The actual legal and enforceable boundaries of this zone will be established by markers or buoys, upon marking and posting of the area.)

(b) MAXIMUM 25 MPH ZONE —

1. All waters within Martin County within the "cross roads" area of the intersection of the Indian River and the St. Lucie River, unless otherwise designated and which are outside of the Slow Speed Zone, with the northerly limit in the Indian River being an east-west line drawn from shore to shore through day mark "G 235" (lat 27 ° 10" 38.477" N, long 80 ° 11" 03.939" W), the southerly limit being day mark "G 1" (lat 27 ° 09" 43.649" N, long 80 ° 10" 39.947" W) at the Great Pocket, the westerly/northwesterly

Appendix 3. Regulations

limit being an east-west line drawn from Hell Gate Point to the eastern shore of the St. Lucie River, and the easterly limit being the waterward extreme of the entrance to the St. Lucie Inlet.

2. All waters within 600 feet of the general contour of the shoreline easterly of the Atlantic Intracoastal Waterway within the "cross roads" area described in (1)(b)1., above, inclusive of private channels and the channel commonly known as "Sailfish Point."

3. All waters within the marked channel of the Atlantic Intracoastal Waterway, unless otherwise designated, from day mark "G 1" (lat 27 ° 09" 43.649" N, long 80 ° 10" 39.947" W) in the Indian River Great Pocket southward to the Martin County/Palm Beach County line.

4. All waters of the St. Lucie/Okeechobee Waterway, within its marked channel in the St. Lucie River, from the centerline of the Palm City Bridge to the St. Lucie Locks.

5. All waters within the "oxbow" section of the old St. Lucie River South Fork outside of the canalized portion of the South Fork, easterly of Midway Island, between day mark "37" (lat 27 ° 08" 57.380" N, long 80 ° 15" 37.730" W) and day mark "39" (lat 27 ° 08" 18.580" N, long 80 ° 15" 44.170" W) and that portion of the old river branching off of the oxbow and to the south of it, in the form of a lake. That portion described in (1)(a)10. above shall be excluded from this designation.

6. All waters within the marked navigation channel of the Loxahatchee River from the Martin County/Palm Beach County line northward through the boundaries of the Jonathan Dickinson State Park.

7. All waters in the Indian River within the marked channel of the Atlantic Intracoastal Waterway from day mark "R 230" (lat 27 ° 11" 53.51" N, long 80 ° 11" 16.28" W) to day mark "G 235" (lat 27 ° 10" 38.477" N, long 80 ° 11" 03.939" W).

(2) That portion of Lake Okeechobee within Martin County is exempt from speed restrictions under the provisions of this rule.

(3) Those waters designated under subparagraphs (1)(a)1.b., (1)(a)3., (1)(a)5., (1)(a)6., (1)(b)1., (1)(b)3., and (1)(b)6., wherein protection zones were previously established and enforced (as adopted March 19, 1979), shall remain unaffected by exemption provisions for the purpose of boat/motor testing as set forth under 68C-22.003(7).

(4) It is provided that any motorboat operator who has reason to believe that a manatee may be present within 200 feet shall operate his or her vessel at no greater than Idle Speed.

(5) For the purpose of exempting qualifying commercial fishermen and professional fishing guides from certain speed zone restrictions, as provided under 68C-22.003(6), F.A.C., the following conditions, and procedures for exemption application, shall apply:

(a) Exemptions shall apply to zones described under paragraphs (1)(a)1., 2., 3., 4., 6., 7., 8., 9., and 10., above, except as conditioned hereunder. From November 15 through March 31, exemptions shall be considered within the zones described under subparagraph (1)(a)3. (within those waters lying outside the marked channel of the Atlantic Intracoastal Waterway) only for the purpose of setting nets.

(b) A recipient of such an exemption must maintain speeds of less than 20 mph at all times within the restricted area, and comply with any and all conditions specified within the notice of exemption, as well as under the provisions of this rule.

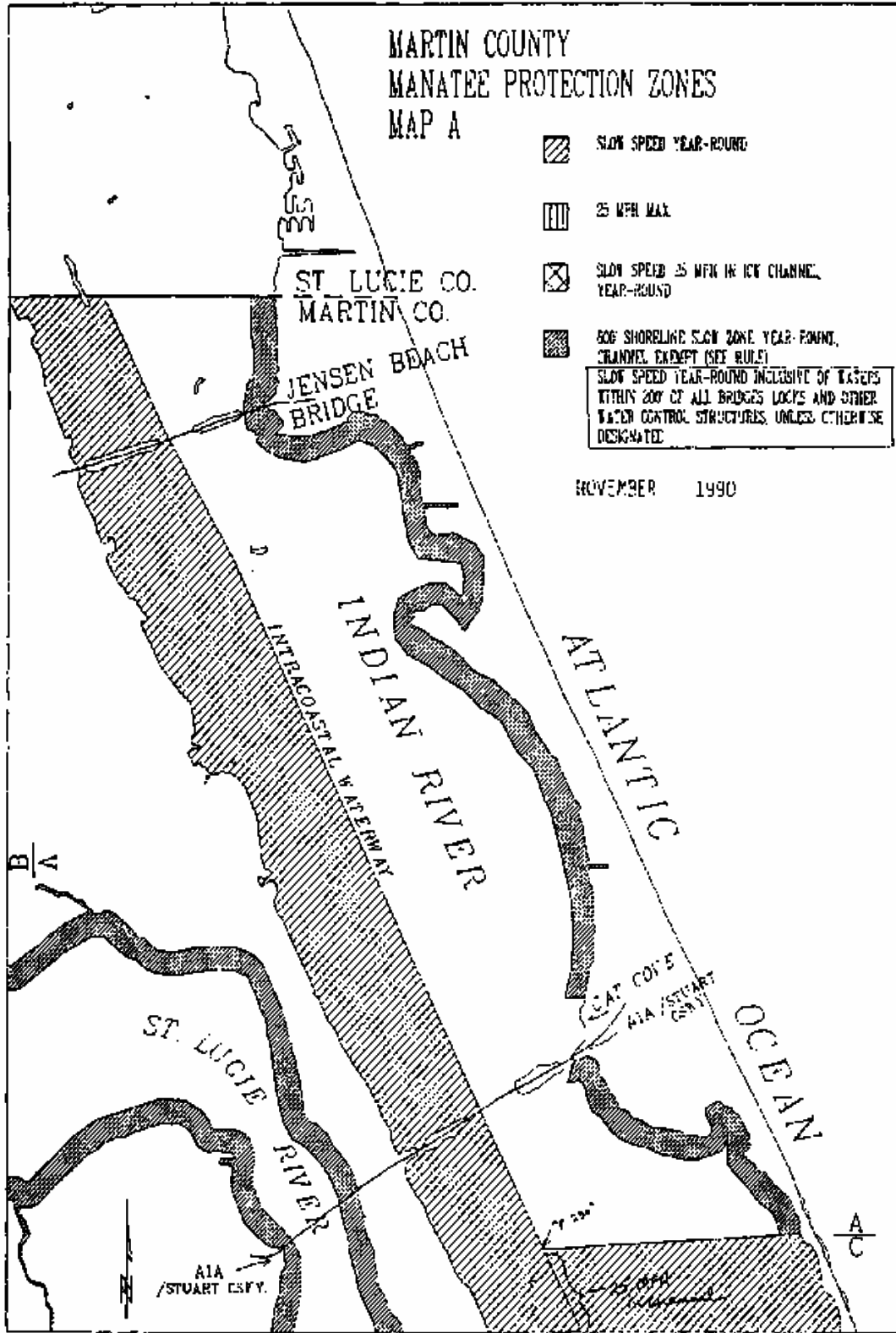
Appendix 3. Regulations

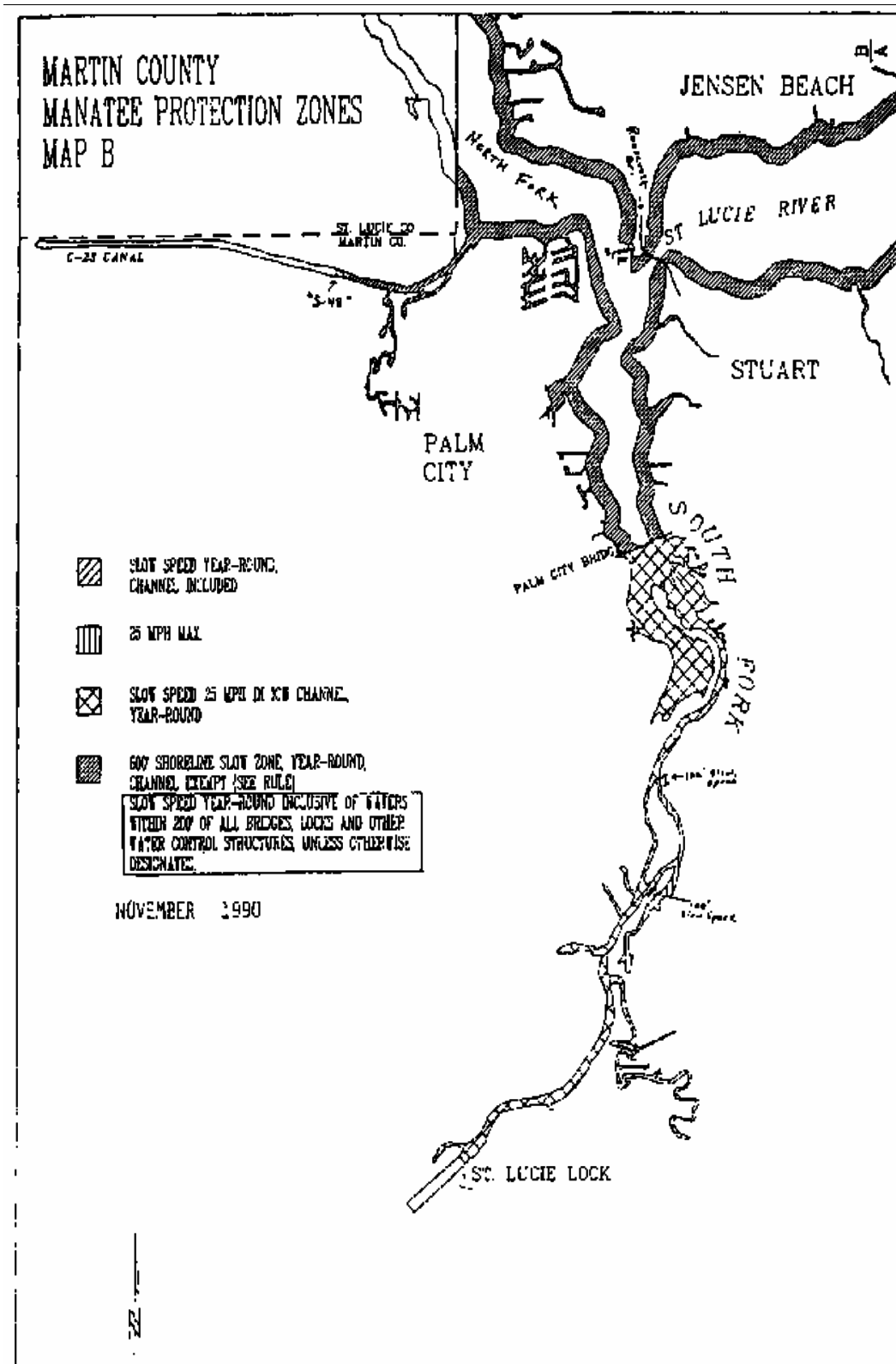
(c) Exemptions granted will not apply on weekends or state-recognized holidays (except during the period from November 15 through March 31, when exemptions may apply on state-recognized holidays).

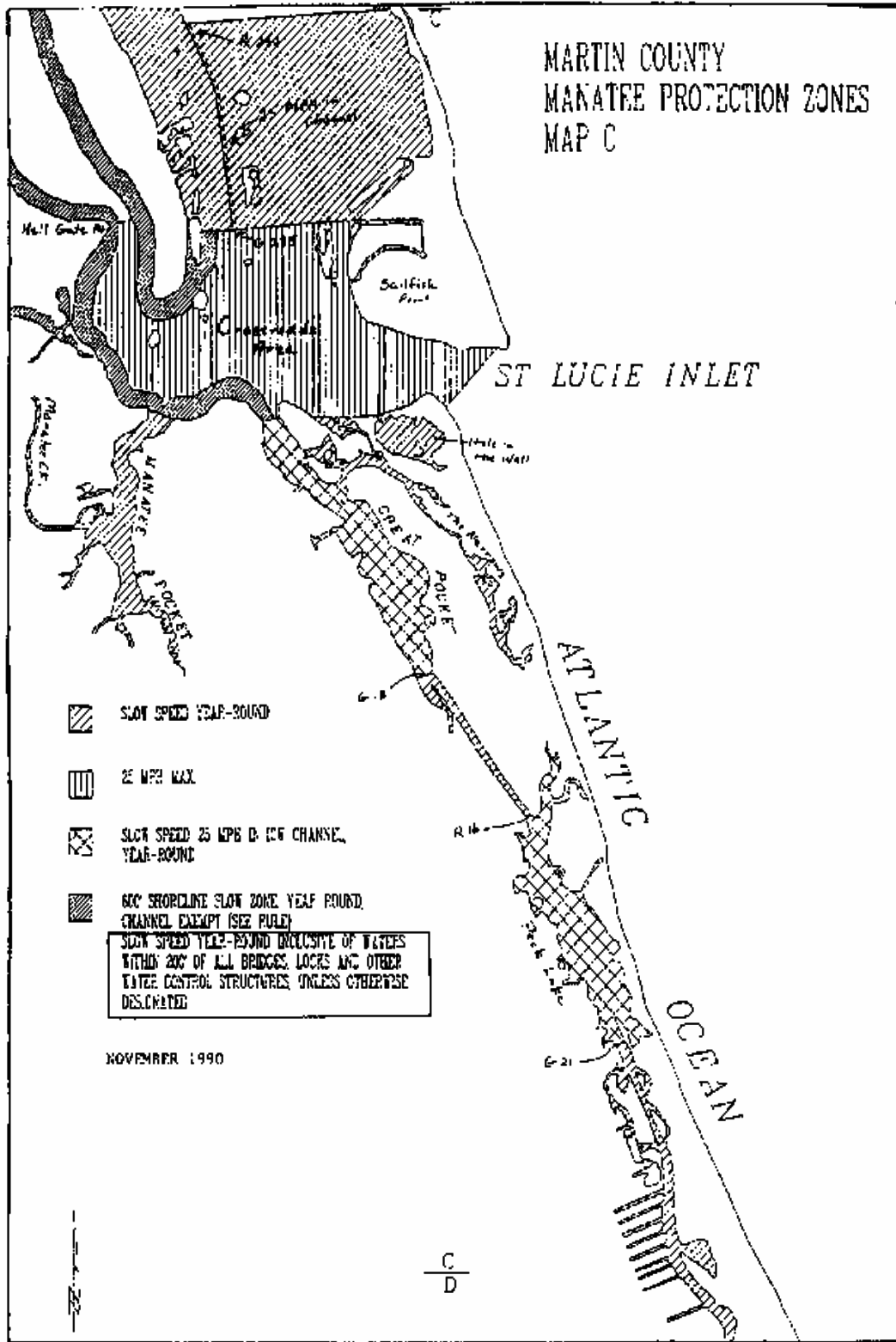
(d) Any commercial fishermen or professional fishing guide fulfilling the requirements set forth under paragraph 68C-22.003(6), F.A.C. may apply for said exemption, one of which shall be required for each vessel so operated, by completing the application form specified. Applications for exemption in accordance with the provisions of this rule may be obtained from the Fish and Wildlife Conservation Commission, Division of Law Enforcement office, 13000 Marcinski Road, Jupiter, FL 33477 (telephone (561)624-6935).

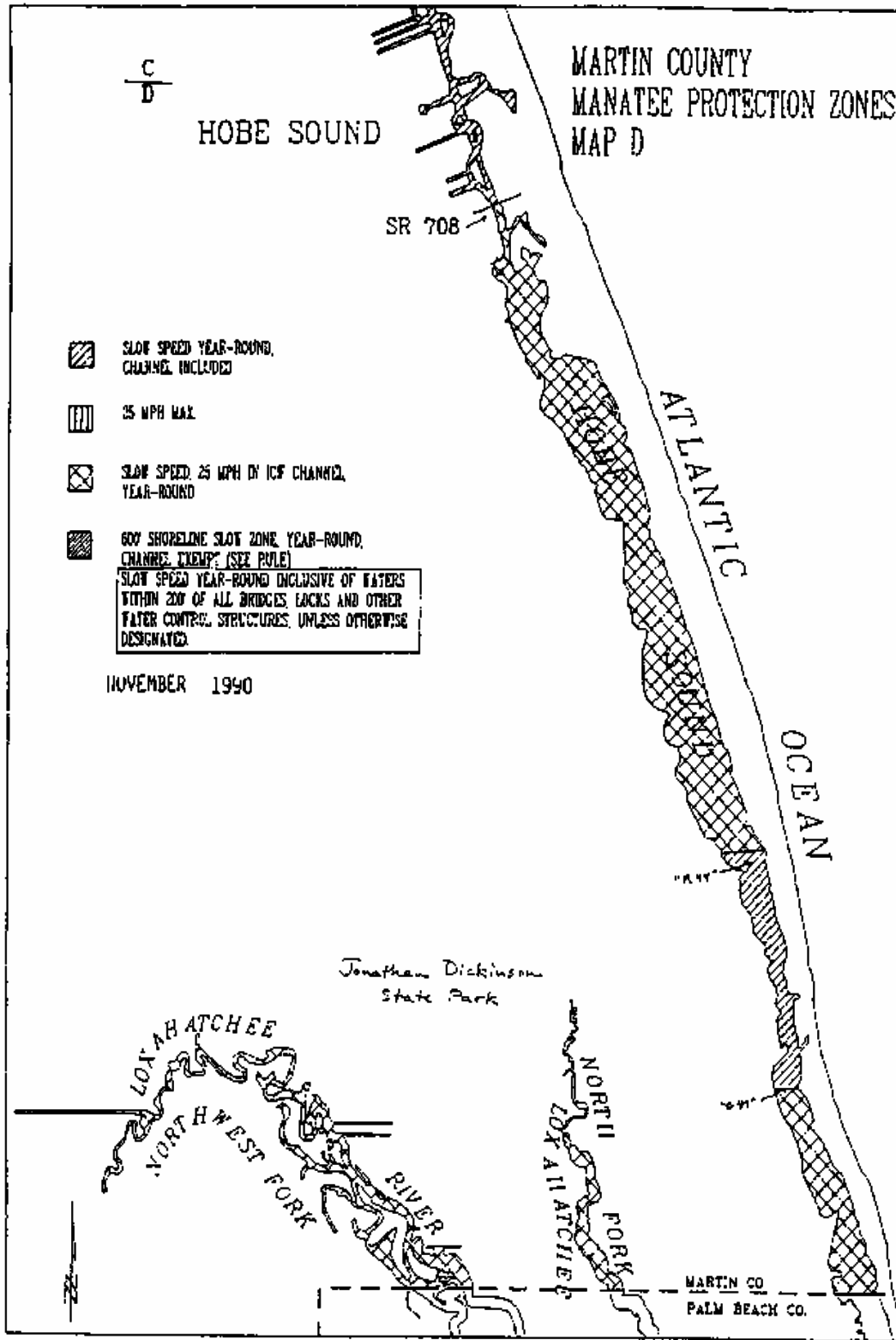
(6) Regulations restricting motorboat speed and operation, as set forth herein, are not intended to supersede any existing regulations duly established by federal, state, or local authority which are more restrictive in nature. Permitted markers as posted are presumptive evidence of zone boundaries, as intended.

(7) The zones described in 68C-22.024(1) herein are depicted on the following maps, labeled "Martin County Manatee Protection Zones, Map A through Map D" and dated November 1990: (Maps provided herewith are intended as depictions of the above described zones. In the event of conflict between the two, the above descriptions shall prevail.)









Specific Authority 370.12(2)(f), (g), (n) FS.
 Law Implemented 370.12(2)(f), (g), (n) FS.
 History — New 12-24-90, Formerly 16N-22.024, 62N-22.024.

Appendix 3E. St. Lucie County Manatee Protection Zone Law

68C-22.008 — St. Lucie County Zones.

(1) The Commission designates those portions of the Indian River and North Fork St. Lucie River, including all associated waters, within St. Lucie County as areas where manatees are frequently sighted. The Commission has further determined that manatees are assumed to inhabit these waters periodically or continuously. This rule is for the purpose of regulating the speed and operation of motorboats in portions of these designated areas in St. Lucie County.

(2) For the purpose of regulating the speed and operation of motorboats within St. Lucie County, the following year-round and seasonal zones are established, which shall include all associated and navigable tributaries, lakes, creeks, coves, bends, backwaters, canals, and boat basins unless otherwise designated or excluded: (Access to the NO ENTRY and MOTORBOATS PROHIBITED zones designated below in paragraphs (2)(a) and (2)(b), respectively, will be provided in accordance with procedures set forth in subsection (4), hereunder, and applicable provisions under section 68C-22.003, Florida Administrative Code.)

(a) NO ENTRY ZONE (Year-round) — Harbor Branch Area: Those waters of the Harbor Branch waterway including all associated canals and boat basins westerly of a due south line from the westernmost point of the rail system associated with the hoist on the northern side and near the western end of said Harbor Branch waterway (approximate latitude 27 ° 32"03" North, approximate longitude 80 ° 21"24" West).

(b) MOTORBOATS PROHIBITED ZONE (November 15 through March 31)/IDLE SPEED ZONE (Remainder of Year) — Moore's Creek Area: Those waters of Moore's Creek lying westerly of the general contour of the westerly shoreline of Indian River, and easterly of the centerline of the Indian River Drive Bridge.

(c) IDLE SPEED ZONE (Year-round) —

1. Harbor Branch Area: Those waters of the Harbor Branch waterway including all associated canals and boat basins, westerly of a line drawn across the eastern extremities of the north and south jetties at the entrance of said waterway and easterly of a due south line from the westernmost point of the rail system associated with the hoist on the northern side and near the western end of said Harbor Branch waterway (approximate latitude 27 ° 32"03" North, approximate longitude 80 ° 21"24" West);

2. Garfield Cut Area: Those waters of Garfield Cut, including the canal system of the Queens Cove residential development and all other associated waters easterly and northeasterly of a line which bears North 11 ° 00"00" West from a point on the westerly side of Garfield Point (approximate latitude 27 ° 30"54" North, approximate longitude 80 ° 19"38" West), with said line running approximately through privately maintained channel marker "8";

3. Jack Island Area: Those waters lying easterly and northeasterly of Jack Island, northerly of lines which bear North 65 ° 00"00" West and North 65 ° 00"00" East from the northeasternmost tip of an unnamed mangrove island lying on the south side of Snapper Cut (approximate latitude 27 ° 29"17" North, approximate longitude 80 ° 18"49" West), and southerly of a line which bears East from the southernmost tip of a peninsula near the north end of the easterly side of Jack Island (approximate latitude 27 ° 30"13" North, approximate longitude 80 ° 18"33" West), including the waters of the bay immediately west of said peninsula and the canals of Coastal Coves residential area;

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4. Ft. Pierce Cut, Wildcat Cove Area: Those waters of Ft. Pierce Cut and Wildcat Cove, including the canal system of the Coral Cove development, northeasterly of a line which bears North 60 ° 00"00" West from a point approximately 2640 feet northeasterly of Cook Point on the southeasterly side of the Ft. Pierce Cut (approximate latitude 27 ° 29"08" North, approximate longitude 80 ° 18"28" West);

5. North Beach Causeway to Delaware Avenue Area: Those waters of Indian River, westerly of a line 100 feet westerly of and parallel with the westerly boundary of the Atlantic Intercoastal Waterway, southerly of the centerline of the North Beach Causeway Bridge, and northerly of a line which bears South 69 ° 00"00" West running through Green Atlantic Intracoastal Waterway Channel Marker "189" (latitude 27 ° 26"39" North, longitude 80 ° 18"44" West), including those waters of Taylor Creek easterly of the centerline of the North 25th Street Bridge and those waters of Belcher Canal easterly of the salinity control structure located near the North 14th Street Bridge, except as designated for alternative regulation under paragraph (2)(b);

6. Little Mud Creek Area: Those waters of Little Mud Creek, easterly of a line which bears approximately South 27 ° 00"00" East from the tip of a peninsula on the northerly shoreline of Little Mud Creek (approximate latitude 27 ° 22"38" North, approximate longitude 80 ° 15"36" West) to the westernmost tip of a peninsula on the southerly shoreline of Little Mud Creek (approximate latitude 27 ° 22"30" North, approximate longitude 80 ° 15"33" West), and westerly of the centerline of the U.S. Highway A-1-A Bridge;

7. Big Mud Creek Area: Those waters of Big Mud Creek, easterly of a line which bears North 25 ° 00"00" East from the northernmost tip of Herman Bay Point (approximate latitude 27 ° 20"58" North, approximate longitude 80 ° 15"32" West), and westerly of the centerline of the U.S. Highway A-1-A Bridge.

(d) SLOW SPEED ZONE (Year-round) —

1. Blue Hole Point Area: Those waters of Indian River, channel included, southerly of the Indian River County/St. Lucie County line, and northerly of an East-West line running through Green Atlantic Intracoastal Waterway Channel Marker "173" (latitude 27 ° 31"14" North, longitude 80 ° 20"18" West), including the waters of Big Starvation Cove, the unnamed backwater northeasterly of Big Starvation Cove in the Northwest 1/4 of Section 3, Township 34 South, Range 40 East, and all the waters of Blue Hole Creek, except as otherwise designated for alternative regulation under subparagraphs (2)(c)1. and (2)(h)1.;

2. Indrio to North Beach Causeway Area: Those waters within 600 feet of the general contour of the westerly shoreline of Indian River, southerly of an East-West line running through Green Atlantic Intracoastal Waterway Channel Marker "173" (latitude 27 ° 31"14" North, longitude 80 ° 20"18" West), and northerly of the centerline of the North Beach Causeway Bridge;

3. Snapper Cut, Southern Jack Island Area: Those waters of the Indian River within 300 feet of the general contour of the westerly and southwesterly shoreline of Jack Island, southerly and southeasterly of a line which bears West from a point on the westerly shoreline of Jack Island (approximate latitude 27 ° 29"38" North, approximate longitude 80 ° 19"19" West) and northerly and northwesterly of a line which bears North 41 ° 00"00" East from the northwesterly tip (approximate latitude 27 ° 29"12" North, approximate longitude 80 ° 19"02" West) of the unnamed mangrove island that forms the

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southern boundary of Snapper Cut; and all waters of Snapper Cut and the Indian River easterly and southeasterly of a line which bears North 41 ° 00"00" East from said northwesterly tip of the unnamed mangrove island southerly of Jack Island, southwesterly of a line which bears North 65 ° 00"00" West from the northeasternmost tip of said unnamed mangrove island (approximate latitude 27 ° 29"17" North, approximate longitude 80 ° 18"49" West), and northerly of the northern shoreline of said unnamed mangrove island that forms the southern boundary of Snapper Cut;

4. Ft. Pierce Inlet Area: Those waters of Indian River and the Ft. Pierce Inlet, northeasterly of a line 100 feet northeasterly of and parallel with the northeasterly boundary of the main marked channel of the Atlantic Intracoastal Waterway, westerly and northwesterly of a line which bears South from a point on the northerly shoreline of Ft. Pierce Inlet approximately 800 feet southwesterly of the southerly end of Beach Boulevard (approximate latitude 27 ° 28"20" North, approximate longitude 80 ° 17"45" West), southerly of the centerlines of the North Beach Causeway bridges, and northerly of the general contour of the northerly shoreline of Causeway Island and the centerline of the South Beach Causeway Bridge, except as designated for alternative regulation under subparagraphs (2)(e)2. and (2)(g)1. and excepting the following described waters: Those waters of Indian River southeasterly of the general contour of the southerly shoreline of the North Beach Causeway, northeasterly of a line which bears South 30 ° 00"00" East from the southernmost tip of a peninsula near the southwest end of said causeway (approximate latitude 27 ° 28"20" North, approximate longitude 80 ° 19"14" West), northeasterly of a line which bears North 65 ° 00"00" West from a Red Isophase 6 Second Range Light (latitude 27 ° 28"02" North, longitude 80 ° 18"56" West), northwesterly of a line which bears approximately North 80 ° 00"00" East from said Red Isophase 6 Second Range Light, westerly of the general contour of the westerly shoreline of the unnamed mangrove island westerly of the privately maintained channel leading to Jim Island, and southwesterly of a line which bears North 30 ° 00"00" West from the northernmost tip of said unnamed mangrove island (approximate latitude 27 ° 28"22" North, approximate longitude 80 ° 18"40" West); also excepting those waters of Tucker Cove, northwesterly of a line which bears North 30 ° 00"00" East from the easternmost tip of Coon Island (approximate latitude 27 ° 28"25" North, approximate longitude 80 ° 17"55" West), northeasterly of a line which bears approximately North 50 ° 00"00" West from said easternmost tip of Coon Island to the easternmost tip of the small unnamed island immediately north of the eastern end of Coon Island, northeasterly of the general contour of the northeasterly shoreline of said unnamed island, and northeasterly of a line which bears approximately North 35 ° 00"00" West from the northernmost tip of said unnamed island to the easternmost tip of a peninsula on the westerly shore of Tucker Cove (approximate latitude 27 ° 28"34" North, approximate longitude 80 ° 18"13" West);

5. Causeway Island Area: Those waters of Indian River northeasterly of a line 100 feet northeasterly of and parallel with the northeasterly boundary line of the main marked channel of the Atlantic Intracoastal Waterway, southerly of the centerline of the South Beach Causeway Bridge and the general contour of the southerly shoreline of Causeway Island, southwesterly of a line 2500 feet northeasterly of and parallel with said northeasterly boundary line, and northerly of a line which bears North 69 ° 00"00" East running through Green Atlantic Intracoastal Waterway Channel Marker "189" (latitude 27 ° 26"39" North, longitude 80 ° 18"44" West); those waters of Indian River and Faber

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Cove lying northerly and northeasterly of an East-West line which runs through private red channel marker "12A" (approximate latitude 27 ° 27"41" North, approximate longitude 80 ° 18"04" West); and those waters of Indian River lying northerly of the northern boundary of the privately maintained channel on the south side of Causeway Island, northeasterly of a line 2500 feet northeasterly of and parallel with the northeasterly boundary of the main marked channel of said Intracoastal Waterway, southerly and southwesterly of said East-West line which runs through private red channel marker "12A, " and southerly of the general contour of the southerly shoreline of Causeway Island;

6. Delaware Avenue to St. Lucie County/Martin County Line Area: Those waters of Indian River westerly of a line 200 feet southwesterly of and parallel with the southwesterly boundary line of the main marked channel of the Atlantic Intracoastal Waterway, southeasterly of a line which bears South 69 ° 00"00" West running through Green Atlantic Intracoastal Waterway Channel Marker "189" (latitude 27 ° 26"39" North, longitude 80 ° 18"44" West), and northerly of the St. Lucie County/Martin County line;

7. Hook Point to Bear Point Cove Area: Those waters of the Indian River within 1000 feet of the general contour of the easterly shoreline of said Indian River, southerly of a due West line from a point on said easterly shoreline (approximate latitude 27 ° 26"03" North, approximate longitude 80 ° 17"51" West), said point lying approximately 5800 feet southerly of Hook Point, and northerly and westerly of a line which bears South from the southern tip of Bear Point (approximate latitude 27 ° 25"41" North, approximate longitude 80 ° 17"18" West); and those waters of Bear Point Cove northerly of a line which bears West from a point located on the easterly shoreline of Indian River (approximate latitude 27 ° 25"30" North, approximate longitude 80 ° 16"56" West), easterly of a line that bears South from the southern tip of Bear Point (approximate latitude 27 ° 25"41" North, approximate longitude 80 ° 17"18" West), and northeasterly of a line that bears South 85 ° 00"00" East from a point on the aforementioned line bearing South located 1000 feet southerly of the southerly shoreline of Bear Point to a point on aforementioned line bearing West located 1000 feet westerly of the easterly shoreline of Indian River;

8. Bear Point Cove to Herman Bay Area: Those waters of the Indian River within 1000 feet of the general contour of the easterly shoreline of the Indian River, southerly of a line which bears West from a point on the easterly shoreline of the Indian River (approximate latitude 27 ° 25"30" North, approximate longitude 80 ° 16"56" West), and northerly of a line which bears West from the southernmost tip of a peninsula on the northwesterly shoreline of Herman Bay (approximate latitude 27 ° 20"18" North, approximate longitude 80 ° 14"55" West); and those waters easterly of a line that bears North 04 ° 00"00" East from a point 1000 feet West of the westernmost tip of Herman Bay Point (approximate latitude 27 ° 20"55" North, approximate longitude 80 ° 15"36" West) and those waters of Pete Stones Creek and Middle Cove lying southwesterly of the centerlines of the U.S. Highway A-1-A bridges, excepting the waters of Blind Creek and those waters designated for alternative regulation under subparagraphs (2)(c)6. and (2)(c)7.;

9. Nettles Island Area: Those waters of the Indian River, including associated canals and boat basins lying southeasterly of a line which bears South 35 ° 00"00" West from the southernmost tip of a mangrove peninsula (approximate latitude 27 ° 17"30"

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North, approximate longitude 80 ° 13"40" West) to a point 600 feet northwesterly of the northwest tip of Nettles Island, northeasterly of a line 600 feet southwesterly of and parallel with the general contour of the southwesterly shoreline of Nettles Island, and northerly and northeasterly of a line which bears North 85 ° 00"00" West from a point on the easterly shoreline of the Indian River (approximate latitude 27 ° 16"03" North, approximate longitude 80 ° 12"52" West) to a point 600 feet southwesterly of the southwest tip of Nettles Island; and those waters (including all associated canals and boat basins) lying within 600 feet of the general contour of the easterly shoreline of the Indian River southerly of a line which bears North 85 ° 00"00" West from a point on the easterly shoreline of the Indian River (approximate latitude 27 ° 16"03" North, approximate longitude 80 ° 12"52" West) and northerly of the St. Lucie County/Martin County line;

10. North Fork St. Lucie River Area: Those portions of North Fork St. Lucie River described as follows:

a. Those waters within 600 feet of the general contour of the southwesterly shoreline of said river, northwesterly of the St. Lucie County/Martin County line, and westerly and southerly of a line which bears South from the easternmost tip of the peninsula between North Fork St. Lucie River and Blakeslee Creek (approximate latitude 27 ° 14"32" North, approximate longitude 80 ° 19"16" West), including all navigable waters of Blakeslee Creek, but excluding the waters of Brill and Winters creeks;

b. Those waters within 600 feet of the general contour of the northeasterly shoreline of said river, northwesterly of the St. Lucie County/Martin County line, and northerly and easterly of a line which bears East 600 feet from the southernmost tip of Greenridge Point (approximate latitude 27 ° 14"28" North, approximate longitude 80 ° 18"42" West), including all navigable waters of Howard Creek;

c. Those waters of Kitching Cove northwesterly of a line which bears North 60 ° 00"00" East from the easternmost tip of a peninsula on the westerly shore of Kitching Cove (approximate latitude 27 ° 14"44" North, approximate longitude 80 ° 19"17" West);

d. Those waters of C-24 Diversion Canal westerly of the centerline of the Florida Turnpike (Sunshine State Parkway) and easterly of the canal control structure located approximately 2100 feet westerly of said centerline;

e. Those waters within 1300 feet downstream and 1800 feet upstream of said river's confluence with C-24 Diversion Canal; those waters of the C-24 Diversion Canal easterly of the centerline of the Southbend Boulevard Bridge; and all waters of Mud Cove and Long Creek, including the canal north of Port St. Lucie Boulevard that connects Long Creek to said river;

f. Those waters westerly of approximate longitude 80 ° 19"05" West, northerly of approximate latitude 27 ° 18"07" North, southerly of approximate latitude 27 ° 18"15" North, and easterly of Coral Reef Street, including the waters of the creek and canal easterly of Coral Reef Street;

g. Those waters within 1000 feet upstream and 2300 feet downstream of said river's confluence with the waterway lying south of Calmosa Drive, including said waterway and the waterway lying west of Degan Drive;

h. Those waters northeasterly of the south end of the cut through located approximately 1000 feet northwesterly of the centerline of the Prima Vista Boulevard Bridge and those waters easterly and northeasterly of the north end of said cut through located approximately 2300 feet northwesterly of said centerline;

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i. All other navigable side creeks and canals not described above or otherwise designated (as depicted on Maps 5-8).

(e) SLOW SPEED ZONE (November 15 through April 30)/MAXIMUM 30 MPH SPEED ZONE (Remainder of Year) —

1. Intracoastal Waterway, Ft. Pierce Inlet Area: That portion of the main marked channel of the Atlantic Intracoastal Waterway, and those waters within 100 feet of the eastern and western boundaries of said channel, southeasterly of the centerline of the North Beach Causeway Bridge, and northerly of a line which bears North 69 ° 00"00" East running through Green Atlantic Intracoastal Waterway Channel Marker "189" (latitude 27 ° 26"39" North, longitude 80 ° 18"44" West); and

2. Shark Cut, Ft. Pierce Inlet Area: That portion of Shark Cut (Swash Channel) within the channel to be marked by local government (said marked channel to generally follow the contours of the natural channel and not to exceed 250 feet in width), northwesterly of the northern boundary line of the main marked east-west channel leading out of Ft. Pierce Inlet and southeasterly of the northeastern boundary of the main marked channel of the Atlantic Intracoastal Waterway.

(f) SLOW SPEED ZONE (November 15 through April 15) — Fish House Cove Area: Those waters of Indian River and Fish House Cove easterly and northeasterly of a line 100 feet easterly of and parallel with the northeasterly boundary of the main marked channel of the Atlantic Intracoastal Waterway, southerly of an East-West line running through Green Atlantic Intracoastal Waterway Channel Marker "173" (latitude 27 ° 31"14" North, longitude 80 ° 20"18" West), westerly of the general contour of the easterly shoreline of the Indian River and Fish House Cove and a line which bears North 11 ° 00"00" West from a point on the westerly side of Garfield Point (approximate latitude 27 ° 30"54" North, approximate longitude 80 ° 19"38" West), northerly of the general contour of the southerly shoreline of Fish House Cove and the northwesterly shoreline of an unnamed island on the north side of Old Inlet and a line which bears North 45 ° 00"00" East from the northernmost tip of said unnamed island (approximate latitude 27 ° 30"22" North, approximate longitude 80 ° 19"39" West), and northerly and northwesterly of a line which bears South 71 ° 00"00" West from a point on the southwestern shoreline of last said unnamed island (approximate latitude 27 ° 30"10" North, approximate longitude 80 ° 19"43" West), including the waters of the privately maintained channel leading into Garfield Cut from a line 100 feet northeasterly of and parallel with the northeasterly boundary of the main marked channel of the Atlantic Intracoastal Waterway, except as designated for alternative regulation under subparagraph (2)(c)2.

(g) MAXIMUM 25 MPH SPEED ZONE (Year-round) —

1. Coon Island, Jim Island Area: That portion of the privately maintained channel westerly of Coon Island and southerly and easterly of Jim Island, northerly and northwesterly of a line bearing North 67 ° 00"00" East from Green Beacon "5" (approximate latitude 27 ° 28"08" North, approximate longitude 80 ° 18"28" West) and southerly and southeasterly of a line bearing East from Green Beacon "11" (approximate latitude 27 ° 28"41" North, approximate longitude 80 ° 18"38" West), and;

2. North Fork St. Lucie River, North of Port St. Lucie Boulevard Area: Those waters of North Fork St. Lucie River, Five Mile Creek and Ten Mile Creek lying between the general contour of the shorelines (excepting associated and navigable tributaries,

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oxbows, lakes, creeks, coves, backwaters, canals and boat basins, and those waters designated for alternative regulation under subparagraph (2)(d)10.), northerly of approximate latitude 27 ° 18"15" North, including those waters of the cut-through beginning at a point located approximately 1000 feet northeasterly of the centerline of Prima Vista Boulevard and terminating at a point approximately 2300 feet northwesterly of said centerline (as depicted on Maps 6 — 8).

(h) MAXIMUM 30 MPH SPEED ZONE (Year-round) —

1. Blue Hole Point Area: That portion of the main marked channel of the Atlantic Intracoastal Waterway and those waters within 100 feet of the eastern and western boundaries of said channel, southerly of the Indian River County/St. Lucie County line, and northerly of a line which bears North 77 ° 00"00" East running through Green Atlantic Intracoastal Waterway Channel Marker "171" (latitude 27 ° 32"10" North, longitude 80 ° 20"33" West), and;

2. North Fork St. Lucie River, Greenridge Point to Port St. Lucie Boulevard Area: Those waters of the North Fork St. Lucie River lying between the general contour of the shorelines of the river (excepting associated and navigable tributaries, oxbows, lakes, creeks, coves, backwaters, canals and boat basins, and those waters designated for alternative regulation under subparagraph (2)(d)10.), northerly of a line which bears East from the easternmost tip of the peninsula between North Fork St. Lucie River and Blakeslee Creek (approximate latitude 27 ° 14"32" North, approximate longitude 80 ° 19"16" West), and southerly of approximate latitude 27 ° 18"07" North (as depicted on Maps 5 — 6);

(3) For the purpose of exempting qualifying commercial fishermen and professional fishing guides from certain speed zone restrictions, as provided under Rule 68C-22.003(6), Florida Administrative Code, the following limitations and procedures for exemption application shall apply:

(a) Exemptions shall be considered seasonally or year-round in zones, or portions of zones, described under subparagraphs (2)(d)1. through (2)(d)9. and under paragraph (2)(f).

(b) A recipient of an exemption must maintain speeds of 20 MPH or less at all times within the restricted area and comply with all conditions specified within the notice of exemption, under the provisions of this rule or Rule 68C-22.003(6), Florida Administrative Code.

(c) Exemptions granted will not apply on weekends and state-recognized holidays.

(d) Any commercial fisherman or professional fishing guide fulfilling the requirements set forth under Rule 68C-22.003(6), Florida Administrative Code shall be considered for an exemption, one of which shall be required for each vessel so operated, by completing the application form specified. Applications for exemption in accordance with the provisions of this rule may be obtained from the Fish and Wildlife Conservation Commission, Division of Law Enforcement Office, 1300 Marcinski Road, Jupiter, FL, 33477 (telephone 407/624-6935).

(4) Access to the NO ENTRY and MOTORBOATS PROHIBITED zones designated in paragraphs (2)(a) and (2)(b), above, will be allowed as follows:

(a) Research vessels affiliated with the Harbor Branch Oceanographic Institute will be authorized access to the NO ENTRY zone designated in paragraph (2)(a) for

Appendix 3. Regulations

ingress and egress purposes only, in accordance with applicable provisions of section 68C-22.003, Florida Administrative Code.

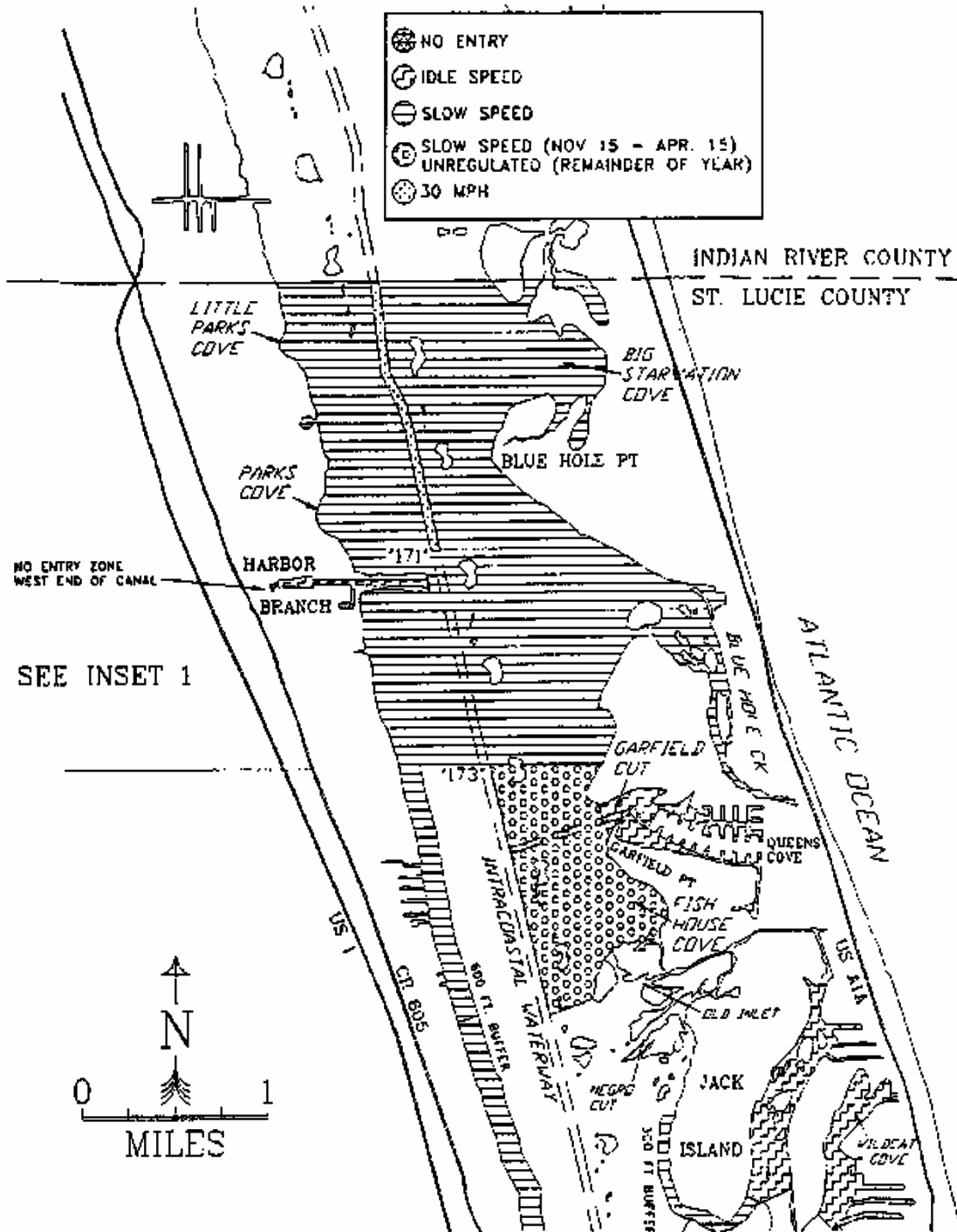
(b) Operators of sailboats who are leasing dock space from the public marina within the seasonal MOTORBOATS PROHIBITED zone designated in paragraph (2)(b) will be authorized access to said dock space for ingress and egress purposes only, in accordance with paragraph 68C-22.003(5), Florida Administrative Code.

(c) Exemptions for access to the zones designated in paragraphs (2)(a) and (2)(b), if applied for and granted, will be issued to the owners of the respective upland facilities, with guest passes being issued for individual vessels. The owner/operator of the upland facility shall be responsible for issuing guest passes to operators of vessels prior to said vessels entering the respective zones and shall be responsible for informing recipients of guest passes of all applicable restrictions and requirements. For identification purposes, guest passes must be prominently displayed on the vessel while the vessel is within the subject restricted area.

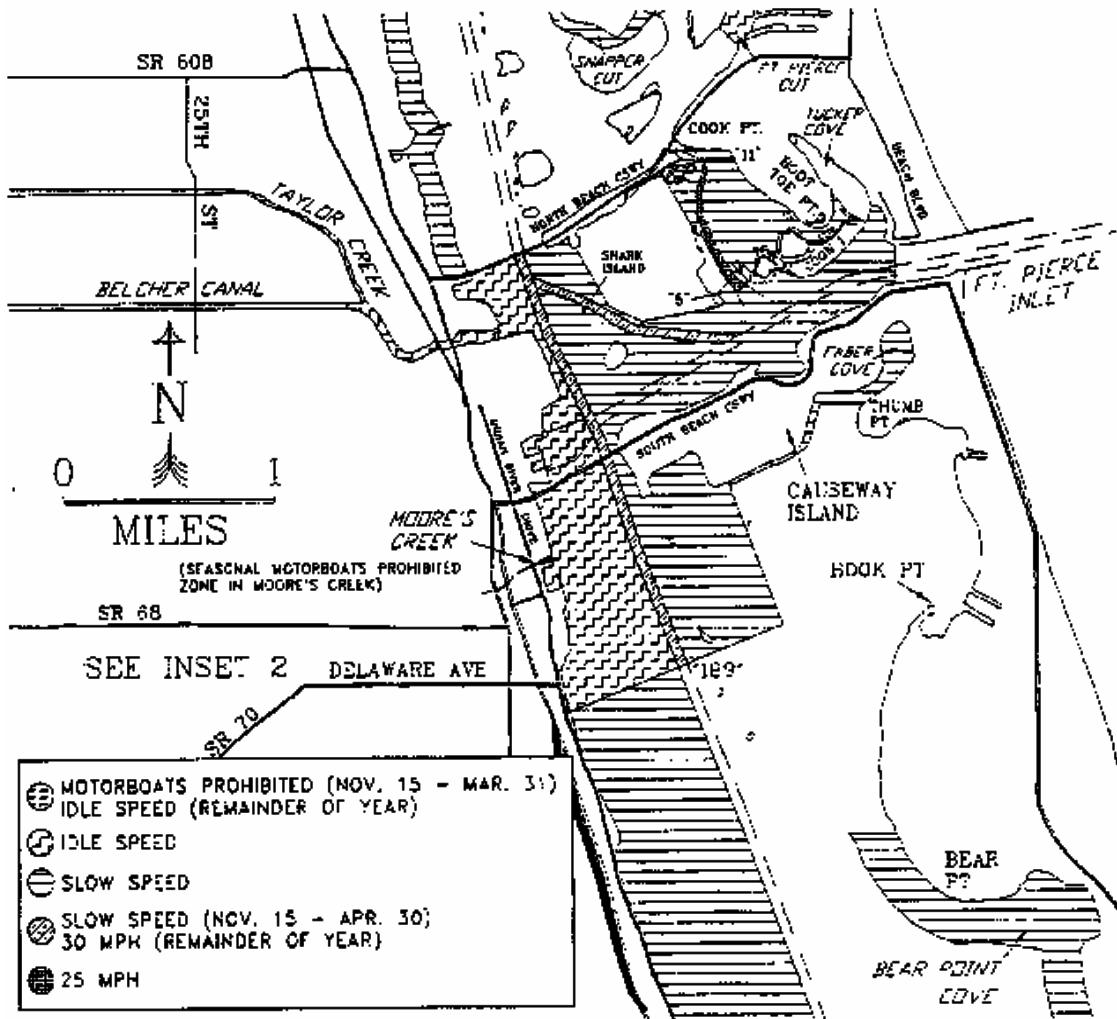
(d) Operators of vessels within the zones designated in paragraphs (2)(a) or (2)(b) are to take extreme care while operating within the zones so as not to, either intentionally or negligently, molest, harass, injure, or otherwise harm manatees. Operators will not be held harmless from any actions on their part that result in the harassment, injury or death of a manatee while operating their vessels within these zones.

(5) The zones described in 68C-22.008(2) are depicted on the following maps, labelled "St. Lucie County Manatee Protection Zones" and dated July 1994, which shall replace all previously published maps. Maps provided are intended as depictions of the above-described zones. In the event of conflict between the two, the above descriptions shall prevail.

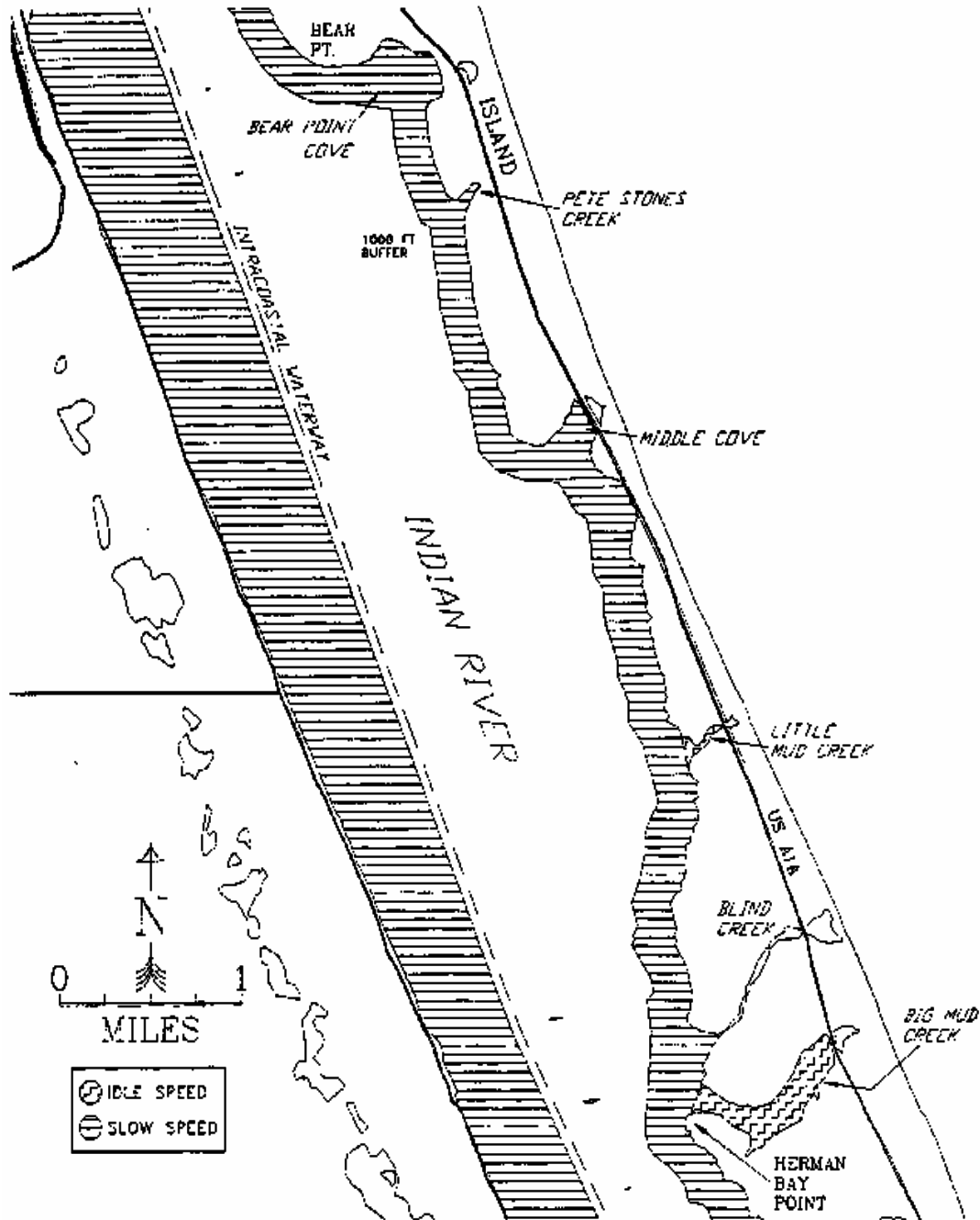
MAP 1 ST. LUCIE COUNTY MANATEE PROTECTION ZONES JULY 1994



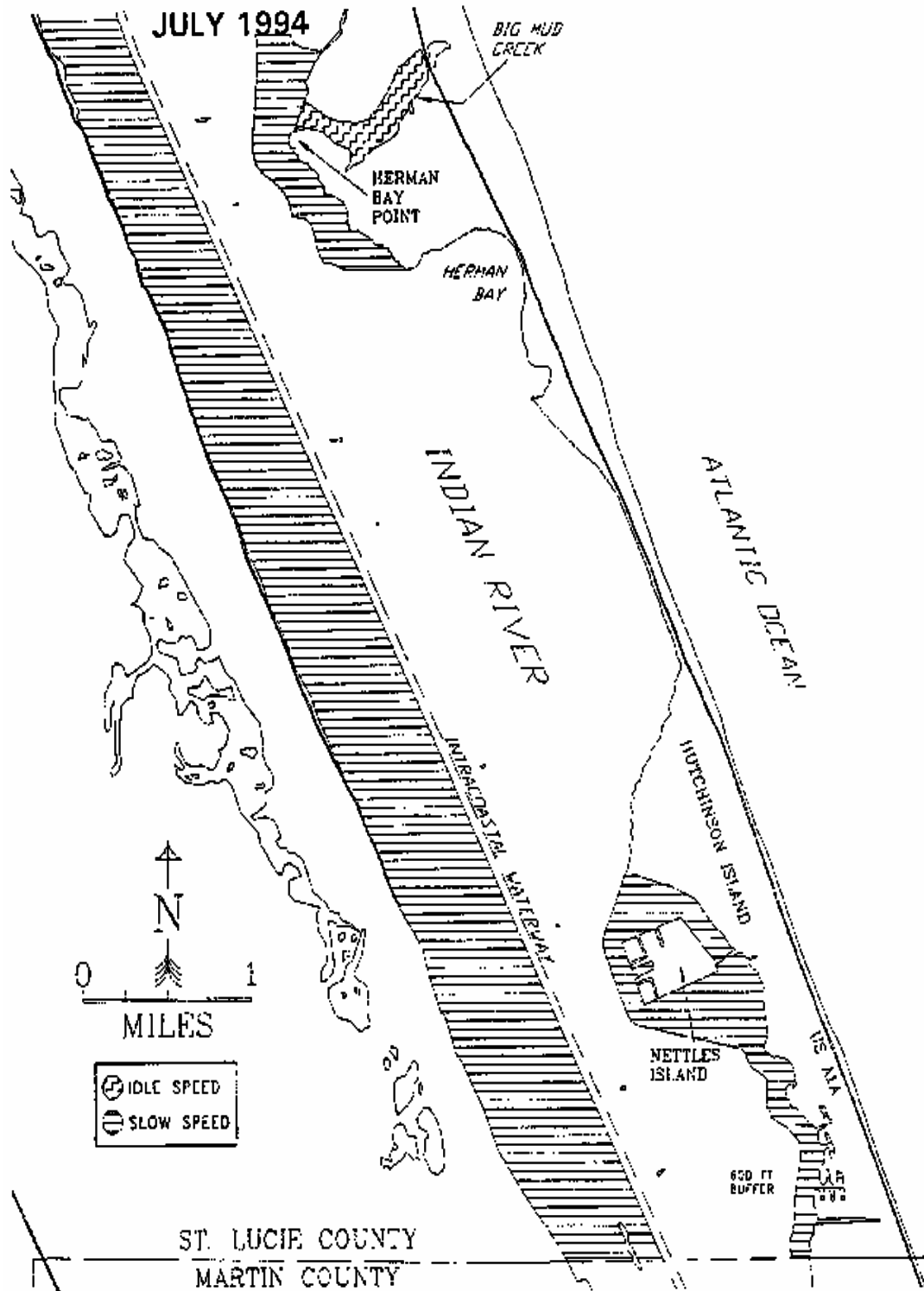
MAP 2 ST. LUCIE COUNTY MANATEE PROTECTION ZONES JULY 1994



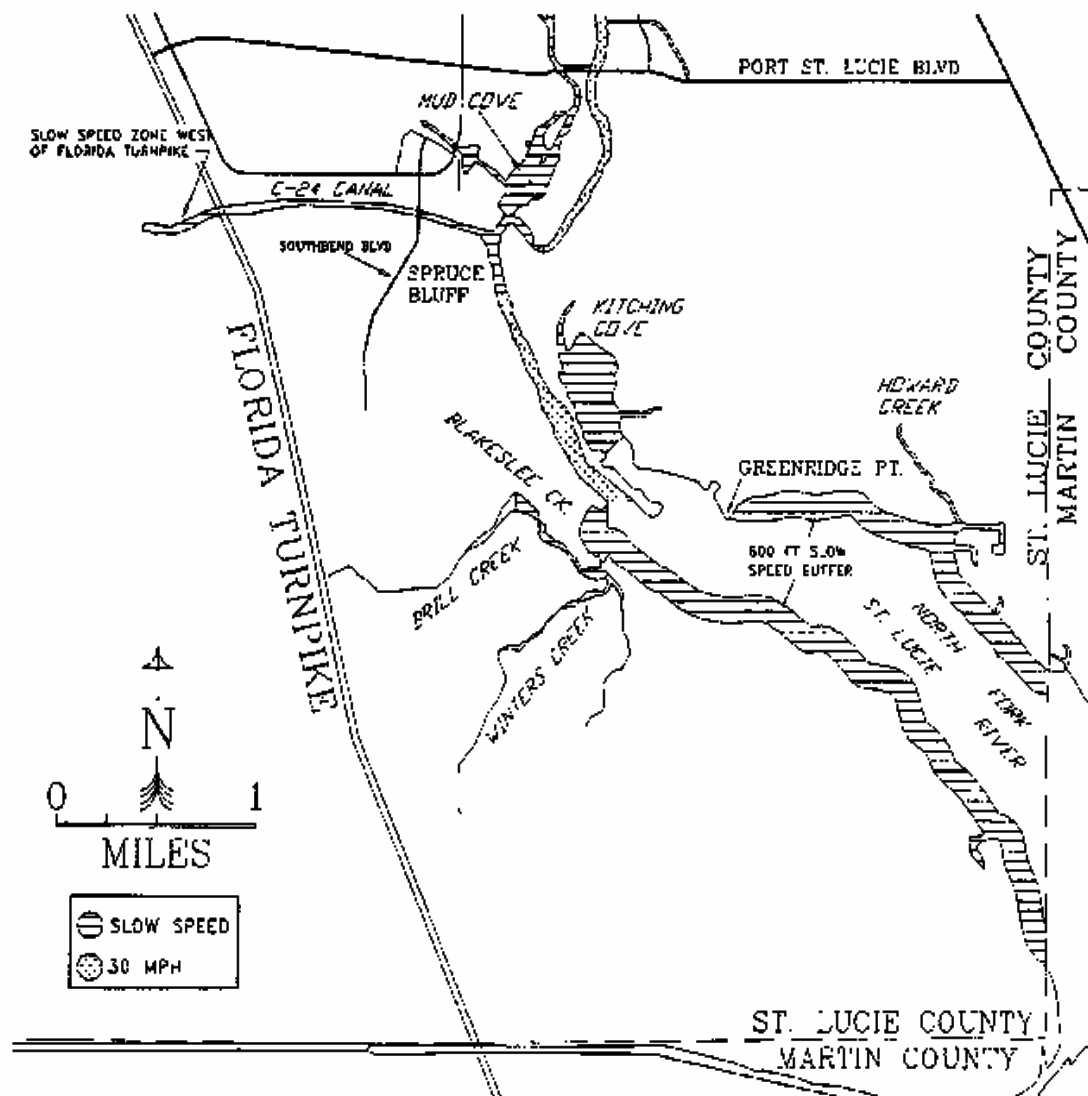
MAP 3 ST. LUCIE COUNTY MANATEE PROTECTION ZONES JULY 1994



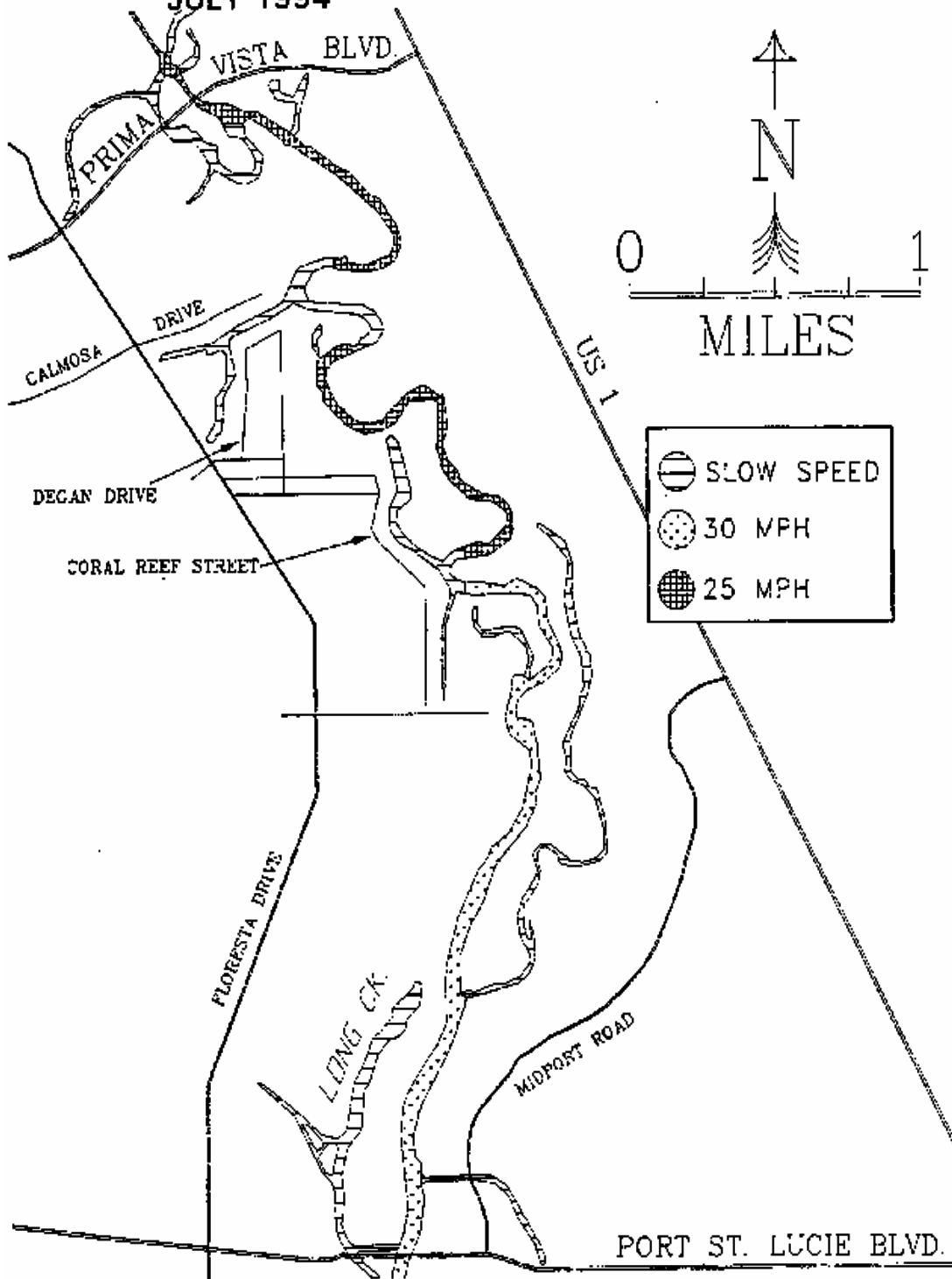
MAP 4 ST. LUCIE COUNTY MANATEE PROTECTION ZONES JULY 1994



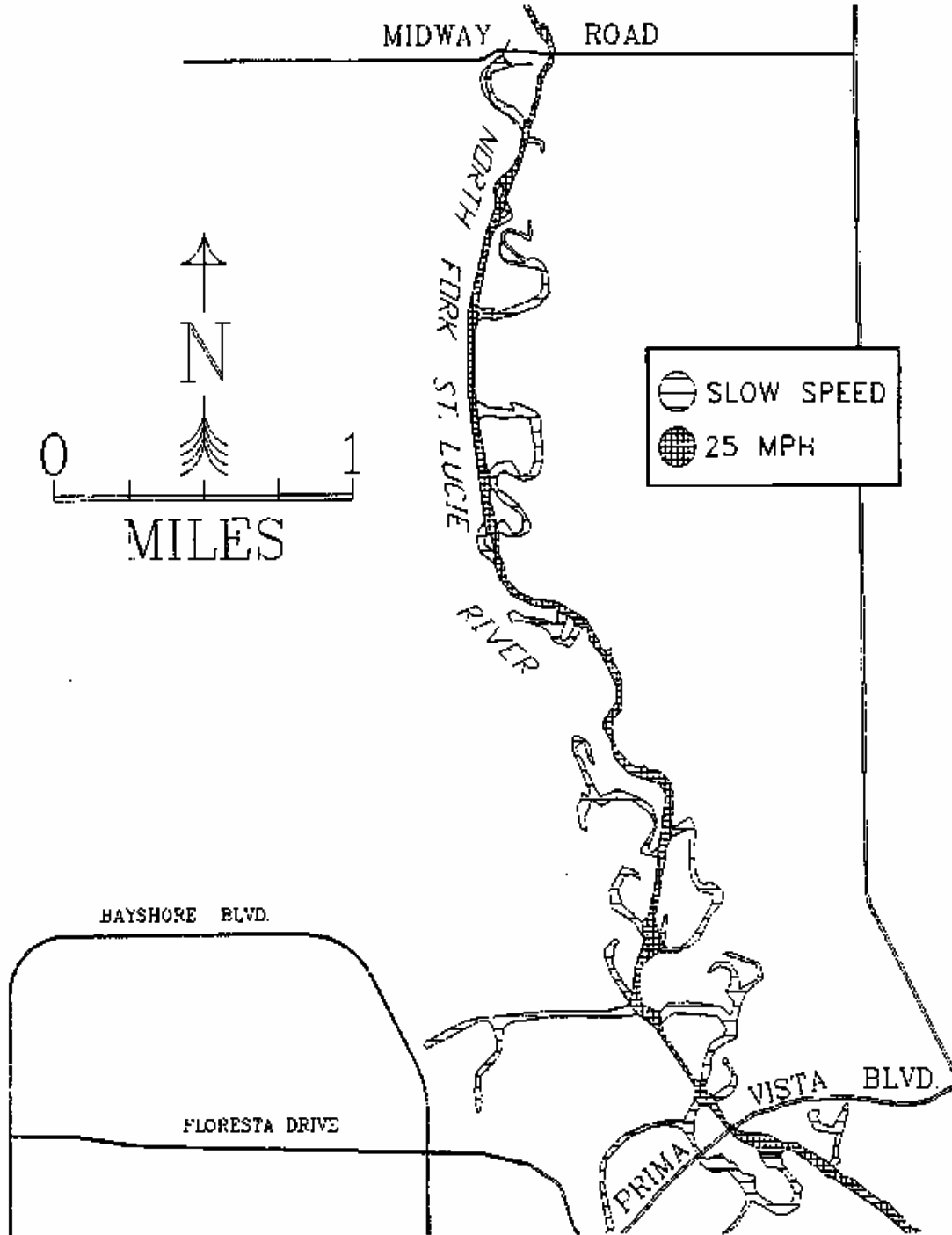
MAP 5 ST. LUCIE COUNTY MANATEE PROTECTION ZONES JULY 1994



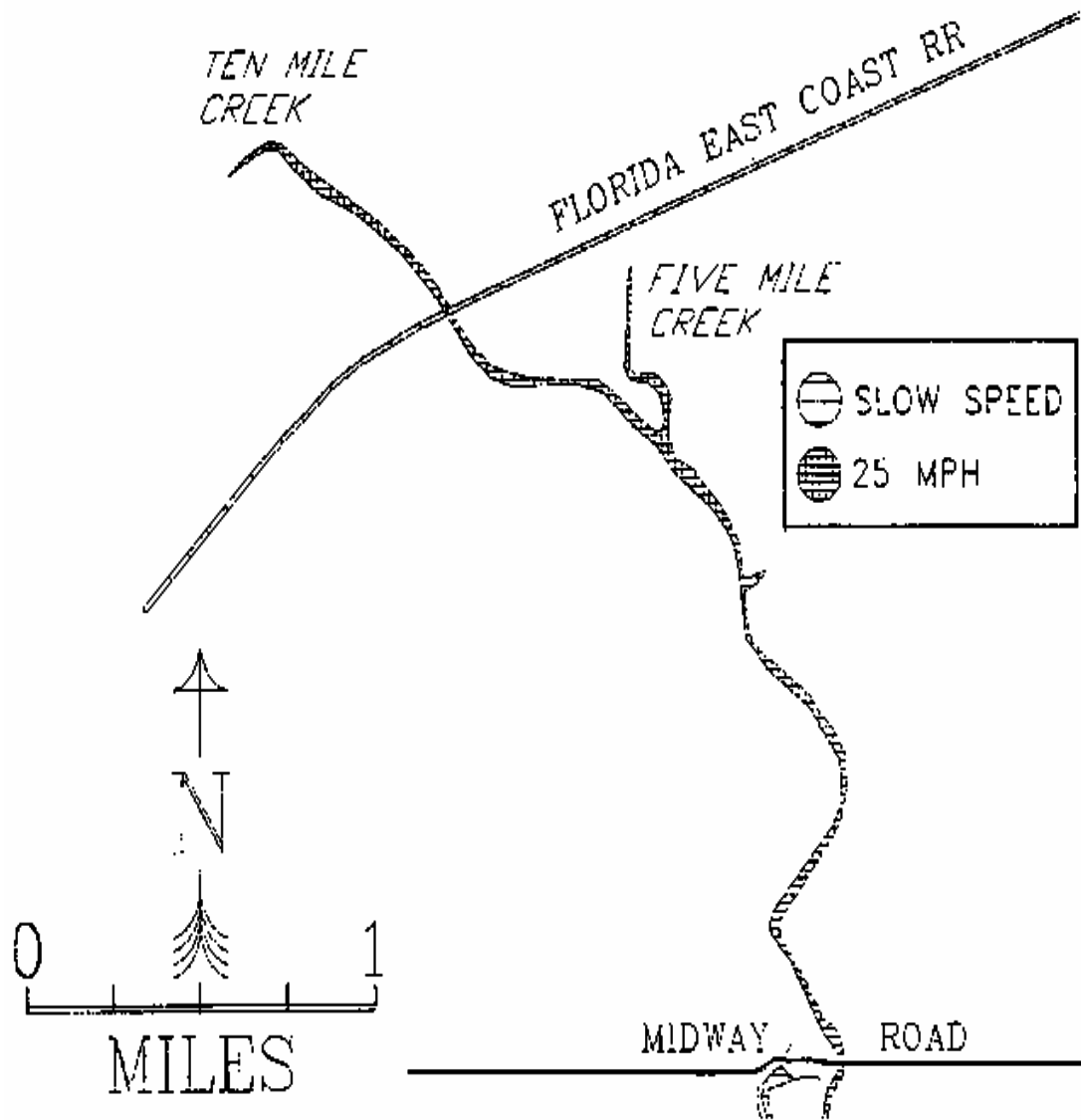
**MAP 6 ST. LUCIE COUNTY
MANATEE PROTECTION ZONES
JULY 1994**



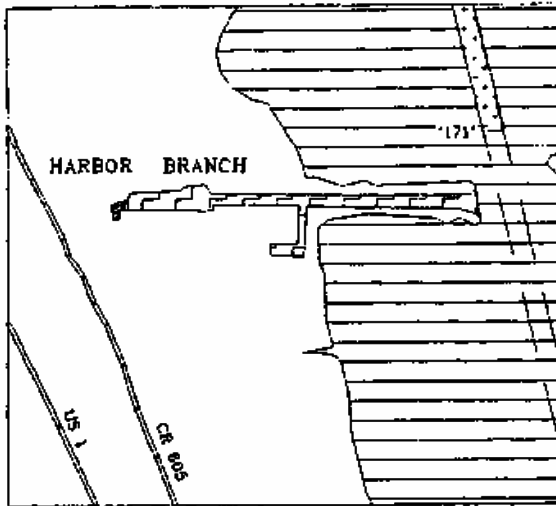
**MAP 7 ST. LUCIE COUNTY
MANATEE PROTECTION ZONES
JULY 1994**



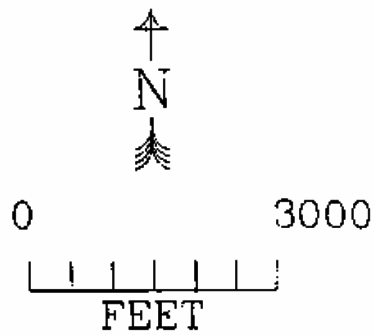
**MAP 8 ST. LUCIE COUNTY
MANATEE PROTECTION ZONES
JULY 1994**



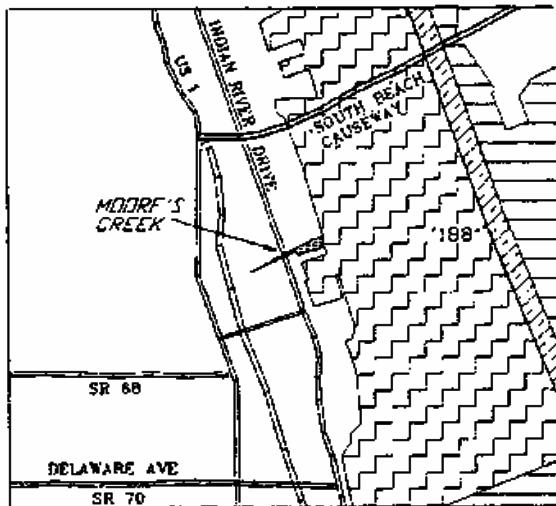
**MAP 9 ST. LUCIE COUNTY
MANATEE PROTECTION ZONES
JULY 1994**



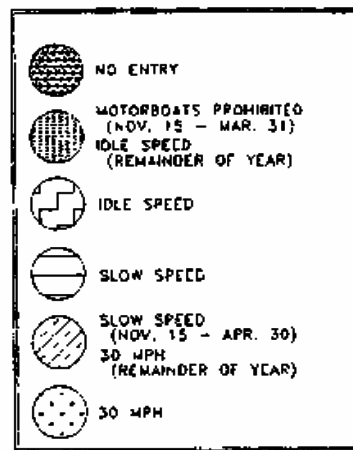
INSET 1



INSET SCALE



INSET 2



Specific Authority 370.12(2)(f), (n), (o) FS.
 Law Implemented 370.12(2)(f), (4)(n), (o) FS.
 History — New 3-19-79, Formerly 16N-22.08, Amended 8-16-94, Formerly 16N-22.008, 62N-22.008.

Table 31: Office Market Potentials—Martin & St. Lucie Counties, 2013—2021

Industry Sector	New Jobs 2013-2021	% Office- Using	SF Occupancy Factor	2021 Demand (In SF)
Workforce Region 20				
Resources & Construction	3,526	10%	175	61,700
Manufacturing	492	20%	200	19,700
Transp/Communications/Utilities	388	40%	200	31,000
Wholesale & Retail Trade	4,122	20%	175	144,300
Finance/Insurance/Real Estate Services	585	85%	275	136,700
Professional/Business Services	1,892	90%	250	425,700
Management/Administrative	1,763	60%	250	264,500
Education & Health Care	6,595	35%	200	461,700
Arts/Entertainment/Recreation	948	20%	175	33,200
Accommodations & Food Services	2,358	25%	175	103,200
Other Services	647	50%	225	72,800
Government	3,248	60%	150	292,300
Self-Employed	1,465	10%	175	25,600
Total/Weighted Average:	28,029	36%	192	2,072,400
+ Vacancy Adjustment @		5% [█]	(1)	103,600
+ Cumulative Replacement Demand		7.5% [█]	(2)	155,400
GROSS DEMAND - Workforce Region 20 (SF):				2,331,400

Martin County				
Allocation Based on Fair Share @		37.0%		862,722
Existing Vacant Office Space		488,181		
- Lease-up Required @	40%	(195,272) [█]	(3)	(195,272)
Remaining Vacant Space:		292,909		
% Vacant		7.7%		
2021 Countywide Net Demand (SF):				667,400

St. Lucie County				
Allocation Based on Fair Share @		44.7%		1,041,404
Existing Vacant Office Space		715,646		
- Lease-up Required @	40%	(286,258) [█]	(3)	(286,258)
Remaining Vacant Space:		429,388		
% Vacant		8.0%		
2021 Countywide Net Demand (SF):				755,100

- [█] (1) This allows for a 5% "frictional" vacancy rate in new office space delivered to the market (i.e., this accounts for tenant movement to new space).
- [█] (2) This represents new space required by existing businesses to replace obsolete or otherwise unusable office space. This is assumed to represent 7.5% of total demand.
- [█] (3) From a financing perspective, some portion of existing vacant office space in both counties will need to be leased before financing of new construction is available. This is assumed to represent 40% of existing vacant office space, which would thereby reduce the overall vacancy rate to 7.7% in Martin County and 8% in St. Lucie County.

Source: CoStar, Inc.; Florida Agency for Workforce Innovation; WTL +a, May 2014.

Table 32: Industrial Market Potentials—Martin & St. Lucie Counties, 2013—2021

Industry Sector	New Jobs 2013-2021	% Industrial- Using	SF Occupancy Factor	2021 Demand (In SF)
Workforce Region 20				
Resources & Construction	3,526	30%	350	370,200
Manufacturing	492	90%	350	155,000
Transp/Communications/Utilities	388	45%	650	113,500
Wholesale & Retail Trade	4,122	15%	750	463,700
Finance/Insurance/Real Estate	585	5%	500	14,600
Services	14,203	15%	450	958,700
Government	3,248	10%	300	97,400
Self-Employed	1,465	5%	300	22,000
Total/Weighted Average:	28,029	17%	458	2,195,100
+ Vacancy Adjustment @		3.5% [▼]	(1)	76,800
+ Cumulative Replacement Demand		5% [▼]	(2)	109,800
GROSS DEMAND - Workforce Region 20 (SF):				2,381,700

Martin County				
Allocation Based on Fair Share @		37.0%		881,335
Existing Vacant Industrial Space		444,096		
- Lease-up Required @	35%	(155,434) [▼]	(3)	(155,434)
Remaining Vacant Space:		288,662		
% Vacant		4.3%		
2021 Countywide Net Demand (SF):				725,900

St. Lucie County				
Allocation Based on Fair Share @		44.7%		1,063,873
Existing Vacant Industrial Space		1,077,527		
- Lease-up Required @	55%	(592,640) [▼]	(3)	(592,640)
Remaining Vacant Space:		484,887		
% Vacant		9.0%		
2021 Countywide Net Demand (SF):				471,200

- [▼] (1) This allows for a 3.5% "frictional" vacancy rate in new industrial space delivered to the market (i.e., this accounts for tenant movement to new space).
- [▼] (2) This represents new space required by existing businesses to replace obsolete or otherwise unusable industrial space. This is assumed to represent 5% of total demand.
- [▼] (3) From a financing perspective, some portion of existing vacant industrial space in both counties will need to be leased before financing of new construction is available. This is assumed to represent 35% of existing vacant industrial space in Martin County, and 55% in St. Lucie County (due to existing high vacancies), which would thereby reduce the vacancy rate to 4.3% in Martin County, and 9% in St. Lucie County.

Source: CoStar, Inc.; Florida Agency for Workforce Innovation; WTL +a, May 2014.

Appendix 4. Market Study Support Data

Table 33: Hotel Market Potentials—Martin County, 2013—2021

	Actual		Forecasts							
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Martin County										
Overnight Visitors	281,700	293,100	304,824	317,017	329,698	342,886	356,601	370,865	385,700	401,128
Actual/Assumed Growth Rate	-	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Stay in Hotel/Motel	131,962	134,504	143,267	152,168	161,552	171,443	181,866	192,850	204,421	216,609
(1) As % of All Overnight Visitors	46.8%	45.9%	47.0%	48.0%	49.0%	50.0%	51.0%	52.0%	53.0%	54.0%
(2) / Average Party Size	2.35	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
(2) x Average Length of Stay	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
Annual Roomnights:	182,501	194,284	206,942	219,798	233,353	247,640	262,696	278,561	295,274	312,880
(3) / Days Per Year	365	365	365	365	365	365	365	365	365	365
Total-Annual Room Demand:	500	532	567	602	639	678	720	763	809	857
Existing Supply										
Full-service	274	274	274	274	274	274	274	274	274	274
Limited-service	852	852	852	852	852	852	852	852	852	852
Subtotal-Existing:	1,126	1,126	1,126	1,126	1,126	1,126	1,126	1,126	1,126	1,126
Planned Supply										
(4) Proposed Aloft Hotel	-	-	-	-	120	-	-	-	-	-
Subtotal-Planned:	-	-	-	-	120	-	-	-	-	-
MARKET POTENTIALS:										
Existing & Planned Supply	1,126	1,126	1,126	1,126	1,246	1,246	1,246	1,246	1,246	1,246
(5) Unaccommodated/(Excess) Rooms	(626)	(594)	(559)	(524)	(607)	(568)	(526)	(483)	(437)	(389)
(6) Assumed Occupancy			66.0%	66.7%	67.3%	68.0%	68.7%	69.4%	70.1%	70.8%
Available Room Demand:			757	777	837	860	884	911	940	971
Unaccommodated/(Excess) Rooms:			(369)	(349)	(409)	(386)	(362)	(335)	(306)	(275)

- (1) Estimate based on 2012 and 2013 hotel occupancies (see Table 18). Assumes increase of 1% per year.
- (2) Based on Martin County visitor data from Martin County Tourism Development Council/Research Data Services, Inc. (see Table 9).
- (3) Annual roomnights are determined by dividing total hotel visitors by party size and multiplying the result by the average length of stay.
- (4) Assumes delivery of a proposed 120-room Aloft Hotel in Stuart in 2016.
- (5) Unaccommodated rooms illustrates the number of supportable rooms in the market if annual occupancy totaled 100%. Negative demand indicates an over-supply of rooms, while demand of 0 indicates that existing supply meets existing demand.
- (6) Assumes a 1% annual increase to ensure that occupancy levels remain above minimum threshold occupancies required by the capital markets when financing new hotel construction.

Source: STR Global; Martin County Tourism Development Council; WTL+a, June 2014.

Table 34: Demographic Trends & Forecasts—Martin County, 2000—2017

	2000	2010	2012	% Dist.	2017	% Dist.	Change: 2012-2017	
							No.	CAGR %
Demographic Profile								
Population	126,731	146,318	146,331		149,216		2,885	0.39%
Households	55,288	63,899	63,858		65,222		1,364	0.42%
Avg. HH Size	2.23	2.23	2.23		2.23			
Median Age	47.4	49.7	50.6		52.4			
Race								
White		127,736	127,601	87%	129,370	87%	1,770	0.3%
Black		1,609	7,756	5%	7,908	5%	153	0.4%
American Indian		878	878	1%	895	1%	17	0.4%
Asian, Pacific Islander		1,756	1,610	1%	1,791	1%	181	2.2%
Other		5,999	6,146	4%	6,715	5%	569	1.8%
Two or More Races		2,341	2,341	2%	2,537	2%	195	1.6%
Hispanic (1)		17,851	18,291	13%	20,293	14%	2,002	2.1%
Age Distribution								
0-14		20,777	20,486	14%	20,443	14%	(44)	0.0%
15-24		14,193	13,901	10%	12,982	9%	(920)	-1.4%
25-34		12,437	12,584	9%	12,534	8%	(50)	-0.1%
35-44		15,363	14,926	10%	14,474	10%	(452)	-0.6%
45-54		22,240	21,364	15%	19,697	13%	(1,668)	-1.6%
55-64		21,216	21,950	15%	22,979	15%	1,030	0.9%
65-74		19,460	20,633	14%	24,621	17%	3,988	3.6%
75+		20,485	20,633	14%	21,636	15%	1,004	1.0%
Average HH Income			\$ 72,517		\$ 82,818			2.7%
Median HH Income			\$ 49,452		\$ 56,765			2.8%
Housing Profile								
Owner-occupied	44,136	49,223	48,138		49,719		1,581	0.6%
% of Total	67%	63%	61%		62%			
Renter-occupied	11,152	14,689	15,731		15,472		(260)	-0.3%
% of Total	17%	19%	20%		19%			
Unoccupied	10,183	14,220	14,788		15,391		604	0.8%
% of Total	16%	18%	19%		19%			
Total Units:	65,471	78,131	78,657		80,582		1,925	0.5%
Median Value			\$ 178,627		\$ 204,282			2.7%
Average Value			\$ 148,048		\$ 170,244			2.8%

(1) Persons of Hispanic origin are a subset of other race categories; therefore, totals do not add.

Source: ESRI Business Analyst; WTL +a, April 2014.

Table 35: Demographic Trends & Forecasts—St. Lucie County, 2000—2017

	2000	2010	2012	% Dist.	2017	% Dist.	Change: 2012-2017	
							No.	CAGR %
Demographic Profile								
Population	192,695	277,789	281,382		291,224		9,842	0.69%
Households	76,933	108,523	110,432		113,739		3,307	0.59%
Avg. HH Size	2.47	2.53	2.52		2.53			
Median Age	42.0	42.4	43.0		44.2			
Race								
White		199,453	200,907	71%	203,274	70%	2,368	0.2%
Black		53,058	53,181	19%	54,750	19%	1,569	0.6%
American Indian		1,111	1,126	0%	1,747	1%	622	9.2%
Asian, Pacific Islander		4,722	5,346	2%	7,572	3%	2,226	7.2%
Other		12,501	12,944	5%	14,852	5%	1,909	2.8%
Two or More Races		7,223	7,879	3%	9,028	3%	1,149	2.8%
Hispanic (1)		46,113	47,835	17%	55,041	19%	7,206	2.8%
Age Distribution								
0-14		51,113	51,212	18%	52,129	18%	918	0.4%
15-24		32,224	32,078	11%	30,579	11%	(1,499)	-1.0%
25-34		30,001	30,952	11%	31,743	11%	791	0.5%
35-44		34,724	34,047	12%	33,782	12%	(265)	-0.2%
45-54		39,168	38,549	14%	36,403	13%	(2,146)	-1.1%
55-64		35,001	36,861	13%	39,315	14%	2,454	1.3%
65-74		29,446	31,515	11%	38,733	13%	7,218	4.2%
75+		26,112	26,450	9%	28,540	10%	2,090	1.5%
Average HH Income			\$ 56,875		\$ 63,387			2.2%
Median HH Income			\$ 44,265		\$ 51,942			3.3%
Housing Profile								
Owner-occupied	60,050	80,710	80,292		83,695		3,403	0.8%
% of Total	66%	59%	58%		58%			
Renter-occupied	16,883	27,817	30,109		29,985		(125)	-0.1%
% of Total	19%	20%	22%		21%			
Unoccupied	14,328	28,502	28,994		31,877		2,883	1.9%
% of Total	16%	21%	21%		22%			
Total Units:	91,262	137,029	139,395		145,556		6,161	0.9%
Median Value			\$ 108,112		\$ 124,644			2.9%
Average Value			\$ 124,474		\$ 141,910			2.7%

(1) Persons of Hispanic origin are a subset of other race categories; therefore, totals do not add.

Source: ESRI Business Analyst; WTL +a, April 2014.

Table 36: Annual Household Consumer Spending, 2012

	Martin County	St. Lucie County
Other Entertainment		
Pets	\$ 691	\$ 528
Toys & Games	131	107
Recreational Vehicles & Fees	234	171
Sports/Recreation/Exercise Equipment	152	120
Photo Equipment & Supplies	75	60
Reading	169	127
Catered Affairs	23	18
Subtotal:	\$ 1,475	\$ 1,131
Food & Alcohol		
Food at Home	\$ 5,110	\$ 4,038
Food Away from Home	3,180	2,536
Alcoholic & Non-alcoholic Beverages	1,012	798
Subtotal:	\$ 9,303	\$ 7,373
Household Furnishings & Equipment		
Household Textiles	\$ 109	\$ 85
Furniture	482	387
Floor Coverings	25	19
Major Appliances	304	232
Housewares	67	52
Small Appliances	47	36
Luggage	9	7
Telephones & Accessories	46	38
Lawn & Garden	498	359
Moving/Storage/Freight Expenses	68	52
Housekeeping Supplies	748	584
Maintenance & Remodeling Materials	305	231
Subtotal:	\$ 2,707	\$ 2,082
Health & Personal Care		
Non- & Prescription Drugs	\$ 715	\$ 530
Optical	90	70
Personal Care Products	462	362
School Supplies	177	146
Smoking Products	488	386
Subtotal:	\$ 1,932	\$ 1,492
TOTAL:		
Total Annual Spending	\$ 1,219,498,142	\$ 1,657,366,769
Per Household	\$ 19,097	\$ 15,008
As % of Average HH Income	26.3%	26.4%

Source: ESRI Business Analyst; WTL +a, April 2014.

Table 36 (Continued): Annual Household Consumer Spending, 2012

	Martin County	St. Lucie County
Other Entertainment		
Pets	\$ 691	\$ 528
Toys & Games	131	107
Recreational Vehicles & Fees	234	171
Sports/Recreation/Exercise Equipment	152	120
Photo Equipment & Supplies	75	60
Reading	169	127
Catered Affairs	23	18
Subtotal:	\$ 1,475	\$ 1,131
Food & Alcohol		
Food at Home	\$ 5,110	\$ 4,038
Food Away from Home	3,180	2,536
Alcoholic & Non-alcoholic Beverages	1,012	798
Subtotal:	\$ 9,303	\$ 7,373
Household Furnishings & Equipment		
Household Textiles	\$ 109	\$ 85
Furniture	482	387
Floor Coverings	25	19
Major Appliances	304	232
Housewares	67	52
Small Appliances	47	36
Luggage	9	7
Telephones & Accessories	46	38
Lawn & Garden	498	359
Moving/Storage/Freight Expenses	68	52
Housekeeping Supplies	748	584
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Subtotal:	\$ 2,707	\$ 2,082
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Non- & Prescription Drugs	\$ 715	\$ 530
Optical	90	70
Personal Care Products	462	362
School Supplies	177	146
Smoking Products	488	386
Subtotal:	\$ 1,932	\$ 1,492
TOTAL:		
Total Annual Spending	\$ 1,219,498,142	\$ 1,657,366,769
Per Household	\$ 19,097	\$ 15,008
As % of Average HH Income	26.3%	26.4%

Source: ESRI Business Analyst; WTL +a, April 2014.

Appendix 4. Market Study Support Data

Table 37: Housing Profile—Martin County, 2010—2017

	2010	2012	% Dist.	2017	% Dist.	Change: 2012-2017	
						No.	CAGR %
Housing Tenure							
Owner-occupied	49,196	48,159		49,732		1,573	0.6%
% of Total	63.0%	61.2%		61.7%			
Renter-occupied	14,703	15,699		15,490		(209)	-0.3%
% of Total	18.8%	20.0%		19.2%			
Unoccupied	14,232	14,799		15,360		561	0.7%
% of Total	18.2%	18.8%		19.1%			
Total Units:	78,131	78,657		80,582		2,451	0.5%
Owner-Occupied Value							
\$50,000 - \$99,999		10,431	22%	6,786	14%	(3,645)	-8.2%
\$100,000 - \$199,999		16,878	35%	17,396	35%	518	0.6%
\$200,000 - \$299,999		9,746	20%	13,348	27%	3,602	6.5%
\$300,000 - \$399,999		4,808	10%	5,710	11%	902	3.5%
\$400,000 - \$499,999		2,275	5%	1,963	4%	(312)	-2.9%
\$500,000 - \$749,999		2,164	4%	2,577	5%	413	3.6%
\$750,000+		1,857	4%	1,952	4%	95	1.0%
Median Value		\$ 178,627		\$ 204,282			2.7%
Average Value		\$ 242,181		\$ 261,182			1.5%
Unoccupied Housing Units By Status (2010 Census)							
Unoccupied for Other Reasons							
Rented (Not Occupied)	146	1%					
For Sale Only	1,828	19%					
Sold (Not Occupied)	334	3%					
Seasonal Use	7,475	76%					
For Migrant Workers	24	0%					
Subtotal:	9,807	69%					
True Vacancies							
Other Vacant	2,117	48%					
Vacant, For Rent	2,308	52%					
Subtotal:	4,425	31%					
Total Unoccupied Units:	14,232	18.2%					
TRUE VACANCY:							
Vacant Units		4,425					
True Vacancy Rate		5.7%					
Housing Units By Structure (ACS Estimate, 2008-2012)							
Detached	40,929	52%					
Attached	6,002	8%					
2 Units	1,868	2%					
3 or 4 Units	3,864	5%					
5 to 9 Units	4,914	6%					
10 to 19 Units	7,874	10%					
20+ Units	4,578	6%					
Mobile Home/Other	7,946	10%					
Boat/RV/Van, etc.	62	0.1%					
Total Units:	78,037	100%					

Source: ESRI Business Analyst; American Community Survey; WTL +a, April 2014.

Table 38: Housing Profile—St. Lucie County, 2010—2017

	2010	2012	% Dist.	2017	% Dist.	Change: 2012-2017	
						No.	CAGR %
Housing Tenure							
Owner-occupied	80,766	80,352		83,739		3,387	0.8%
% of Total	58.9%	57.6%		57.5%			
Renter-occupied	27,757	30,080		30,000		(80)	-0.1%
% of Total	20.3%	21.6%		20.6%			
Unoccupied	28,506	28,963		31,817		2,854	1.9%
% of Total	20.8%	20.8%		21.9%			
Total Units:	137,029	139,395		145,556		8,527	0.9%
Owner-Occupied Value							
\$50,000 - \$99,999		35,807	45%	28,556	34%	(7,251)	-4.4%
\$100,000 - \$199,999		36,456	45%	42,361	51%	5,905	3.0%
\$200,000 - \$299,999		5,340	7%	9,202	11%	3,862	11.5%
\$300,000 - \$399,999		1,390	2%	1,994	2%	604	7.5%
\$400,000 - \$499,999		683	1%	698	1%	15	0.4%
\$500,000 - \$749,999		485	1%	689	1%	204	7.3%
\$750,000+		189	0%	237	0%	48	4.6%
Median Value		\$ 108,112		\$ 124,644			2.9%
Average Value		\$ 124,474		\$ 141,910			2.7%
Unoccupied Housing Units By Status (2010 Census)							
Unoccupied for Other Reasons							
Rented (Not Occupied)	225	1%					
For Sale Only	3,925	23%					
Sold (Not Occupied)	666	4%					
Seasonal Use	12,486	72%					
For Migrant Workers	2	0%					
Subtotal:	17,304	61%					
True Vacancies							
Other Vacant	6,194	55%					
Vacant, For Rent	5,008	45%					
Subtotal:	11,202	39%					
Total Unoccupied Units:	28,506	20.8%					
TRUE VACANCY:							
Vacant Units		11,202					
True Vacancy Rate		8.2%					
Housing Units By Structure (ACS Estimate, 2008-2012)							
Detached	91,231	67%					
Attached	4,702	3%					
2 Units	3,410	2%					
3 or 4 Units	4,262	3%					
5 to 9 Units	4,154	3%					
10 to 19 Units	5,520	4%					
20+ Units	10,888	8%					
Mobile Home/Other	12,435	9%					
Boat/RV/Van, etc.	88	0.1%					
Total Units:	136,690	100%					

Source: ESRI Business Analyst; American Community Survey; WTL +a, April 2014.

Appendix 4. Market Study Support Data

Table 39: Annual Housing Starts, 2004—2012

Municipality	2004	2005	2006	2007	2008	2009	2010	2011	2012	Change: 2004-2012		
										Total Starts	Annual Average	% of Total
Martin County												
Single-family Detached												
Jupiter Island	12	5	15	15	11	2	6	5	3	74	8	2%
Stuart	71	32	8	13	2	-	16	13	20	175	19	4%
Unincorporated County	1,150	1,073	908	284	157	101	143	183	272	4,271	475	93%
Subtotal - SFD:	1,243	1,120	936	318	174	106	167	205	299	4,568	508	78%
Multi-family												
Jupiter Island	-	-	-	-	-	-	-	-	-	-	-	0%
Stuart	38	519	8	-	-	-	-	-	-	565	63	12%
Unincorporated County	178	367	20	48	50	14	32	19	21	749	83	16%
Subtotal - MF:	216	886	28	48	50	14	32	19	21	1,314	146	22%
5+ Units In MF Structures	59%	93%	71%	75%	58%	43%	75%	63%	24%	83%		
TOTAL - Martin County:	1,459	2,006	964	366	224	120	199	224	320	5,882	654	100%
St. Lucie County												
Single-family Detached												
Fort Pierce	41	110	216	136	63	21	12	5	8	612	68	3%
Port St. Lucie	6,642	7,070	4,067	1,281	513	197	192	153	176	20,291	2,255	86%
Unincorporated County	930	812	353	271	108	36	61	108	95	2,774	308	12%
Subtotal - SFD:	7,613	7,992	4,636	1,690	684	254	265	266	279	23,679	2,631	86%
Multi-family												
Fort Pierce	635	429	325	220	243	10	22	21	28	1,933	215	51%
Port St. Lucie	384	271	116	8	96	-	6	28	6	915	102	24%
Unincorporated County	465	84	287	125	6	-	-	-	2	969	108	25%
Subtotal - MF:	1,484	784	728	353	345	10	28	49	36	3,817	424	14%
5+ Units In MF Structures	89%	75%	86%	86%	94%	80%	100%	80%	78%			
TOTAL - St. Lucie County:	9,097	8,776	5,364	2,043	1,029	264	293	315	315	27,496	3,055	100%

<http://socds.huduser.org/permits/>

Source: U.S. Census Bureau; U.S. Dept. of Housing & Urban Development; WTL+a, April 2014.

Table 40: Summary of Hotel Rooms, by Location, 2014

	No. of Properties	Total Rooms	% of Supply	By Product Class				
				Upper Upscale	Upscale	Upper Mid-scale	Mid-scale	Economy
Martin County								
Jensen Beach	1	110	10%		100%			
Stuart	8	1,016	90%	24%	20%	27%	18%	11%
Subtotal - Martin County:	9	1,126	32%					
St. Lucie County								
Fort Pierce	15	1,136	48%			22%	10%	17%
Port St. Lucie	11	1,217	52%		20%	13%	8%	11%
Subtotal - St. Lucie County:	26	2,353	68%					
TOTAL - STUDY AREA:	35	3,479	100%	8%	20%	32%	17%	22%

Source: STR Global; WTL+a, April 2014.