

Demonstration Projects

~~DEMO-01~~ — Combining Storm Surge Protection with Economic Development
**deemed ineligible to proceed in the CWPPRA process

Use Storm Surge Barriers to Expand Oyster Production

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Properly positioned storm surge barriers will fit within the State's Master Plan for Coastal Protection and Restoration. They provide a way for dredging and diversion to build dry or wet land in the Coastal Zone and will encourage the expansion of the oyster industry. **Currently, investment in the oyster industry is discouraged** by the uncertainty over what will happen to fresh water flows and existing oyster bottoms. Storm surge barriers will reduce this uncertainty by providing the physical and regulatory stability to encourage new investment in the oyster industry---investment that could double or triple Louisiana oyster production within the foreseeable future¹. Most importantly for moving forward with Coastal Protection and Restoration, properly positioned storm surge barriers provide a solution that many Coastal interests will support politically and financially. For the oyster industry this is a path to a better future welcomed by many non-oyster interests.

Storm surge barriers come in several forms. They can be floating or fixed. Fixed storm surge barriers can be vertical, like bulkheads or like levees. They can surround a piece of land like ring-levees. They can be relatively short and straight like the new barriers behind Grand Isle. Or, like the barrier (see artist rendering above) being considered for New York City.



Perhaps the most useful barriers are those built for suburban developments. Lakeshore Estates at Slidell is a good example. See picture below and webpage: <http://lakeshorelouisiana.com/> These barriers can provide space for multiple uses: housing, marinas, sports fishing, oyster production, etc. **Most impressive**, the storm surge barriers at Slidell were



built with a minimum of public subsidy. The developer paid for the environmental and engineering studies required and spent months obtaining public approval to construct these barriers.

Imagine what storm surge barriers would be built if the State provided pre-approved locations, construction plans, and construction subsidies for barriers that combined storm surge protection with expanded oyster production.

Some barriers might be positioned to protect newly developed oyster growing areas from **too much fresh water**. If the barriers were close to a source of higher-salinity water, that water could be used to manage the salinity in the newly developed oyster growing areas to maximize oyster growth.

¹ NMFS Ten Year (2005-2014) Average Annual La. oyster landings value is \$42 million, equals 1,800,000 sacks. Well-managed per acre production in Louisiana is 200 sacks/acre. The number of well-managed acres required to produce those annual landings is 9,000 acres. In La., a single company may own 100,000 acres of coastal marsh. Before reopening leasing, La. had 400,000 acres of leased oyster bottoms.

Demonstration Project Proposed to the CWPPRA

Project Title: Combining Storm Surge Protection with Economic Development

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Project Description:

Emergent terraces created from adjacent barrow areas. Terraces will be oriented to maximize storm surge dampening. The terraces will be used for land-based enterprises, e.g., solar/wind power generation, forestry, agriculture, tourism, etc. The created barrow-canals will be dedicated, as appropriate, to fresh-, brackish-, or sea-water-based forestry, agriculture, or aquaculture, e.g., oysters, crabs, finfish, crawfish. Terraces will be positioned to control water flow through the canals to maximize target species growth. Where possible, terraces will be connected to a source of saltwater to allow blending of salt and brackish water for maximum oyster production. Given appropriate permitting and financial incentives, the private and NGO sectors will participate in the construction and maintenance of the terraces/canals. Each added terrace should add a measurable increment of storm protection. The metric might be reduction in floor insurance premiums. Data collection and analysis could help develop cost/benefit ratios for terraces and help answer the question: "How many terraces are enough?"

Examples:

1. Terraces/canals running westerly/easterly from MRGO, creating wide canals dedicated to oyster production and terraces for land-based enterprises. Water from MRGO could be used to blend desired salinity in the canals for maximum oyster production.
2. Terraces/canals running westerly/easterly south of Caernarvon would likely be used for fresh-water-based enterprises, including, aquaculture, agriculture, forestry, sport-fishing, etc. Silt-laden river water and dredged material could be used to rapidly build land without affecting the salinity regimes to the south.

Qualification as a Demonstration Project

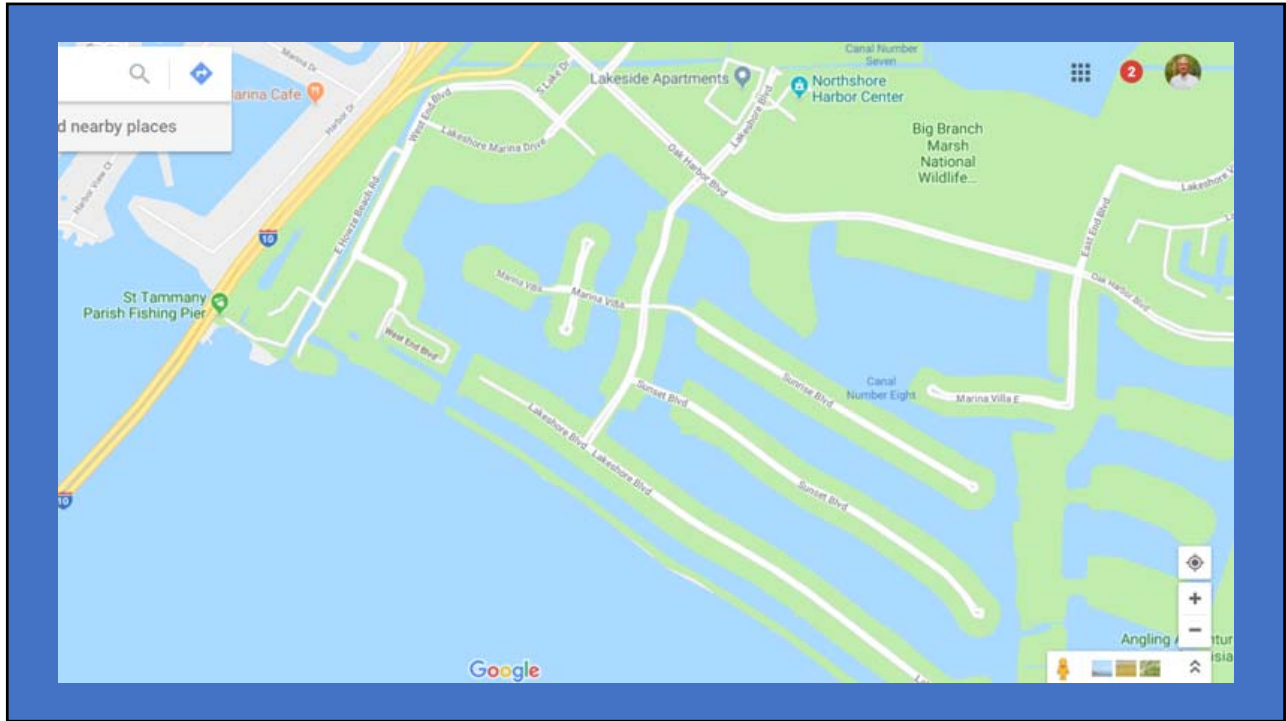
The CWPPRA PROJECT STANDARD OPERATING PROCEDURES MANUAL, Page 44, lists what constitute a demonstration project. The description focuses on new technology that has not been fully developed, and can be applied elsewhere. Significantly, the Manual also states that demonstration projects should be unique. The uniqueness of this project proposal is that it demonstrates a policy, rather than a physical technique. The policy (policy/technique) is that of explicitly planning for inclusion of disparate economic interests. The project(s) would demonstrate the policy of leveraging storm surge protection investments to create economic development---combining storm surge protection with economic development.

Combining Storm Surge Protection with Economic Development

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Emergent terraces provide
space for economic
development:

Aquaculture, Agriculture, Fisheries, Forestry, Tourism



**'Unique' Project Demonstrates
Policy/technique:
Protection and Development**

Protection and Economic Development

Oyster Industry Development

**New oyster bottoms with manageable water
salinity and flow**

Double average yearly landings