

Building Back More Resilient Working Waterfronts

Initiative Summary Statement:

Rehabilitate support structures over and adjacent to the water such as seawalls, docks, marinas, and other watercraft supporting infrastructure to establish working waterfronts where appropriate.

Initiative Description:

Objective: The region's seawalls, docks, mooring fields, harbors, and marinas are key to supporting local businesses and are a part of the way of life for many Lee County area residents. Bringing access to coastal waters back is important for the fishing and boating industries, but also creates a chance to develop stronger flood water management features with resilience to sea level rise in mind. Resilient waterfront facilities can reduce risks of coastal flooding, mitigate future impacts, improve access to navigable waters, and provide opportunities for businesses that rely on sustainable access. Inland marinas can also provide opportunities for evacuation planning of vessels in coastal areas, creating partnerships with those inland marinas to allow vessels to have slips there in times of crisis. Working waterfronts, both along the coastline and rivers, can be designed for specific commercial, recreational, public safety, or industrial uses to meet the needs of the region.

Need: Hurricane Ian produced catastrophic storm surge that impacted the coastal region of Lee County bringing 10 to 15 ft of storm surge in portions of Fort Myers Beach. The widespread storm surge reversed the flow of rivers causing flooding miles inland, destroying public and private marinas, grounding 43 vessels of the Fort Myers Beach shrimping fleet. The shrimping industry has a \$50 million annual economic impact considering much of their income is spent locally which supports other businesses.¹⁹ Fishing is considered second, only to tourism on Fort Myers Beach. While most vessels in the shrimping fleet have been refloated, the infrastructure to support the shrimping fleet was severely damaged on San Carlos Island in unincorporated Lee County.

¹⁹ Aten, Tim. 2023. "Hurricane Ian remains lingering threat to SWFL's commercial fishing industry." *Gulfshore Business*, January 1. <https://www.gulfshorebusiness.com/hurricane-ian-remains-lingering-threat-to-swfls-commercial-fishing-industry/#:~:text=Hurricane%20Ian%20had%20a%20devastating,destruction%20of%20waterways%20and%20infrastructure>

In addition, Hurricane Ian damaged several bridges, severing the link between the mainland and the barrier islands of Sanibel, Captiva, and Pine Island. The connectivity to the coastal islands was lost temporarily and significant shifts in the topography of waterways created initial challenges to reach the islands by boat. After establishing a navigable channel, barges were used to transport equipment, supplies, and personnel to begin the response efforts on the islands. Permanent facilities for barge operations could be developed for each island in the event of a disaster or any event that disrupts vehicular access across bridges that are singular access points to the barrier islands. During the State's debris removal mission, seawalls within the City of Fort Myers were left damaged and further compromised. Damage to waterfronts can also be result of response and recovery efforts, not just from direct impacts from Hurricane Ian.

Regional Approach: Historically, water-adjacent areas were identified for their strategic importance as marine infrastructure in the Lee Plan with specific policies and development concerns. A key strategy will be to establish design standards for working waterfronts to be resilient to flood risk and sea level rise. Jurisdictions can address vulnerabilities to critical infrastructure and incorporate a variety of measures to reduce flood risks for new waterfront infrastructure. Resilience through adaptation and mitigation efforts can reduce adverse impacts from severe rainfall events, coastal flooding, storm surge from more frequent and severe weather systems, and sea level rise. A key public safety consideration is establishing barge access points, assessing the need for each island individually, since road connectivity cannot be assumed following a storm surge event.

Impact: The recovery from Hurricane Ian provides the region an opportunity to inventory public and private marinas, seawalls, boat ramps, mooring fields, and assess if additional facilities are needed. As waterfronts are repaired and rebuilt, there is an opportunity to reimagine new ways to provide access and economic opportunity with respect to natural resources. Working waterfronts designed for specific commercial, industrial, or recreational use can revitalize the shrimping, boating, and fishing industries in the County. Incorporating design standards for a resilient waterfront infrastructure that retains the historic character of a community will support a unified approach on resilience standards. Preparing and developing barge landing facilities allows for effective response to future storms and threats of flooding.

Key Considerations:

- Areas of possible improvements include:
 - Reconstruction of seawalls along working waterfronts and other publicly owned or maintained lands;
 - Mooring field improvements;

- Identify regional locations for developing of barge landing facilities;
- Construct barge landing facilities that are vital for response efforts and maintaining supply lines to barrier islands; and
- Marinas and docks built to withstand risks from coastal flooding and sea level rise.
- Design standards should consider both past stormwater and ocean surge experience as well as modeling of future conditions.

The use of rip rap and green, living shorelines may be appropriate in some areas.

Co-Sponsoring Branches:

Infrastructure, Economic Recovery, Natural Resources

Stakeholders:

- County departmental experts on natural resources and community development.
- Municipal departmental experts on natural resources and community development.
- Fishing and boating industry associations.

Potential Funding Sources:

- Federal Emergency Management Agency
- Economic Development Administration
- United States Department of Commerce
- National Oceanic and Atmospheric Administration
- United States Department of Transportation
- United States Army Corps of Engineers
- Environmental Protection Agency
- Florida Division of Emergency Management
- Florida Department of Commerce
- Florida Department of Transportation
- Florida Department of Environmental Protection