



## ***TERREBONNE PARISH MEETINGS 4 & 5 SUMMARY***





## MEETING 4 OVERVIEW

In October, LA SAFE conducted two types of meetings in Terrebonne Parish: round table discussions with parish officials and community open houses.

The LA SAFE team met with leaders and potential partners at the city and parish level in order to learn how the proposed projects could align with existing related efforts. This also helped the team identify potential hurdles in implementing certain projects, so they could plan with those obstacles in mind.

The LA SAFE team shared these same project and program updates were shared with community members at the Rougarou Festival, where LA SAFE the team hosted an informational tent and surveyed residents for their thoughts on the proposal ideas. These eventsThe event and meetings provided the an opportunity for residents and the project team to discuss ideas one-on-one and for the residents to share their thoughts on the project ideas. The Round 4 meetings helped refine the resident-generated ideas from the previous meetings into final proposals. These proposals were then evaluated in Round 5.

### Round 4 Meeting Events in Terrebonne

- Stakeholders & Parish Staff Round Table  
*Thursday 9.29.17*
- Rougarou Festival  
*Saturday 10.21.17*
- Business Round Table



*Rougarou Festival*



*Stakeholders Round Table*



*Stakeholders Round Table*



## MEETING 5 OVERVIEW

In the fifth and final round of meetings, residents reviewed six potential demonstration proposals for their parish, and voted for their preferred projects at a polling station. The meeting was a gallery-style exhibit with boards set up around the room, so that the residents could understand the LA SAFE process. The boards included a summary of previous meetings; future flood risk, land loss and subsidence maps; a 50-year vision map for the parish; and a policy proposal board that covered a range of issues expressed by residents in earlier meetings.

Demonstration proposal boards (shown in the Appendix) illustrated six different projects and programs that LA SAFE could fund. The boards included detailed descriptions, concept drawings and example images along with information on cost, location, area, and potential partners to give residents an idea of each project. Each proposal highlighted multiple community benefits, using the five categories that emerged in the previous meetings: Culture & Recreation, Stormwater Management, Housing & Development, Transportation, and Education, Economy & Jobs. This provided residents with a complete understanding of each project, in order to help them decide on their preferred proposals.



*Hosts at the Vision board*



*Meeting 5 participants casting their preferences for the six demonstration proposals*



*Unveiling the poll results*

## MEETING 5 PROPOSALS

Below are summary descriptions of each of the 6 demonstration proposals that residents evaluated at the meeting. The full description of all these proposals can be found in the appendix.



### **A BAYOU LA CACHE WETLAND PARK**

This proposal transforms an existing borrow pit site into a beautiful public park with educational and recreational programming. The park will provide multiple ecosystem services, including stormwater management, water cleansing, and recovery of native habitats.



### **B GRAND CAILLOU ENVIRONMENTAL, CULTURAL & BUSINESS CENTER**

This project will redevelop and reprogram an unused school site to provide multiple community uses and stormwater management benefits. Potential uses include a wetland discovery center, a business incubator, a cultural center, seafood processing and more. This project also includes retention ponds and enhanced open-space amenities.



### **C HOUMA SEAFOOD MARKET & HARBOR OF REFUGE**

This proposal creates a marina and safe harbor facility and a venue to host a monthly food and local products market. It gives fishermen and farmers a central location to sell products, provides consumers an established retail venue, and showcases local products to more buyers.



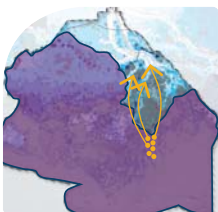
### **D LAKE BOUDREAUX LIVING MITIGATION**

The living mitigation terraces create over 300 acres of terraces/marshlands which will assist in reducing the impacts of storm surge for residents, businesses and infrastructure. The terraces will enhance growth of submerged aquatic vegetation, restore habitats and trap suspended sediments.



### **E FISHERMEN AND SEAFOOD CULTIVATION LOAN PROGRAM**

This program provides technical assistance and loans to residents in the fishing or agriculture industries who do not have access to traditional lines of credit. This program will support improvements to boats and equipment and help farmers transition to wet agriculture in areas where flooding impacts crop yield.



### **F BUYOUTS FOR PERMANENT RESIDENT HOUSEHOLDS**

This program provides assistance for permanent residents outside Morganza to the Gulf to relocate to a safer location. The program, combined with the Resettlement of Isle de Jean Charles, would create a precedent in which all permanent residents in Terrebonne Parish would be located inside of Morganza to the Gulf.

## COMMENTS AND FEEDBACK

Residents left comments and feedback on the boards describing what they liked and disliked about each proposal. A summary of their feedback is below. All of the comments gathered are in the appendix.

### A: BAYOU LA CACHE WETLAND PARK

Terrebonne Parish residents liked that this project provides public access to Bayou La Cache, giving them an opportunity to observe and learn about the natural systems of the bayou while enjoying active recreation in the area. There were four suggestions for improvements regarding the cost and safety of the plan.

### B: GRAND CAILLOU ENVIRONMENTAL, CULTURAL & BUSINESS CENTER

Many stakeholders liked that this project would repurpose existing buildings, as well as incorporate cultural and educational components. Despite the project's stormwater management components, some residents were concerned about future flooding.

### C: HOUMA SEAFOOD MARKET & HARBOR OF REFUGE

Parish residents liked that this proposal serves multiple functions. They commented that it provides opportunities for residents to purchase fresh and healthy food, creates jobs, and boosts tourism in the area. Stakeholders also pointed out that it allows fishermen to bring their boats to a safe area during storms. There was concern over the location of the harbor; it may be underutilized due to its proximity to the coast.

### D: LAKE BOUDREAUX LIVING MITIGATION

Stakeholders viewed this proposal as an effective way to combat storm surge and restore marshland in the area. They particularly liked that it could be implemented quickly and have an immediate impact on their community. There were questions surrounding public access and recreation, and residents suggested improving access for boating and boardwalks.

### E: FISHERMEN & SEAFOOD CULTIVATION LOAN PROGRAM

The participants approved of the assistance to local historic industries like crawfish, rice farming, and the seafood industry. Residents points out that it allows for Terrebonne Parish farmers and fishermen to adapt to changing landscapes, as well as keep up in a shifting economy. Assuring fairness and flexibility was a main concern, as stakeholders expressed apprehension that money may be wasted, and that the assistance program could be abused by non-commercial fishermen.

*"Time and again fishermen fall on bad times and eventually give up and fall in despair. This would be the boost they need."- Terrebonne Parish Resident*

### F: BUYOUTS FOR PERMANENT RESIDENT HOUSEHOLDS OUTSIDE MORGANZA

Residents liked that the proposal provided an option to take a buyout if and when they decide to move. However, some stakeholders felt that the proposal did not do enough to bolster the communities of southern Louisiana; that relocation may be too much to ask.



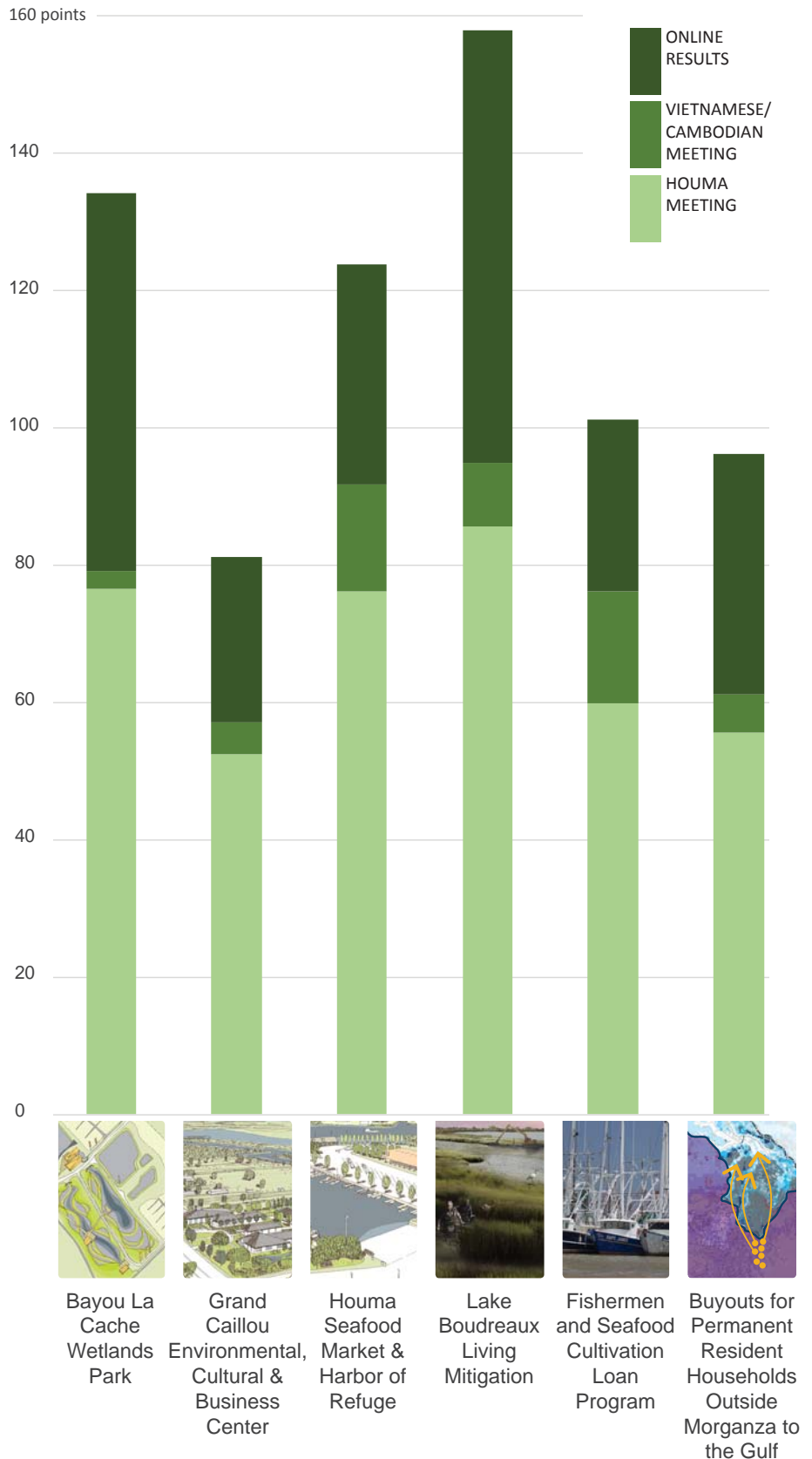
## MEETING 5 POLLING

After reviewing all of the 6 proposals, residents visited the polling station and reviewed the proposal selection criteria, which includes public preference as one of the six components. Residents were given tokens to mark their preference for each of the six proposals. They used their two gold tokens to select their favorite two proposals; green tokens for their 3rd and 4th favorite proposals, and blue tokens for their least favorite proposals. Gold tokens were worth two points, green tokens were worth 1 point and blue tokens were worth 0 points.

At the end of the evening, the results of the polling were revealed, giving the participants a general idea of the outcome. In order to make the polling accessible to residents throughout the parish, and to minimize geographic bias, residents not at the meeting could access an online poll for 3 weeks following the meeting.

The Terrebonne Parish meeting was held on Wednesday, December 6th at the Houma-Terrebonne Convention Center. Sixty-seven residents and stakeholders signed in and participated. An additional meeting for Vietnamese- and Khmer-speaking (Cambodian) residents was held in Jefferson Parish on December 20th. This meeting was open to residents of Plaquemines, Terrebonne, Jefferson, and Lafourche Parishes. Two of the residents in attendance were from Terrebonne and cast their preferences. Following these meetings, an online poll collected preference input from 39 additional residents. The graph on the right shows the results of the preference polling.

### POLLING RESULTS



## PROPOSAL SELECTION

Both the public preference results from Round 5 and the online poll will inform the proposal selection. Public preference is one of the six scoring criteria that the project team will use to select proposals for funding. The LA SAFE team will announce the proposal selection in the first quarter of 2018, when the LA SAFE planning document is released.

**1. Public Preference** - The result of the meeting preference polling and an online poll.

**2. Leverage Funds** - The level of matching funds from other sources.

**3. LMI Benefit** - Points awarded to projects that benefit low-to-moderate income populations.

**4. Public Benefit (Quantitative)** - The level of benefit to the public that can be measured. For example, the number of units created in a housing proposal, or the amount of water stored in a stormwater management proposal.

**5. Public Benefit (Qualitative)** - The degree to which the project addresses future flood risk in a unique way and/or improves quality of life for residents.

**6. CRS Score** - Awarded to projects that gain points in FEMA's Community Rating System (CRS), which utilizes floodplain management planning to lower flood insurance rates.



*Comments on one of the boards*



*A resident casting his preference*



*A resident reviewing one of the proposals*

## APPENDIX

The following pages contain additional materials produced for the meetings, as well as comments gathered at the meetings.



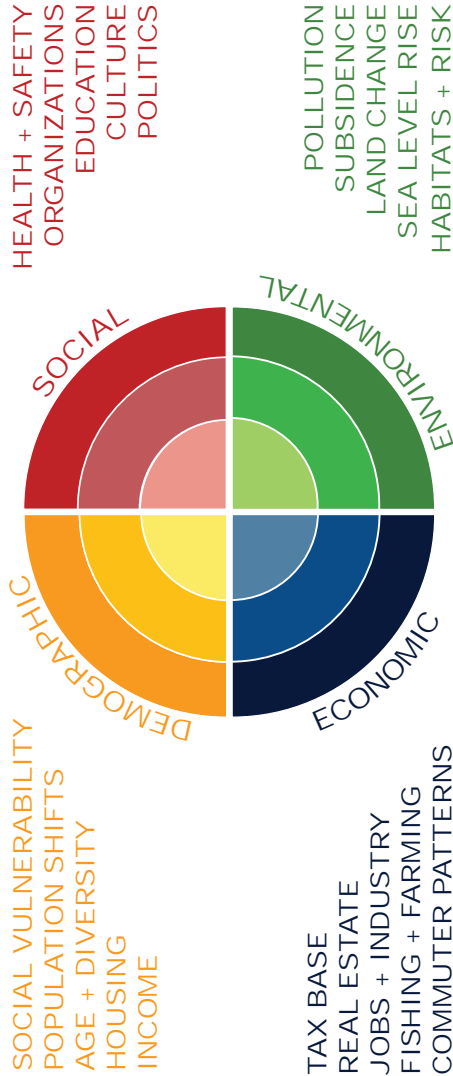


### LA SAFE OVERVIEW

LA SAFE is an approach to planning for future risk, using planning expertise, science, and community input to envision the future of southeast Louisiana. When the plan is complete, we will begin implementation with pilot projects to demonstrate adaptive strategies that will help decrease flood risk for the Louisiana coast.

### HOLISTIC APPROACH

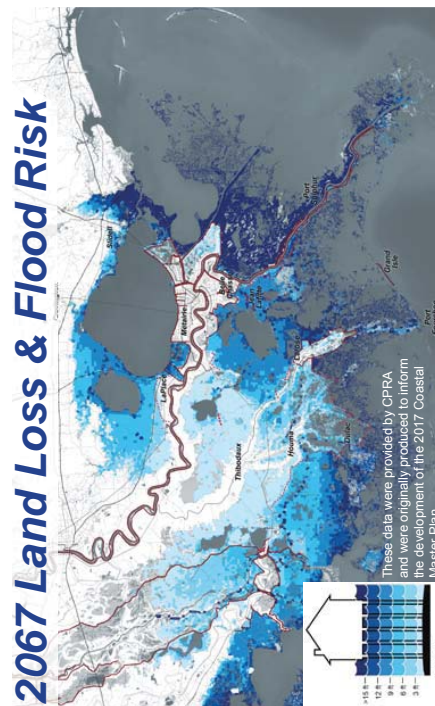
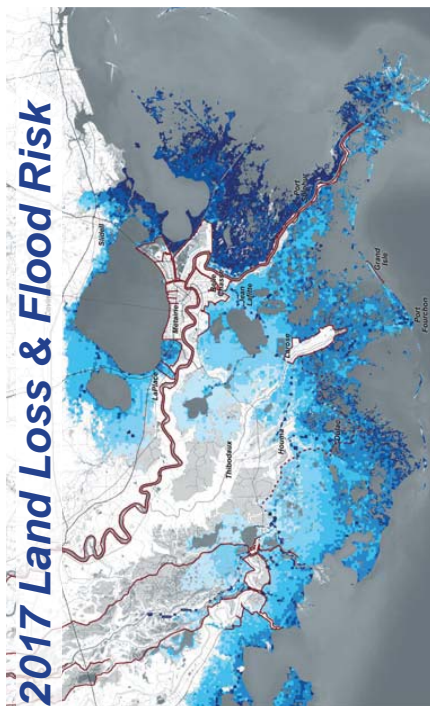
Increasing flood risks and environmental challenges lead to changes in population, culture, economy, and education. To address these challenges, we are collecting data and perspectives to find adaptation strategies that can provide multiple benefits across community life.



### CONNECTING LOCAL TO REGIONAL

The six LA SAFE parishes - Jefferson, Lafourche, Plaquemines, St. John the Baptist, and Terrebonne - will develop plans that include programs, policies, and projects to support southeast Louisiana communities over the next 50 years.

So far, more than 1,500 residents discussed issues related to stormwater management, transportation, and development policy that affect their communities. Through this process, local, regional, and state-scale solutions emerged, as well as ways for governments to coordinate across political boundaries.



These data were provided by CPERA and are originally intended to inform the development of the 2017 Coastal Master Plan.



MEETING 4 INFORMATIONAL BOARDS

# BIG PICTURE VISION

A 50-YEAR VISION FOR TERREBONNE PARISH AND ITS DIFFERENT RISK AREAS



## VISIONING AROUND RISK



**Low Risk: Growth and Community Character**  
Continue to make areas with higher ground and lower risk ready for growth by providing denser residential and commercial development, increased transportation options, improved stormwater management, and better designed green spaces.

**Moderate Risk: Fishing, Recreation, and Agriculture**  
In moderate risk areas, continue to embrace more of a fishing and recreation economy so that both residents and visitors can enjoy Terrebonne's culture and "good earth" lifestyle.

- Protect harbors, build elevated housing and amenities close together, and create new recreational spaces, elevated evacuation routes, and more transportation options to move around the parish.
- Grow recreational and ecotourism businesses, with better support for seafood industry and coastal workers.
- Expand elevation program of pier-and-beam homes.
- Provide buyout options for primary homeowners, especially those that are more at risk of flooding (i.e., slab on grade construction).



**High Risk: Camps, Fishing, and Tourism**  
In the area outside the levee system, help permanent residents move to safer ground and encourage secondary homes and camps for fishing, tourism, and recreation.



## PARISHWIDE VISION

In 2067, Terrebonne Parish will be a resilient coastal parish. To plan and adapt for risk, the parish will:

1. **Manage water** by retaining rainwater close to where it falls. Build on the parish's culture of working and living with water where everyone has a role in managing water - the region, the parish, communities, and individuals;
2. Create **healthy and safe communities** that attract residents of all ages by focusing on public amenities, safe neighborhoods, preserving the culture, and providing a high quality of life for all;
3. Support a comprehensive and **resilient transportation system**. Create walkable communities with a transportation system that includes cars, bicycles, boats, buses, and shuttles; and
4. **Diversify the economy** and enhance workforce training opportunities. Support the parish's entrepreneurial spirit and (re)train workers. Base training on existing skills and apply those skills to work in clean energy and the coastal protection and restoration industry.

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WHAT DO YOU THINK?  
PLEASE FILL OUT A SURVEY SHEET WITH YOUR COMMENTS!

MEETING 4 INFORMATIONAL BOARDS

# EXAMPLE ADAPTATION STRATEGIES

POSSIBLE PROJECTS, PROGRAMS, AND POLICIES TO IMPLEMENT THE LA SAFE VISION FOR TERREBONNE PARISH

## REDUCE FLOOD RISK BY MANAGING STORMWATER

Parishwide  
All Risk Areas

*Use natural processes to help manage stormwater and reduce future flood risk*

- Encourage adjacent property owners to use shared areas that hold stormwater
- Create retention areas in large undeveloped areas that can also be used for recreation and education
- Develop an "Adopt-A-Ditch (or Bayou)" or "Maintain the Drain" program for individuals and groups
- Reduce paving and surfaces that create significant runoff
- Build roads, drainage, and new development using green infrastructure that uses plants and soil along with pipes to manage water and improve places



Velly Pontif Park in Metairie, LA, is a public park that also manages stormwater.



A conventional parking lot design contrasted with a design that manages stormwater.

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## CONTINUE TO REVITALIZE DOWNTOWN HOUMA

Houma  
Low Risk Areas

*Take advantage of walkability, historic character, and Bayou Terrebonne to reinforce downtown as a destination*

- Create a downtown plan that works with the Vision 2030 Comprehensive Plan to keep downtown vital
- Develop a downtown open space plan that connects downtown to the bayou and includes pocket parks and plazas
- Plant native trees for beauty, shade, improved air quality, and stormwater management
- Encourage walking and bicycling downtown
- Research historic tax credits for restoration
- Rehab bayou-front properties to use Bayou Terrebonne as an amenity



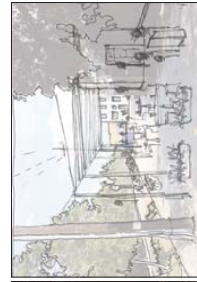
Looking west at a parking lot between Belanger, Church, and Main Streets in downtown Houma, and a sketch of the same parking lot used as a plaza, with outdoor seating, shade, and plantings. Belanger Street could be flexible—providing parking and seating most days, and serving as an extension of the courthouse plaza during events.



Looking east along the south side of Bayou Terrebonne from Church Street, and a sketch of the same area with outdoor seating, shade, and plantings. Revitalizing buildings along the Bayou could provide an active frontage of cafes and shops with direct access to the bayou.



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## UPDATE TERREBONNE PARISH ORDINANCES

Parishwide  
All Risk Areas

*Update ordinances to help manage stormwater, allow different types of housing, and make walking and bicycling easier*

- Conduct an audit of all parish plans, ordinances, and policies to check for consistency, and change to achieve resilience goals
- Work with homebuilders, realtors, and citizens to develop ordinances that support and incentivize pier-and-beam construction rather than building on fill
- Preserve open space and minimize building in environmentally sensitive areas like wetlands
- Allow a variety of types of housing, such as mixed-use and cluster neighborhoods, townhomes, duplexes and small lot subdivisions in areas of lower risk
- Develop new areas with sidewalks, bike lanes, and trails, and add to existing streets where appropriate



A house in downtown Houma with pier-and-beam construction.



Bike lane on Esplanade Avenue in New Orleans.



WHAT DO YOU THINK?  
 PLEASE FILL OUT A SURVEY SHEET WITH YOUR COMMENTS!



# MEETING 4 INFORMATIONAL BOARDS

## EXAMPLE ADAPTATION STRATEGIES

POSSIBLE PROJECTS, PROGRAMS, AND POLICIES TO IMPLEMENT THE LA SAFE VISION FOR TERREBONNE PARISH

### IMPROVE PUBLIC BOAT LAUNCHES

Parishwide  
All Risk Areas

*Improve quality of life and support economy by upgrading boat launches*

- Upgrade ramps
- Add parking
- Add other amenities where appropriate:
  - RV support
  - Shelter
  - Bathrooms
  - Fish cleaning stations
  - Commercial kitchens
- Design to fit the area's character, use green infrastructure, use renewable energy, and minimize environmental impacts
- Add more safe harbor sites throughout parish
- Build on the parish's re-established Boat Launch Advisory Committee



Fish cleaning station at Blackhawk Lake Recreation Area, Highland, WI.



Permeable pavement allows rainwater through at Gleason Boat Ramp, Portland, OR.

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### UPGRADE DOWNTOWN HOUMA MARINA

Downtown Houma  
Low Risk Areas

*Expand and upgrade services to attract more boats*

- Expand marina services to include:
  - Refreshments
  - Bait
  - Dry stack boat storage
  - Boat cleaning and maintenance
  - Showers and personal services
  - Call-ahead concierge services
- Create a marina improvement plan that includes several blocks around the marina
- Create a marketing strategy for the marina



Dry stack boat storage at the Port Marina, Fort Lauderdale, FL.



Boat maintenance services at SeaBrook Harbor & Marine, New Orleans, LA.

### SUPPORT LOCAL FISHERIES

Locations to be Determined  
Low or Moderate Risk Areas

*Keep the commercial fishing/seafood industry viable*

- Work with fishermen to expand LaTer Seafood Direct
- Expand the campaign for local fisheries marketing
- Target regional groceries and restaurants
- Include fish/seafood markets and commercial kitchens into upgraded boat launches and marinas so fishermen can add value to their catches and sell their products directly
- Help fishermen adapt to change if they move away from the water to safer areas:
  - Provide areas near boat storage to store traps and gear
  - Provide ice houses and processing plants
  - Provide help (insurance, marketing, business plans) to help fishermen expand into ecotourism, like swamp tours or charter fishing, during non-fishing seasons



Boats in Pointe aux Chenes.



Swamp tours are an opportunity for ecotourism available to fishermen during the off season.



Restaurant website featuring Certified Authentic Louisiana Wild Seafood.

WHAT DO YOU THINK?  
PLEASE FILL OUT A SURVEY SHEET WITH YOUR COMMENTS!



## DEMONSTRATION PROPOSAL BOARDS

A

BAYOU LA CACHE  
WETLAND PARK

## Plan View

The level of water in Bayou La Cache is raised by a weir to a higher elevation, discharging into an existing borrow pit. A collection of new weirs between the existing borrow pits control their water level. Using gravity, water cascades downwards and returns to the bayou allowing still water to move. Concurrently and during drought spells, modern wind mills, connected to Archimedes screw-pumps, elevate drainage water to the level-controlled borrow pits.

- |                                                                               |                                                                             |
|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1 Weir to divert water to retention ponds                                     | 4 Wind-driven Archimedes Screw-pumps                                        |
| 2 Terraced retention pond filled with native plants and recreational pathways | 5 Existing Sugarcane Fields                                                 |
| 3 Observation Deck, Pavilion, Open-Air Classroom, and Water Literacy Signage  | 6 Future Cultural Center with Focus on Sugar Cultivation and Water Literacy |



Precedent Image of Archimedes Screw Pump and Cascading Water



Precedent Image of Archimedes Screw Pump



Precedent Image of Wind Turbine



Precedent Image of Wind-driven Pumping System in St. Landry Parish, Louisiana



Aerial View of Wetland Park & Walking Trails



Precedent Image of Terraced Wetlands



Precedent Image of Wetlands, Boardwalks, and Plantings



Precedent Image of Seating Area overlooking Wetlands



Precedent Image of Park Pavilion and Deck



Precedent Image of Seating Area overlooking Wetlands



## DEMONSTRATION PROPOSAL BOARDS

A



## PROPOSAL

Areas subject to moderate and high future flood risk must consider stormwater management features in addition to current and planned structural protection systems. The Bayou La Cache Wetland Park in the Smith Ridge forced drainage system diverts and temporarily stores water during heavy rain events while providing access from Aragon Road to amenities such as bird and wildlife viewing and walking paths. Increasing the bayou's capacity by using weirs and shut off valves to divert water into existing ponds reduces flood risk down the bayou. The proposed project transforms an existing borrow pit site into a park that slows down the flow of stormwater and provides multiple ecosystem benefits, including stormwater management, water cleansing, recovery of native habitats, as well as creating a public space for education and recreation.

## Community Benefits



Diverts water from the bayou into detention ponds, allows for groundwater recharge, and alleviates loads on the drainage system.



Potential to reduce flooding for development down the bayou.



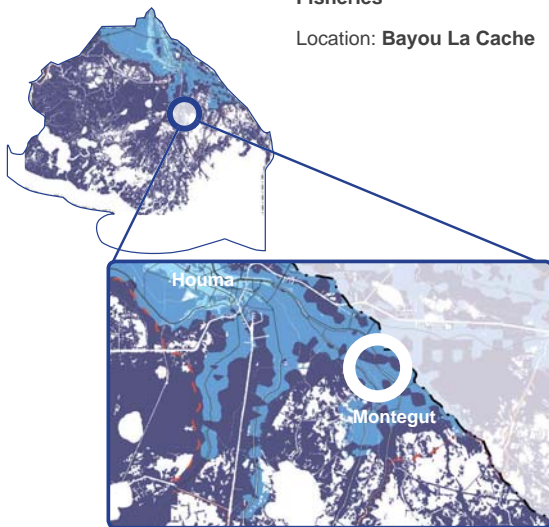
Includes an observation and education platform and open classroom.



Provides green space, walking paths and habitat.

## Key Info

|                        |                                                                                                   |
|------------------------|---------------------------------------------------------------------------------------------------|
| Project Area           | 100 acres                                                                                         |
| Estimated Project Cost | \$5.4 million                                                                                     |
| Partners               | Terrebonne Levee & Conservation District;<br>Terrebonne Parish;<br>Louisiana Wildlife & Fisheries |
| Location:              | Bayou La Cache                                                                                    |



Source: CPRA & FEMA

## COMMENTS

## DEMONSTRATION PROPOSAL BOARDS

# B GRAND CAILLOU ENVIRONMENTAL, CULTURAL, AND BUSINESS CENTER



Aerial View Looking North

- |                                                                             |                                                                                                             |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| 1 New Waterfront Gazebos for Seafood Retail with Boat Docks                 | 7 New Observation and Educational Platform (Open Classroom)                                                 |
| 2 Parking Lot with Permeable Pavers                                         | 8 Educational Signage (Ex. "At this Point, You are 4 1/2 feet Below Sea Level")                             |
| 3 New Roof on Existing Commercial Kitchen to be used for Seafood Processing | 9 New Trails in Forested Wetland                                                                            |
| 4 Existing Buildings - Renovation for New Uses                              | 10 Retention Pond/Bioswale                                                                                  |
| 5 Retention Ponds                                                           | 11 New Boardwalk Connecting to Existing Trails                                                              |
| 6 Boardwalk and Educational Discovery Trail                                 | 12 Existing Pump Station - Future upgrades can include windows & signage retrofits for educational purposes |



Plan of Project Proposal



# DEMONSTRATION PROPOSAL BOARDS

# B



## PROPOSAL

In areas projected to experience moderate future flood risk, it will be important to cluster goods and services in central locations where they will be easier to protect. In Terrebonne Parish, three abandoned elementary schools are available to repurpose in support of this goal: Grand Caillou Elementary in Dulac and Boudreaux Canal Elementary and Little Caillou Elementary Schools in Chauvin. Potential uses to support existing residents include a wetland discovery center; an ecotourism business incubator; a language cultural center and seafood processing with direct retail opportunities. Grand Caillou Elementary is adjacent to the Dulac branch library and the Grand Caillou Recreation Center, creating a centralized area for amenities and services.

### Community Benefits



Green infrastructure on the campus will capture and slow water runoff. A wetland discovery center would educate visitors on the value of Terrebonne's wetlands and natural systems.



Provides training, services and products needed by residents and businesses.



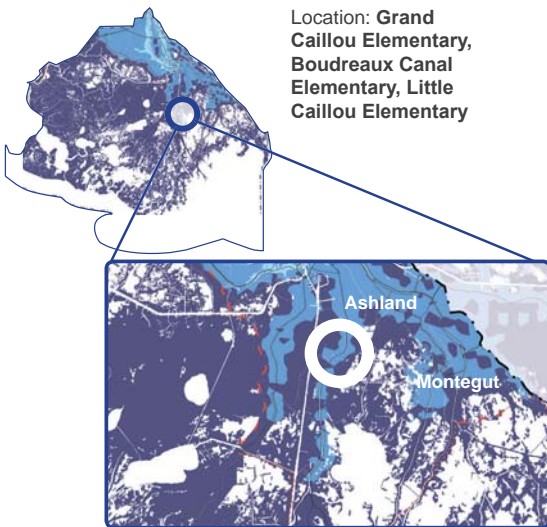
Incubators assist business startups and retrain residents in emerging business opportunities. Support entrepreneurial spirit of residents.



Provides green space, sports fields, walking paths and habitat.

### Key Info

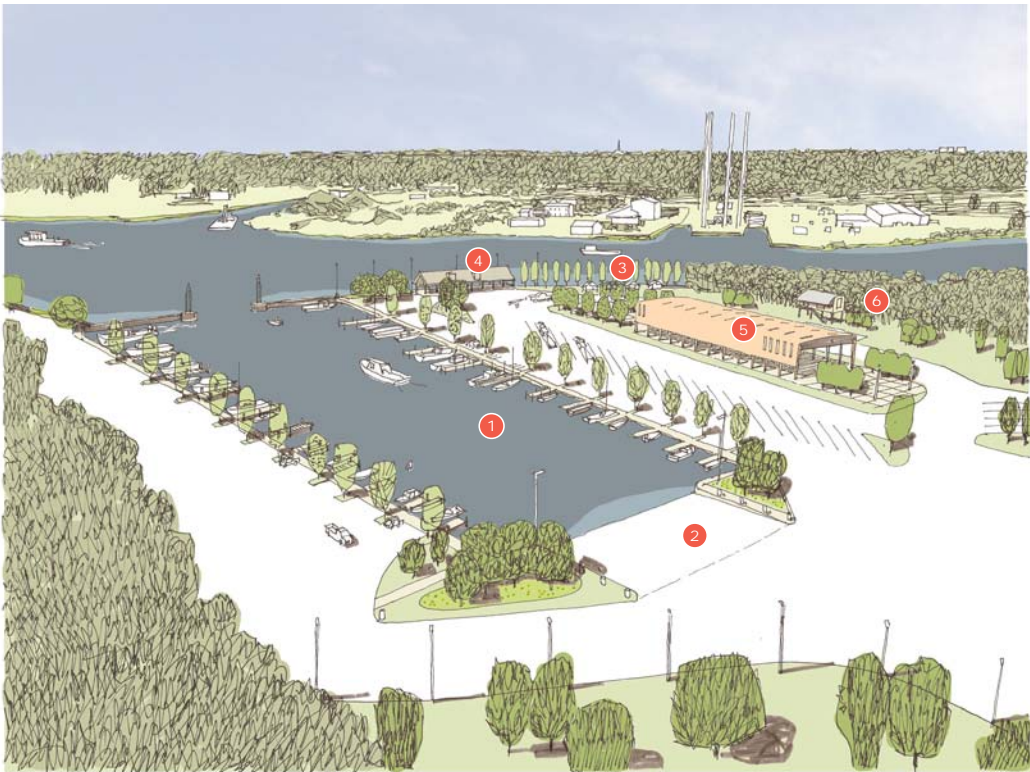
|                        |                                                                                                  |
|------------------------|--------------------------------------------------------------------------------------------------|
| Project Area           | 15 acres                                                                                         |
| LA SAFE Investment     | Up to \$6 million                                                                                |
| Estimated Project Cost | \$7.3 million                                                                                    |
| Partners               | Levee District;<br>Nonprofit Grants;<br>Property Owner                                           |
|                        | Location: <b>Grand Caillou Elementary, Boudreaux Canal Elementary, Little Caillou Elementary</b> |



Source: CPRA & FEMA

## COMMENTS

# C HOUMA SEAFOOD MARKET & HARBOR OF REFUGE



Aerial View Looking Northwest

- 1 New Harbor of Refuge and Boat Docks
- 2 New Boat Launch
- 3 Picnic Area with Pavilions and Tables
- 4 Covered Pavilion and Fishing Dock
- 5 Seafood Market in Modified Existing Building
- 6 New Raised Convenience Store and Restrooms



Precedent images of project proposal activities



Precedents around Louisiana  
Top, Middle: Delcambre Fish Market  
Bottom: Westwego Fish Market



Plan View



## DEMONSTRATION PROPOSAL BOARDS

## C



## PROPOSAL

As permanent resident populations transition upland in response to increasing flood risk, it will be important to develop facilities supporting the water-based industries reliant on their access to the coast. The Terrebonne Seafood Market and Harbor of Refuge proposal expands LSU AgCenter's direct seafood marketing campaign. Modeled after the Seafood and Farmer's Market in Delcambre, LA, this strategy builds on LaTerDirectSeafood.com, and provides opportunities for residents living in areas with increasing risk to establish businesses that can thrive in a changing environment. This project creates a monthly physical seafood, vegetable and fruit market and would also include marina amenities and harbor of refuge wet- and dry-docking facilities for boats during extreme weather events.

## Community Benefits



Supports residents and businesses by providing needed goods and services.



Provides safe storage for boats.



Grows the direct seafood to consumer market and provides fishermen and farmers with a permanent location to sell and market goods.

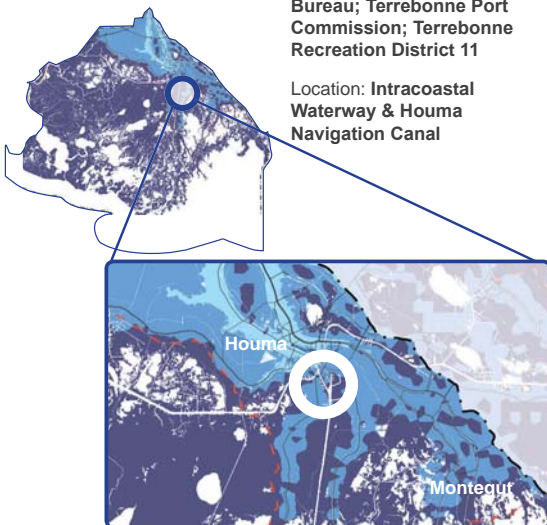


Enhances the arts and festival opportunities in the parish and provides a lively tourism venue.

## Key Info

|                        |                                                                                                                                            |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Project Area           | 30 acres                                                                                                                                   |
| LA SAFE Investment     | Up to \$6 million                                                                                                                          |
| Estimated Project Cost | \$8.2 million                                                                                                                              |
| Partners               | TEDA; TPCG; LSU AgCenter; Houma C.O.C.; Houma Convention & Visitor's Bureau; Terrebonne Port Commission; Terrebonne Recreation District 11 |

Location: Intracoastal Waterway & Houma Navigation Canal



Source: CPRA & FEMA

## COMMENTS

DEMONSTRATION PROPOSAL BOARDS

D

# LAKE BOUDREAUX LIVING MITIGATION



The project site is within the wetland area circled in red



- Alternate Terracing Locations
- Possible Cypress Planting Location
- Primary Terracing Locations

Potential Project Area and Layout



Precedent image of coastal restoration



Original image courtesy of LSU Coastal Sustainability Studio, edits by Waggoner & Ball

## Aerial View

Vegetated terraces create marshland and reduce storm surge impact



Precedent image of duck wing terraces



Precedent image of wetlands as natural habitat



Precedent image of Four-Mile Terracing in Vermillion Bay, LA



Precedent image of recreational fishing



Precedent image of duck hunting in wetlands



## DEMONSTRATION PROPOSAL BOARDS

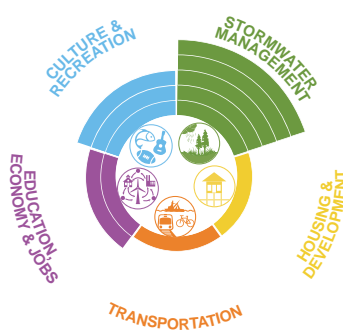
D



## PROPOSAL

In thinking through a future with increasing flood risk, it will be important to employ what is known as a 'multiple lines of defense' approach. The living mitigation terraces create over 300 acres of terraces and marshlands within the Morganza to the Gulf protection system that will assist in reducing the impacts of storm surge for residents and businesses, as well as protecting Terrebonne's infrastructure. The terraces also have environmental benefits such as enhancing submerged aquatic vegetation growth, restoring habitats, and trapping suspended sediments generated by wind and wave action.

## Community Benefits



The terraces produce marshlands and reduce storm surge, wave fetch, and turbidity. The project also traps suspended sediments generated by wind and wave action.



Protects residences and businesses from storm surge.



Protects roadways and infrastructure from storm surge.



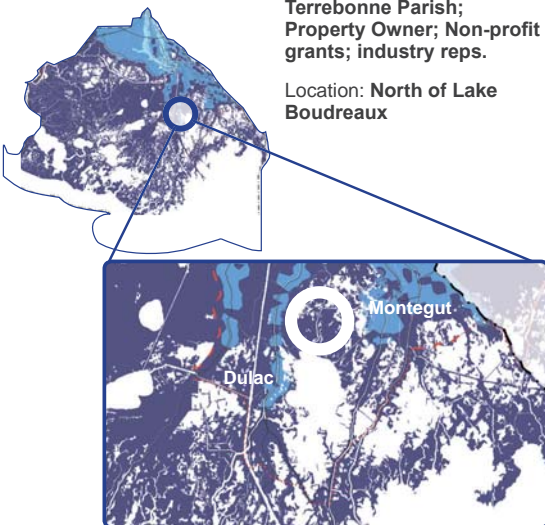
Provides educational example of the value of wetlands and marshlands and habitat diversity.



Enhances submerged aquatic vegetation growth, providing resting and nesting habitat for avian life and the American alligator to support birding and tourism industries.

## Key Info

|                        |                                                                                                                      |
|------------------------|----------------------------------------------------------------------------------------------------------------------|
| Project Area           | 1235 acres / 300 acres of created marsh                                                                              |
| LA SAFE Investment     | Approx. \$2 million                                                                                                  |
| Estimated Project Cost | \$10 million                                                                                                         |
| Partners               | Terrebonne Levee & Conservation District;<br>Terrebonne Parish;<br>Property Owner; Non-profit grants; industry reps. |
|                        | Location: North of Lake Boudreaux                                                                                    |



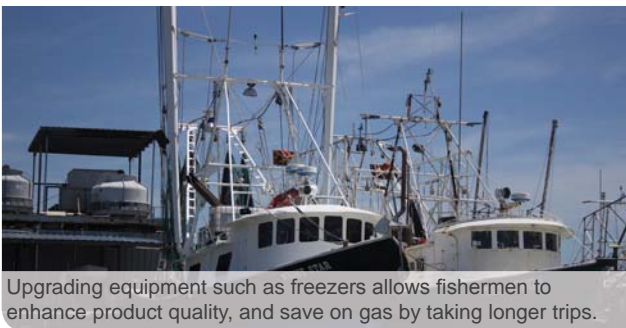
## COMMENTS

## DEMONSTRATION PROPOSAL BOARDS

# E FISHERMEN AND SEAFOOD CULTIVATION LOAN PROGRAM

## Fishermen Loans

Supporting Louisiana Seafood is a goal that LA SAFE heard across the coast. Fishermen struggle with changing ecosystems, increasing risk to their equipment, and cheap imported competition. They often need boat repairs and upgrades prior to fishing season. Due to the seasonal nature of the industry, conventional loans do not always meet their needs. This program would provide low interest loans with a flexible repayment schedule that matches the fishing season. By supporting fishermen, this program also supports the Louisiana seafood industry as a whole, a cornerstone of Louisiana economy and culture.



Upgrading equipment such as freezers allows fishermen to enhance product quality, and save on gas by taking longer trips.

## Agriculture Transition Loans and Technical Assistance

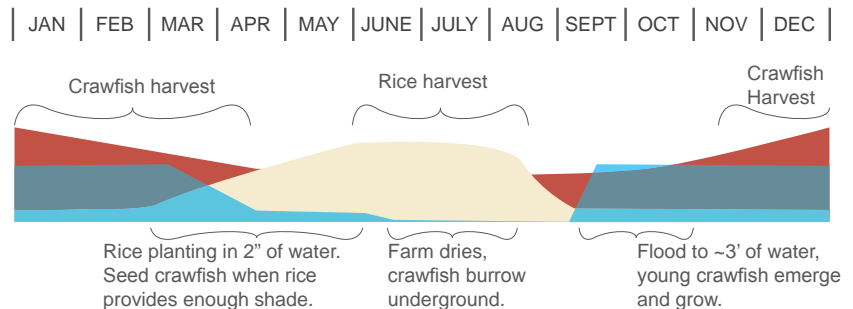
Changing coastal conditions will likely lead to different future habitats. Farmers seeking assistance to convert their operations to crops suited to a wet environment can benefit from this program. For example, dry wheat and sugarcane farms in increasingly wet regions could convert to combined rice and crawfish farms, providing income and stormwater management. This program will provide loans and technical assistance to farmers who want to adapt their crops to a changing environment.



## Yearly Flooding and Harvests

This is an abstracted calendar showing the pattern of rice and crawfish harvests and the level of water during different times of the year.

Source: <https://www.cajuncrawfish.com/how-we-grow-crawfish.htm>





## DEMONSTRATION PROPOSAL BOARDS

E

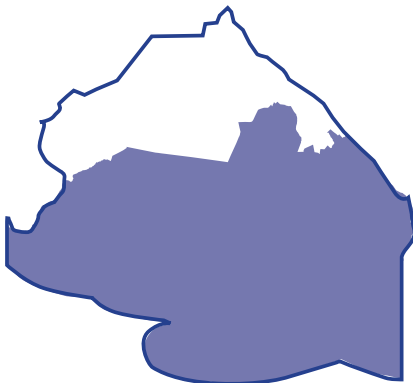


## PROPOSAL

This program provides technical assistance and loans of up to \$50,000 to residents in the fishing or agriculture industries who do not have access to traditional lines of credit. Fishermen may use these loans to improve or repair boats and equipment, diversify into charter service or tourism, implement approved best practices or invest in product quality enhancement equipment. Likewise, farmers in low-lying areas that require expensive water management to maintain expected crop output may qualify for loans and technical assistance to convert dry agriculture operations to more sustainable land uses. Loans would be low-interest and borrowers may be eligible for flexible repayment options based on seasonal income.

## Key Info

|                        |                                                                         |
|------------------------|-------------------------------------------------------------------------|
| LA SAFE Investment     | \$3 million                                                             |
| Estimated Project Cost | \$3 million                                                             |
| Partners               | Community Development Financial Institution, Credit Union or non-profit |
| Location               | In all eligible census tracts in Terrebonne Parish                      |



## Community Benefits



Transitioning from dry farming to seafood/crop (rice & crawfish) provides stormwater retention benefits to the region.



Loans can be used to improve commercial fishing boats.



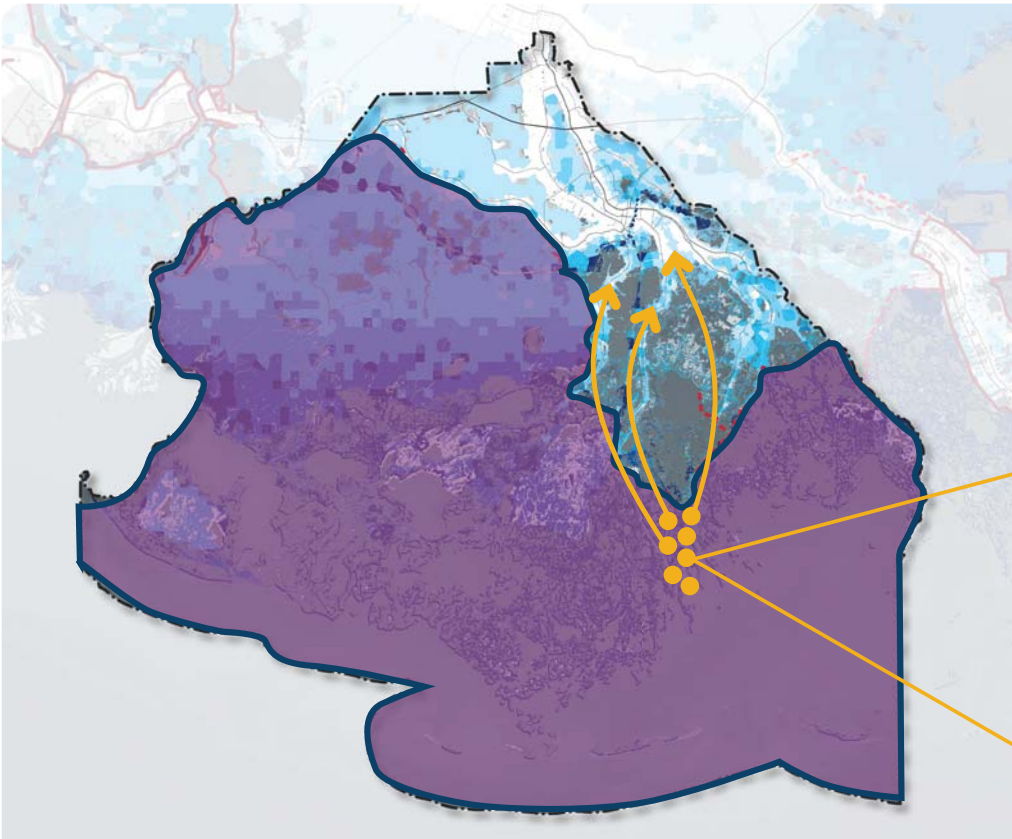
Enhanced product quality can provide higher incomes for fishermen and farmers.



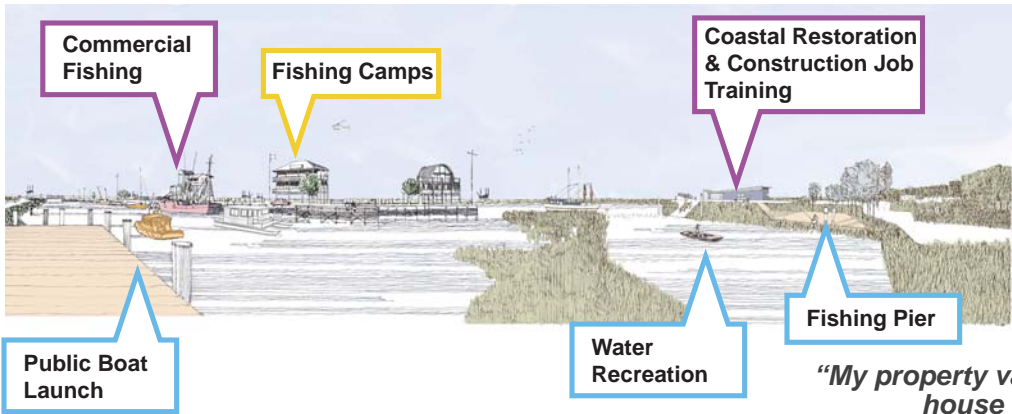
Loans could be used by boat owners to expand into charter or tour businesses.

## COMMENTS

# F BUYOUTS FOR PERMANENT RESIDENT HOUSEHOLDS



Buyout program for permanent residents outside of Morganza to the Gulf  
Residents who accept the voluntary buyout will receive funds to relocate to higher ground within Terrebonne Parish.



Even as residents leave land outside of protection systems, these areas can still serve a variety of economic and recreational purposes.



***"My property value is nil. Been trying to sell my house for 2 years and no one wants it."***  
-Montegut Resident at Meeting 2



# DEMONSTRATION PROPOSAL BOARDS

# F



## PROPOSAL

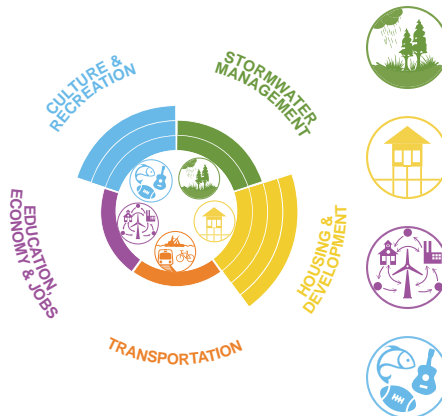
Areas not protected from the planned levee system, which are projected to experience high degrees of flood risk, are not suitable for permanent housing. In Terrebonne Parish most permanent residents living in these areas are located on Isle de Jean Charles. The State of Louisiana is in the process of resettling these residents to higher, safer ground. Approximately 7 permanent households are currently located in areas outside of Morganza to the Gulf. This program provides relocation assistance to a safer location. This program would be supported by policy implementations intended to prevent future permanent resident development in these areas.

### Key Info

|                                         |                                                                               |
|-----------------------------------------|-------------------------------------------------------------------------------|
| Number of permanent resident households | 7                                                                             |
| Estimated Project Cost                  | Up to \$2M<br>• \$250,000 cap per household<br>• \$250,000 for administration |
| Partners                                | Terrebonne Parish                                                             |
| Location                                | Eligible area outside Morganza to the Gulf                                    |



### Community Benefits



Vacated properties may be converted for stormwater retention or wave attenuation purposes.



Residents who choose to relocate will be provided with funds to resettle in a safer area.



Relocated residents will enjoy closer access to goods and services.



Vacated properties may be converted to recreational camps, facilitating an economic transition to natural uses.

## COMMENTS

## MEETING 5 PROPOSAL COMMENTS



### A: BAYOU LA CACHE WETLAND PARK

#### What do you like about this proposal?

- This is a great idea for reclaiming space for stormwater management, community beautification, and wildlife and native plants.
- I love the idea of making a public park.
- Gives public access to wetlands and waterways to use for recreation.
- It's an amazing proposal. I'd love to be able to use and enjoy what is in my backyard. So brilliant a proposal thank you!
- I like that this is also a quality of life proposal.
- Love the natural components of this project. It uses what nature does naturally in its plan. No major machines or artificial needs to sustain.
- I love the combination of recreational use, ecological, and educational use.
- I love this project, because it helps our bayou to thrive. It protects us, our native animals, and crops. Thanks.
- Very creative engineering.
- Ecological balance. (veg. and animal) Looks good. Areas for physical activity. Potential for smoke free campus policy.
- It is an amazing idea for kids to experience, as well as adults to view a different bayou landscaping and get educated about the natural environment. The beauty of the landscaping!!
- Environmental focus.
- This is something we need more of.
- This terraced project is wonderful! Educational, environmental, and functional. Great idea. Should be done all over south Louisiana.

#### What do you not like about this proposal?

- No fences for safety.
- The cost available for me to determine the "value benefit" vs. cost.
- Seems impractical.
- There needs to be many of these in southern Louisiana.



### B: GRAND CALLIOU ENVIRONMENTAL, CULTURAL, AND BUSINESS CENTER

#### What do you like about this proposal?

- This program is most beneficial to residents as it helps secure them when disaster happens!! I like everything about it! It needs to happen!
- Close to my home, close to Indian culture.
- I think these projects work hand in hand for the greater good of the bayou. And retailing definitely spells more production in our marketing industries. Good plan!
- I love that it includes a cultural component and reuses existing structures.
- Language cultural center. Retention ponds. Community business development.
- Using existing structures.
- Uses existing public property and promotes residents to have something to be proud of.
- It uses an existing building, has educational component, and utilizes recreational area which is really needed in our area.
- This would be educational and useful.
- No places to buy produce down the bayou. Community garden- youth program like Grow Dat in Nola revenue. Would have to fix flooding.
- Repurposing structures. Road access. Potential for wellness components- physical activity, nutritious food (gardens, produce markets, etc.), bike trails, etc. Potential for tobacco free campus policy.
- Wonderful repurpose of building. Why not have community gardens?

#### What do you not like about this proposal?

- Wish more stormwater management. Worry about flood risk.
- Good idea, but unless the levee/pumps hold or more wetland is created near here, this would all just flood.
- Sees to compete with plans for the south Louisiana wetlands discovery center.
- 3-6' water risk.
- Use green roofs on all structures. You can grow veggies and have those at the market also. Citrus or nut trees as shade, additional crop revenue.



## MEETING 5 PROPOSAL COMMENTS



### C: HOUMA SEAFOOD MARKET & HARBOR OF REFUGE

#### What do you like about this proposal?

- Focus on tourism.
- Something Houma has been needing for a long time.
- Fresh vegetables are not available down the bayou. This is good for people without transportation.
- I think this is fantastic! Great connection between community, resources, and industry. I have seen this having great positive impact in other coastal cities.
- Good for tourist outing for Houma residents.
- Supports family activities.
- Safe harbor is good for hurricane tie ups. Could be a good community trading post.
- Great location, love the seafood market.
- It seems like a great way to produce funds and jobs on the bayou. Great idea and commercial fishermen can use a lay over spot during storms.
- Enhancements to existing structures (repurposing). Potential for physical activity, healthy food access, smoke free/tobacco free campus policy.
- I like the idea of a so called fisherman's market only if it applies to allowing our parish residents, no outsiders.
- It is a good location for general public and will being a fresh market to our area.
- Great idea of having two uses for the space.
- Brilliant! Why haven't there been boat to market? Use the grounds for community gardens. Green roofs and use edibles (okra, pepper onions, tomatoes as landscape).

#### What do you not like about this proposal?

- Too far north, won't be used.
- Large catch won't sell. We have a safe harbor in Terrebonne.
- Very far inland for fishermen to bring their catch.
- Not in a lock system, better locations around.
- Too far from coast. Would it get used very often outside of emergencies of there's just one market a month?
- Will there be enough spaces for many boats?
- It may be too far for boats to come for market.

- No plan for leasing slips (ongoing vs short term). No plan for planting fruit trees, gardens.
- I feel this suggestion should be divided parish wide not just centrally located.



### D: LAKE BOUDREAUX LIVING MITIGATION

#### What do you like about this proposal?

- Very much needed to restore vegetation and land mass in a coastal area.
- Anything that stops surges has potential.
- Could use trustees for each parish as labor. Anything that can be built is a good thing. Great for birding.
- Great idea. Effective strategy. We need more marsh to aid sedimentation. This will be good for the community.
- It's ready to go and can be a quick completion with almost immediate results.
- Restoration and protection.
- Mitigates salt water intrusion and storm surge while replacing vegetation.
- Increased habitat for birds and fish.
- Perfect location, helps rebuild/ protect marsh.
- This would be very beneficial for all the reasons stated.
- Good for storm/flood mitigation. Potential for tobacco-free policy designation.
- If this is effective, lets do it!

#### What do you not like about this proposal?

- Public access, maybe a boardwalk. These part of it?
- Is public access allowed? If its private land will they be banned from future development or mineral access?
- Include public access?
- Poor access by boat.
- To little effect in too little time.
- Lack of public access. Lack of physical activity for large populations. How does this improve population health and wellness conditions?

## MEETING 5 PROPOSAL COMMENTS



### E: FISHERMEN & CULTIVATION LOAN PROGRAM

#### What do you like about this proposal?

- Very good program to take care of local residents.
- Help historic industries.
- Yes! Local people who rely on sustainable natural resource harvest should not face the economic brunt of coastal degradation and commercial exploitation.
- A big part of Louisiana seafood is the bayou.
- Good idea if money is spent on what they get paid for.
- Fits current parish aquaculture and agriculture, enhances business. Low cost. Potential for income to residents (social and of health). Potential for tobacco-free campus policy.
- Time and again fishermen fall on bad times and eventually give up and fall in despair. This would be the boost they need.
- This is really good, no downside at all!

#### What do you not like about this proposal?

- May be abused by non-commercial fishermen.
- Money will be wasted.
- Would just like to assure fairness and fishers are given enough flexibility in how they're allowed to use their loan so it truly serves the needs of them and their families.
- Anything that keeps this going keeps jobs. Lets do it!!
- Very high potential for abuse.
- Lacks clear opportunity for population health improvements, physical activity, high nutrition foods. No ROI projection.



### F: BUYOUTS FOR PERMANENT RESIDENT HOUSEHOLDS

#### What do you like about this proposal?

- As this pertains to home owners this is a personal matter and choice.
- Good program to help those left out of the levee system.
- It insures the residents don't have a total loss of their biggest asset. Good to see the social safety net still has some money.
- Excellent option to willing homeowners. Potential for zoning/policy for population health improvements.
- I like this proposal because it allows residents an outlet of hope which many feel they don't have in moving to safer areas.
- Moves those outside protection to be protected. Better to spend once rather than over and over.
- Gives people the option of relocation if they want that.
- Lives in Chauvin and wants buyout.
- If it is beneficial go for it.

#### What do you not like about this proposal?

- That residents were left out of the system.
- Not sure why camps would be developed in areas that are prone to flood? Isn't this why our flood insurance rates are so high because of repeated flooding of homes?
- It encourages community loss and instead of building our southern communities we are destroying them for the purpose of new wetlands.
- Only a few buyouts in budget/cost @ \$250k/ house. Lacks clean plan for population wellness benefits.
- No!
- Not many people like exporting from their places of birth and livelihood.
- Sort of a slap in the face if vacated residences were converted to recreational camps. So y'all can't help residents make their homes more flood resistant, but y'all can develop their homes for duck leases?
- No just no!



# 50-YEAR RESILIENCE VISION

