Everybody knew everybody. The faces have changed.

My parents live out of the country now.
The people of means moved to higher ground.
Elevation is key.

We see people coming from lower lying areas.

People from other places that don't get the culture.

Indians and Chinese taught us how to live here.

Nobody lives in the house after their parents die.

My next home should be a condo in the cemetery.
My generation is the last.

I feel like I'm pretty well rooted here.
I have a decent-sized property down here.

When my grandmother was a kid it was cotton fields, When I was a kid it was cattle.

Now we hunt ducks Now we hunt hope.

In areas that have converted to open water.

To think, you might not ever be able to stand On the place you always stood.

I like people to see where we stand.

People of means moved to higher ground.

Erosion of culture.

Was planning on living. Hope is not a plan.
Louisiana Adaptation: Mitigation to Managed Retreat

Dakota K. Fisher
Louisiana Office of Community Development

Rachelle Thomason
Foundation for Louisiana

Jeannette Dubinin
Center for Planning Excellence

Maria Papacharalambous
Waggonner & Ball Architects
INTRODUCTION

Dakota K. Fisher
Louisiana Office of Community Development
ISLE DE JEAN CHARLES
RESETTLEMENT
Meet the winners.

Announced by President Obama in 2014, the National Disaster Resilience Competition was developed to help U.S. communities recover from prior disasters through innovative resilience projects.

67 disaster-affected communities
13 competition winners
1 billion dollars to rebuild better

Louisiana: $92.6 million
• $40m LA SAFE
• $48m Isle de Jean Charles Resettlement
TARGET AREA

PLAQUEMINES
ST. TAMMANY
JEFFERSON
PLAQUEMINES
LAFOURCHE
TERREBONNE
ST. JOHN THE BAPTIST
BEST PLANNING PRACTICES & EXPERTISE

COMMUNITY & STAKEHOLDER VISION

CURRENT & FUTURE ENVIRONMENTAL CONDITIONS
Source: CPRA and USGS. This data was originally created by CPRA for the 2017 Coastal Master Plan.
Communication of Risk & Community Organizing

Rachelle Thomason
Foundation for Louisiana

Foundation for Louisiana
At work for resilient communities.
THE CHALLENGE

Source: CPRA and USGS.
This data was originally created by CPRA for the 2017 Coastal Master Plan.
LAND & WETLANDS - 1960

Source: CPRA and USGS. This data was originally created by CPRA for the 2017 Coastal Master Plan.
Source: CPRA and USGS. This data was originally created by CPRA for the 2017 Coastal Master Plan.
LAND LOSS – 2067 (with plan)

Source: CPRA and USGS. This data was originally created by CPRA for the 2017 Coastal Master Plan.
Source: CPRA and USGS. This data was originally created by CPRA for the 2017 Coastal Master Plan.
FLOOD RISK & LAND LOSS - 2017

Source: CPRA and USGS. This data was originally created by CPRA for the 2017 Coastal Master Plan.
FLOOD RISK & LAND LOSS - 2067

Source: CPRA and USGS. This data was originally created by CPRA for the 2017 Coastal Master Plan.
Flood depths per moderate scenario of CPRA model for a 100-year storm in 2067

* Moderate Risk is per CPRA model OR w/in 100 year FEMA floodplain

Low: 0’-3’
Mod: 3’-6’ *
High: 6’+

Source: CPRA and FEMA
POPULATION SHIFTS 2000-2010

Source: U.S. Census
COMMUNITY ORGANIZING & ENGAGEMENT
LA SAFE FACILITATORS & LEAD THE COAST
COMMUNITY PARTNERS & EXPANDED CAPACITY
Identify Challenges & Opportunities
Parishwide Meeting

Propose Strategies
May & June Community Meetings

Evaluate Vision & Strategies
July & August Parishwide Meeting

Policy, Program, & Project Development
October Stakeholder Round-tables & Open Houses

Project Evaluation
December Parishwide Meeting

71 Community Meetings
2,835 Participants
1. GOALS AND VALUES

Challenges
1. Population loss and movement
2. Flooding
3. Loss of business and industry
4. Loss of jobs and income
5. Wildlife movement and death
6. Increasing cost of living
7. Seafood Industry Instability
8. Schools closing
9. Land loss and erosion
10. Home values declining
11. Cultural loss
12. Declining safety
13. Increased traffic

Strengths
1. Traditions and culture
2. Natural beauty
3. Quality of life
4. Community closeness
5. Fishing and hunting
6. Business & Industry

Opportunities
1. Jobs and jobs training
2. Improve education and information sharing
3. Economic development and diversification
4. Coastal protection and restoration
5. Improve regulations and policy
6. Preserve culture and promote tourism
7. Plan and build for future conditions
8. Preserve community stability
9. Recreation and youth programs
10. Promote local seafood
11. Land and water management
3. ADAPTATION STRATEGIES

- Public Boat Docks
- Cross-Parish Stormwater Management Strategy
- Coastal Restoration Construction Jobs & Training
- Improved Parish Drainage System
- Job Training Programs
- Job Opportunities In Renewable Energy
- Increased Affordable Housing Options
- Drainage Requirements for New Developments
- Support Culturally Focused Camps & After School...
- Culvert/Ditch Maintenance
- Commuter & Regional Rail
- Complete Streets
- Community gardens and planting programs
- Incentivize Essential Service Providers
- Medium Density Housing (2-3 stories)
- Improve Public Transportation Across Parish lines
- Create a Full-Time Drain Maintenance Department
- Program to Restore Abandoned Property to Natural...
4. POLICY, PROGRAM, & PROJECT DEVELOPMENT
5. PROJECT EVALUATION
1. Public Preference
A proposal earns points based on public polling at the meetings and online.

2. Leverage Funds
A proposal earns points if it can identify other funding sources in addition to current funds. Points are awarded by proportion of leverage funds to LA SAFE investment.

3. LMI Benefit
A proposal earns points if 50% or more of the proposal benefits a low-to-moderate-income (LMI) population. Points will be awarded on an all-or-nothing basis.

4. Public Benefit (Quantitative)
A proposal earns points if the benefit to the public can be measured. For example, the number of units created or rehabilitated in a housing proposal, or the number of jobs created in an economic development proposal.

5. Public Benefit (Qualitative)
A proposal earns points if it addresses future flood risk and environmental conditions in a unique way and/or improves quality of life for residents.

6. CRS Score
A proposal will earn points if the activity falls under the Community Rating System (CRS). Points will be awarded on an all-or-nothing basis.
PLANNING CATEGORIES

STORMWATER MANAGEMENT

HOUSING AND DEVELOPMENT

TRANSPORTATION

EDUCATION, ECONOMY, AND JOBS

CULTURE AND RECREATION
Low Risk Zone
LA SAFE - Terrebonne Parish
High Risk Zone
LA SAFE - Terrebonne Parish
50-Year Vision by Risk Zone
LA SAFE - Terrebonne Parish

Low Risk
0' - 3' projected flood depths
Design New Growth Corridors and Urban Centers

Moderate Risk
3' - 6' projected flood depths
Within the 100-year floodplain
Protect Assets and Establish Resilient Neighborhoods

High Risk
6' + projected flood depths
Enhance Economic Engines and Adapt to Rising Waters
1 Mitigate Flooding & Subsidence
LA SAFE - Terrebonne Parish

Legend
- Land
- Wetlands
- Major Non-federal Levee
- CRRA Proposed Levee
- Parish Boundary
- Major Road
- Bayou
- Canal
- Green Belt Network
- Water Storage
- Wetland Restoration
- Wetland Conservation

Stormwater Management
- Urban
  - Reduce impervious surfaces
  - Retrofit with green infrastructure
- Suburban
  - Limit turbulock / slab-on-grade
  - Hold water at the source
- Rural
  - Adopt best management agricultural practices
  - Land conservation where applicable
- Wetlands
  - Store water before discharging into waterways
  - Restoration where applicable
- Subsidence Potential
  - Limit water table drawdown
  - Limit new development
- Subsidence
  - Raise water table where possible
  - Restrict new development
2 Direct Growth to Low Risk Areas

LA SAFE - Terrebonne Parish
Goal 2: Direct growth to low-risk areas
Create safe and vibrant communities with amenities that attract and retain residents of all ages.

Strategy 1: Encourage housing and commercial development on higher ground
Strategy 2: Continue revitalization of downtown Houma
Strategy 3: Plan for a Houma-Thibodaux growth corridor

Strategy 1
Encourage housing and commercial development on higher ground

Action A: Prepare areas of higher ground for increased concentrations of development.
Action B: Develop a housing incentive program to encourage development on higher ground.
Action C: Consider repurposing unused properties.
3 Improve Mobility

LA SAFE - Terrebonne Parish

Legend
- Land
- Wetlands
- Major Non-Federal Levee
- CPEA Proposed Levees
- Parish Boundary
- Major Road
- Bayou
- Canal
- New Road
- Road Improvements
- Articulate Station Improvements
4 Build a Robust Economy

LA SAFE - Terrebonne Parish
A Global Challenge
Integrated Water Management
LA SAFE 50-Year Vision
LA SAFE Pilot Projects
Portraits From a Drowning World

Images by Gideon Mendel, Nat’l Geographic
THE FORCES OF WATER

The project area is surrounded by water that pushes and pulls with human use, tides, floods, and climate change.
Flood risk management in the Delta programme

Multi-level protection strategy:

Level 3:
Effective flood warning and emergency plans

Level 2:
Flood robust spatial planning

Level 1:
Flood protection

* in line with EU Floods Directive 2007
Delta Programme Commissioner
Multiple Lines of Defense

ADD
Internal Water Management

RETAIN → STORE → DRAIN

1. Offshore Shelf
2. Barrier Island
3. Sound
4. Marsh Landbridge
5. Natural Ridge
6. Highway
7. Flood Gate
8. Levee
9. Pump Station
10. Elevated Building
11. Evacuation Route

Salt Marsh → Brackish Marsh → Intermediate Marsh → Fresh Marsh

SALTWATER → WETLAND HABITAT → FRESHWATER → RIDGES - UPLANDS - CITIES

Louisiana 2007 Coastal Master Plan
INTEGRATED WATER MANAGEMENT
Planning Approach

- Inhabitation
- Land Cover
- Infrastructure Networks
- Soils
- Water
- Biodiversity
Land is Sinking
As the Gulf is Rising
Historic Adaptation (Before Levees)
20th Century Adaptation (Levees & Slab-On-Grade Homes)
21st Century Challenges
Internal Subsidence

-1 to -3m
0 to 0.3m (wetlands)
> 3m
Subsidence Potential

- Highly Organic Soils
- Moderately Organic Soils
- High Plasticity Soils
Challenges of Forced Drainage
Existing
Potential
Potential
Make Space for Water

EXISTING

PROPOSED

Pump + Drain

Slow Store Drain
Create Blue and Green Spaces
Solutions at Multiple Scales

1. Lot
2. Block
3. District
4. Sub-basin
5. Basin
6. Region
Delay

Rain Garden  Bioswale  Exfiltration Basin

Smart Street Retrofits
Store

Water Storage in Public Parks

Potential Water Storage Locations
Optimize Drainage

Existing – Pump Through the Ridge

Proposed – Split Drainage at the Ridge
LA SAFE 50-YEAR VISION

• Blue-Green networks
• Permeable parking retrofits
• Canal beautification
• Limited development in floodplain
• Service consolidation
• Sustainable industries
• Ecological preservation
• Cultural preservation
• Multi-modal transportation & new connections
• Ecotourism
Regional Connections
50-Year Vision

- Transportation
- Major Land Route
- Major Water Route
- Development
- Consolidation of Services
- Growth Corridor
Jefferson Parish
50-Year Vision
Plaquemines
50-Year Vision
St. John the Baptist
50-Year Vision
St. Tammany
50-Year Vision
Lafourche Parish
50-Year Vision
Terrebonne Parish
50-Year Vision
Bayou La Cache Wetland Park
Grand Caillou School Repurpose
Houma Seafood Market & Harbor of Refuge
Lake Boudreaux Living Mitigation
Villages In The Woods
Buyouts for Permanent Residents
Phase 1: Outreach & Needs Assessment

JUNE 2016 – NOVEMBER 2016

Phase 2: Site Selection & Master Planning

CURRENTLY UNDERWAY

Phase 3: Development/Construction

2019 – SEPTEMBER 2022
PHASE 1: OUTREACH & NEEDS ASSESSMENT
PHASE 1 METHODOLOGY

Community Meeting #1
  - Land Use & Infrastructure Survey
  - Resident Interviews

Community Meeting #2

Site Selection Activities

Final Visit & Data Confirmation

Final Phase 1 Report

THE RESETTLEMENT OF ISLE DE JEAN CHARLES
CONSIDERED SITES
PHASE 2: SITE SELECTION & MASTER PLANNING
CONSIDERED SITES
PREFERRED POTENTIAL SITES
THE PREFERRED & OPTIONED SITE

EVERGREEN SITE CONFIGURATION - C
±515 ACRES

Asking Price: $13,544,500
Option Agreement - $11,700,000
PHASE 2: RESETTLEMENT MASTER PLANNING
SITE SELECTION CONTEXT

METHODOLOGY

- ISLAND RESIDENT
- ISLAND RESIDENT
- NON-ISLAND RESIDENT OR CAMP OWNER

Note: Some residents placed more than one dot, while other residents placed no dots.

SCHRIEVER 18 dots
BOURG 7 dots
BAYOU BLUE 2 dots
PRESQUEILE 2 dots
HOUMA 2 dots
MANDALAY 1 dot
OAK SHAW 1 dot
ISLE DE JEAN CHARLES 1 dot
NEAR US 90 & HWY. 211 1 dot
PHASE 3: Development/Construction
Next Steps
ISLE DE JEAN CHARLES
RESETTLEMENT