



Florida Department of Environmental Protection

Sustainable Initiatives Program

Florida's Clean and Resilient Marina Program

May 16, 2017





Resiliency

What is resiliency, and how does it apply to marinas?

“Resilience is the capacity of human and natural systems to adapt and recover from change. For marinas in the Gulf Coast, being resilient means being able to reduce damage and resume business even in the face of many hazards.”

- Gulf of Mexico Alliance’s Coastal Community Resilience Team





Gulf of Mexico Resilient Marinas

Coastal and Clean Coastal Marinas for TX, LA, MS, AL, and FL



Legend

Disclaimer: The information contained on this map was prepared using the best available data. The Florida Department of Environmental Protection and its staff do not warrant the accuracy or completeness of the information shown on this map. The Florida Department of Environmental Protection and its staff do not assume any liability for any errors or omissions on this map. The Florida Department of Environmental Protection and its staff do not assume any liability for any damages, including consequential damages, arising from the use of this map. The Florida Department of Environmental Protection and its staff do not assume any liability for any damages, including consequential damages, arising from the use of this map.

- County boundaries
- Coastal Zone Boundary
- Coastal Marinas
- Clean Marinas
- Lakes
- State Boundaries
- Interstate Highways
- Rivers

*Background depicts certain topographic features



RESILIENT MARINAS DEPARTMENT OF MARINE RESOURCES	
<i>Eco-Systems, Inc.</i>	
<small>Consultants, Engineers, and Scientists</small>	
SCALE: 1"=496,000'	DATE: 03-08-2012
DRAWN BY: PML	CHECKED BY: MP
PROJECT NO: 11193	FILE: 11193_030812_FIG01_R00_D_Multi_State_CM
MULTI-STATE COASTAL MARINAS	FIGURE 1



Florida Clean and Resilient Marinas

Florida's Designated

Clean & Resilient Marinas:

16

- Ben's Lake Marina (Okaloosa)
- Bluepoints (Brevard)
- Bluewater Bay Marina Complex (Okaloosa)
- Boca Chica Naval Air Station (Monroe)
- Carrabelle Boat Club (Franklin)
- City Ft Myers Yacht Basin (Lee)
- Clearwater Harbor Marina (Pinellas)
- Fish Tale (Lee)
- Lost Key Marina and Yacht Club (Escambia)
- Legacy Harbour Marina (Lee)
- NAS Pensacola Bayou Grande (Escambia)
- NAS Pensacola Sherman Cove (Escambia)
- Palm Harbor (Escambia)
- Port St. Joe Marina (Gulf)
- St Augustine Municipal Marina (St Johns)
- Venetian Cove Marina (Lake)



Clean and Resilient Goals

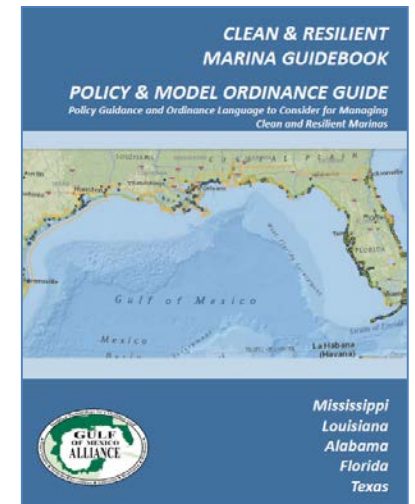
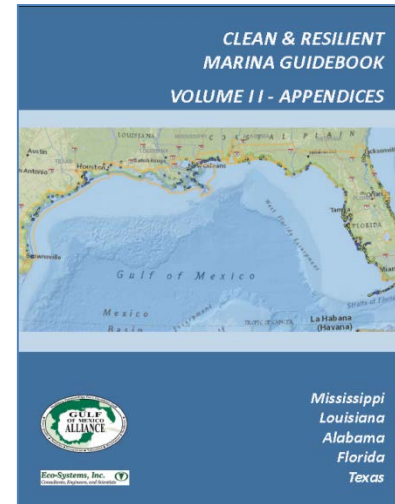
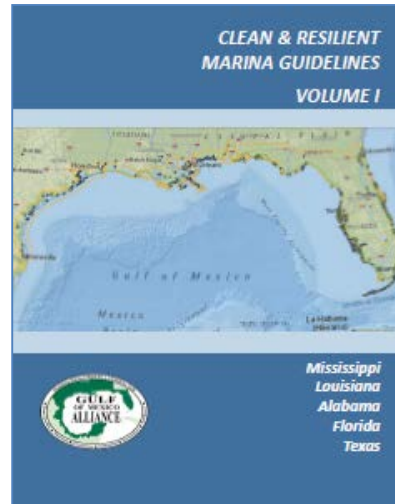
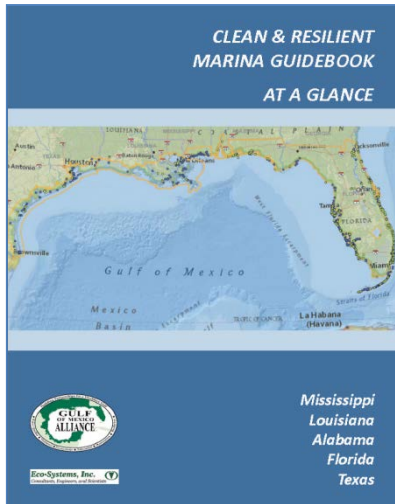
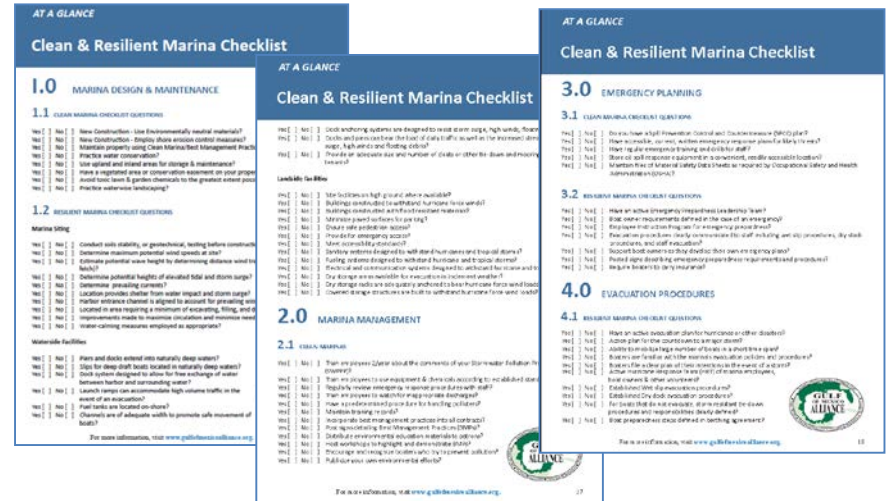
To achieve designation, Clean and Resilient Marinas selectively implement a set of criteria designed to:

1. Protect human life and safety;
2. Reduce the exposure of structures on water and land to damage;
3. Reduce the exposure of boats to damage;
4. Minimize damage to property that cannot be relocated; and
5. Resume business operations as ***quickly*** as possible.



Clean and Resilient Resources

- **Guidebook-at-a-Glance**
- **Guidebook Vol. I**
- **Guidebook Vol. II: Appendices**
- **Policy Guide**





Clean and Resilient Checklist

- Marina Design and Siting
- Marina Management
- Emergency Planning
- Evacuation Procedures
- Petroleum Control
- Sewage Handling
- Waste Containment and Disposal
- Vessel Maintenance and Repair
- Stormwater Management
- Outreach and Education

The image displays three overlapping pages of the 'Clean & Resilient Marina Checklist'. Each page features a blue header with the title 'Clean & Resilient Marina Checklist' and a sub-header 'AT A GLANCE'. The leftmost page shows section 1.0 'MARINA DESIGN & MAINTENANCE' and section 1.1 'DESIGN MARINA CHECKLIST QUESTIONS'. The middle page shows section 2.0 'MARINA MANAGEMENT' and section 2.1 'CONSTRUCTION'. The rightmost page shows section 3.0 'EMERGENCY PLANNING' and section 3.1 'DESIGN/CONSTRUCTION QUESTIONS'. Each page contains a list of questions with checkboxes for 'Yes', 'No', or 'N/A'. The checklist is published by the Florida Department of Environmental Protection, as indicated by the logo and website URL at the bottom of each page.



Design and Siting

Clean and Resilient Marina *Best Management Practices* (BMPs)– Siting:

- Preconstruction soil stability testing is conducted.
- Determination of maximum wind speeds, currents and wave heights.
- Location naturally provides shelter.
- Water-calming measures are used.
- Minimum amount of excavating, filling and dredging for construction and operation.

Clean and Resilient Marina BMPs – Waterside Facilities:

- Piers and docks extend into naturally deep waters.
- Dockage systems are designed to resist surge, winds and floating debris.
- Docks allow for free exchange of water between harbor and surrounding environment.
- High volume ramps and facilities in event of evacuation.
- Adequately wide channels used to promote safe vessel traffic.



Design and Siting

Bluewater Bay Marina Complex, Niceville, FL

- Marina built into the environment;
- Shielded by natural barriers on three sides;
- Natural shoreline provides sheltered harbor.





Design and Siting

Palm Harbor Marina, Pensacola, FL

- Facility constructed in a well-protected bayou inlet.
- 70' piling being installed in 2014 to resist hurricane level wave heights.





Design and Siting

St. Augustine Municipal Marina, St. Augustine, FL

- Marina protected by land mass, and built using shoreline as natural barriers.
- Breakwater dock installed in 2013 to help protect existing marina and infrastructure.





Emergency Planning

Clean and Resilient Marina BMPs – Emergency Planning:

- Encourage patrons to develop personal emergency plans.
- Emergency signage is posted throughout facility.
- Boaters are required to have current insurance.
- Evacuation procedures are clearly communicated to staff.



Holiday Harbor Marina, Pensacola, FL



Emergency Planning

Clean and Resilient Marina BMPs – Emergency Planning:

- Conduct regular emergency training and drills for staff.
- Emergency Response Plans;
- Spill Prevention Control and Countermeasure (SPCC) Plan; and
- Store oil spill and emergency equipment in a readily accessible location.



St. Augustine Municipal Marina, St. Augustine, FL



Evacuation Procedures

Evacuation plans are important to the successful execution of your resiliency plans. They save you, and your patrons, valuable time and money.

Clean and Resilient Marina BMPs – Evacuation Procedures:

- Active facility evacuation plan – wet slips and dry stack
- Regular emergency training and drills for staff are conducted
- Preparedness steps are defined in slip lease agreements
- Notification of storm resistant tie-down procedures and responsibilities



Waterview Towers Yacht Club Marina, Destin, FL



Hurricane Preparedness

Clean and Resilient Marina BMPs – Hurricane Preparedness:

- Facilities are encouraged to establish an Emergency Preparedness Leadership Team to prepare a hurricane plan, evacuation procedures, train personnel and practice for emergency situations.
- Some marinas offer a hurricane club to its members for a yearly fee.
- Guaranteed a reserved space for their boat in the event of a wind storm.
- Meets insurance requirements for hurricane plan.



Hurricane Matthew 2016

Sebastian Inlet Marina, Micco, FL
River Forest Yachting Center, LaBelle, FL





Hurricane Resilient Dry Stack

Bluepoints Marina, Cape Canaveral, FL

- Dry stack resilient to 150 mph winds;
- Reinforced to prevent twisting;
- Vented at bottom; and
- Boats are moved inside in storm threat.





Stormwater Management

Clean and Resilient Marina BMPs – Stormwater Management:

- Stormwater is treated for pollutant removal.
- Proper use of natural erosion control.
- Erosion and sediment control plans are required for construction and landscaping projects.
- ID areas for potential stormwater pollution.



Bluepoints Marina, Cape Canaveral, FL



Sewage Handling

Clean and Resilient Marina BMPs – Sewage Handling:

- Install pumpout connections at convenient locations, and provide convenient pumpout service fees.
- Use signage stating no discharge of sewage and/or wastewater is allowed and provide directions on how to use the pumpout equipment.
- Have personnel on hand to monitor and ensure the proper use of pumpout equipment.



Adventure Yacht Harbor, Port Orange, FL



Pensacola Shipyard Marina,
Pensacola, FL



Sewage Handling

Clean and Resilient Marina BMPs – Sewage Handling:

- Add language to lease agreements promoting the use of pumpout facilities.
- Provide signage for proper disposal of marina patron's animal waste.
- Develop regular inspection schedules and arrange service agreements with contractors competent in the repair of pumpout and waste dump receptacle equipment.



**NAS Boca Chica,
Key West, FL**

**St. Augustine
Municipal Marina,
St. Augustine, FL**





Waste Containment & Disposal

Clean and Resilient Marina BMPs – Waste Containment & Disposal:

- Train facility personnel in proper waste management and storage procedures.
- Provide convenient trash disposal and recycling facilities to patrons, with adequate signage identifying waste disposal practices.



Sun Harbor Marina, Panama City, FL



Boot Key Harbor City Marina, Marathon, FL

- Design an adequate hazardous waste storage facility.
- Keep the storage unit locked, except during times when a trained facility employee is available to monitor proper waste segregation.



Petroleum Control

Clean and Resilient Marina BMPs – Petroleum Control:

- Provide secondary containment for piping (double wall piping) and a collection tray under dispensing area.
- Properly dispose of used petroleum spill response products and maintain records of proper waste disposal.
- Incorporate proper fueling information into boating safety, stressing the importance in maintaining a healthy marine and boatyard environment.
- Provide signage and pamphlets that stress the impacts from spills and fueling activities.



Stock Island Marina Village, Key West, FL



Marathon Marina and Boatyard



Outreach and Education

Clean and Resilient Marina BMPs – Outreach and Education:

- Include emergency and evacuation policies in berthing agreements
- Employ environmentally-knowledgeable staff that can quickly and efficiently respond to minor disturbances and major disasters.
- No-wake zones are clearly defined and included in agreements.
- Post educational signage providing education on the risks to endangered and threatened species from boating.



Cedar Key
City Marina,
Cedar Key, FL



Florida State University Coastal and Marine Laboratory, St. Teresa, FL



Resiliency in Action

Island Cove Marina, Pensacola, FL

- Marina is built in a half-moon cove protected by land behind it which is 20' above sea level
- Marina is shielded by an island 300' from the docks
- Was fully operational with electricity, water, and fuel after hurricane Ivan in 2004
- Supplied the Coast Guard and other emergency vessels fuel and dockage when no other marinas were left operational





Resiliency in Action

St. Augustine Municipal Marina, St. Augustine, FL

- Breakwater dock constructed on the facility's north side provides protection from north and northeast winds.
- Designed to protect boats, slips and marina infrastructure from storm surge.
- Remained open for normal hours and services after hurricane Matthew.





Florida Clean Marina Program

Florida Clean Marina Program

<http://www.dep.state.fl.us/osi/clean-marina>

Florida Clean and Resilient Marina Program

<http://www.dep.state.fl.us/dep.state.fl.us/osi/clean-marina/content/clean-resilient-marina>

Florida Clean Vessel Act Grant Program

<http://softlive.dep.state.fl.us/osi/cva>

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