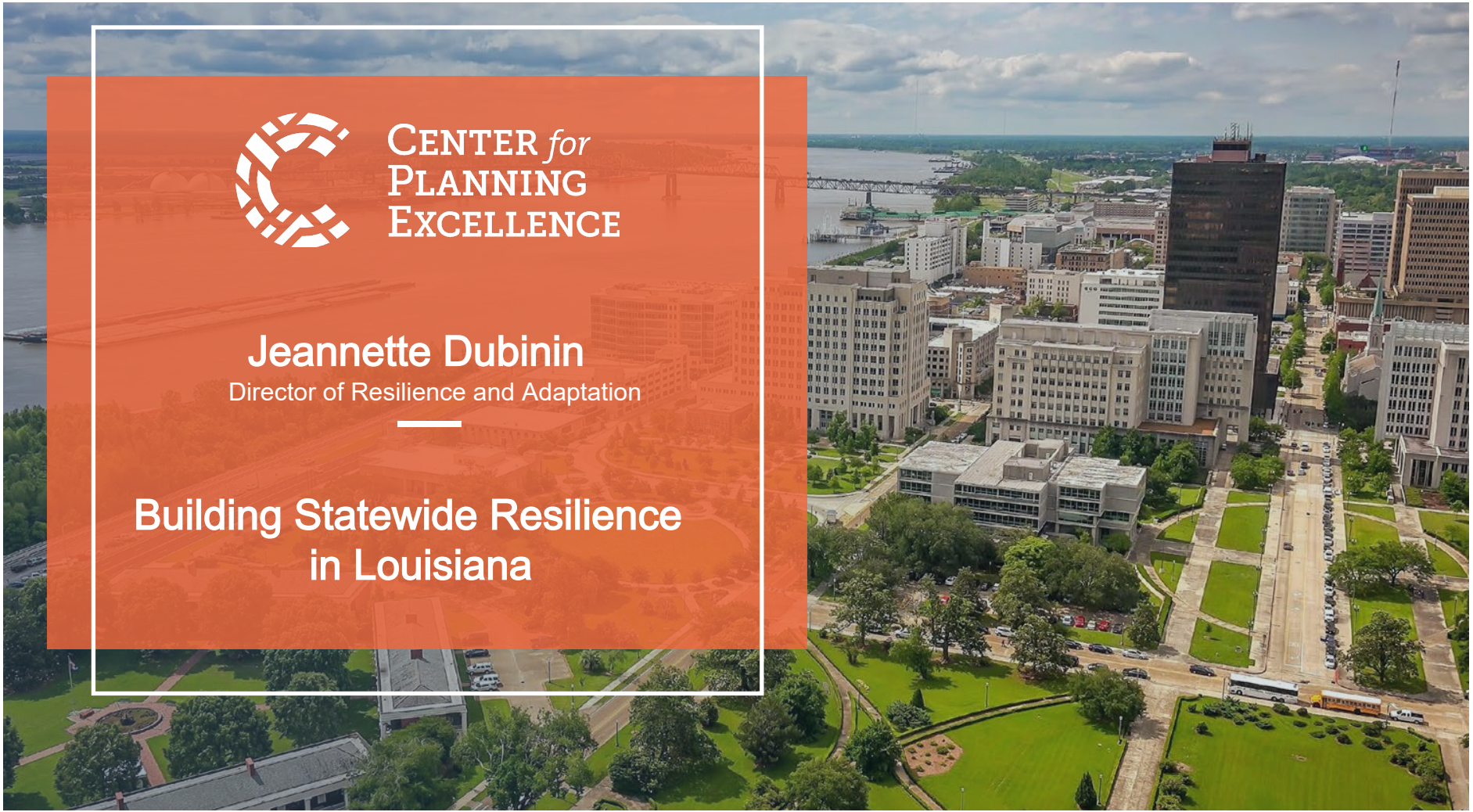

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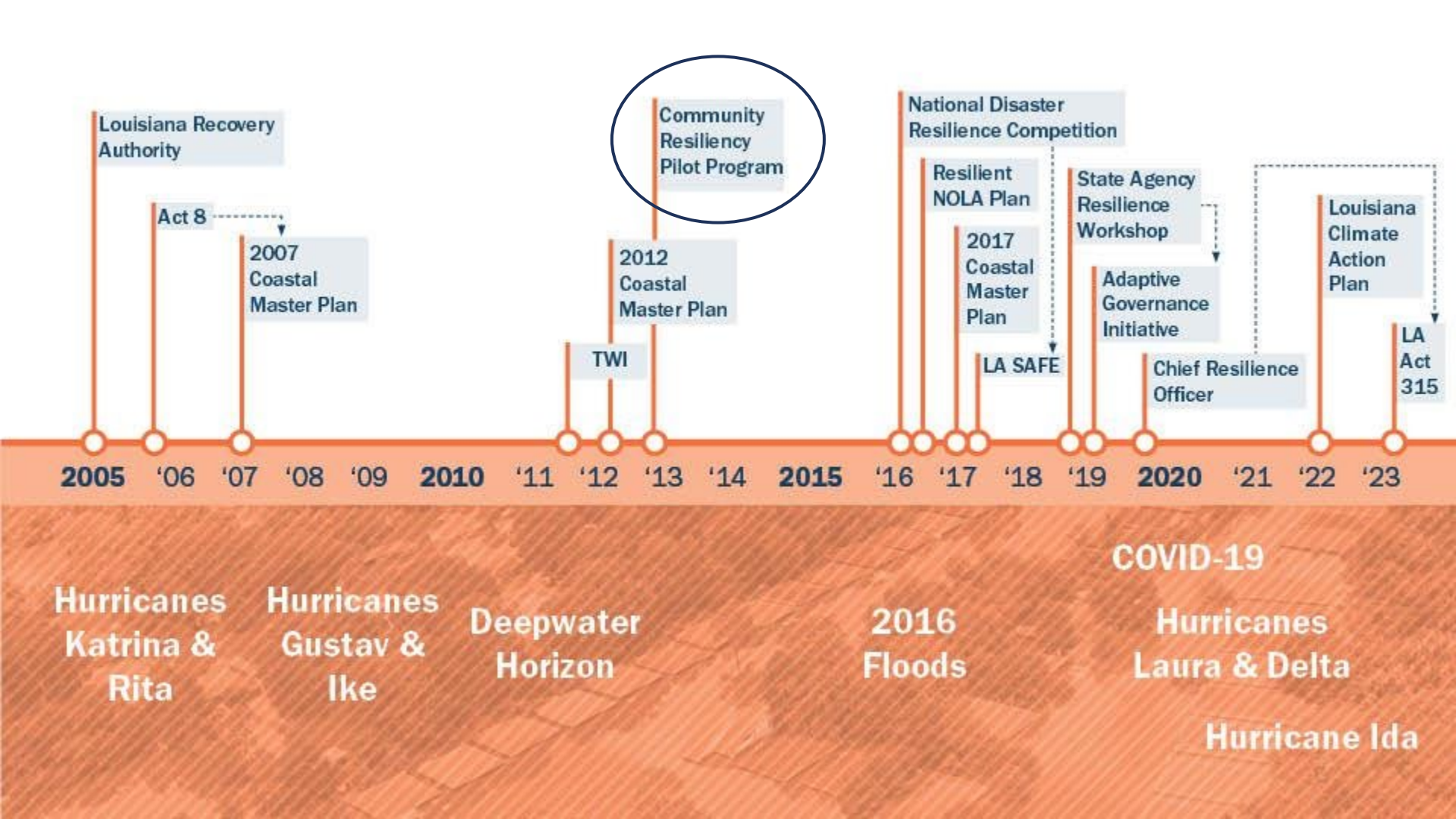
Jeannette Dubinin

Director of Resilience and Adaptation

Building Statewide Resilience in Louisiana

Who is CPEX?

The Center for Planning Excellence champions the power of good planning to build healthy, sustainable communities throughout Louisiana through our work as policy advocates, educators and consultants.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From Recovery to Resiliency

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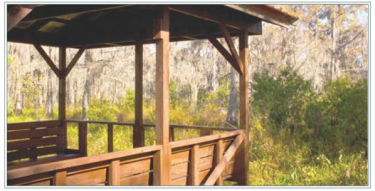
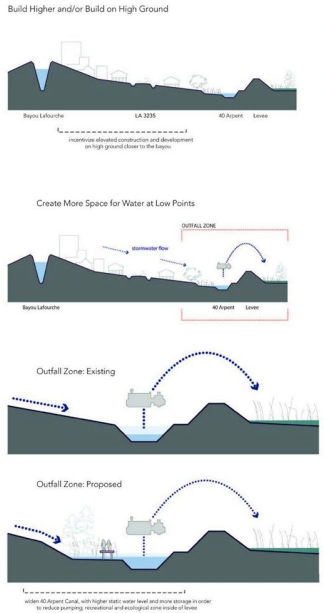
2 Six Principles of Resilience: Enhance Local Assets

Jean Lafitte has been working in recent years to build additional tourist destinations. The Town should explore adding physical improvements to keep visitors in the community longer and more likely to spend money at local businesses. These facilities would also serve the resident population year-round. Providing more lodging, retail, restaurant and public access to waterways could all contribute to making Jean Lafitte an overnight destination. Existing attractions focusing on the history, culture, and the natural environment of the region have been a proven tourist draw. Additional attractions, whether public or private, would help in marketing Jean Lafitte as an important historical and cultural destination.



Existing shelter along the Nature Study Park boardwalk allows an opportunity to rest and enjoy the views of the bayou.

Figure 25: Approaches to flood protection



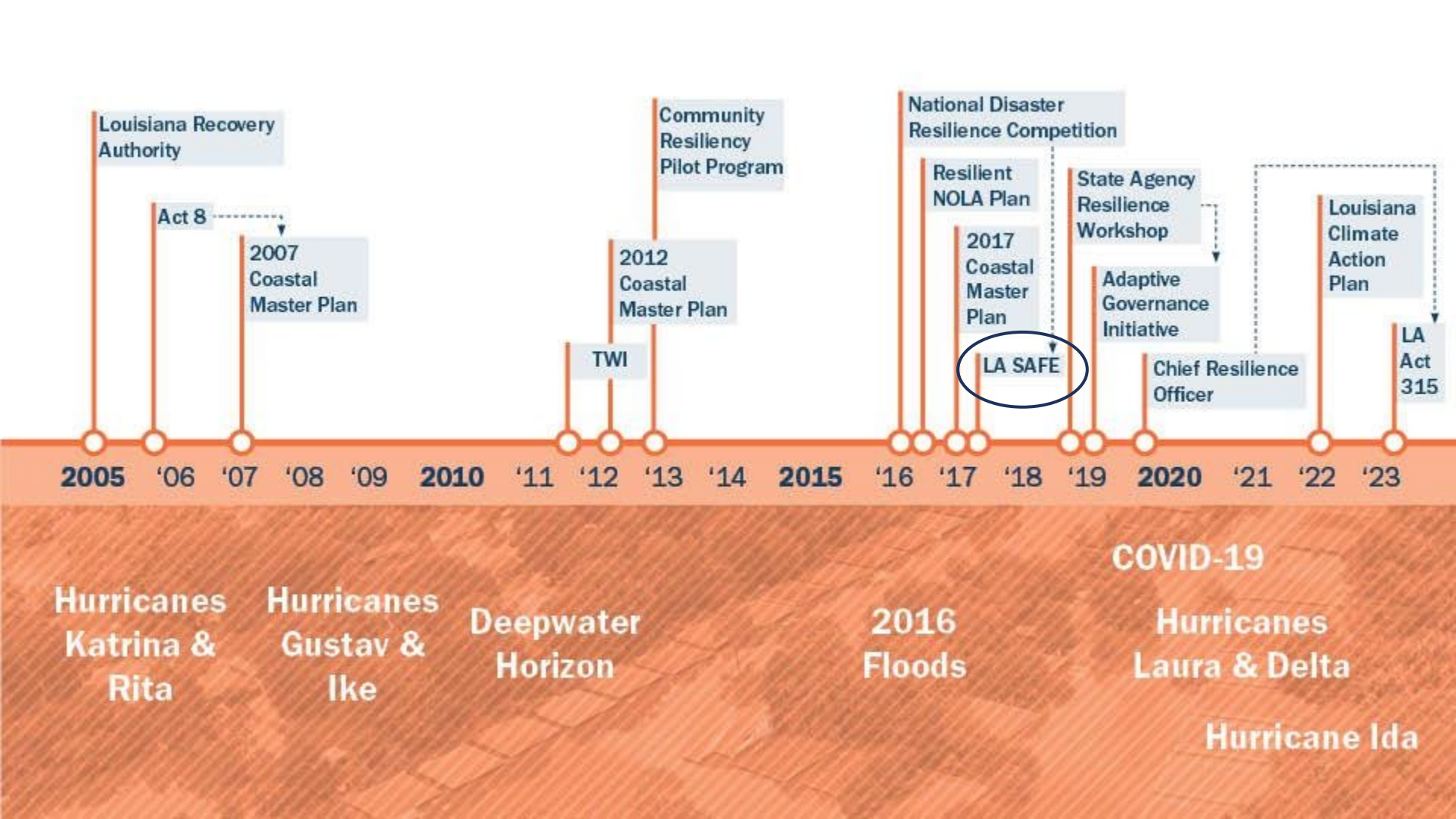
Resiliency & Mitigation Strategies

Louisiana's Comprehensive Master Plan for a Sustainable Coast

The *2012 Coastal Master Plan* was developed by looking 50 years into south Louisiana's future, applying scientific best practices and knowledge, and given those findings, identifying protection and restoration projects that will provide increased flood protection for all communities and ensure a sustainable and resilient coastal landscape in the years to come.

The *Louisiana Coastal Master Plan* focuses on protection and restoration and identifies 397 projects for evaluation in the *2012 Coastal Master Plan*. These projects include:

- **248 restoration projects** which help build or sustain land and contribute to risk reduction, since they help reduce storm surge. Restoration projects are grouped into the following efforts.
  - Barrier island/headland restoration
  - Hydrologic restoration
  - Marsh creation
  - Oyster barrier reefs
  - Ridge restoration
  - Sediment diversion
  - Channel realignment
  - Bank stabilization
  - Shoreline protection
- **33 structural risk reduction projects** which reduce flood risk in coastal communities by acting as physical barriers against storm surge. Structural measures include the following measures:
  - Earthen levee
  - Concrete wall
  - Floodgate
  - Pumps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From Resiliency to Adaptation

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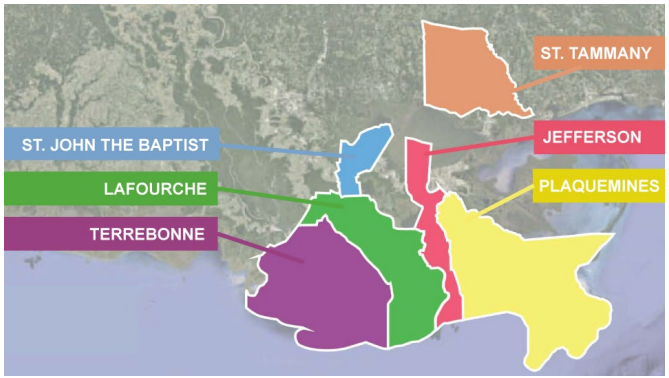

Community Benefits

Park and canal improvements to increase stormwater retention capacity and reduce flooding risk to streets, houses, schools, & businesses.

Improves housing stock and property values by reducing flood risk and enhancing the park, encouraging development and neighborhood revitalization.

Creates greater community connectivity, walkability, bikeability.

Educational signage and programming about stormwater management will be included in City Park and will support jobs to rent recreational equipment (kayaks, canoes, paddleboards) and manage facilities.

Provides spaces for many types of recreation, increases community connectivity and access to amenities, and provides aesthetic enhancements improving quality of life.

Adaptation at the Community Level

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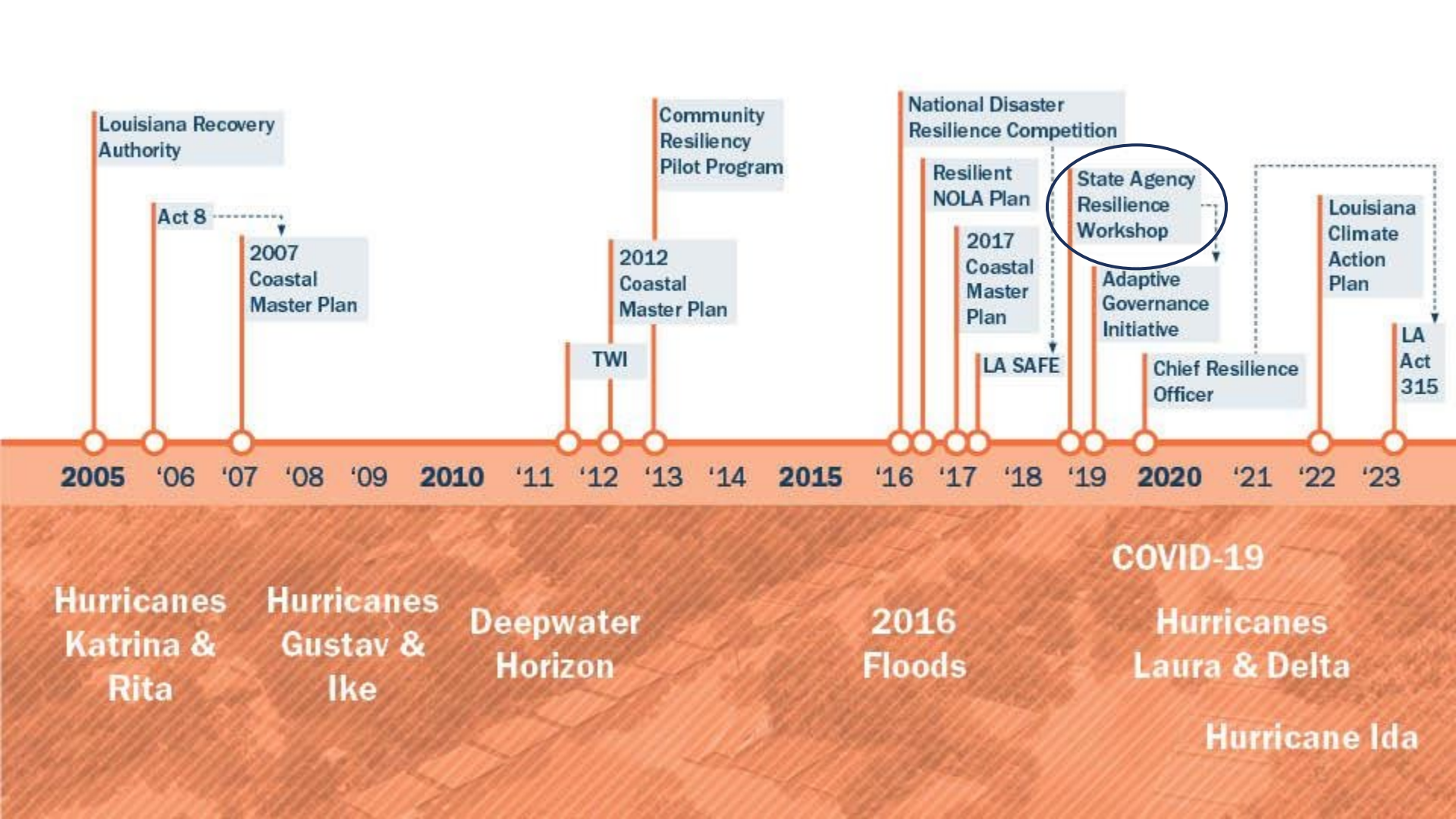
A PLAQUEMINES HARBOR OF REFUGE

Prototype Perspective View

1. Harbor of Refuge and Boat Docks
2. Picnic Pavilion (optional)
3. Raised Convenience Store and Restrooms (optional)
4. Seafood market (optional)
5. Permeable parking and bioswales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Resilience Workshop

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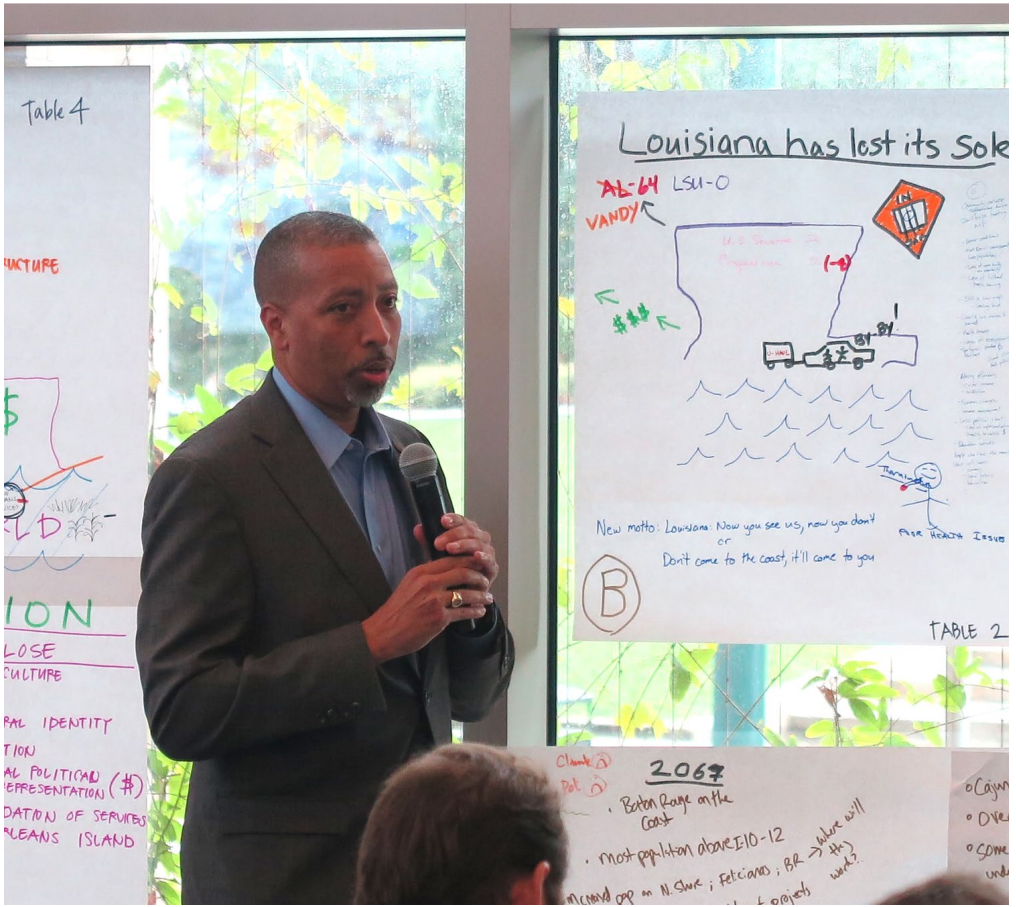

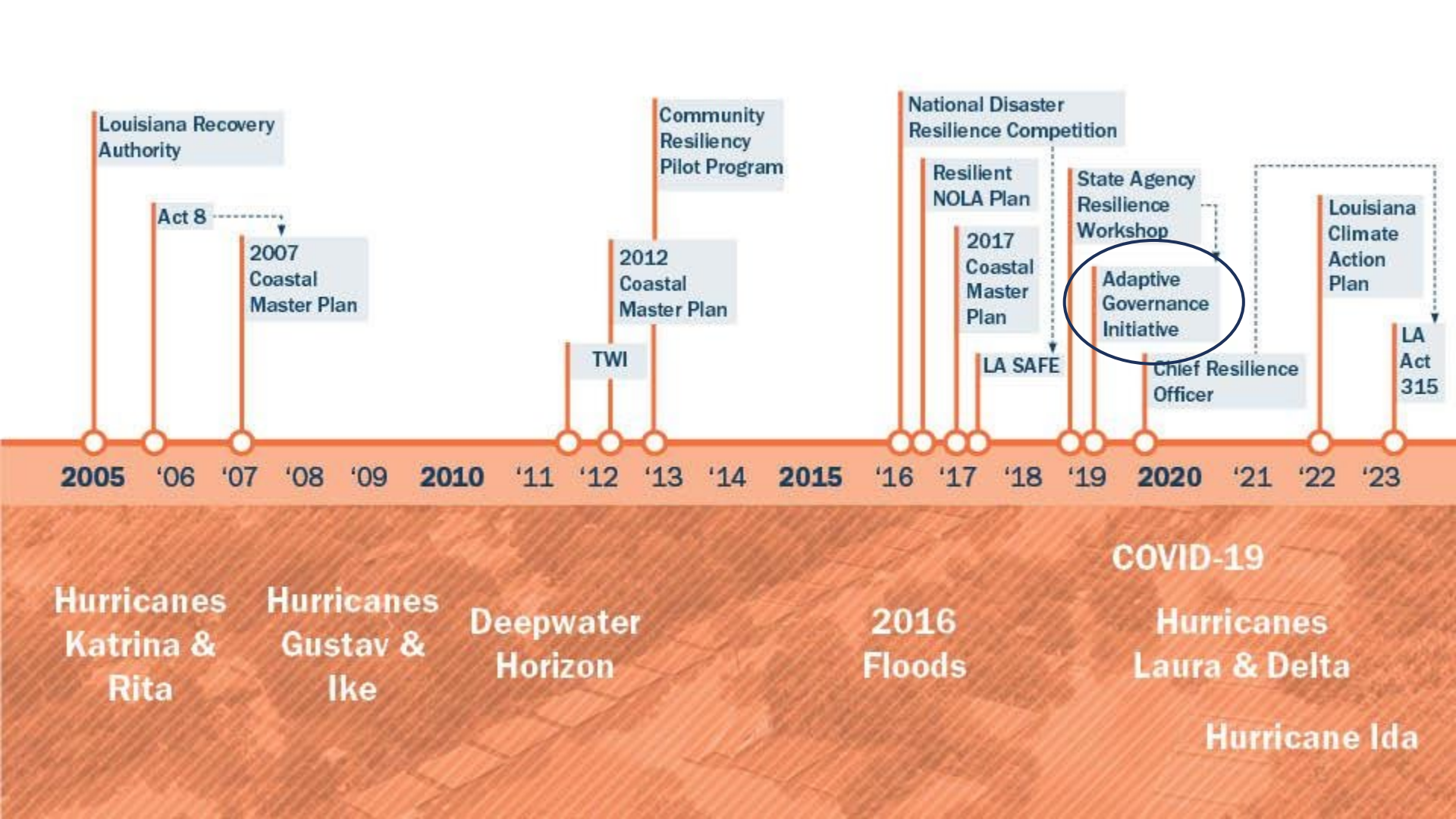
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Adaptive Governance Initiative

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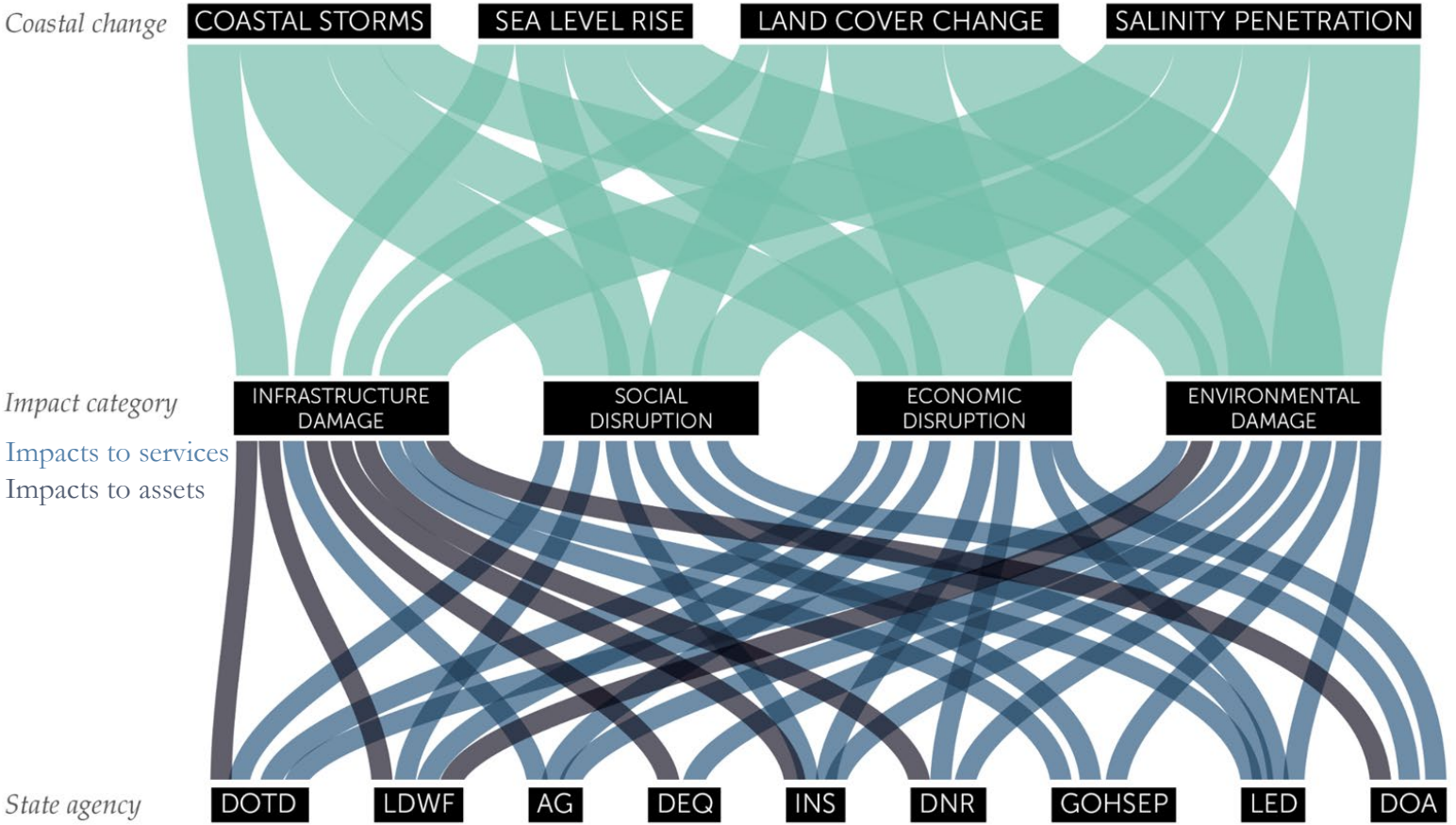

JBE 2020-19 Coastal Resilience

Establishing a coordinated, intentional, collaborative agency-wide effort to build resilience

Section 1: **Coordination**
Section 2: **Incorporate Master Plan Data**
Section 3: **Strategic Planning for Coastal Resilience**
Section 4: **Accountability**

Supporting Adaptive Governance

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- Agencies understand their **relationship to the coastal crisis** and to each other.
- Aid in the **integration of Coastal Master Plan projections** into decision making.
- **Leverage partnerships** to maximize investment benefits.
- Establish a framework for **proactive, climate adaptive governance** for Louisiana.

Supporting Adaptive Governance

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Information

- Having resources to make data-driven decisions

Integration

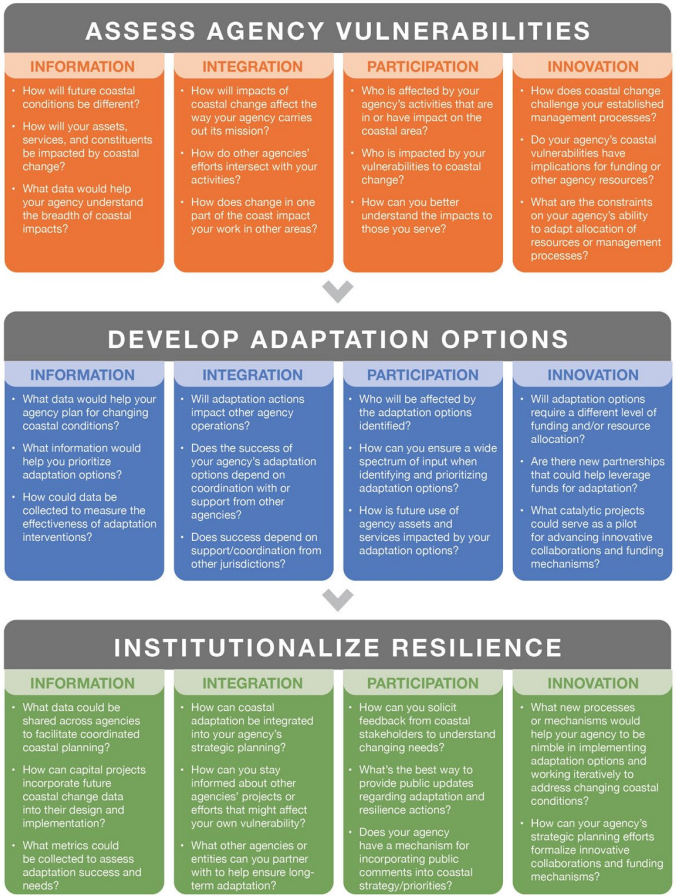
- Aligning agency objectives and efforts

Participation

- Engaging a spectrum of perspectives to inform approach

Innovation

- Mobilizing resources to deal with new conditions



ADAPTIVE GOVERNANCE:
A GUIDE FOR LOUISIANA

CONDUCTING A VULNERABILITY ASSESSMENT

There are four steps to developing the Vulnerability Assessment:

Step 1: Screening

Vulnerability screening identifies the most vulnerable locations, service centers, and programs within an agency that need further assessment. Agencies may be able to use existing data to obtain an overview of recent exposure and vulnerability. For example:

Office/facility closures or disruptions due to storms
- Closures issued by Parish or State
- Extended closures due to storm damage
- Disruptions due to lack of access, impacts of flooding on staff

Damage to facilities or equipment
- Repairs needed
- Claims for equipment damage through Office of Risk Management
- FEMA claims

Workforce impacts
- Displacement of agency workers
- Excessive overtime, stressed employees

Change in demand for service
- Increased demand in some areas versus others following storms
- Decreased demand over time in some areas versus others due to population change

Surveys, questionnaires, or interviews with regional office staff may also be used to collect information.

Step 2 and 3: Current and Future Impacts

Assessment of current and future impacts uses recent experience (e.g., since 2005) to identify assets (i.e., facilities, infrastructure, equipment) and services affected by acute shocks and chronic stressors and considers how those effects may change in years to come. Regional and on-the-ground personnel, including office managers and maintenance staff, are often quite knowledgeable about the weaknesses and vulnerabilities of the current system. Eliciting their expert opinion on sensitivities can provide important information on agency vulnerabilities. Linking their observations of past vulnerability with **exposure** to specific conditions allows future changes in vulnerability to be estimated as exposure changes, e.g., increased sea-level rise. The impacts are assigned a score according to severity (see page 20).

Step 4: Mission Significance

Mission significance can be used to prioritize vulnerabilities within an agency and across government, identifying those most in need of current or future adaptation. For state agencies, significance of the impacts can be thought of in terms of their own agency's ability to fulfill its mission, as well as how the effects of vulnerabilities within an agency affect other aspects of state and local government. For example, some agencies may be dependent on the facilities or services provided by other agencies to conduct their mission. While these dependencies may be less apparent for routine operations under current conditions, they may become critical during acute shocks, such as storm impacts, or as the chronic stress of coastal change plays out.

An Excel Workbook has been designed to help agencies track information in a structured way and to enable prioritization of vulnerabilities.
VULNERABILITY ASSESSMENT WORKBOOK

STEP 1

CONDUCT A SCREENING

Identify the most vulnerable assets or programs within an agency that need further assessment

STEP 2

DETERMINE CURRENT RISK

What is already being impacted?

Asset Impacts (Now)
Use data and recent experience to identify assets (i.e., facilities, infrastructure, equipment) currently affected by acute shocks and chronic stressors.

Service Impacts (Now)
Use data and recent experience to identify services currently affected by acute shocks and chronic stressors.

STEP 3

DETERMINE FUTURE RISK

What locations and services will be impacted?

Asset Impacts (Future)
Use coastal change data to consider how those effects may impact asset management in years to come.

Service Impacts (Future)
Use coastal change data to consider how those effects may impact service provision in years to come.

Tools:
CLIMATE CENTRAL
CHRA

STEP 4

DETERMINE SIGNIFICANCE

What are the most urgent threats to agency missions?

Prioritize vulnerabilities within an agency and across government with the most need for current or future adaptation.

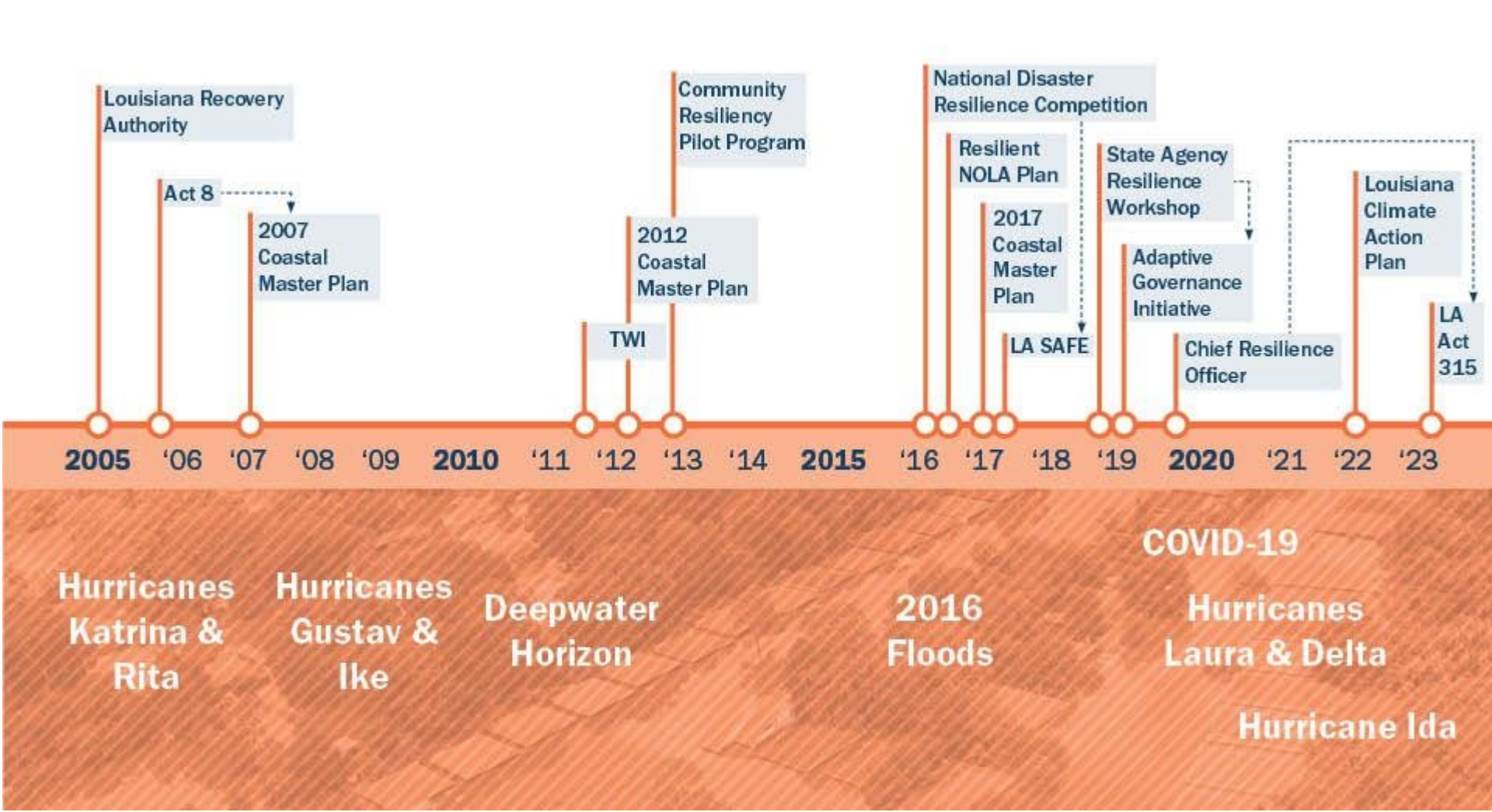
Exposure Examples

	DIRECT EFFECTS AND EXAMPLES	
ACUTE SHOCKS	Flood Damage	Agency facilities are flooded, resulting in damage and temporary office closure
	Storm Damage	Storm surge and waves undermine coastal highways and bridges impeding transportation
	Emergency Response	Staff are redirected from usual duties, including providing services to the public, to assist with emergency response
	INDIRECT EFFECTS AND EXAMPLES	
	Population Migration	Temporary or permanent relocation of vulnerable people away from areas suffering the shock increases the workload of a regional office beyond its capacity
	Business Migration	Business temporarily or permanently move out of areas repeatedly subject to storm impacts shifting the load of supporting those businesses from one agency regional office to another
	Changes in Coastal Hydrology	Storms wash through natural or artificial barriers, allowing saltwater penetration into agricultural lands
	Increased Pollutants in Runoff/Floodwater	Storm runoff remobilizes contaminants and distributes them into areas with potential for human and ecological impacts

	DIRECT EFFECT AND EXAMPLES	
CHRONIC STRESSORS	Increased Flooding	Repeated flooding of the parking floor and first floor of an agency's facility impedes its ability to serve the public resulting in frequent or permanent closure
	Coastal Habitat Loss	Wetland habitat for species considered rare, threatened to endangered is lost to open water
	Saltwater Intrusion	Changing salinities alter the distribution of habitat for commercial species leading to inadequacies in monitoring plans that to effectively manage these species
	Disturbed Fish Habitat	Fisheries patterns shift away from areas accessed by traditional fishing communities impacting livelihoods and food security
	Disturbed Wildlife Habitat	Wildlife management areas no longer support the species for which they were designed
	Channel Sedimentation	Repeated delays in access to ports/harbor facilities impacts the efficiency of navigation commerce and the ability to attract new businesses dependent on import/export or water-based transportation.
	INDIRECT EFFECTS AND EXAMPLES	
	Population Migration	Service provision by state agencies in receiving communities becomes overburdened as haphazard migration from the coast increases.
	Coastal Habitat Migration/ Loss	Recreational opportunities for residents, including those in underserved communities, degrade or become unsafe
	Business Migration	Employment opportunities shift away from rural communities as businesses seek to reduce flood risk, increasing unemployment among the remaining population, including groups that are already disadvantaged.
	Increased Pollutants in Runoff/Floodwater	Rural underserved communities are subject to increased levels of pollution as regular flooding of roadways and storage facilities mobilizes contaminants increasing their exposure
	Ecotourism Migration	Loss of habitat for charismatic species leads to loss of opportunity for ecotourism businesses, and reduced use of state parks
	Agricultural Migration	Increased salinization and lack of drainage result in unsuitable conditions for traditionally viable crops

Examples of Exposure - Effect Linkages

DIRECT EFFECTS	HAZARD EXPOSURE: Temporary Flooding	Periodic Inundation	Wind	Erosion	Sedimentation	Land Loss	Saltwater Intrusion
Increased Flooding		■			■		■
Storm Damage	■		■	■			
Emergency Response	■	■					
Flood Damage	■	■					
Drainage Issues	■	■			■		
Wastewater System Inadequacies	■	■			■		
Coastal Habitat Loss			■			■	■
Saltwater Intrusion	■	■					■
Disturbed Fish Habitat		■	■	■	■	■	■
Disturbed Wildlife Habitat		■	■	■	■	■	■
Reduced Freshwater Supply						■	
Channel Sedimentation			■	■	■		
Groundwater Salinization	■						■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Thank You

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