

GOAL I D

FOSTER AWARENESS AND STEWARDSHIP OF COASTAL ENVIRONMENTS AND ECOSYSTEMS

Located in east central Florida looking east to the Atlantic Ocean, Brevard County is home to the world famous Kennedy Space Center, Port Canaveral, the second busiest cruise port in the world, and the Indian River Lagoon (IRL), the most ecologically diverse waterway in North America (Brevard County, 2010). The tropical weather and diverse cultural activities have drawn more than 500 million people to Brevard County, making it the 10th most populous county in the state of Florida (US Census, 2009). Over one third of the county is water, including the Indian River Lagoon system, the St. Johns River, and the Atlantic Ocean. The County extends over 70 miles from north to south, and only a handful of miles inland from the seacoast at any point. The headwaters of the St. Johns River are located in the western part of Brevard County's marshes (Wikipedia, 2010).

Traversing the IRL is the Atlantic Intracoastal Waterway along the eastern edge of the County. A major waterway route in Brevard County, tourism is one of Brevard County's major economic drives. In 2008, tourists coming to Brevard for boating, fishing and other coastal related activities spent about \$3 billion in the county. (Hazen and Sawyer, 2008). Since 1997, the population in Brevard has increased by almost 20%, and approximately 35,000 pleasure boats are registered or titled within the county, according to the National Marine Manufacturers Association in 2005. The steady increase in both population and recreational boating activities in the county put pressures on its fragile waterways and ecosystems, which in turn, will affect the economic structure of the County (Sidman, et al., 2007).

Recognizing the difficult management challenge of how to sustaining economic viability while maintaining the integrity of the coastal environmental resources, the County has implemented several small-scale management plans. Through the years agreements have been put in place with St. Johns River Water Management District (SJRWMD), the Florida Fish and Wildlife Conservation Commission (FWC), and the Indian River Lagoon National Estuary Program (IRL-NEP), as well as coordination arrangements with local educational institutions and various related organizations. The purpose of this section of the Comprehensive Maritime Management Master Plan (CM3P) aims at building awareness and regional stewardship of coastal environment and ecosystems. This will ultimately provide local residents and waterway users with more opportunities to understand the uniqueness of the county's waterways by encouraging participation in maintaining a sustainable environment for the regions organisms and promoting long term benefits to the county's economic development.

Potential Funding Sources

Ad Valorem Taxes
Inheritance Tax
Corporate Gross Receipts Taxes
Corporate Income Taxes
General Sales and Use Tax
Amusement Tax
Hard-to-Dispose Tax
Rental Car Tax
Tourist Development Tax
Watercraft Sales Tax
Real Estate Transfer Tax
Severance Taxes
Special Assessments
Tax Increment Funding
Boater Registration Fees
Connection Fees
Disposal Fees
Emissions/Discharge-Based Fees
Development Impact Fee
License Fees
Recreational Fees
Fines and Penalties
Direct Donations
Fish & Wildlife Service North American Wetlands Conservation Act Standard Grants (FWS NAWCA – Standard)
FWS North American Wetlands Conservation Act Small Grants (NAWCA – Small Grants)
FWS Coastal Wetlands Planning, Protection, and Restoration Act Grants (CWPPRA – National Coastal Wetlands)
FWS Coastal Program
FWS Clean Vessel Act Pumpout Grant Program
FWS Endangered Species Conservation Grants
FWS Wildlife Restoration Grants
FWS Sport Fish Restoration Grants
NOAA Community-Based Restoration Direct Solicitation
NOAA FishAmerica Foundation
NOAA Marine Debris Research & Technology
The Nature Conservancy
National Estuary Program- NOAA Community-Based Restoration Program (CRP) grants

Potential Funding Sources (cont.)

Coastal Counties Restoration Initiative
Coastal & Estuarine Land Conservation Program
Coastal Zone Management Administration Awards
Community-based Marine Debris Prevention and Removal Grants
Community Action for a Renewed Environment (CARE)
Beach Grants
Water Pollution Control
Estuary Habitat Restoration Act
National Fish and Wildlife Foundation Keystone Initiatives
Shell Marine Habitat Program (non-federal)
Nature of Learning Program
Native Plant Conservation Initiative
Pulling Together Initiative
United States Golf Association Wildlife Links
FL FWC State Wildlife Grant
FL DEP Section 319 Grant
FL DEP TMDL Water Quality Restoration Grants
FL DEP Recycling and Education Grants
Indian River Lagoon License Plate Fund
Indian River Lagoon Workplan Projects
Water Management District Community Education Grant Program
Water Management District Grants and cost sharing programs
FL Inland Navigation District Waterway Assistance Program
Cultural Heritage and Nature Tourism Grant Program
Conservation Fund
Cooperative Institute for Coastal and Estuarine Environmental Technology
(CICEET)
Global Releaf
Sea Grant Aquatic Invasive Species Research and Outreach Program
Boat-US, Grass Roots Grant

*Potential funding sources generated by working group.
See working group meeting notes 8-11-2010.*

SUPPORT, EXPAND AND INCREASE AWARENESS OF EXISTING EDUCATION PROGRAM

Overview of Actions

- ID1-a* Institute branding to promote sustainable waterway use and preservations
- ID1-b* Implement marine science programs for kids (e.g., day trips to the lagoon)
- ID1-c* Institutionalize education within County school system
- ID1-d* Increase the use of hazardous waste collection sites (increase their availability and accessibility)
- ID1-e* Promote awareness of problems associated with fertilizers and benefits of Best Management Practices
- ID1-f* Educate boaters on their impacts to water quality and other environmental factors
- ID1-g* Promote sustainable fisheries management practices (e.g. catch and release)
- ID1-h* Improve enforcement of existing regulations regarding check pump-outs / bilges
- ID1-i* Improve enforcement of existing regulations regarding environmental damage by users
- ID1-j* Improve coordination of efforts between all agencies with an interest in water quality issues

OBJECTIVE ID1:

Support, expand and increase awareness of existing education program.

RELATED IRL CCMP ACTIONS:

- FSD-10: Encourage the proper use of fertilizers, herbicides, pesticides and reuse water.
- MB-1: Implement the Clean Marina Program throughout the Indian River Lagoon.
- MB-5: Provide educational materials and programs, such as the Clean Boater Program and boater's guides, to owners and operators of boats and personal watercraft.
- MB-6: Expand and coordinate enforcement of boating safety and resource protection regulations throughout the Indian River Lagoon.
- MB-8: Monitor boating impacts to Indian River Lagoon natural resources. Where appropriate, establish resource protection zones and monitor their effectiveness.
- ETS-2: Improve enforcement of regulations protecting endangered, threatened or species of special concern in the Indian River Lagoon region.
- F-1: Conserve, protect, restore and manage the finfish and shellfish resources in the Indian River Lagoon region.
- PIE-1: Implement and expand public involvement and education projects or programs.

- PIE-2: Develop, implement and refine a communications plan to inform stakeholders and government officials about the resources of the Indian River Lagoon, the economic and ecological value of these resources and threats to the continued viability of these resources.
- PIE-4: Increase public and governmental involvement in activities designed to protect and restore the resources of the Indian River Lagoon.
- PIE-5: Strategically prioritize and implement public education programs based on pollution potential, perceived likelihood for behavior change, resource availability, and opportunities that arise.
- DIM-4: Ensure appropriate water quality and benthic data and information concerning the Indian River Lagoon is entered into and available through the storage and retrieval (STORET) system or its successor.
- MON-1: Continue projects related to monitoring the resources of the Indian River Lagoon and address gaps in data as needed.
- MON-2: Continue the Citizens Water Quality Monitoring Program.
- BD-1: Coordinate biodiversity activities within the Indian River Lagoon region.

PRIORITY PROBLEM:

Public participation and awareness has been a necessary and essential ingredient in keeping the IRL and St. Johns River systems healthy (IRL-NEP, 1996). It has been discussed and agreed amongst organizations that stimulating public interest in the welfare of the surrounding environment, rather than enacting legislation to force people to become aware of its fragile state, is an important way to prevent further damage. During the drafting and review process for the IRL Comprehensive Conservation and Management Plan (CCMP), it was recognized that a variety of public outreach strategies have been employed to educate citizens about the IRL system and to promote citizen involvement. The methods used included posters, brochures, slides, video shows, and T-shirts at program sponsored workshops, fairs, educational events, etc. The implementation of IRL-CCMP actions is highly dependent on maintaining and nurturing public interest and involvement in the protection, preservation, and restoration of the IRL and its resources. Thus, it has been noted that in order to maintain public interest and support, a continuous outreach program or programs must strengthen education for Brevard County residents as well as visitors and tourists.

In 2007, residents and visitors of the IRL counties received about \$3.7 billion in benefits, due to the existence of the IRL in its 2007 environmental condition (Hazen and Sawyer, 2008). These benefits include, but are not limited to recreational expenditures, recreational use value, non-use value of the Lagoon, real estate values, resident income, restoration, research, education expenditures, and commercial fishing dockside value. Among those benefits, education expenditures summed to \$91 million. Therefore, it is important for the County to proactively support, expand, and increase awareness of existing education programs.

There are many examples of educational outreach programs available in the region from which the County could draw inspirations and develop system-specific environmental education programs within the County. By communicating with similar programs in other parts of the country and abroad, and related agencies and organizations, the County can improve its coordination of efforts between all agencies with similar interest.

Over the past years, rapid population increase in Brevard County and the region has led to higher demand for waterway access and an increase in pollutant discharge. The nature of the IRL system puts pressures on its entire course, including the Mosquito Lagoon, Banana River, Eau Gallie River, St. Sebastian River, all the way south to Hobe Sound, and out into the Atlantic Ocean. Pressure locally can have subsequent linked effects to the water quality, ecology, fisheries, and the economy amongst all of the IRL's neighbors.

It is important to note that, funding is a continuous challenge in conducting all actions mentioned herein. Therefore it is equally important for the County and its partners to obtain sufficient monetary support to complete the tasks listed in the plan.

ESTIMATED COSTS:

Cost can be minimized by encouraging voluntary support from the residents and waterway users through educational outreach that utilizes existing educational materials available from local non-profit organizations and education institutions.

Task ID1-a

Institute branding to promote sustainable waterway use and preservation

BACKGROUND AND EXPECTED BENEFITS:

Waterway access is one of Brevard County's most valuable environmental resources. As population growth continues, so does the demand for the use of waterways. The need for a better understanding of present use and its impacts, therefore, becomes critical among stakeholders. Creation of a local or regional waterway brand, a representative and/or promotion symbol (trademark), with ties to involved user-groups, and clear organizational links to regional waterway features could assist in preservation of waterway cultural heritage and promote sustainable use and development.

PRIORITY:

The working group recommends a priority rating of HIGH

HOW:

Develop mission statement through a consortium of interested parties formed by locally active recreational organizations, boating education groups and lagoon programs. Create guidelines for stewardship according to the mission statement. Appoint a lead agency and review board, such as the Brevard Marine Advisory Council (BMAC). Look for sponsors to support and promote branding using social media and through school activities and contests.

WHO:

Primary: Indian River Lagoon National Estuary Program
Brevard County
Tourism Development Council

Secondary: National Oceanic and Atmospheric Administration
National Park Service
Patrick Air Force Base
Canaveral Air Force Station
NASA
Florida Department of Community Affairs
Florida Department of Agriculture
Florida Fish and Wildlife Conservation Commission
St. Johns River Water Management District
Canaveral Port Authority
Historical Societies (local, State)
Local municipalities
Brevard County Sheriff's Office Ag/Marine
Brevard Nature Alliance
Chambers of Commerce

Secondary: The Nature Conservancy
(Continued) Marine Resources Council
Sierra Club
Citizens for Florida Waterways
Marine/Agricultural Extension Service
Educational Institutions (BCC, FIT, UF, UCF)
Sea Grant
Power Squadron
USCG Auxiliary
Yacht Clubs
Surfrider Foundation
BoatUS
Scouting Organizations
KBB
United Waterfowlers of FL
Save the Manatee Club

WHERE:

Throughout Brevard County.

MEASURE OF PROGRESS:

1. Identification and development of the brand
2. Conduct survey of the chosen brand
3. Conduct follow-up survey to analyze the effectiveness of branding

RELATED CM3P ITEMS:

- IC1-d** Conserve upland buffers to waterways
IIA Engage all relevant planning and regulatory agencies to find solutions to access issues in a regional perspective
IIC2-a Explore no-net-loss policy for public access
IID1-b Explore more effective coastal and waterfront development practices
IID2-a Promote capital reinvestment – private/government grants
IID2-b Maximize utilization of available funds
IID2-d Inventory historical, cultural, heritage, public access sites
IID2-e Determine the economic impact of “historical” water-oriented uses

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Cost is dependent upon each organization’s willingness to participate and promote brand. The initial branding is expected to be on a voluntary basis. Final costs will include staff time and fees for brand related materials for dissemination and costs for electronic dissemination.

NOTES:

None.

Task *ID1-b*

Implement marine science programs for kids (e.g., day trips to the lagoon)

BACKGROUND AND EXPECTED BENEFITS:

Successful implementation of the CM3P is dependent on public support. The Indian River Lagoon and the St. Johns River provide excellent resources for marine science activities for adults as well as children. Over the past years, Brevard County and a variety of regional organizations have developed programs collaborating with environmental groups, local educational institutions, and clubs, to support marine science education for children. Effective implementation of consistent, age appropriate marine science programs for children may work to broaden parents' knowledge and awareness of the waterway, provide opportunities for coordination with business and interest groups, and promote long-term concern for the environment.

PRIORITY:

The working group recommends a priority rating of HIGH

HOW:

Compile a directory of regional programs. Identify and examine existing programs for effective models, then expand and enhance those programs. Look for opportunities to develop collaborative projects and programs with clubs and business partners. Look toward options that include camp-type programs, and options for fee-based and fee-waived programs. Once funding is secured, develop tiered programs based on age and school standards, and identify pilot programs.

WHO:

- Primary:**
- National Park Service
 - St. Johns River Water Management District
 - Indian River Lagoon National Estuary Program
 - Brevard Public Schools
 - Brevard County
 - Marine/Agricultural Extension Service
 - Educational Institutions (BCC, FIT, UF, UCF)
 - Sea Grant
 - Brevard Zoo
- Secondary:**
- U.S. Fish and Wildlife Service
 - National Oceanic and Atmospheric Administration
 - US Coast Guard
 - USGS
 - NASA
 - Florida Department of Environmental Protection (CAMA)

Secondary: Florida Department of Agriculture
(Continued) Florida Fish and Wildlife Conservation Commission
City of Satellite Beach (ongoing program)
Chambers of Commerce
The Nature Conservancy
Marine Resources Council (ongoing)
Power Squadron
USCG Auxiliary
Surfrider Foundation
Scouting Organizations
KBB
Save the Manatee Club
Economic Development Council

WHERE:

Throughout Brevard County schools, kindergartens, and non-traditional/informal extensions of educational services.

MEASURE OF PROGRESS:

1. List existing programs, review and identify gaps for improvement
2. Identify potential partners for new and expanded programs
3. Increase partnership in exiting and creation of new opportunities
4. Identify and secure funding

RELATED CM3P ITEMS:

- IDI-b** Institutionalize education within County school system
IVA1-d Partner with the marine industry for the development of educational materials
VIA3 Base priorities as identified by current, complete data and local input
VIB1 Increase involvement of the existing Marine Advisory Committee in determining the need for and application of relevant studies

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Funding for the implementation of marine science programs for kids is highly dependent upon government budget. Therefore, private funding sources are strongly encouraged. Liability costs and budge for personnel should also be considered.

NOTES:

More information can be found on the University of Florida's Institute of Food and Agricultural Sciences website: <http://www.ifas.ufl.edu/> and UF/IFAS Brevard County Extension website: <http://brevard.ifas.ufl.edu/>

Task ID1-c

Institutionalize environmental education programs within Brevard County public schools school system

BACKGROUND AND EXPECTED BENEFITS:

The Indian River Lagoon and St. Johns River systems provide a superb resource for environmental education in county schools. Many local organizations provide environmental educational materials for students, kinder and up. At this time, very few formal educational institutions partner with these organizations, and there exists a lack of continuity of environmental educations amongst different grade levels. Implementing a formal regional system based on environmental education requirements within County school system will support and encourage environmental-related education funds in the county, enhance the environmental education process, promote sustainable access of local waterways, provide opportunities for early age voluntary boating safety instructions, and create sense of stewardship in the community.

PRIORITY:

The working group recommends a priority rating of MEDIUM

HOW:

Identify scope and available literature in all environmental and/or waterway related fields and topics of study. Review existing programs and curriculum and consider the expansion of integrated science programs as related to the multidisciplinary nature of our regional waterways. Provide in-service training. Coordinate with USCG Auxiliary and Power Squadron through their existing educational programs to make safe boating certificate available through school programs.

WHO:

Primary: Brevard Public Schools

Secondary: National Science Foundation
NASA
Indian River Lagoon National Estuary Program
Florida Legislature
Florida Department of Education
Brevard County
Educational Institutions (BCC, FIT, UF, UCF)
Save the Manatee Club
Sea Grant

WHERE:

Throughout Brevard County school systems.

MEASURE OF PROGRESS:

1. List existing programs and requirements
2. Create new curriculum as necessary
3. Implement curriculum
4. Follow-up with timely assessment to determine effectiveness of programs within Brevard public schools

RELATED CM3P ITEMS:

- IDI-b** Implement marine science programs for kids (e.g., day trips to the lagoon)
- IVI-a** Provide incentives to encourage education (insurance discounts, registration discounts)
- IVI-d** Partner with the marine industry for the development of educational materials
- IVI-g** Inventory available educational materials and sources
- IVI-h** Develop countywide education task force
- IVI-i** Improve education of non-motorized boat operators
- VIB1** Increase involvement of the existing Marine Advisory Committee in determining the need for and application of relevant studies

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Funding is dependent upon County budget. At the initial stage, public schools are encouraged to work with local environmental organizations and educational institutions that can provide resources.

NOTES:

Private school may also implement similar systems whereas considered appropriate.

Examples of the type of materials that may be used as a resource to teachers and students is available at the Save the Manatee Club website at <http://www.savethemanatee.org/edmat.htm> .

Working group members thought that the current title is unclear and suggested a new title for the task “Institutionalize environmental education programs within Brevard public schools”.

Task ID1-d

Increase the use of hazardous waste collection sites (increase their availability and accessibility)

BACKGROUND AND EXPECTED BENEFITS:

Several methods have been used to treat and dispose of hazardous waste generated in the IRL system in the past. Through the years, dumping into the IRL has consistently remained a public issue. The number of registered vessels in the county has grown steadily over the past 20 years leading to increasing demand for hazardous waste collection sites accessible to boaters. Effective implementation of regulations and use of hazardous waste collection sites will increase awareness among waterway users in the county, decrease the likelihood of pollution, provide opportunities for education outreach and improve intergovernmental coordination.

PRIORITY:

The working group recommends a priority rating of MEDIUM

HOW:

Identify types and locations of waste generated through formal analysis or survey. Provide listing of penalties and proper disposal sites. Provide incentives for users to participate in recycle and establish fines for those who do not recycle. Utilize advertisement, signage, and multimedia in public outreach and education on waste disposal-related issues. Use pictures to show what are considered hazardous waste, and how to handle them.

WHO:

Primary: Florida Department of Environmental Protection
Canaveral Port Authority
Brevard County

Secondary: National Park Service
Patrick Air Force Base
Canaveral Air Force Station
US Coast Guard
Florida Department of Transportation
Florida Fish and Wildlife Conservation Commission
St. Johns River Water Management District
Indian River Lagoon National Estuary Program
Brevard County Sheriff's Office Ag/Marine
Municipalities
Marine Resources Council
Citizens for Florida Waterways
Marine/Agricultural Extension Service

Secondary: Educational Institutions (BCC, FIT, UF, UCF)
(Continued) Power Squadron
USCG Auxiliary
Yacht Clubs
Surfrider Foundation
BoatUS
Point of Sale

WHERE:

Throughout Brevard County.

MEASURE OF PROGRESS:

1. Identify locations and distribution and/or accessibility of disposal sites.
2. Conduct survey to improve level of awareness of existing sites
3. Build awareness through signage and educational materials as needed
4. Increase waste collections sites and decrease related citations.

RELATED CM3P ITEMS:

- ICI-f*** Increase the availability and accessibility of hazardous waste collection sites
- IAI-f*** Investigate the effects of thermal discharge (thermal pollution?) and the loss of these discharges on flora and fauna

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

To be estimated.

NOTES:

Members thought that the definition of hazardous material remains unclear to waterway users and should be clarified. In addition, members suggested that it is important to help users distinguish sewage and hazardous waste.

Task ID1-e

Promote awareness of problems associated with fertilizers and benefits of Best Management Practices

BACKGROUND AND EXPECTED BENEFITS:

The best fertilizers for use in Florida contain at least 30 percent slow-release nitrogen (Brevard County, 2010). These products have less potential to reach the waterways. The Florida Yards and Neighborhoods program by the Institute of Food and Agricultural Sciences (IFAS) of University of Florida has been implemented statewide but misconceptions still exist regarding proper and effective fertilizer use. By promoting awareness of problems associated with fertilizers, the county will promote good stewardship, reduce pollution to the waterways, preserve and improve water quality, and realize benefits of Best Management Practices.

PRIORITY:

The working group recommends a priority rating of LOW

HOW:

Conduct an inventory on existing awareness programs and identify the needs for new programs through outreach and education. Determine main audiences, such as the Homeowner's Associations (HOA) and other preexisting organized groups. Coordinate with municipalities on BMPs and regulations for residential lot drainage. Support existing programs, such as the Brevard County IFAS extension service through the University of Florida. In addition, seek local brand certification for BMP business (see 1D1-a).

WHO:

Primary: Florida Department of Environmental Protection
Florida Department of Agriculture
Brevard County
Municipalities
Marine/Agricultural Extension Service

Secondary: National Oceanic and Atmospheric Administration
National Park Service
Patrick Air Force Base
US Coast Guard
Florida Fish and Wildlife Conservation Commission
St. Johns River Water Management District
Canaveral Port Authority
Indian River Lagoon National Estuary Program
Marine Resources Council

Secondary: Citizens for Florida Waterways
(Continued) Educational Institutions (BCC, FIT, UF, UCF)
Power Squadron
USCG Auxiliary
Yacht Clubs
Surfrider Foundation
BoatUS
Scouting Organizations
KBB
Private Golf Courses
HOA's

WHERE:

Throughout Brevard County.

MEASURE OF PROGRESS:

1. Conduct survey of current practices and participation with existing programs
2. Record the number of certified green industry personnel and green industry BMP programs
3. Improved water quality

RELATED CM3P ITEMS:

- IC1-h** Investigate Best Management Practices for lawn care and fertilizer application including the effectiveness of programs such as the University of Florida's Florida Yards and Neighborhoods program
- IA1-f** Investigate the effects of thermal discharge (thermal pollution?) and the loss of these discharges on flora and fauna
- ID1-g** Promote sustainable fisheries management practices (e.g. catch and release)

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Cost to local governments associated with converting landscapes can be recouped quickly by lower maintenance costs associated with landscaping BMPs. Cost for developing educational materials will be minimized through the use of existing materials from educational institutions and extension programs.

NOTES:

Municipalities and Brevard County provide funding for the UF/IFAS Brevard County Extension office to provide educational programs to the public based on Florida Yards and Neighborhoods (FYN) program and Florida Friendly Landscaping (FFL). These programs cover BMPs for fertilizers. Those municipalities that pay for such programs offered by UF/IFAS will show FDEP that they provide such education programs for FYN and will receive education credit. A 3% reduction credit in TMDL will be applied for municipalities that provide local funding to implement FYN. A 2% credit reduction is given for local development that requires FFL, training through Florida-Friendly Best

Management Practices for Protection of Water Resources by the Green Industries (GIBMP) program, covering such topics as: irrigation systems, and pest waste controls.

Task *IDI-f*

Educate boaters on their impacts to water quality and other environmental factors

BACKGROUND AND EXPECTED BENEFITS:

Discharges from marine sanitation devices, pollutants generated by fueling and operating boat motors, detergents from boat cleaning, metals or other materials leaching from bottom paints, along with unsafe operations in environmentally sensitive areas can affect water quality in the IRL. The impacts related to these issues can range from small disturbances to acute toxicity in the water column or sediments and threats to the public health (IRL-NEP, 2008). Educating boaters on their impacts to water quality and related environmental factors will increase awareness of environmental issues, which in turn will promote eco-tourism in Brevard County and provide boaters with knowledge to pursue more environmentally sound options.

PRIORITY:

The working group recommends a priority rating of MEDIUM

HOW:

Conduct inventory on existing programs and expand those programs to include more environmental information in boater safety. Examine applicability of inclusion in executing “safe boating” courses. Make educational materials available at registration and title offices. Create materials for infrequent users, increase signage at ramps and in boats using stickers, placard and chachkis with sponsors to incorporate branding.

WHO:

Primary: Brevard County Sheriff’s Office Ag/Marine
Brevard County
Marine/Agricultural Extension Service
Sea Grant
Power Squadron
USCG Auxiliary

Secondary: National Park Service
US Coast Guard
Florida Department of Environmental Protection
Florida Department of Agriculture
St. Johns River Water Management District
Canaveral Port Authority
Marine Resources Council
Seven Seas Cruising Association
Citizens for Florida Waterways
Educational Institutions (BCC, FIT, UF, UCF)

Yacht Clubs
BoatUS
Secondary: Scouting Organizations
(Continued) Marinas and other waterfront
Save the Manatee Club
Point of Sale

WHERE:

Throughout Brevard County waterways and among all boaters.

MEASURE OF PROGRESS:

1. List of existing environmental standards of boating safety courses
2. Develop survey to identify knowledge gaps and areas of improvements
3. Implement multimodal education strategy
4. Assess awareness on local environmental issues

RELATED CM3P ITEMS:

- IVA1-e** Better advertisement of educational opportunities for boaters
IVA1-f Alert boaters to navigational hazards especially fixed objects not visible at night
IVA1-h Develop county-wide education task force
IVA1-i Improve education of non-motorized boat operators
IVA2-j Encourage law enforcement to take a more “boater friendly” approach, especially when dealing with transient boaters
ID1-j Improve coordination of efforts between all agencies with an interest in water quality issues.

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Funding can be maximized by utilizing existing educational materials from on-going education programs.

NOTES:

None.

Task *ID1-g*

Promote sustainable fisheries management practices (e.g. catch and release)

BACKGROUND AND EXPECTED BENEFITS:

Commercial fishing contributed over \$3.8 million dollars of the annual economic values of the IRL in 2007 (Hazen and Sawyer, 2008). Since the 1980s, the landings of seatrout, a species largely limited to estuaries and strongly associated with sea grassbeds have shown a decline (IRL-NEP, 2008). In addition to finfish, several species of shellfish are important components of fishery landings. In the IRL, blue crabs, stone crabs, hard clams and oysters are the primary shellfish species of commercial importance. Through support of sustainable fisheries management practices, the County will enhance pride and stewardship of the fishing culture among residents, promote long-term environmental benefits, advance tourism, and support the economy associated with commercial and recreational fishing.

PRIORITY:

The working group recommends a priority rating of MEDIUM

HOW:

Support state and federal efforts related to sustainable commercial and recreational fisheries management. Conduct inventory of existing programs and look for areas of improvement. Maximize outreach efforts by ensuring educational materials are available and given out at the time of boat registration, at license locations, and at boat and gear sales sites to maximize outreach. Promote consistency in education and outreach that ties upland activities to fisheries management and aquatic resources (see ID1-b, c).

WHO:

Primary: Florida Fish and Wildlife Conservation Commission
Brevard County
Marine/Agricultural Extension Service
FL Sea Grant

Secondary: National Oceanic and Atmospheric Administration
Florida Department of Agriculture
St. Johns River Water Management District
Indian River Lagoon National Estuary Program
Municipalities
Brevard County Sheriff's Office Ag/Marine
Marine Resources Council
Citizens for Florida Waterways

Educational Institutions (BCC, FIT, UF, UCF)
Fishing Clubs / Organizations

WHERE:

Throughout Brevard County and adjacent counties.

MEASURE OF PROGRESS:

1. Identify existing education programs and materials
2. Increase distribution locations for materials
3. Increase outreach events and participation
4. Increase in and stability of fish population

RELATED CM3P ITEMS:

- ID1-a** Institute branding to promote sustainable waterway use and preservation
- IID1-a** Explore zoning and access limits
- IID1-b** Explore more effective coastal and waterfront development practices
- IID2-a** Promote capital reinvestment – private/government grants
- IID2-e** Determine the economic impact of “historical” water-oriented uses
- VIA1-a** Estimate carrying capacity of waterways and facilities including commercial uses and facilities
- VIS1** Increase involvement of the existing Marine Advisory Committee in determining the need for and application of relevant studies

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Cost can be best managed by effective coordination with local and regional fisheries management agencies, such as the South Atlantic Fishery Management Council (SAFMC). A variety of institutions and marine labs also provide educational materials that can be used for outreach.

NOTES:

The health of the waterfront (water quality, shoreline vegetation, etc.) should be considered when looking at fisheries management. See mosquito impoundment tasks from previous Working Groups (Task IC-1a).

Task ID1-h

Improve enforcement of existing regulations regarding ~~check~~ pump-outs and bilges

BACKGROUND AND EXPECTED BENEFITS:

Infrastructure shortcomings ranked fifth on the Primary Boating Detractors' list during a survey conducted for recreational boating characterization study in Brevard County in 2007 (Sidman, et al., 2007). Inadequate marina facilities such as pumpouts and maintenance services encompassed 4.1% of all marina users. The availability of pumpouts throughout the County interwaterways, particularly at managed mooring fields, could reduce the dumping of untreated sewage into our waterways. Through improved enforcement of existing regulations regarding pumpouts and bilges, the county will, promote compliance, and encourage and support the preservation and enhancement of water quality in the IRL.

PRIORITY:

The working group recommends a priority rating of LOW

HOW:

Support agencies currently enforcing existing related regulations and look for areas of coordination improvement. Analyze existing pumpouts and set target for justification of additional enforcements as needed. Look at sufficiency and availability of pumpouts currently available. Provide up-to-date maps showing pumpout stations and educational materials online.

WHO:

Primary: US Coast Guard
Florida Fish and Wildlife Conservation Commission
Brevard County Sheriff's Office Ag/Marine

Secondary: Florida Department of Environmental Protection
Canaveral Port Authority
Indian River Lagoon National Estuary Program
City of Indian Harbor Beach
City of Melbourne
City of Titusville
Town of Cocoa Beach
Brevard County
Seven Seas Cruising Association
Citizens for Florida Waterways
Marine/Agricultural Extension Service
FL Sea Grant
Power Squadron
USCG Auxiliary

Yacht Clubs

WHERE:

Throughout Brevard County waterways.

MEASURE OF PROGRESS:

1. Produce current map on the web site for pumpout stations
2. Increase patrol presence, fines, and/or citations, and arrests

RELATED CM3P ITEMS:

- IB1-d** Investigate establishment of a mitigation value for mooring fields
- ID1-f** Educate boaters on their impacts to water quality and other environmental factors
- ID1-j** Improve coordination of efforts between all agencies with an interest in water quality issues.
- VA3-a** Establish consistent design and placement regulations for signage
- VIA2-a** Incorporate bathymetry into conservation regulations

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Enforcement calls for better interagency coordination and should not require additional costs at the early stage. Further costs should be determined depending on the effectiveness of enforcement.

NOTES:

The WG members felt that it is important to improve communications across agencies in various media, and to ensure interactive equipment is compatible and standardized, as discussed in ID1-j.

The members hope that the number of citation would eventually decrease as users respond to enforcement and increased citations.

Clarification of Task title was suggested by the working group and is included above.

Task ID1-i

Improve enforcement of existing regulations regarding environmental damage by users

BACKGROUND AND EXPECTED BENEFITS:

Brevard County and its adjacent counties along the IRL represent approximately 11 percent of all boats registered in Florida in 1993 (IRL-NEP, 1996). In 2006, there were more than 115,000 boats registered in the IRL region (IRL-NEP, 2008). Heavy use of the lagoon can strain the sensitive natural resources of the lagoon and in the long term reduce the popularity of IRL among users. In order to sustain the signature quality of the lagoon and ensure regional long term economic development, it is necessary to build consistency and improve enforcement of regulations regarding environmental damages by on-water users.

PRIORITY:

The working group recommends a priority rating of HIGH

HOW:

Increase education and outreach for the public, as described in ID1-b, c. Provide resources and opportunities for continuing education. Review and setup education benchmarks. Ensure on-water officers are consistent and knowledgeable about local issues through workshops and/or classes. Ensure fines are sufficient and deterrent. Amend enforcement measures by making education classes mandatory with any citation. Seek additional enforcement resources, such as officers and funding.

WHO:

Primary: Florida Fish and Wildlife Conservation Commission
Brevard County Sheriff's Office Ag/Marine

Secondary: US Coast Guard
Florida Department of Environmental Protection
St. Johns River Water Management District
Canaveral Port Authority
Indian River Lagoon National Estuary Program
City of Indian Harbor Beach
City of Melbourne
Town of Cocoa Beach
Brevard County
Seven Seas Cruising Association
Citizens for Florida Waterways
Marine/Agricultural Extension Service
FL Sea Grant

Save the Manatee Club

WHERE:

Throughout Brevard Country and adjacent counties.

MEASURE OF PROGRESS:

1. Set up education benchmarks for law enforcement
2. Increased number of on water officers with knowledge of local environmental issues
3. increased number of environmental related citations

RELATED CM3P ITEMS:

- IDI-f** Educate boaters on their impacts to water quality and other environmental factors
- IDI-j** Improve coordination of efforts between all agencies with an interest in water quality issues.
- IIIA2-b** Mark shoals and environmentally sensitive area
- VA3-a** Establish consistent design and placement regulations for signage
- VIA2-a** Incorporate bathymetry into conservation regulations

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Cost for enforcement can be minimized by utilizing existing education classes and materials. Parts of fines from citations may be used for developing education materials as necessary.

NOTES:

The WG members felt that it is important to improve communications across agencies in various media, and to ensure interactive equipment is compatible and standardized, as discussed in ID1-j.

Task ID1-j

Improve coordination of efforts between all agencies with an interest in water quality issues

BACKGROUND AND EXPECTED BENEFITS:

Following the direction of the Legislature to develop a database for Florida water quality information, FDEP adopted STORET, a national water quality database maintained by the EPA for the storage of water information in the United States. To comply with this requirement, all publicly funded IRL water quality data are ultimately entered into STORET, simplifying searches for scientific information about IRL resources. Facilitating and improving coordination of efforts between all agencies with an interest in water quality will promote better use of these resources, optimize use of manpower and funding, synergize processes among agencies, and support cost-effective actions along the IRL.

PRIORITY:

The working group recommends a priority rating of MEDIUM

HOW:

Create publically acceptable “plain language” inter-agency flowcharts to identify water quality related scientific jurisdictions and relationships for the edification of the public and government officials. Clarify jurisdictional issues. Prioritize management at higher level government agencies, and relate importance to the enforcement sections (see boating safety and ID1-i). Provide water-related data available to the public through STORET (“STORage and RETrieval” from FDEP website) in order to minimize duplication. Optimize resources to reduce cost.

WHO:

Primary: Brevard County

Secondary: Environmental Protection Agency
U.S. Fish and Wildlife Service
National Oceanic and Atmospheric Administration
National Park Service
Patrick Air Force Base
Canaveral Air Force Station
US Coast Guard
USGS
USACE
NASA
Florida Department of Community Affairs

Florida Department of Environmental Protection
Florida Department of Transportation
Florida Department of Agriculture
Secondary: Florida Fish and Wildlife Conservation Commission
(Continued) St. Johns River Water Management District
Florida Inland Navigation District
Canaveral Port Authority
Indian River Lagoon National Estuary Program
Municipalities
Marine Resources Council
Educational Institutions (BCC, FIT, UF, UCF)
FL Sea Grant
Save the Manatee Club
Surfrider Foundation

WHERE:

Throughout Brevard County.

MEASURE OF PROGRESS:

1. Construct inter-agency flow chart and make it available online
2. Make flow chart available at inter-agency state meetings
3. Improve inter-agency coordination

RELATED CM3P ITEMS:

- ID1-f** Educate boaters on their impacts to water quality and other environmental factors
- IID2-c** Improve coordination of waterfront purchases
- IVA2-a** Evaluate current law enforcement strategies and identify needs and appropriate priorities
- IVA2-c** Improve geographic allocation of law enforcement resources between USCG/FWCC/Sheriff/Cities
- IVA2-j** Encourage law enforcement to take a more “boater-friendly” approach, especially when dealing with transient boaters
- VIA3-a** Partner with universities and the Cooperative Extension Service to obtain relevant data

ESTIMATED COSTS AND IMPLEMENTATION TIMELINE FOR TASK:

Dependent upon staff time needed for flow chart development.

NOTES:

Improve communications across agencies in various media; ensure interactive equipment is compatible and standardized.

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