

A Great Egret is perched on a weathered, vertical wooden post. The bird's wings are spread wide, showing the intricate patterns of its feathers. Its long, sharp beak is pointed to the left. The background is a clear, light blue sky. The text 'ADAPTIVE GOVERNANCE: A GUIDE FOR LOUISIANA' is overlaid on the left side of the image in white, bold, sans-serif font.

**ADAPTIVE
GOVERNANCE:**
A GUIDE FOR
LOUISIANA



PREPARED BY



CENTER *for* PLANNING EXCELLENCE

Center for Planning Excellence (CPEX) is a non-profit organization that coordinates urban, rural, and regional planning and implementation efforts in Louisiana. We provide best-practices, planning models, innovative policy ideas, and technical assistance to individual communities that wish to create and enact master plans dealing with transportation and infrastructure needs, environmental issues, and quality design for the built environment. CPEX brings community members and leaders together and provides guidance as they work towards a shared vision for future growth and development.

In collaboration with:

THE KRESGE FOUNDATION



4 INTRODUCTION

8 ESTABLISHING A FRAMEWORK

14 ASSESSING VULNERABILITIES

24 DEVELOPING ADAPTATION ACTIONS

PURPOSE OF THIS MANUAL

The purpose of this Manual is to support state agencies as they respond to the Executive Order JBE 2019-19, which aims to improve the state's resilience in the face of changing environmental conditions that will have direct and indirect implications for state agencies and the people they serve. The Manual serves as a summary of other documents developed throughout the course of the Adaptive Governance Initiative. It includes principles, step-by-step instructions, and templates to guide agencies as they work on assessing vulnerabilities, identifying actions, and institutionalizing adaptation. The Manual is designed to help agencies work through the process individually and with other agencies.

1

INTRODUCTION

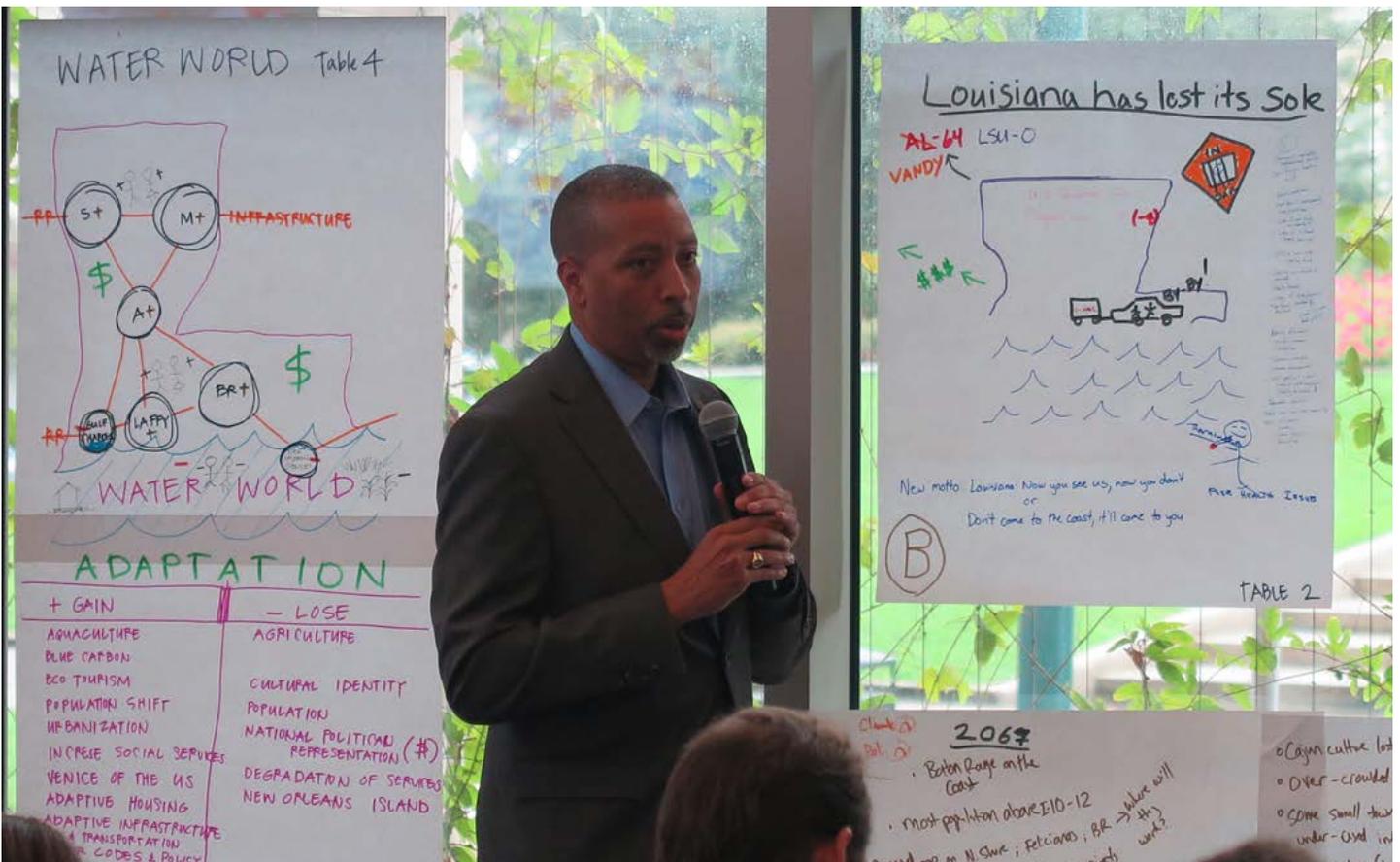
BACKGROUND AND CONTEXT

Louisiana has lost 2,000 square miles of coastline since the 1930s and is in danger of losing an additional 4,000 square miles if significant action is not taken. This land loss increases the flood risk of coastal communities and presents many other challenges to communities and ecosystems. To address this problem, the state has developed the Comprehensive Master Plan for a Sustainable Coast, currently in its third edition, that analyzes the physical changes to the coast and contains a list of projects to reduce flood risk and restore the natural environment.

While the crisis on the coast is punctuated by singular disasters like hurricanes and oil spills, it also brings chronic stressors for the people, communities, natural resources, and economies of Louisiana. The impacts of coastal change continue to grow and will directly and indirectly test every state agency, making it crucial

to look beyond disaster preparation and response to find new ways to strengthen our ability to plan for the future in a way that meets those challenges.

The focus of this Manual, developed to support the implementation of Executive Order JBE 2019-19 and the Adaptive Governance Initiative, is on the Executive Branch of the Louisiana State Government. Although each agency in the Executive Branch has a distinct mission and its own expertise, resources, and responsibilities, each will be impacted and tested by the monumental changes occurring across Louisiana's coast. As each agency finds ways to adapt to these changes they are also helping to build a more resilient state by supporting stronger, more integrated, and informed programs and assets that meet different aspects of the changing needs of the populations living along the coast.



The diagram below illustrates how certain well-documented physical changes to the coastal system will produce impacts to infrastructure, social systems, the economy, and the environment. Each of these direct impact areas will affect the programs, services, or assets of different state agencies, drawing them in to the important task of adaptation.

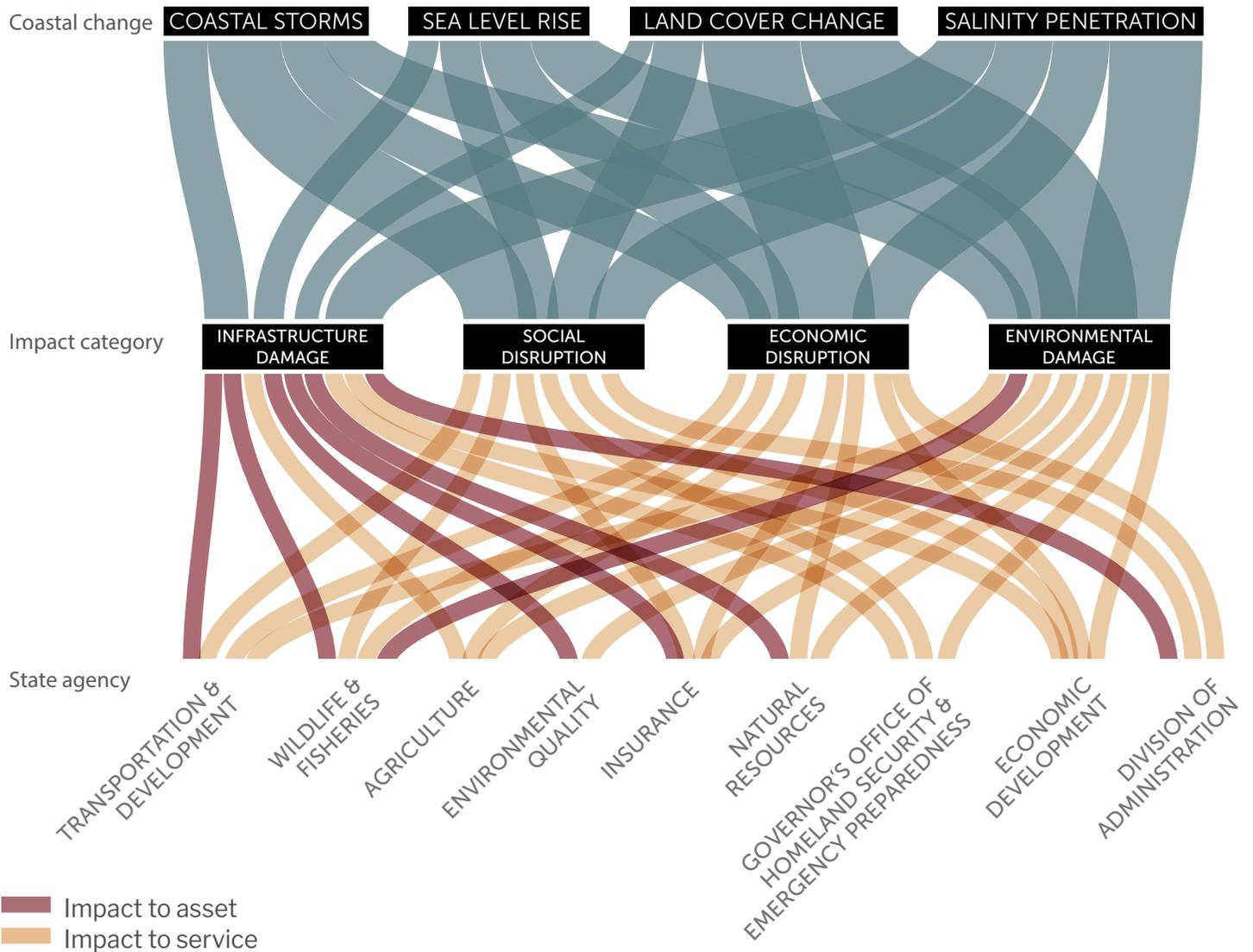


Figure 1: Conceptual diagram illustrating the shared impact of coastal change on sample agencies.

“ Understanding and responding to the constellation of related but distinct impacts associated with coastal change is a primary goal of this Initiative.



To build the capacity of agencies to identify how coastal change will affect their missions and begin the process of adapting to those changes, Governor John Bel Edwards issued Executive Order 2020-19 on Coastal Resilience. This EO advances several agency resilience initiatives including establishing a Chief Resilience Officer within the Office of the Governor. The EO also asks state agencies to appoint a Resilience Coordinator to act as the agency’s point person for resilience and adaptation measures. It also asks them to consider projected coastal change from the CPRA’s

Coastal Master Plan into all agency investments and plans, beginning with a vulnerability assessment to identify adaptation options that address vulnerabilities and allow the agency to continue carrying out its mission. Finally, the EO asks agencies to incorporate these efforts into their strategic plans with an eye toward resources and priorities required for implementation. This process can be summarized in three phases: assess agency vulnerabilities, develop adaptation options, and institutionalize resilience.



2

**ESTABLISHING
A FRAMEWORK**

DEFINING COASTAL RESILIENCE IN LOUISIANA

The term resilience is widely understood to be multi-dimensional—including more than just enhancements to infrastructure. “Resilience” is the capacity of individuals, communities, and systems to survive, adapt, and grow no matter what kind of chronic stresses and acute shocks they experience.

This Framework is intended to guide agency leadership and staff as they make decisions about their existing and future operations on the coast. It prompts those who provide oversight or management of agency efforts with a series of questions to consider when analyzing opportunities to enhance their contribution to Louisiana’s coastal resilience.

This Framework aids agencies as they develop vulnerability assessments, develop adaptation options and catalytic projects, and integrate the

identified adaptation options into their agency planning protocols. In addition to the “**elements of coastal resilience**,” this framework also includes “**principles of adaptive governance**” that focuses on how to put resilience-thinking into action.

For instance, as the agency works through understanding the impacts of ongoing changes to the coast and how their assets and services are vulnerable to that change, they are asked to consider what information they need to make data-driven decisions; what kind of ripple effects anticipated coastal change will have; how impacted communities have expressed their thoughts and expectations about agency responses; and how coastal change will impact their available resources for response?



ELEMENTS OF COASTAL RESILIENCE

In this Initiative, a resilient future consists of four elements: *a robust built environment, health and opportunity for all coastal residents, vibrant economic activity, and a sustainable natural environment.* Only when all four of these elements are being tended to systematically are we truly building resilience.

These four elements have been identified to embrace all aspects of state agency coastal work and operations. They are not designed to be exclusive or

independent, and within state government there may be interrelations and co-dependencies. Agencies should identify with at least one of these four elements, but it is expected that many will have interests or responsibilities that touch several of the elements, highlighting the essential nature of communication and collaboration among state agencies as they collectively adapt their operations to the anticipated impacts of coastal change.

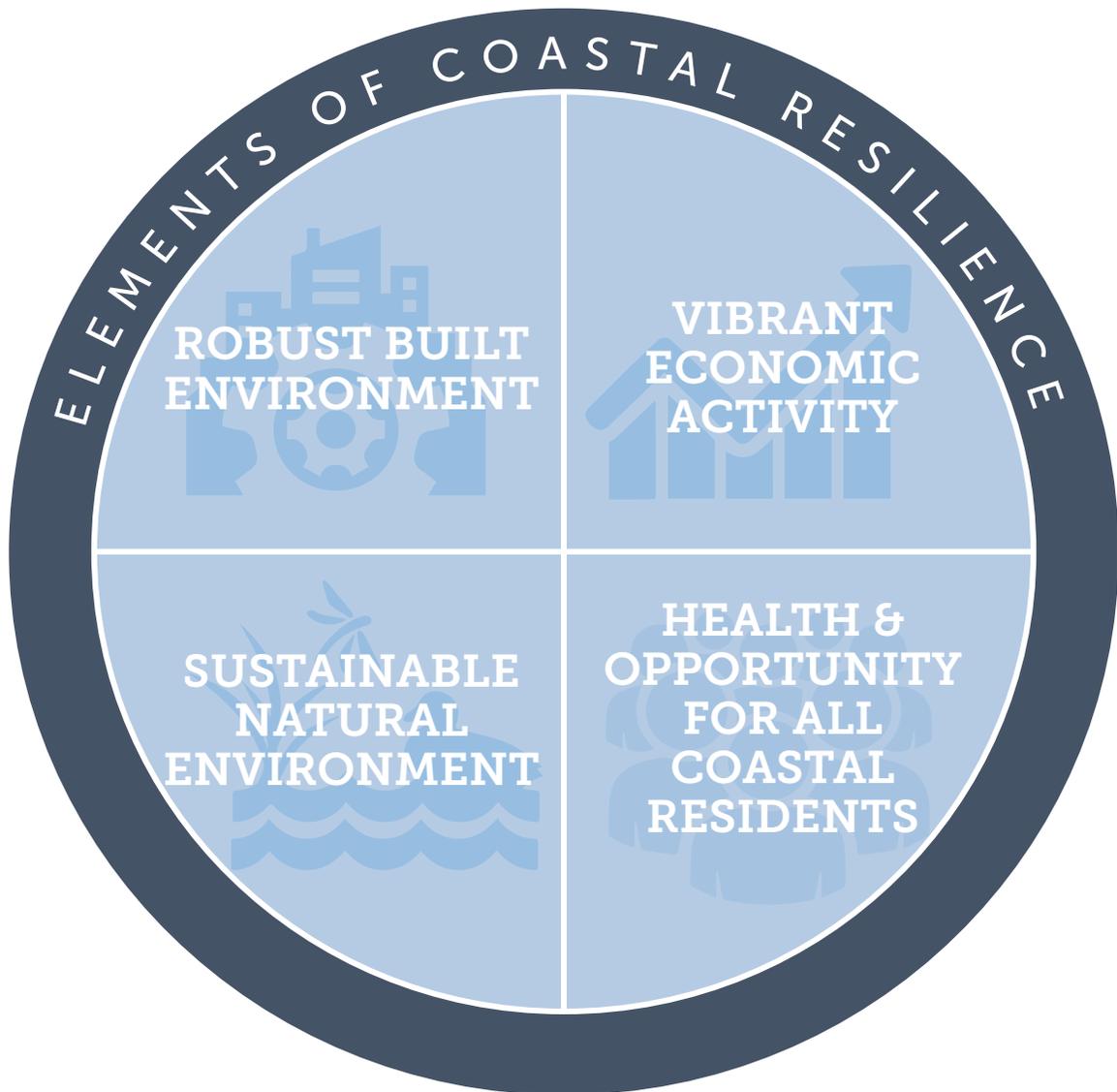


Figure 2: Resilience Framework Elements

Robust Build Environment

Vision: Infrastructure of all types (including state facilities; residences; and structures supporting critical or essential services, employment, and cultural and social opportunities) is planned, designed, and maintained to withstand stresses from extreme events and long-term coastal change.

The built infrastructure facilitates movement, settlement, employment, and all other activities along the coast. Robust physical infrastructure is foundational to realizing the other elements of resilience. Ensuring that future coastal infrastructure sufficiently meets the needs of all coastal stakeholders will require adapting the management of existing assets to changing coastal conditions while also requiring that design of new assets consider future coastal change to occur within the project's lifespan.

Health and Opportunity for all Coastal Residents

Vision: All coastal residents experience a clean and safe environment and have ready access to educational, cultural, and recreational opportunities, and services like healthcare, public safety, and other social services that promote community well-being are locally provided and responsive to residents' needs.

Coastal residents are the lifeblood of Louisiana's diverse coast, and their interests have to be at the forefront of all agency coastal adaptation activities. The impacts of coastal change will have direct consequences for those who live, work, and play along the coast. Those agencies providing services to coastal residents will have to adapt their programmatic priorities and delivery methods to respond to the changing composition of people and needs as agencies work to secure a future coast where people will have access to healthcare, social networks, economic prospects, and other opportunities to flourish.

Vibrant Economic Activity

Vision: Economic activity is diverse, able to withstand broader economic shocks and stresses, and provides meaningful employment and business opportunities for individuals with an array of skills and educational backgrounds.

As the physical landscape along Louisiana's coast continues to change, so will its economic landscape. The many industries that depend on the coastal environment will have to adapt to new realities. Coastal residents will also be impacted by the evolving economic prospects of a changing coast. Agencies supporting the economic welfare of coastal sectors, businesses, investors, and workforce will have to be proactive in supporting existing and securing new opportunities for these stakeholders.

Sustainable Natural Environment

Vision: The natural environment is a valued resource which is diverse in character; supports an array of native fish and wildlife; provides opportunities for recreation and commercial activity; contributes to improved air and water quality; lowers flood risk; and meets the needs of Louisianians today as well as the needs of future generations.

The diverse ecosystems of Louisiana's coast are the source and summit of its reputation as a "sportsman's paradise" as well as the foundation for many important cultural practices and economic strengths. Coastal change will continue to challenge the composition and integrity of these distinct ecosystems, and agencies will have to respond to those challenges. Resource allocation, protection and restoration project prioritization, area management, and other agency actions will have profound impacts on the State's future coastal environments.

PRINCIPLES OF ADAPTIVE GOVERNANCE

Building resilience into agency operations will require agency processes to be more adaptive, responding to coastal conditions as they continue to change. To guide the adaptation of these institutional processes, the Framework considers four principles of resilient governance. These principles are process-oriented and will help to ensure that agency resilience initiatives are holistic, effective, and coordinated. These principles are detailed below:

Information: Having resources to make data-driven decisions

Informed coastal decision making requires a capacity to obtain data about Louisiana's future coast and interpret the impacts of that change to agency operations. Information that is authoritative and understandable helps agency decision makers identify current and future risk to their agency and the impact of resilience strategies.

Integration: Aligning agency objectives and efforts

Integrated analysis and planning helps agencies take coordinated resilience actions, moving toward a common vision for Louisiana's coast. It also recognizes the importance of integrating each agency's coastal actions with actions carried out by other state agencies and at other levels of government.

Participation: Engaging a spectrum of perspectives to inform approach

As agencies plan for the future of their coastal operations, it is critical that they engage the many diverse interests that live, work, play, and own property in coastal Louisiana, along with national interests that have a stake in coastal Louisiana's landscape.

Innovation: Mobilizing resources to deal with new conditions

Innovation acknowledges the need to use resources differently as conditions change. It encourages agencies to capitalize on synergies among projects, resolve resource overlaps and conflicts, and promote smart management of resources. It also encourages recognizing alternative ways to use resources in order to meet agency needs or achieve their goals; as Louisiana's coastal realities change, agencies will have to be nimble in utilizing resources in new and different ways.

While some of the principles will be more critical than others in any given phase of the Initiative, integrating all four of the principles into all agency adaptation processes will result in a more holistic, collaborative, and equitable plan for responding to coastal change.

ASSESS AGENCY VULNERABILITIES

INFORMATION

- How will future coastal conditions be different?
- How will your assets, services, and constituents be impacted by coastal change?
- What data would help your agency understand the breadth of coastal impacts?

INTEGRATION

- How will impacts of coastal change affect the way your agency carries out its mission?
- How do other agencies' efforts intersect with your activities?
- How does change in one part of the coast impact your work in other areas?

PARTICIPATION

- Who is affected by your agency's activities that are in or have impact on the coastal area?
- Who is impacted by your vulnerabilities to coastal change?
- How can you better understand the impacts to those you serve?

INNOVATION

- How does coastal change challenge your established management processes?
- Do your agency's coastal vulnerabilities have implications for funding or other agency resources?
- What are the constraints on your agency's ability to adapt allocation of resources or management processes?



DEVELOP ADAPTATION ACTIONS

INFORMATION

- What data would help your agency plan for changing coastal conditions?
- What information would help you prioritize adaptation options?
- How could data be collected to measure the effectiveness of adaptation interventions?

INTEGRATION

- Will adaptation actions impact other agency operations?
- Does the success of your agency's adaptation options depend on coordination with or support from other agencies?
- Does success depend on support/coordination from other jurisdictions?

PARTICIPATION

- Who will be affected by the adaptation options identified?
- How can you ensure a wide spectrum of input when identifying and prioritizing adaptation options?
- How is future use of agency assets and services impacted by your adaptation options?

INNOVATION

- Will adaptation options require a different level of funding and/or resource allocation?
- Are there new partnerships that could help leverage funds for adaptation?
- What catalytic projects could serve as a pilot for advancing innovative collaborations and funding mechanisms?



INSTITUTIONALIZE RESILIENCE

INFORMATION

- What data could be shared across agencies to facilitate coordinated coastal planning?
- How can capital projects incorporate future coastal change data into their design and implementation?
- What metrics could be collected to assess adaptation success and needs?

INTEGRATION

- How can coastal adaptation be integrated into your agency's strategic planning?
- How can you stay informed about other agencies' projects or efforts that might affect your own vulnerability?
- What other agencies or entities can you partner with to help ensure long-term adaptation?

PARTICIPATION

- How can you solicit feedback from coastal stakeholders to understand changing needs?
- What's the best way to provide public updates regarding adaptation and resilience actions?
- Does your agency have a mechanism for incorporating public comments into coastal strategy/priorities?

INNOVATION

- What new processes or mechanisms would help your agency to be nimble in implementing adaptation options and working iteratively to address changing coastal conditions?
- How can your agency's strategic planning efforts formalize innovative collaborations and funding mechanisms?

3

ASSESSING VULNERABILITIES

WHY A VULNERABILITY ASSESSMENT?

A key building block for engaged and effective contributions to building resilience state wide is a firm understanding of where and how changing environmental conditions will affect an agency’s ability

to fulfill its mission in the near, medium, and long term. This process is known as a vulnerability assessment and is the first step toward knowing what conditions require adaptations.

WHAT IS A VULNERABILITY ASSESSMENT?

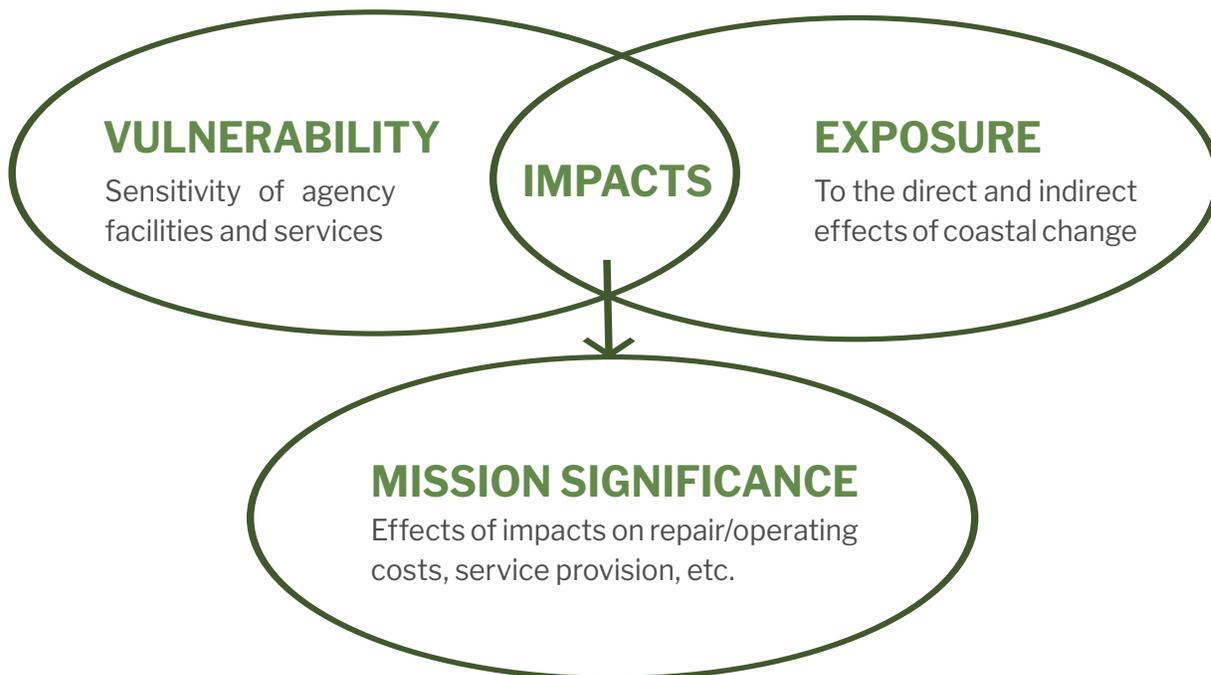
In the context of this initiative, vulnerability is how sensitive an agency is to extreme weather events and persistent coastal change, i.e., hazards. A vulnerability assessment is an examination of agencies’ assets and activities that may be affected by these acute and chronic hazards and an evaluation of the resulting consequences or impacts. While vulnerability assessments do not include adaptation plans for agency facilities or activities that are impacted, they provide a foundation for their development.

There are three related components to thinking about vulnerability within a state agency:

- The **exposure** of the agency’s assets or services to **acute shocks and chronic stressors** associated with coastal change. These shocks or stressors can have both **direct and indirect effects**. Direct effects have an impact on

agency facilities, offices, or infrastructure, and/or impair their ability to provide a service. Indirect effects can stem from direct effects and often result in a change in the location or type of service required or the use of an asset by others, and the agency has to respond to the change.

- The **vulnerability** of the agency’s facilities or services. This depends on the nature of the work each agency conducts and how it can be affected.
- The **mission significance** of the impacts. This could include agency infrastructure, services provided, personnel, or budgets. This should also include local services that are overseen by the agency (such as local school systems under the Department of Education).



Exposure Examples

ACUTE SHOCKS	DIRECT EFFECTS AND EXAMPLES	
	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	

CHRONIC STRESSORS	DIRECT EFFECT AND EXAMPLES	
	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

		HAZARD EXPOSURE						
		Temporary Flooding	Periodic Inundation	Wind	Erosion	Sedimentation	Land Loss	Saltwater Intrusion
DIRECT EFFECTS	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							

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:



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.

Rating the Significance of Impacts

ASSET IMPACT	SCORE	DESCRIPTION
Major Breakdown	10	Substantial loss or ruin of an asset, e.g., facility, infrastructure or equipment. Acute shock: Use of asset is limited for at least 1 month and would require major repair or rebuild over an extended period of time.
	9	Chronic Stress: Frequent, temporary loss of function of facility or infrastructure, or asset no longer appropriate/useful for changed conditions
	8	Could include: <ul style="list-style-type: none"> • Road or facility closure. • Reduced commerce in affected areas. • Reduced or eliminated access to some destinations.
	7	Score from 7-10 based on length of potential disruption/closure and impact to regional population, commercial activities, etc.
Operational Loss	6	Minor damage to and/or disruption to use of an asset. Acute shock: Asset is back to either full or limited use within 60 days.
	5	Chronic Stress: Periodic, temporary loss of function of facility or infrastructure, or asset has reduced utility under changed conditions Could involve: <ul style="list-style-type: none"> • Temporary closure of facility, loss of use • Disruptions to commercial activities, diminished use
	4	Score from 4-6 based on length of potential disruption/closure and impact to regional/local population, commercial activities, etc.
Reduced Capacity	3	Little or negligible impact to assets. Acute shock: Facility/infrastructure available at full capacity within 5 days and immediate limited capacity still available.
	2	Chronic Stress: Occasional temporary loss of function of facility or infrastructure, or use of asset has to be adjusted to cope with changed conditions
	1	Score from 1-3 based on length of potential disruption and impact to regional/local population, commercial activities, etc.

WITHIN AGENCY SIGNIFICANCE	DEFINITION
High	Impact is likely to occur, would require substantial additional state resources to address, has extensive and potentially enduring effects on residents and businesses, limits emergency response/recovery, and/or impairs the agency's ability to support Federal funding programs.
Moderate	Damage to state facilities or disruption to services is major and requires additional resources and adjustments in agency practice to accommodate, key sectors of the population or economy are affected, including those considered underserved.
Low	Impact is unlikely to occur, damage to state facilities or disruption to services will be localized, additional resources may be required for repairs/staffing, and/or other programs can provide temporary support.
Minimal	Impact is unlikely to occur or can be readily addressed by current agency staff and resources and has little enduring effect on Louisiana residents and businesses

Rating the Significance of Impacts

SERVICE IMPACT	SCORE	DESCRIPTION
Major Breakdown	10	Service provision lost or disrupted to the extent that agency mission to residents or businesses cannot be fulfilled.
	9	Acute shock: Loss of ability to provide services for > 1 month and with an extended period of time operating at less than capacity. Chronic Stress: Frequent, temporary disruption of services, or service no longer needed due to changed conditions
	8	Could include: <ul style="list-style-type: none"> • Closure of facility/office • Population migration or change in business climate
	7	Score from 7-10 based on length of potential disruption/closure and impact to regional population, commercial activities, etc.
Operational Loss	6	Minor disruption to service provision. Acute shock: Services back to either full or limited use within 60 days. Chronic Stress: Periodic, temporary disruption of services, or demand for service diminished due to changed conditions
	5	Could involve: <ul style="list-style-type: none"> • Temporary closure of facility, loss of use • Reduced extent or scale of service provision
	4	Score from 4-6 based on length of potential disruption/closure and impact to services including the scale of the service area, impacts to underserved communities, etc.
Reduced Capacity	3	Little or negligible impact to services. Acute shock: Facility/infrastructure available at full capacity within 5 days and immediate limited capacity still available.
	2	Chronic Stress: Occasional short disruption of services
	1	Score from 1-3 based on length of potential disruption and impact to services including the scale of the service area, impacts to underserved communities, etc.

ACROSS GOVERNMENT SIGNIFICANCE	DEFINITION
High	Impacts limit the ability of other state agencies to fulfill key areas of their missions in large areas of the coast, and/or increases the load on other agencies or local governments to compensate
Moderate	Effects on other agencies and local governments are at parish or local scale, and increased burden on others is temporary but hampers their ability to fulfill their missions in other areas.
Low	Other agencies can temporarily adjust their practices to account for the impact to facilities or services.
Minimal	Only minor impacts to the work of other agencies or local governments, which can be accommodated within existing capacity.



COMMUNICATING VULNERABILITY ASSESSMENT FINDINGS

Once the vulnerability assessment has been completed, the asset and services worksheets and significance ratings of the impacts provide a rich source of information for taking an overview of vulnerability within the agency. Communicating the findings should include:

1. A brief introduction to the agency and the process used to compile the information

2. An overall narrative assessment including discussion of the following questions:

- » What are the most significant potential impacts to my agency's mission?
- » Which programs are most vulnerable now and in the future?
 - Describe the general nature of the program and services
 - What types of exposure are the programs sensitive to?
 - What is the likelihood of that exposure, e.g., 100-year flood versus 500-year flood?
- » Are there regions of the coast or parishes where coastal change has greater impacts for your agency?
 - Describe the general nature of the impacts.
 - What is the current or expected exposure in that area that results in the impact?
- » Are there specific services provided by the agency that have a greater vulnerability?
- » How does vulnerability within your agency affect other government functions and services?
 - Emergency response and recovery?
 - Ability to deliver or support federal programs?
 - Limiting the work of other agencies or local governments?

3. References or lists of data sources as appropriate

A Report Card has been designed to help agencies track information in a structured way and to enable prioritization of vulnerabilities.

[**REPORT CARD**](#)

4

DEVELOPING ADAPTATION ACTIONS

WHAT ARE ADAPTATION ACTIONS?

Making changes is not easy, but it is not unprecedented—over time agency practices have likely evolved to better cope with hazard exposures. The vulnerabilities that remain are probably difficult to address.

Adaptation actions are measures that can be taken to maintain or improve the ability of the agency to meet its mission in the face of the coastal crisis. These actions can promote and facilitate resilience decisions

in a number of ways—policy implementation, resource allocation, and project management are just a few of the pathways agencies can pursue to build resilience into their coastal operations. The purview, structure, and other unique qualities of each agency will determine a suite of resilience interventions that is appropriate and effectively addresses that agency's vulnerabilities to coastal change.

DEVELOPING ADAPTATION ACTIONS

The process described here aims to develop adaptation actions targeted at the most significant impacts identified in the vulnerability assessment (i.e., impact scores of >5 now or in the future). Agencies should think broadly and creatively to develop a list of potential adaptation actions, e.g., do not take adaptation off the table yet due to budget limitations.

1. Identify the hazards/exposures that produce significant impacts in several locations or coastwide.

- Include impacts that are significant in the future but not currently, i.e., impacts that affect an agency's ability to deliver the same level of service in the future.
- For agencies that provide services and have responsibility for assets, identify hazards/exposures that result in impacts to both.

2. Consider whether there are other programs/offices/locations in the agency that are exposed to similar hazards but are less impacted.

- Are there differences in how those less-impacted programs are organized, staffed, maintained, or managed? Do any of those differences influence the level of impact? Are there practices that could be transferred or expanded to increase resilience?

3. Think about assets or services that are impacted significantly in future years but less so currently.

- What coastal changes are driving the increase in impacts?
- Are there any planned restoration or protection projects in the Coastal Master Plan that might reduce these impacts (switch between With Plan and Without Plan in the Master Plan Data Viewer to help with this). Conversely, are there major projects proposed in the Master Plan that could, if implemented, increase these impacts?

4. Use the information from the previous steps to examine the specific failure points associated with the significant impacts.

- What is it about the asset or service that is limiting and resulting in the impact?
- Why are some services significantly impacted and others less impacted?
- What will it take to maintain the current level of service in the future?

Track potential adaptation actions in each step of the
VULNERABILITY ASSESSMENT
WORKBOOK

IMPLEMENTING ADAPTATION ACTIONS

The list of adaptation actions developed will vary according to:

The ease of application: Is the adaptation easy to implement within the agency or does it require partnering or working with others? Is extensive planning or reorganization of the agency required?

The resources needed to implement the action: Are the resources available within the agency or can they be leveraged through partnering with other agencies and stakeholders? Is additional budget or staffing needed? What is the magnitude of that need?

Rate each adaptation action in terms of these criteria using the table below. Some judgment will be needed to assign the grades; the process is designed to stimulate thinking about what it will take to make the adaptation happen and could lead to changes in the adaptation actions developed previously.

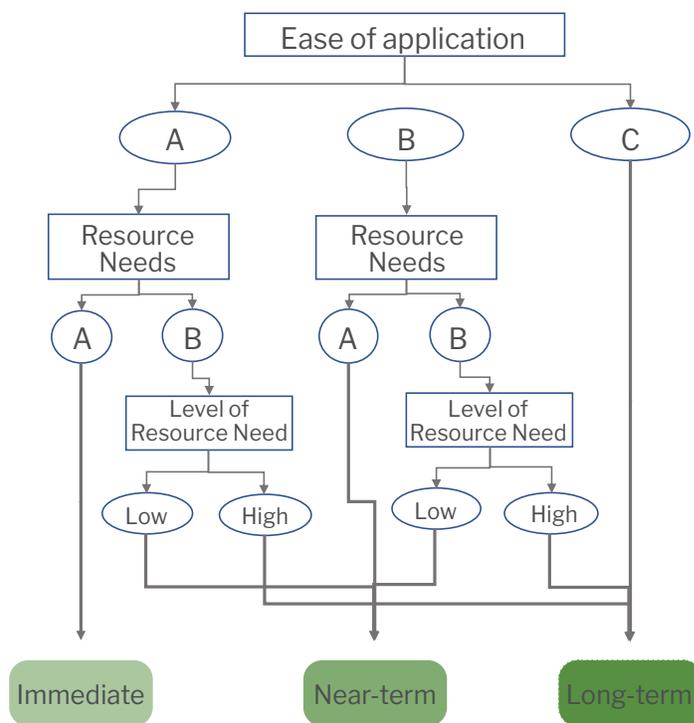
The grades can then be used to categorize adaptation actions into three timelines for implementation:

CRITERION	GRADE
RESOURCE NEEDS	
Possible within existing agency budget/staffing or through partnering with other agencies or stakeholders	A
Additional budget/personnel would be required to implement	B
EASE OF APPLICATION	
Easy to implement with minor adjustments in agency practice	A
Partnering/planning with other agencies can facilitate adaptation	B
Requires extensive planning or realignment of agency roles/function	C

Immediate actions are those that are possible without substantial additional budget or staff, and are relatively easy to implement.

Near-term actions may require more work to apply, e.g., by working across agencies or with stakeholders and may require some additional resources.

Longer-term actions are those that require extensive planning or substantial additional resources and staffing. This category recognizes the importance of beginning planning work so that adaptation can proceed but that it may take some time.



Once the adaptation actions have been categorized, agencies can use the information developed in the process thus far to implement the adaptation actions.

Next steps for individual agencies can be incorporated into strategic plans to ensure continued visibility and progress tracking.

CATALYZING ADAPTATION ACROSS GOVERNMENT

Identifying adaptation actions that can significantly address the impacts of the coastal crisis across state government helps agencies work in collaboration and move adaptation forward in a coordinated way. Adaptation actions are varied in nature. They may be administrative (e.g., changing how government conducts its work), physical (e.g., retrofitting state offices to cope with flooding), or operational (e.g., reconsidering how agency staff provide services to coastal communities).

To identify those adaptation actions that can jump start progress on adaptation across agencies, consider these factors:

- » The potential breadth of application. Are the actions focused on addressing an individual impact within one agency or could they be used by other agencies?
- » The ability to address significant impacts to agency assets or service provision, especially those that are high magnitude both now and in the future.
- » Opportunities for leveraging resources across agencies or with other partners and stakeholders, such as the experience of agency staff at local or regional levels and their awareness of common needs and interests or existing regional planning processes that could facilitate collaboration.

Resilience Coordinators will need to work together to identify opportunities to catalyze adaptation across government in this way. Agencies may have similar adaptation needs but varying ability to implement an action. If one agency has the ability to implement an adaptation action immediately but other agencies with similar needs face obstacles, sharing information

and lessons learned can help agencies adjust their adaptation plans accordingly. Small working groups could be used to further ideas and identify a collective path forward for near-term and longer-term actions that meet the factors listed above. Some may need changes to be made through the Legislature or overarching state-wide policy, while others will require mechanisms for intra-agency reflection or inter-agency cooperation. The Chief Resilience Officer can support the necessary dialog to make adaptation real across groups of agencies.

Big changes are in store for Louisiana's coast in the decades to come. Given this level of change, the state will have to transform the way it manages assets and delivers services to continue to serve its people. The sooner we can begin to anticipate and meet the challenges of the future, the better prepared we will be to not only meet the needs of communities, but also seize opportunities that may present themselves for more efficient or effective outcomes.

To help accelerate the transition from where we are now to the future condition it is important to identify where there will be needs that might be fairly different from what exists today. Adaptation needs to anticipate change so that agencies can continue to meet their missions in the face of acute shocks and chronic stress even as demand for their assets and services evolves.

The Governor's Executive Order calls for a multi-agency approach to achieve the best outcomes for residents and businesses most at risk from coastal change. Identifying adaptation actions is just the start of an ongoing process that will be needed to ensure this vision is achieved.



IDENTIFY ADAPTATION NEEDS

Using the Vulnerability Assessment as a foundation, identify which agency assets or services need adaptation actions to respond to noted vulnerabilities.



DEFINE ADAPTATION ACTIONS

Develop a list of potential actions to reduce the current or future impacts to the above noted assets or services.



IDENTIFY IMPLEMENTATION PATHWAYS

Determine the most efficient method of implementing the proposed actions, noting required resources and expected timelines.



RECOGNIZE CATALYTIC ACTIONS

Identify those actions that can address the impacts of the coastal crisis across state government to move adaptation forward in a coordinated way.



INSTITUTIONALIZE ADAPTATION

Identify the appropriate place for these proposed actions to live within your agency.

MOVING FORWARD

As well as integrating adaptation actions into each agency's strategic plans, continued coordination within and among agencies is essential. Periodically revisiting vulnerabilities and the need for adaptation is important. Louisiana's Coastal Master Plan is updated every six years, providing a source of information that agencies can use to both see how the coast is changing and to anticipate future change. This may be an appropriate time frame for regular updates on agency adaptation plans. However, each agency has

their own rhythm, and there may be planning cycles where needs are assessed for other purposes, and this process can be incorporated. For example, the *Consolidated Plan for Housing* is updated every five years, and the *Transportation Asset Management Plan* is updated every four years. These may provide opportunities to embed adaptation thinking into the work of state agencies, to build further on the work completed under the Executive Order.

