

GOAL II B

Increase ramp, marina, dry stack, and managed mooring field options

Brevard County waterways, dominated by the Indian River Lagoon system (IRL), offer unique recreational and commercial opportunities to the citizens of Florida. In 2007, more than 103,000 vessels were registered to residents in the four-county area of Brevard, Seminole, Osceola, and Orange. There were more than 40,000 registrations in Brevard County alone¹, an increase of 73% since 1985². According to a 2004 Florida Senate Report, statewide the capacity to launch and moor boats has not kept pace with this surge in vessel registration³. If this trend continues, management of Brevard's waterway resources will become evermore essential in this access restricted system. The Brevard County Natural Resources Management Office strives to maintain the balance between the environmental, economic and recreational priorities and understands the connectivity between them. Because the waterways have such high use, the Natural Resources Management Office has taken progressive steps to balance coastal and waterway development using the priorities mentioned above. While increased development may generate short-term revenues, unchecked environmental stress degrades the very resources that were the impetus for the development.

In addition to recreational and commercial activities provided, the Indian River Lagoon serves as a major thoroughfare for vessels headed to the Atlantic Ocean. Inshore and offshore activities include fishing, skiing, power cruising, sailing, nature viewing, windsurfing and diving. Many of these associations with the IRL require the management of large numbers of vessels. Some boats are kept at private homes and trailered to destinations, while others may be stored at marinas or kept in the water at private docks. In order to effectively manage the resources available to the boater, knowing where vessels are launched, what the popular boating destinations are, and where vessels are stored is critical. Exceeding the carrying capacity of a particular facility or destination will result in facility, property, or environmental stresses; conflicts between users; and loss of boating resources.

At times, Brevard County boat ramps operate near or over capacity. Heavily used ramps, most often situated near open water, like Sebastian Inlet and Port Canaveral, can be severely congested. High boat and boater densities can negatively impact the environment in numerous ways. Water quality can be affected by illegal waste discharge or an introduction of chemical pollutants. Physical damage to flora and fauna can result from prop scarring or by unattended boats breaking free of their moorings.

¹ Florida Department of Highway Safety and Motor Vehicles. 2007.

² Charles Sidman *et al.* 2007. A Recreational Boating Characterization of Brevard County. University of Florida Seagrass Program. Page 1.

³ The Florida Senate. Interim Summary Report 2005-122. November 2004

The majority of ramps in Brevard County are publicly accessible at no charge. Currently, funding for operation and maintenance of ramps is the responsibility of Brevard taxpayers. A large portion of Brevard's waterway users are residents of the surrounding 4 county area.⁵ An equitable user-fee system should be considered for county facilities. Additional funds generated from the implementation of a ramp use fee system could potentially spread the financial responsibility to out of county patrons. A revenue stream evaluation would be beneficial to determine where funds generated from ramp use fees could be directed. Suggestions for use of these monies are:

1. Upgrades to existing facilities such as waste water disposal stations
2. Ramp/parking expansion
3. Construction of additional ramps.

Some ramps are equipped with portable restrooms only. Upgrades to these facilities should include the ability to receive black and gray wastewater from boats. Many destinations for boaters in the IRL are spoil islands with no facilities. Giving boaters a convenient means to properly dispose of this wastewater will have a positive impact on water quality in the IRL.

New ramp construction and upgrades should take into account the affect of future sea level rise on ramp operation. The International Panel on Climate Change estimates that sea level rise in the next 100 years could be up to 0.59m.⁵ A rise of this magnitude in the IRL could inundate many existing ramps. Inundated ramps are severely limited in the range of vessel types they are able to accommodate.

Brevard County is presently working in association with local jurisdictions in the development of managed mooring fields. No managed mooring fields are currently in place. Presently regulations allow boaters to anchor at any destination they choose. Often these destinations are without amenities like pump out stations, restrooms, solid waste disposal, dry dock/repair services and convenience stores. An increase in mooring facilities can: 1) decrease conflicts between vessels, 2) increase economic benefits to area businesses and 3) minimize impacts to the environment.⁷ Vessels moored for long periods of time may become derelict, introducing pollutants into the environment, causing damage to other vessels, private docks and seagrass beds. Establishment of

⁵ Charles Sidman *et al.* 2007. A Recreational Boating Characterization of Brevard County. University of Florida Seagrass Program. Page 95.

⁶ Lenny Bernstein *et al* 2007. Climate Change 2007 Synthesis Report. Cambridge University Press.

⁷ Bruce DeYoung and Gib Carter. PARTNERSHIPS AND PROCESS FOR IMPROVING BOATER SAFETY: A Case Study of Transient Moorage Facilities On The Columbia River. OCEANS '95. MTS/IEEE. Challenges of Our Changing Global Environment. Conference Proceedings. Publication Date: 9-12 Oct 1995 Volume: 1, On page(s): 425-431 vol.1

managed mooring fields throughout the county will reduce the need for random anchoring and supply beneficial amenities to boaters. An increase in amenities to transient boaters will allow for more extended stays increasing economic benefits to nearby businesses.

Potential Funding Sources

Rental Car Tax
General Sales and Use Tax
Tourist Development Tax
Boater Registration Fees
Disposal Fees
Recreational Fees
General Obligation Bonds
Revenue Bonds
State Revolving Funds
Non-State Revolving Funds
Transferable Development Funds
Federal Grant Programs
State and Local Grant Programs
Florida Recreation Development Assistance Program
Marine Debris Program
Clean Vessel Act Grant Program
Florida Boating Improvement Program
Senior Environmental Employment Program
Waterway Assistance Program
Recreational Boating and Fishing Program
Boating Infrastructure Grant Program
Water and Waste Disposal Grants
Section 319 Non-Point Source Management Implementation Grant (marine facilities)
Endangered Species Conservation Grants
Wildlife Restoration Grants
Sport Fish Restoration Grants
Florida Grants
Recycling and Education Grants (composting toilets)
Florida Communities Trust
Land and Water Conservation Fund (spoil islands)
Florida's Water Management Districts
Coastal Zone Management Administration Awards
Coastal Partnership Initiative
Direct Donations
License Plates
Fines and Penalties

Potential funding sources generated by working group. See working group meeting notes 10-22-2008.

Add ramps and expand the parking capacity of existing ramps

Overview of Actions

IIB1-a Complete boating access study to evaluate current needs

IIB1-b Evaluate feasibility of ramp use fees

IIB1-c Investigate the feasibility of installing restroom facilities at existing ramps

OBJECTIVE IIB1

Add ramps and expand the parking capacity of existing ramps where need is indicated by all data.

RELATED IRL CCMP ACTIONS

- FSD-7: Amend local comprehensive growth management plans or land development regulations to reduce the impact of development on the various resources of the Indian River Lagoon.
- MB-2: Complete and implement boat facility siting plans.
- MB-3: Provide education for owners and operators of boats and personal watercraft.
- MB-7: Minimize the impacts of waste discharges and marine sanitation devices on the public health and resources of the Indian River Lagoon.
- PIE-4: Increase public and government involvement in activities designed to protect and restore the resources of the Indian River Lagoon.

PRIORITY PROBLEM

Recently compiled data indicates that some Brevard County boat ramps operate near or over capacity (Table 1). Heavily used ramps, most often situated near open water access at Sebastian Inlet and Port Canaveral, can be severely congested. This congestion can cause conflicts between users, create hazards on nearby roadways and waterways, negatively impact boating experiences and damage nearby environmental resources. The third highest ranked perceived boating detractor, as listed in the Brevard Boating Characterization Study, was lack of access, including ramp congestion.⁸ Ramps operate on a “first come first served” basis. During peak usage many boaters are left without adequate parking. This can cause some boaters to discontinue the use of a certain ramp or area, taking away economic benefits to businesses in that locale. At times of heavy use some boaters make the unfortunate choice of parking illegally on medians and shoulders

⁸ Charles Sidman *et al.* 2007. A Recreational Boating Characterization of Brevard County. University of Florida Seagrass Program. Pages 82-83.

of roadways. This causes a very dangerous situation for motorists using the roadway and boaters as they cross against traffic. John Jorgenson Boat Ramp, located near Sebastian Inlet on US 1, is typically faced with this problem. On weekends and holidays the 20 parking spaces are filled quickly. Boaters using the ramp to quickly access the Inlet are faced with finding another launching location or parking illegally. Many choose the latter, a decision which has resulted in accidents and injury.

In 2007, more than 103,000 vessels were registered to residents in the four county area, slightly more than 40,000 in Brevard County alone.⁹ This is an increase of 73% since 1985¹⁰. Due to the unique geography of Brevard County and its orientation to the IRL, residents from the surrounding area take advantage of its ramp facilities with a frequency equal to or greater than that of Brevard's residents. Expected future regional population growth will exacerbate usage issues.

Ramp Name	Parking Spaces	Average Number of Trailers Observed to Time Periods		
		Peak Use	Shoulder	Off-Peak
Bairs Cove	40	27	38	35
Freddie Patrick	100	91	64	34
John Jorgenson	20	33	30	23
Kelly Park	37	39	27	24
Kennedy Point	28	24	24	13
Main Street Boat Dock	25	22	19	13
Parish Park	45	47	63	33
Sebastian Inlet St. Park	30	34	34	26
Sebastian Inlet Yacht Club	40	53	49	31

Peak Use Period (May, June, July)

Shoulder Use Period (March, April, August, September, October)

Off-Peak Use Period (November, December, January, February)

Proper site location for additional ramps is extremely important. Heavily congested ramps are typically located near popular boating destinations. Some of the most popular destinations for boaters include Ski Island, Bird Island, Sebastian Inlet and Party Island. Boaters trailer their boats to ramps located near these destinations and then navigate their vessels to them. A properly sited ramp location will decrease distance between launch site and the destination. Decreased travel on the water will potentially reduce impacts to the environment such as prop scaring to seagrass beds and unwanted encounters with manatees.

New ramp construction and upgrades should also include plans to allow boaters the ability to dispose of marine generated black and gray water. Disposal of wastewater

⁹ Florida Department of Highway Safety and Motor Vehicles. 2007.

¹⁰ Charles Sidman *et al.* 2007. A Recreational Boating Characterization of Brevard County. University of Florida Seagrass Program. Page 1.

¹¹ Charles Sidman *et al.* 2007. A Recreational Boating Characterization of Brevard County. University of Florida Seagrass Program. Page 100.

will have a positive impact on water quality in the IRL. Providing boaters with a convenient means to dispose of this waste will aid in the reduction of illegal discharges.

New ramp construction and upgrades to existing facilities will need to accommodate for future sea level rise. The International Panel on Climate Change estimates that sea level rise in the next 100 years could be as much as 0.59m.¹² A rise of this magnitude in the IRL could inundate many existing ramps and decrease the range of vessel sizes that would be able to use them. Limiting the number of ramps available to the boating public will potentially decrease boater related economic benefits to the county and increase safety issues at certain ramps.

ESTIMATED COSTS

- New boat ramp construction is estimated to be \$90 per square foot with associated docks estimated at \$240 per linear foot (2009). This figure does not include land acquisition, design, permitting, dredging, mitigation and site amenities.
- Boating Characterization Study was completed at a cost of approximately \$75,000.
- Additional costs to be determined.

¹² Lenny Bernstein *et al* 2007. Climate Change 2007 Synthesis Report. Cambridge University Press.

Task IIB1-a

Complete boating access study to evaluate current needs.

BACKGROUND AND EXPECTED BENEFITS:

When considering site selection for new ramp construction and/or existing ramp expansion, a quantitative study is necessary to assess spatial usage patterns of boaters, evaluate existing sites and inventory resources. Increased ramp access in proximity to popular recreational waterway destinations enhances recreational opportunities and decreases resource impacts. Increased ramp access, where allowable, has positive economic benefits including enhanced patronage at nearby marine related businesses.

PRIORITY:

Working group recommends a priority rating of HIGH.

HOW:

Analyze existing data from surveyed respondents to determine utilization and capacity of ramps, upland storage facilities, and marinas in Brevard County. The working group found the existing data useful but would like to see the information disseminated in an easily understandable format.

WHO:

Primary: Indian River Lagoon National Estuary Program
Florida Department of Environmental Protection
Florida Fish and Wildlife Conservation Commission
Florida Inland Navigation District
Sea Grant
Marine/Agriculture Extension Service
St. Johns River Water Management District
Canaveral Port Authority
Brevard County
Brevard County Sheriffs Office Ag/Marine
Marine Industries Association of Brevard

Secondary: U.S. Fish and Wildlife Service
U.S. Army Corps of Engineers
National Oceanic and Atmospheric Administration
National Park Service
Patrick Air Force Station
Florida Department of Transportation
Florida Department of Community Affairs
Local Municipalities

Educational Institutions (BCC, FIT, UCF, UF)
Marine Resources Council
Seven Seas Cruising Association
Citizens for Florida Waterways
Brevard Nature Alliance
The Nature Conservancy
Sierra Club

WHERE:

Throughout Brevard County waterways and the adjacent Atlantic Ocean

MEASURE OF PROGRESS:

The Recreational Boating Characterization of Brevard County was completed in 2007. Although study has been completed:

1. Information must be disseminated to the public in an easily understandable format (flyer/handout),
2. Information must be applied locally to determine the regions with greatest access needs in the County.

RELATED CM3P ITEMS:

IIDI-e Investigate vessel traffic corridors to encourage transport by water to land based business

VIAI-b Identify demographics of user population and summarize trip profiles of users

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK

The completed boating study was accomplished at a cost of approximately \$75,000. Additional costs of up to \$25,000 will be incurred for the creation of flyers that contain a synopsis of the boating study.

NOTES

None

Task IIB1-b

Evaluate feasibility of ramp use fees.

BACKGROUND AND EXPECTED BENEFITS:

Currently the majority of ramps in Brevard County are publicly accessible at no charge. Funds required to operate, maintain or upgrade these ramps are a taxpayer responsibility. Many Brevard County public ramps are heavily utilized by out of county residents. Ramp use fees could be dedicated to the following actions:

- Construction
- Expansion
- Improvements
- Maintenance/Operation

PRIORITY:

Working group recommends a priority rating of HIGH.

HOW:

A cost/benefit analysis regarding development, operation, maintenance and enforcement for any use fee system is recommended. A rational nexus for fee determination must be established. Suggestions for a use based pay system include purchasing yearly decals, using automated on site kiosks, electronic key cards in conjunction with a decal, and the use of meters with pricing based on stall type (car with boat, car only).

WHO:

Primary: U.S. Fish and Wildlife Service
Florida Fish and Wildlife Conservation Commission
Florida Inland Navigation District
Canaveral Port Authority
Brevard County
Brevard County Sheriffs Office Ag/Marine
Local Municipalities

Secondary: Indian River Lagoon National Estuary Program
St. Johns River Water Management District
Marine/Agricultural Extension Service
Educational Institutions (BCC, FIT, UF, UCF)
Citizens for Florida Waterways
Marine Industries Association of Brevard

WHERE:

All ramp facilities in Brevard County

MEASURE OF PROGRESS:

1. Cost/benefit analysis regarding development, operation and maintenance
2. Creation of ordinance
3. Implementation of ramp use fees

RELATED CM3P ITEMS:

IID2-b Maximize utilization of available funds

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK

Cost for implementation and approval should be part of a cost benefit analysis.
To be determined.

NOTES

Monies collected via ramp-use fees are not to replace funds normally budgeted for ramp and associated facility operation.

Task IIB1-c

Investigate the feasibility of installing restroom facilities at existing ramps

BACKGROUND AND EXPECTED BENEFITS:

Although most boat ramps in Brevard County have some form of restroom facility, many of these facilities are simple portable (latrine-type) restrooms. Few existing facilities have the ability to receive on-the-water generated (marine) black and gray water. Improved water quality would be expected with additional restrooms and waste disposal facilities.

PRIORITY:

The working group recommends a priority rating of MEDIUM.

HOW:

Construct permanent restroom facilities, either traditional or composting toilets, at ramps with temporary restrooms. Upgrade existing restrooms to include a pumpout system able to dispose of black and gray water from vessels. Utilization of monies generated from ramp fees and grants is recommended.

WHO:

Primary: U.S. Fish and Wildlife Service
National Park Service
Indian River Lagoon National Estuary Program
Florida Department of Environmental Protection
Florida Fish and Wildlife Conservation Commission
Florida Inland Navigation District
St. Johns River Water Management District
Canaveral Port Authority
Brevard County (Health Department)
Local Municipalities

Secondary: Environmental Protection Agency
Marine/Agricultural Extension Service
Educational Institutions (BCC, FIT, UCF, UF)
Citizens for Florida Waterways

WHERE:

All ramp facilities in Brevard County

MEASURE OF PROGRESS:

1. Inventory of facilities at Brevard ramp facilities.
2. Prioritize according to greatest need.
3. Determine upgrade to facility.
4. Install and maintain.

RELATED CM3P ITEMS:

- IAI-g** Quantify the effects of marine sanitation device use and illegal discharge.
IDI-f Educate boaters on their impacts to water quality and other environmental factors.

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK

Total cost is dependent on sewer hook up fees, restroom construction costs, inventory of existing facilities, prioritization, and required maintenance.

NOTES

None

Increase transient dockage for vessels

Overview of Actions

IIB2-a Evaluate the effects of increased waterfront access on boating patterns, including nighttime traffic

OBJECTIVE IIB2

Increase transient dockage for vessels at restaurants and other points of interest along waterways.

RELATED IRL CCMP ACTIONS

- FSD-7: Amend local comprehensive growth management plans or land development regulations to reduce the impact of development on the various resources of the Indian River Lagoon.
- MB-2: Complete and implement boat facility siting plans.
- MB-6: Improve enforcement of boating safety and resource protection regulations through an improved Florida Marine Patrol presence.

PRIORITY PROBLEM

A trend in Florida's land use has had a negative impact on working waterfronts. Development interests have increasingly converted public use sites to private and residential use sites.¹³ This can initially stimulate the local economy but those benefits are short lived. An increase in short-term dockage for points of interest along Brevard waterways could increase usage and thereby stimulate long-term economic benefits to area businesses. An important consideration is managing development in a way that will create sustainable and safe utilization in the future. Rapid development in South Florida has increased economic benefits to the area but severely decreased the regions environmental viability and recreational opportunities to the public.

Currently Brevard has limited numbers of restaurants and other boater destination points along its waterways. An increase in short-term dockage at these points could stimulate economic benefits to those waterfront businesses and also decrease potential impacts to wildlife due to irresponsible anchorage. Careful planning for increases in waterfront destinations and dockage is necessary to ensure sustainable and safe use of waterways.

¹³ The Florida Senate. Interim Summary Report 2005-122. November 2004

Many destinations such as restaurants and bars will have patrons during nighttime hours. Increased boating at night increases the potential for accidents and damage to wildlife and the environment. Proper nighttime signage, collisions (with pilings, wildlife and vessels), groundings and boating while intoxicated should be evaluated as waterfront development proceeds. The effect of increased nighttime traffic needs to be considered in conjunction with increases in transient dockage. With proper baseline data, planners will be better suited to develop safe and appropriate transient dockage locations.

ESTIMATED COSTS

Costs to be determined and will be dependent upon available resources and planning parameters. Planning parameters include environmental, economic and recreational viability and opportunity.

Task IIB2-a

Evaluate the effects of increased waterfront access on boating patterns, including nighttime traffic

BACKGROUND AND EXPECTED BENEFITS:

Increased dockage at points of interest along the Indian River Lagoon will potentially affect temporal and spatial boating patterns. Altered traffic patterns could result in vessel collisions, personal injury, damage to the environment, and destruction of property. Nighttime boating specifically has inherent risks associated with it. Data on boating patterns could aid in the location of navigational aids and provide data to law enforcement.

PRIORITY:

The working group recommends a priority rating of MEDIUM.

HOW:

A limited study should be conducted to obtain baseline data. This study should include extrapolating information from the 2007 Brevard Boating Characterization Study, using volunteers to collect waterway data and coordinating with law enforcement during nighttime training exercises.

WHO:

Primary: U.S. Fish and Wildlife Service
National Oceanic and Atmospheric Administration
US Coast Guard
NASA
Florida Department of Environmental Protection
Florida Department of Transportation
Florida Fish and Wildlife Conservation Commission
St. Johns River Water Management District
Marine/Agricultural Extension Service
Brevard County
Brevard County Sheriffs Office Ag/Marine
Educational Institutions (BCC, FIT, UCF, UF)
Citizens for Florida Waterways
Marine Industries Association of Brevard
Dockmasters and Harbormasters

Secondary: Indian River Lagoon National Estuary Program
Florida Inland Navigation District
Local Municipalities

Community Redevelopment Agencies
Chamber of Commerce
Economic Development Council
Tourist Development Council
Brevard Nature Alliance
Marine Resources Council
Seven Seas Cruising Association

WHERE:

Throughout Brevard County waterways

MEASURE OF PROGRESS:

1. Determine location, number and type of short-term slips in the county.
2. Set study parameters based on slip location and use data.
3. Evaluate available resource options and set-up and conduct appropriate study.

RELATED CM3P ITEMS:

IID1-e Investigate vessel traffic corridors to encourage transport by water to land based businesses.

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK

The parameters of the study and resources available at time of implementation will help determine the total cost. The 2008 county wide boating characterization study was completed at a cost of approximately \$75,000.

NOTES

Coordinate with available Florida DOT transportation studies.
Extrapolate economic data from businesses whose patrons use to short-term dockage to determine trends in night time boating.

Pursue the establishment of managed mooring fields

OBJECTIVE IIB3

Pursue the establishment of several managed mooring fields throughout the county.

RELATED IRL CCMP ACTIONS

- FSD-7: Amend local comprehensive growth management plans or land development regulations to reduce the impact of development on the various resources of the Indian River Lagoon.
- MB-2: Complete and implement boat facility siting plans.
- MB-3: Increase the protection of resources of the Indian River Lagoon from oil spills.
- MB-5: Provide education for owners and operators of boats and personal watercraft.
- MB-7: Minimize the impacts of waste discharges and marine sanitation devices on the public health and resources of the Indian River Lagoon.
- PIE-3: Increase public and governmental awareness of programs which protect and restore the Indian River Lagoon.
- PIE-4: Increase public and government involvement in activities designed to protect and restore the resources of the Indian River Lagoon.

PRIORITY PROBLEM

Brevard County is presently working in association with local jurisdictions in the development of managed mooring fields. No managed mooring fields are currently in place. Presently regulations allow boaters to anchor at any destination they choose. Often these destinations are without amenities like pump out stations, restrooms, solid waste disposal, dry dock/repair services and convenience stores. An increase in mooring facilities can: 1) decrease conflicts between vessels, 2) increase economic benefits to area businesses and 3) minimize impacts to the environment.⁷ Vessels moored for long periods of time may become derelict, introducing pollutants into the environment, causing damage to other vessels, private docks and seagrass beds. Establishment of managed mooring fields throughout the county will reduce the need for random anchoring and supply beneficial amenities to boaters. An increase in amenities to transient boaters will allow for more extended stays increasing economic benefits to nearby businesses.

Proper site selection for mooring fields is essential. Site selection process will involve a three-step approach¹⁵:

1. Establish a clear understanding of the requirements the mooring field will satisfy.
2. A site suitability analysis that includes identifying relevant criteria such as state and local regulations, environmental concerns and available infrastructure.
3. An evaluation and ranking of sites based on steps one and two as well as input from stakeholders and relevant county staff.

A network of sites throughout the county will allow boaters navigate Brevard County waterways over the course of several days or weeks. Many waterfront homeowners express concern over unrestricted anchoring within view of their properties. Managed mooring fields would reduce this conflict between homeowners and transient boaters. Site selection should take into the concerns of these stakeholders.

A properly managed mooring field should also provide amenities such as pump out station and restroom facilities. Boaters should have access to a convenient and affordable means of wastewater disposal. Proper, efficient wastewater disposal facilities will have a positive impact on water quality in the IRL. Under current conditions boaters that choose to spend extended periods of time on the water are forced to seek out these facilities, which can be great distances apart.

ESTIMATED COSTS

The mooring field siting analysis initiated by Brevard County in 2009 will cost approximately \$80,000.

¹⁵ Brevard County Mooring Field Site Suitability Analysis. UF/IFAS Boating and Waterway Management Program. 2008