

LAND CHANGE

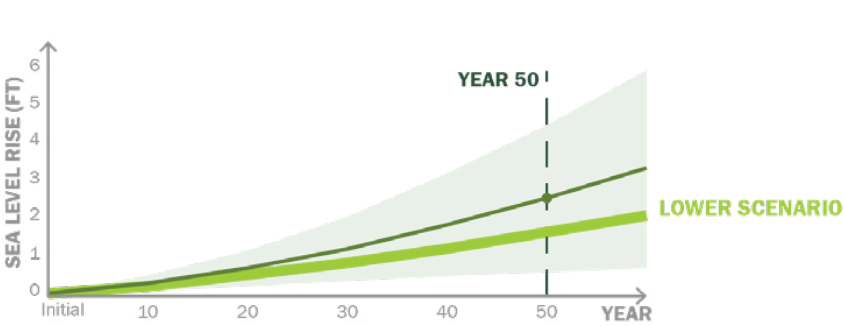
FUTURE WITH ACTION | LOWER SCENARIO | YEAR 50

Even with full implementation of the 2023 Coastal Master Plan, the future landscape of coastal Louisiana will be different from today. In comparison to a future without the 65 restoration and 12 risk reduction projects, the plan provides a significant amount of land created or maintained into the future that would otherwise be converted to open water. It is expected that under the master plan's lower environmental scenario, the projects in this plan will create and maintain approximately 314 sq mi of land over 50 years, as shown in the map above. Marsh creation projects in the Breton and Barataria basins contribute substantial areas of additional land, especially in the lower Bayou Lafourche corridor between the Larose to Golden Meadow levee system and Port Fourchon.

Marsh creation projects in western Terrebonne, on Marsh Island, and near Freshwater Bayou also bolster the land area in the lower estuaries. Landbridges in Barataria and eastern Terrebonne work synergistically with marsh creation projects to maintain land across the mid-basins. This is especially the case in eastern Terrebonne where there is extensive land loss. In the Chenier Plain, loss is reduced where marsh creation and hydrologic restoration projects sustain land that would otherwise be lost.

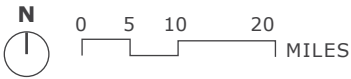
>>> Go to **Chapter 6: Regional Approach** for more information on regional benefits of the master plan projects.

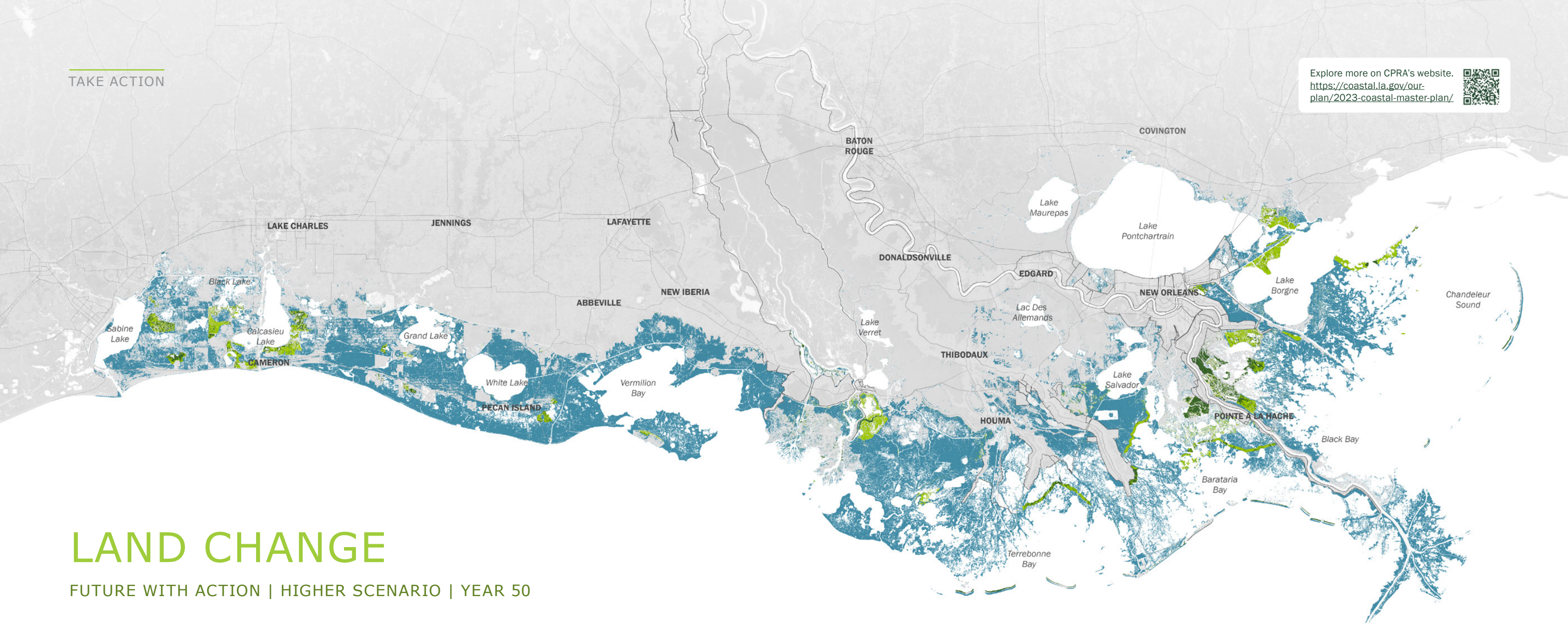
P 95



Land Gained
Land Maintained
Land Lost

Map 5.2: Land Change, Future With Action, Lower Scenario, Year 50.





LAND CHANGE

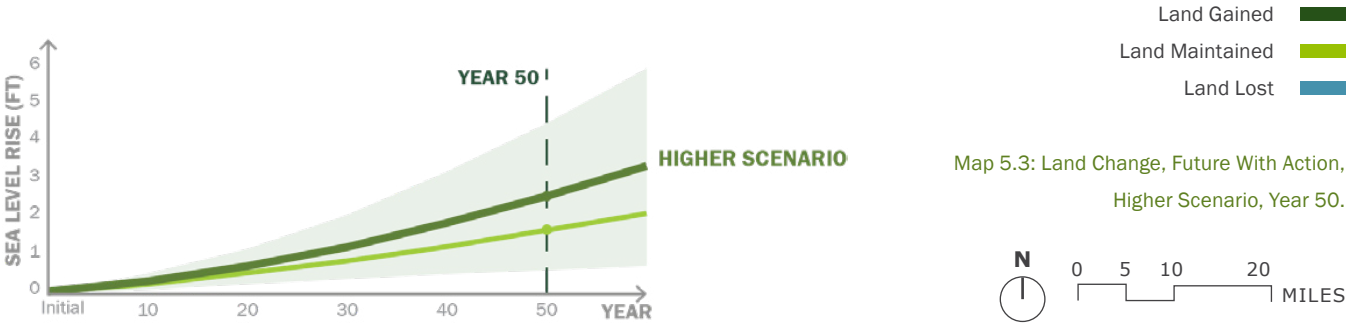
FUTURE WITH ACTION | HIGHER SCENARIO | YEAR 50

The master plan uses an environmental scenario approach to project a range of possible outcomes and applies that information to the planning process. When 2023 Coastal Master Plan projects are implemented under the higher scenario, they build or maintain 233 square miles of land over the 50-year period. While significantly more land loss is projected under the higher scenario compared to the lower, the robust suite of projects selected still has large benefits. Due to higher sea level rise and subsidence in this scenario, individual project effects are much clearer in some areas of the coast. The effects of marsh creation projects and marsh creation components of integrated projects are clear in the Lake Borgne area and in the Breton Basin. In

these areas, many of the marsh creation projects perform well until the later years; so, despite land being lost by Year 50 in many areas, the projects yield substantial benefits throughout much of the 50 years. Landbridges in Barataria and eastern Terrebonne provide continuous land through 50 years. Further west, where subsidence rates are lower, marsh creation in the Calcasieu and Sabine basins provide large areas of continuous wetlands south of the Gulf Intracoastal Waterway (GIWW).

>>> Go to **Chapter 6: Regional Approach** for more information on regional benefits of the master plan projects.

P 95

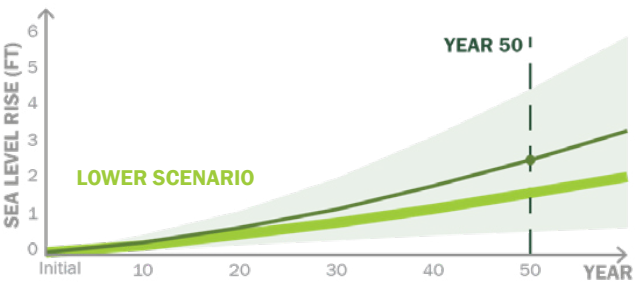


FLOOD DEPTHS

FUTURE WITH ACTION LOWER SCENARIO | YEAR 50

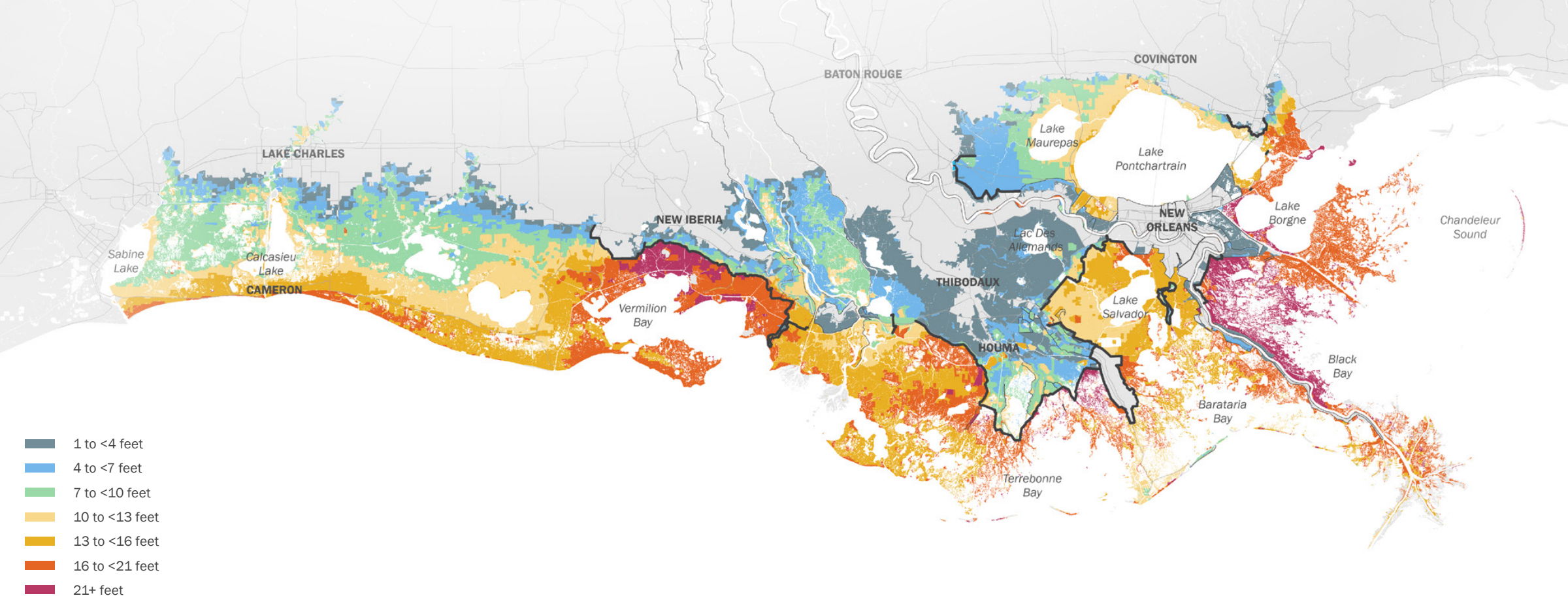
Structural and nonstructural risk reduction measures are expected to reduce flood damage by \$10.7 billion in EADD under the lower environmental scenario and reduce EASD by up to 78% in Year 50 compared to a future without action. Lower scenario projections of flood depths with a 1% AEP are shown to the right. Even with plan implementation, some areas will experience substantial flooding.

Many communities will benefit from structural risk reduction projects, including new levees and improving some existing structures to withstand greater storm surge. To provide risk reduction to coastal communities outside of current and proposed levee systems, \$11.2 billion of the master plan budget is recommended to support nonstructural risk reduction measures, such as elevations, floodproofing, and voluntary acquisition.



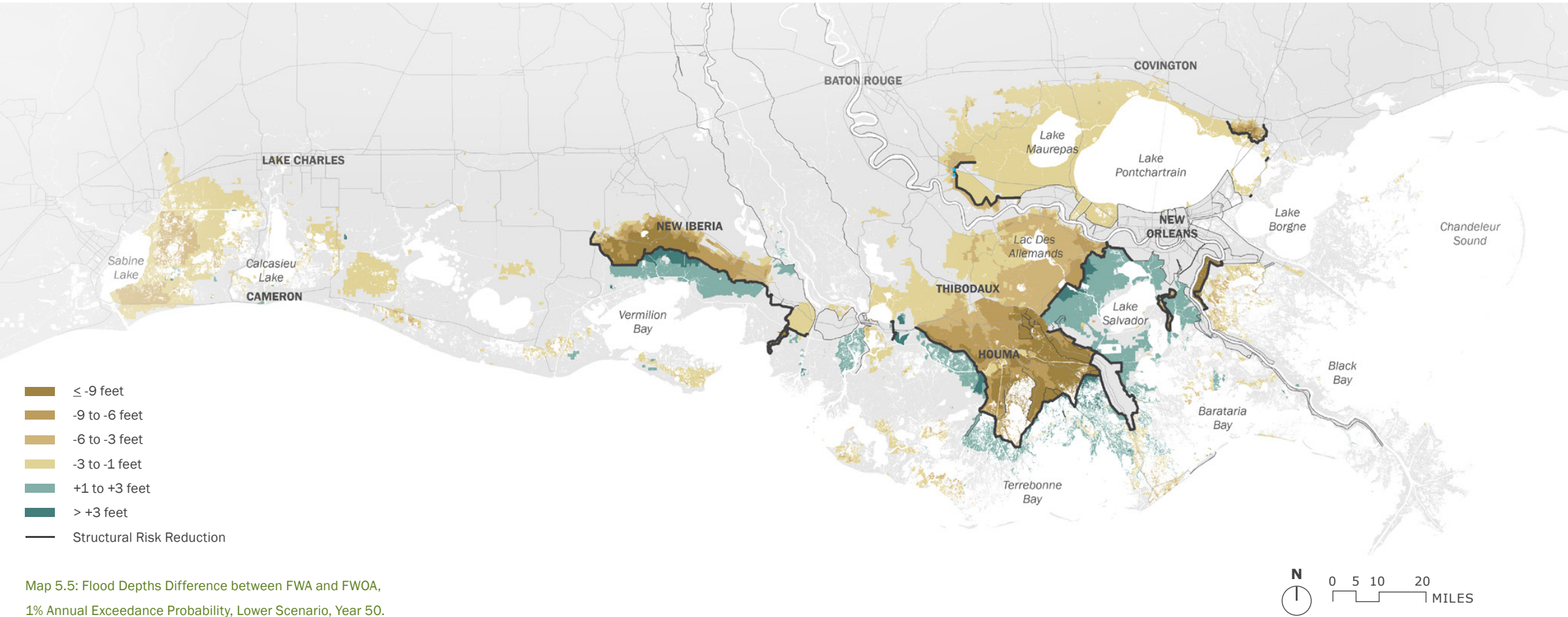
>>> Go to **Chapter 6: Regional Approach** for more information on regional benefits of the master plan projects.

P 95



Map 5.4: Flood Depths, 1% Annual Exceedance Probability, Future With Action, Lower Scenario, Year 50.

Explore more on CPRA's website.
<https://coastal.la.gov/our-plan/2023-coastal-master-plan/>



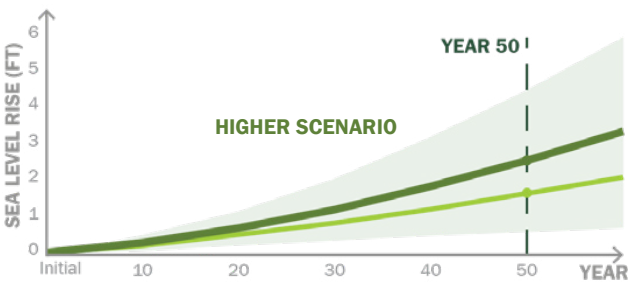
Map 5.5: Flood Depths Difference between FWA and FWOA, 1% Annual Exceedance Probability, Lower Scenario, Year 50.

FLOOD DEPTHS

FUTURE WITH ACTION HIGHER SCENARIO | YEAR 50

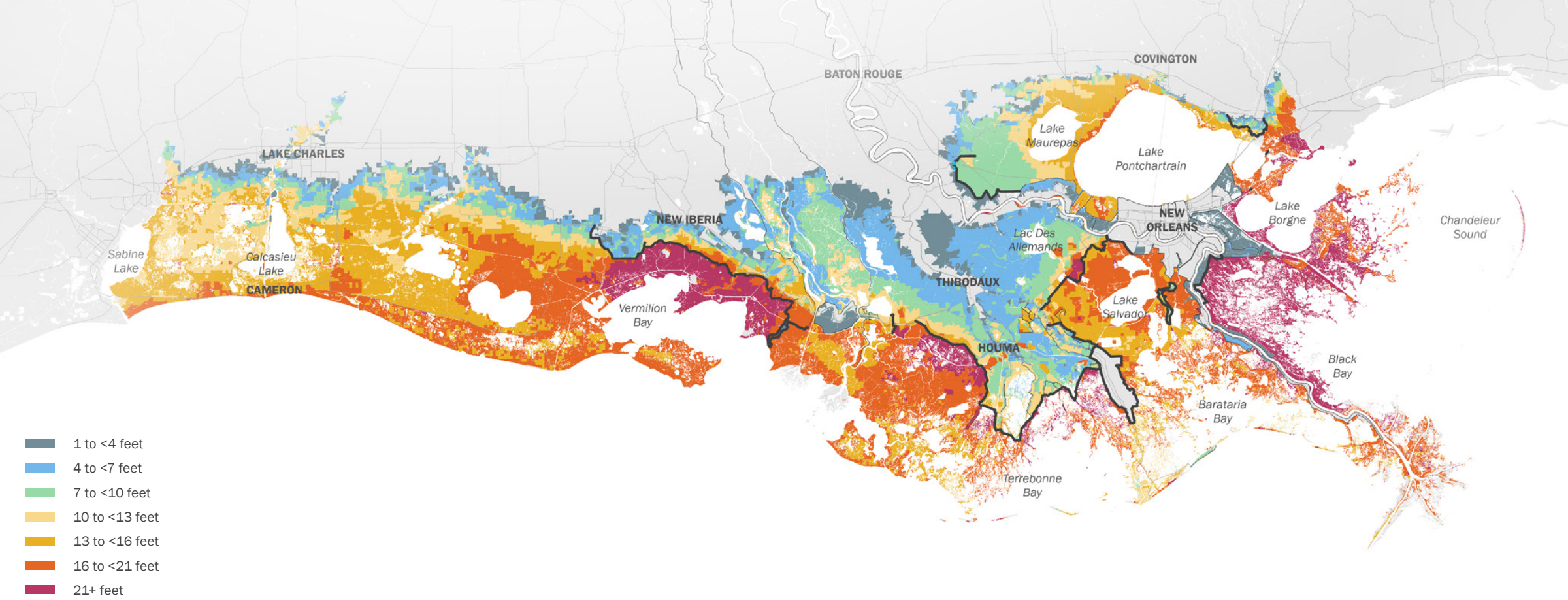
With the higher environmental scenario, storm surge-based flood depths are expected to increase and extend northward, putting additional communities at risk over 50 years. Under the higher scenario structural and nonstructural risk reduction measures are expected to reduce flood damage by \$14.5 billion in EADD and reduce EASD by up to 65% at year 50 compared to a future without action. Higher scenario projections of flood depths with a storm event of 1% AEP are shown to the right. Even with plan implementation, some areas will experience substantial flooding.

If the higher scenario is realized, elevating homes in some areas would lift homes so high that the increased potential for wind damage begins to be an issue; in these instances, voluntary acquisition may become the most viable approach.



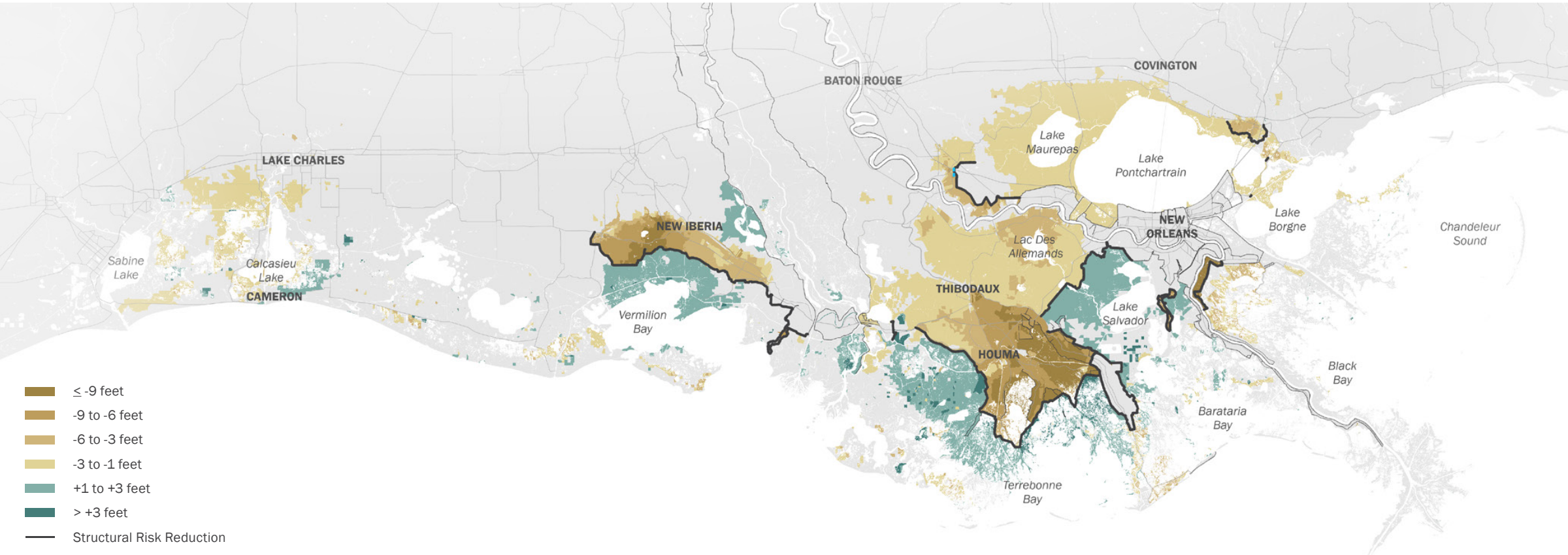
>>> Go to **Chapter 6: Regional Approach** for more information on regional benefits of the master plan projects.

P 95



Map 5.6: Flood Depths, 1% Annual Exceedance Probability, Future With Action, Higher Scenario, Year 50.

Explore more on CPRA's website.
<https://coastal.la.gov/our-plan/2023-coastal-master-plan/>



Map 5.7: Flood Depths Difference between FWA and FWOA, 1% Annual Exceedance Probability, Higher Scenario, Year 50.

BENEFITS OVER TIME

IMPACTS OF THE PLAN

LAND AREA CHANGE

Even with the 2023 Coastal Master Plan fully implemented, coastal Louisiana's landscape is going to look different 50 years into the future. While the coast as we know it today will continue to change into the future, the master plan delivers significant and essential benefits in terms of the land area that is maintained and/or gained. The projects selected help maintain a diversity of ecosystems and bolster key landscape features. Under the lower scenario 314 sq mi of land is built or

maintained that would have otherwise been lost by Year 50. In fact, we project net positive land change for the first 20 years. Under the higher scenario 233 sq mi of land is built or maintained at Year 50 compared to a future without action. We see a maximum benefit of 395 sq mi of additional land at Year 40 under this higher scenario, however the benefits of many of the early projects diminish in the final decade as they can no longer keep pace with subsidence and accelerated rates of sea level rise.

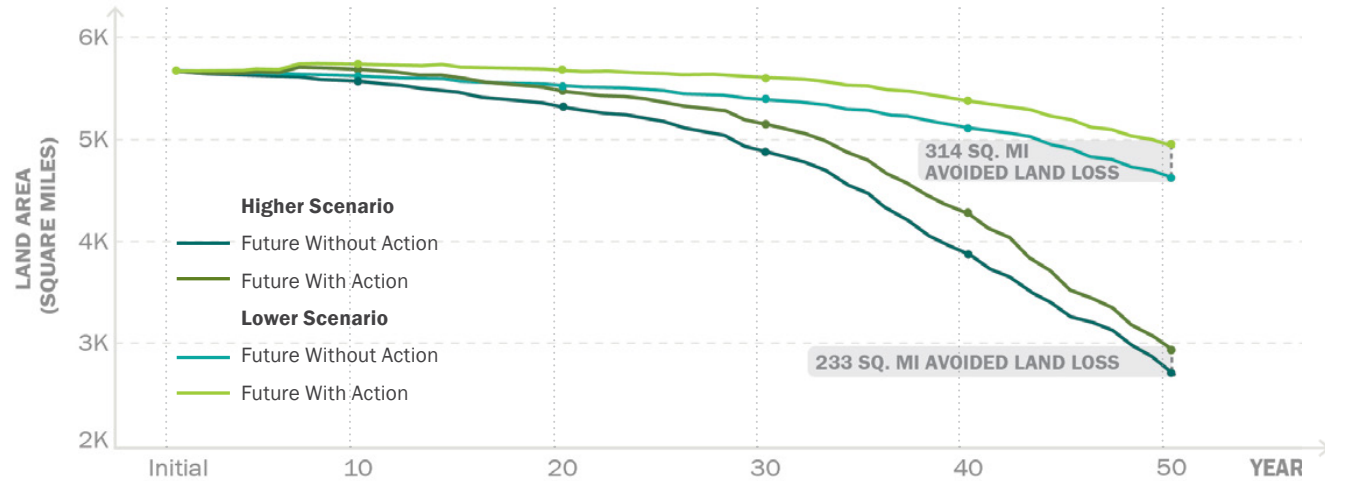


Figure 5.3: Land Area Over 50 Years, Future With and Without Action, Higher and Lower Scenario.

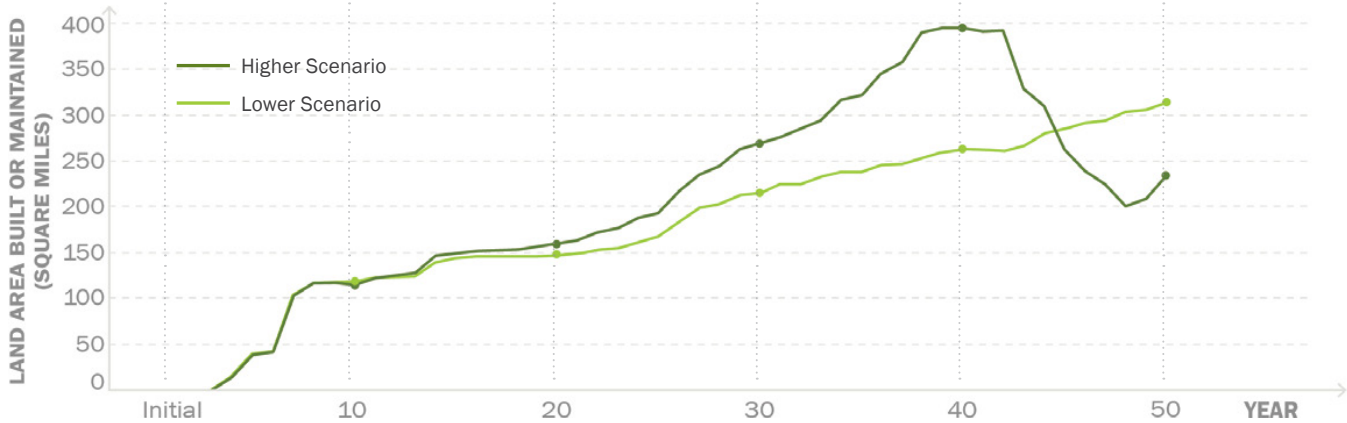


Figure 5.4: Land Area Built or Maintained Over 50 Years, Future With Action, Higher and Lower Scenario.

RISK AND DAMAGES

The plan identifies 12 structural risk reduction projects. By Year 50, these projects will reduce expected annual damage by \$7.7 billion (EADD) under the lower scenarios and \$10.7 billion (EADD) under the higher scenario compared to a future without action. The plan also allocates \$11.2 billion in nonstructural measures which could further reduce expected annual damage by \$3.0 billion (EADD) and \$3.8 billion (EADD) under the lower and higher scenarios, respectively.

Fully implementing the plan could reduce EADD by up to 70% under the lower scenario and 60% under the higher scenario compared to a future without action. The risk reduction, as measured in EASD, shows similar effects reducing coastwide risk by up to 78% under the lower scenario and 65% under the higher scenario. This level of investment could mean that at Year 50, under the lower environmental scenario, Louisiana has less flood risk from hurricanes and tropical storms than we do today.

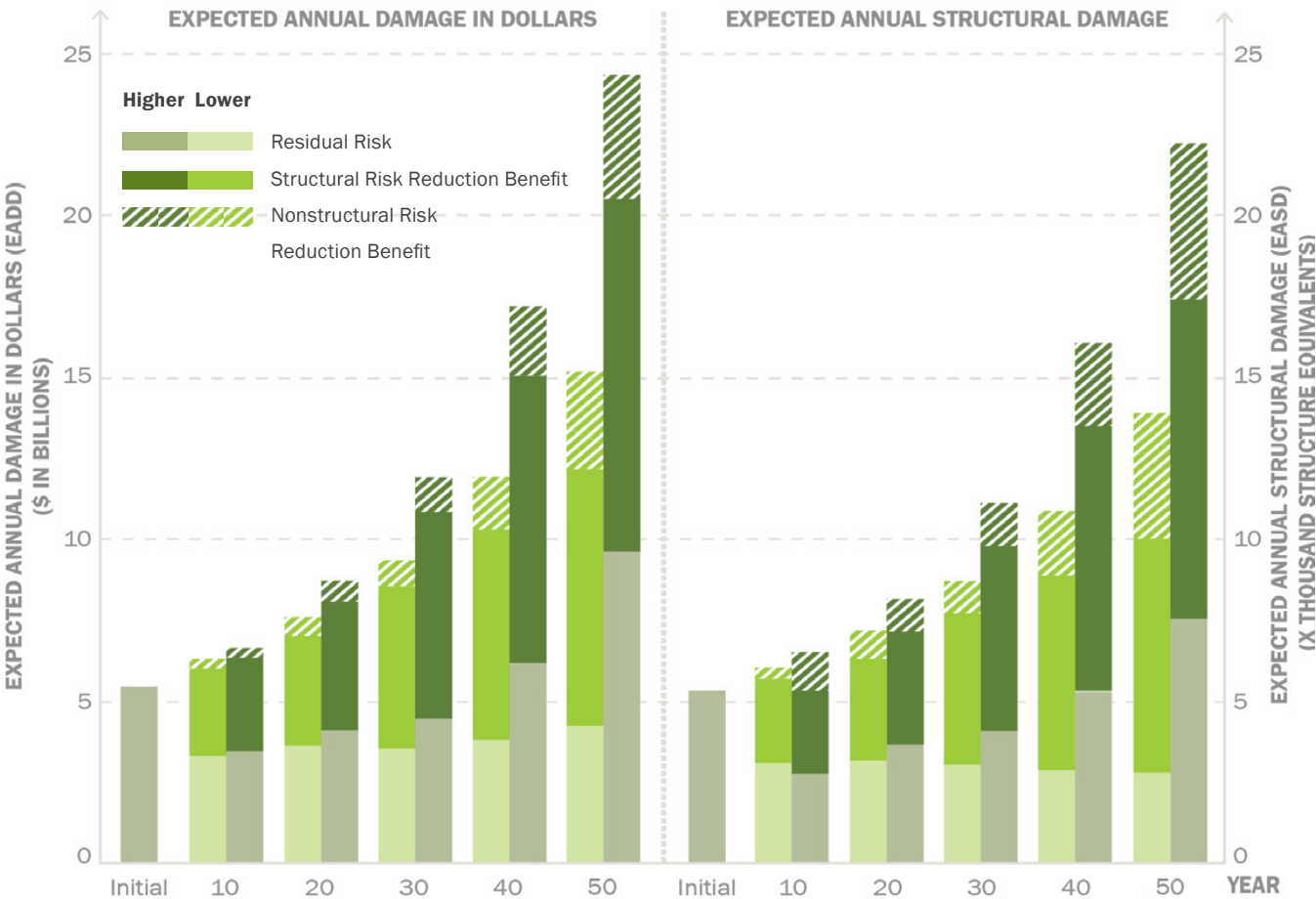


Figure 5.5: Amount of Total Annual Expected Damages in Dollars (left) and Structure Equivalents (right), Future With and Without Action, Higher and Lower Scenario.

FUNDING & IMPLEMENTATION

The master plan identifies projects that can most effectively protect and restore coastal Louisiana over the next 50 years. Moving projects from concept to implementation requires extensive coordination between CPRA, state and federal agencies, local governments, NGOs and stakeholders. These entities, along with elected officials, play an important role in identifying and marshaling the funding necessary to implement the 2023 Coastal Master Plan.

In addition to the master plan, CPRA prepares an annual plan which identifies available funding for a 3-year period and the programs and projects this funding will support. The annual plan is used to track the progress of CPRA projects in different phases of implementation. The implementation plan and funding projections represent a snapshot in time based on available funding sources. The state actively explores new sources of funding to ensure that the coastal program maintains its momentum.

Louisiana will continue to use funding associated with the Deepwater Horizon Oil Spill settlement, including funds administered under the:

- Resources and Ecosystems Sustainability, Tourist Opportunities, and RESTORE Act,
- National Fish and Wildlife Foundation (NFWF), and
- Oil Pollution Act Natural Resource Damage Assessment (NRDA).

Other important sources of funding include the:

- Gulf of Mexico Energy and Security Act (GOMESA),
- Water Resource Development Act (WRDA),
- Coastal Protection & Restoration (CPR) Trust Fund,
- CWPRA,
- State Capital Outlay funds,
- disaster-based funding, and
- grants to support implementation.

>>> 2021 marked a monumental federal investment in coastal Louisiana that will benefit residents across the coast as \$2.6 billion in funding was allocated to Louisiana to support hurricane risk reduction projects. Through the Extending Government Funding and Delivering Emergency Assistance Act (Supplemental Disaster Relief) and the Infrastructure Investment and Jobs Act (IIJA), USACE dedicated funding to several of CPRA's projects.

Congress provided more than \$2 billion for coastal and other flood risk reduction projects in Louisiana to USACE, including the following:

- \$783 million for New Orleans to Venice Hurricane Protection
- \$453 million for West Shore Lake Pontchartrain
- \$163 million for Atchafalaya Basin
- \$128 million for Comite River Diversion
- \$94.3 million for Southeast Louisiana
- \$8 million for Upper Barataria Basin
- \$3.8 million for Grand Isle and Vicinity
- \$3.5 million for Bayou Segnette Waterway
- \$3 million for Tangipahoa Parish

Congress provided more than \$643 million in IIJA funding to USACE for 21 coastal and water management projects, including the following:

- \$379 million for Morganza to the Gulf
- \$125 million for Southwest Coastal
- \$52.9 million for Atchafalaya Basin
- \$23.2 million for the Gulf Intracoastal Waterway

DEEPWATER HORIZON RELATED FUNDING SOURCES

The RESTORE Act, signed into law on July 6, 2012, created the Gulf Coast Ecosystem Restoration Council (RESTORE Council). The Council's Gulf Coast Restoration Trust Fund (RESTORE Trust Fund) receives 80% of the Deepwater Horizon Oil Spill Clean Water Act civil penalties for purposes of restoring the long-term health of the natural ecosystems and economy of the Gulf Coast region. These funds are distributed over 15 years, ending on April 4, 2031. Louisiana's share will total more than \$841 million, including \$29 million for the Louisiana RESTORE Act Center of Excellence.

Under its approved RESTORE Plan, the state committed to funding two projects (Calcasieu-Sabine Large-Scale Marsh and Hydrologic Restoration project and the Houma Navigation Canal Lock Complex) and two programs (Adaptive Management Program and Parish Matching Fund Program) for a total of approximately \$811.9 million, including contingency funds of approximately \$26.4 million.

CPRA also has the opportunity to submit projects for funding under the Council-Selected Restoration Component. To date, funding has been received to support work on five projects totaling \$182 million.

The NFWF Gulf Environmental Benefit Fund (GEBF) was established in early 2013 as an outcome of plea agreements for the Deepwater Horizon Oil Spill. Over five years, \$2.54 billion was directed to NFWF to support projects that remedy harm to natural resources that were affected by the spill. In Louisiana, the funds must be allocated solely to barrier island restoration projects and river diversion projects along the Mississippi and Atchafalaya Rivers. From 2013 through 2018, GEBF received \$1.27 billion for project expenditures in Louisiana. To date, NFWF has awarded more than \$465 million from GEBF for 12 projects in Louisiana.

>>> **Master Plan Consistency:** Given the emergency facing coastal Louisiana, it is imperative that all government agencies act quickly and in accordance with the master plan. Governor Edwards' Executive Order No. JBE 2016-09 highlights the need for the plan to drive and expedite state action across agencies. The same need applies to the state's partners at the local and federal levels, consistent with their mandates and missions. While the master plan provides the blueprint for restoration and planning activities in coastal Louisiana, a coalition of support from the nation will be required if we are to create a more sustainable and resilient coastal Louisiana.

NRDA will provide \$5 billion in settlement funds used for Deepwater Horizon Oil Spill restoration activities. This funding stream is overseen by the Louisiana Trustee Implementation Group (LA TIG), who approves restoration and implementation plans that utilize these funds. These funds are distributed annually over 15 years, ending on April 4, 2031.

FUNDING SOURCES NOT RELATED TO DEEPWATER HORIZON

In 2022, CPRA, parishes and NGOs have received more than \$30 million in competitive grant awards for ecosystem restoration projects in Louisiana funded through the Disaster Relief Supplemental Act (DRSA) and IIJA.

GOMESA allows for federal revenues derived from offshore energy production to be shared with the Land and Water Conservation Fund, the four Gulf producing states, and their coastal political subdivisions. In Louisiana, funds have been constitutionally dedicated to the CPR Trust Fund and

TAKE ACTION

are used primarily to fund hurricane risk reduction projects. The state receives its GOMESA payment each spring based on revenues generated during the prior federal fiscal year.

Louisiana’s CPR Trust Fund is largely supported by mineral revenues and severance taxes on energy production on state lands. The CPR Trust Fund provides funding for the coastal program’s ongoing operating expenses and for continued efforts in coastal restoration and risk reduction.

WRDA 2016 authorized the Southwest Coastal Louisiana project to provide nonstructural risk reduction to communities in this region and subsequent WRDAs have also funded feasibility and planning for several flood risk reduction projects that could lead to further federal funding.

CWPPRA was originally authorized in 1990 and has since been reauthorized several times. Through the CWPPRA Program, CPRA works with five federal agencies — U.S. Environmental Protection Agency, NOAA National Marine Fisheries Service, National Resources Conservation Service (NRCS), U.S. Fish and Wildlife Service (FWS), and USACE — to develop coastal wetlands restoration projects.

Capital Outlay generated by the Louisiana Legislature grants cash and non-cash lines of credit for state and non-state projects. CPRA anticipates receiving \$10 million per year over the next three years in Capital Outlay funding to supplement implementation of 12 projects.

Future disaster-based funding will be applied toward efforts, such as nonstructural mitigation, that remediate damage from the precipitating event. CPRA will coordinate closely with other agencies to direct applicable future disaster funds toward implementation of nonstructural solutions identified in the 2023 Coastal Master Plan.

Grants from businesses, industry, large corporations, and national philanthropic organizations are also a potential future funding source for projects.

IMPLEMENTING NONSTRUCTURAL RISK REDUCTION PROJECTS

Nonstructural risk reduction projects are unique in the master plan process in that they are typically smaller scaled projects – from floodproofing individual businesses to elevating multiple homes along a single road or even the voluntary acquisition of several residential properties in a neighborhood or community with particularly high flood risk. The nature of these projects, which require active participation of individuals and communities, means that pre-selecting a location for a particular project is exceedingly difficult. In practice, many individuals and communities have undertaken these mitigation measures following a storm event where their homes were damaged. Ideally, nonstructural risk reduction strategies should be implemented proactively, before damage occurs.

Additionally, because nonstructural projects are effective against many types of flooding (such as heavy rainfall and high tide flooding events) and not just the storm surge-based flooding that is considered in the master plan, they could potentially be funded by sources that do not typically provide funding for coastal projects. Nonstructural projects are also unique in that CPRA has not traditionally been involved in the implementation of these project types. One exception is the USACE Southwest Coastal Louisiana project. In October 2022, the project secured \$296 million, mostly from the IIJA. To date, more than 3,900 structures have been preliminarily identified as eligible for either elevation or floodproofing measures. USACE is currently working with CPRA to execute a Project Partnership Agreement before proceeding to elevate homes that have been cleared for construction.

State agencies, such as the Office of Community Development (OCD) and the Governor’s Office of Homeland Security and Preparedness (GOHSEP), are experienced in working with federal partners, such as the Department of Housing and Urban Development (HUD) and FEMA, to marshal funding and manage nonstructural project implementation. These agencies also have a role in the disbursement of federal funds made available for recovery following hurricanes and other natural disasters.



Image: Elevated Home in Montegut, 2023 (CPRA)

Coastal communities are expected to face continuing sea level rise and subsidence into the future and rising water levels will continue to impact residents’ way of life. Even if a community does not experience storm surge-based flooding, changing environmental conditions are expected to result in a number of challenges with roads flooding more frequently, rain draining more slowly, and events where a south wind can result in the closure of structures originally designed to prevent flooding from storm surge. As residents consider these and other challenges, some communities may consider moving inland. This is called managed retreat and is the proactive movement of people, structures, and infrastructure out of harm’s way before conditions become unlivable. Managed retreat helps communities move away from vulnerable coastal areas and facilitates their transition inland. It involves more than just acquisition of homes and people moving away from harm – it ensures that the community has somewhere to move to, where there are housing, schools, jobs and community facilities.

Managed retreat is an inherently complex and challenging adaptation option for state and local governments and decisions to undertake these efforts need to be made by community members and their local elected officials. There are planning, legal, and financial considerations. Decision-makers need to ensure that the people most affected are included in the design and implementation of the approach and that the outcomes are equitable for the communities involved. CPRA can support communities considering managed retreat by partnering with them, state agencies, and NGO’s to provide data and projections that can help to inform decision-making. Despite the unique realities of implementing nonstructural risk reduction projects, they are considered an integral part of the 2023 Coastal Master Plan. \$11.2 billion of the \$25 billion risk reduction budget in the plan is proposed to pursue nonstructural measures across both implementation periods, reflecting their near- and long-term effectiveness.

>>> Go to **Chapter 4: Evaluate** for more information on nonstructural risk reduction project types recommended for different flood depths.

BY THE NUMBERS

THE IMPACT OF THE 2023 COASTAL MASTER PLAN

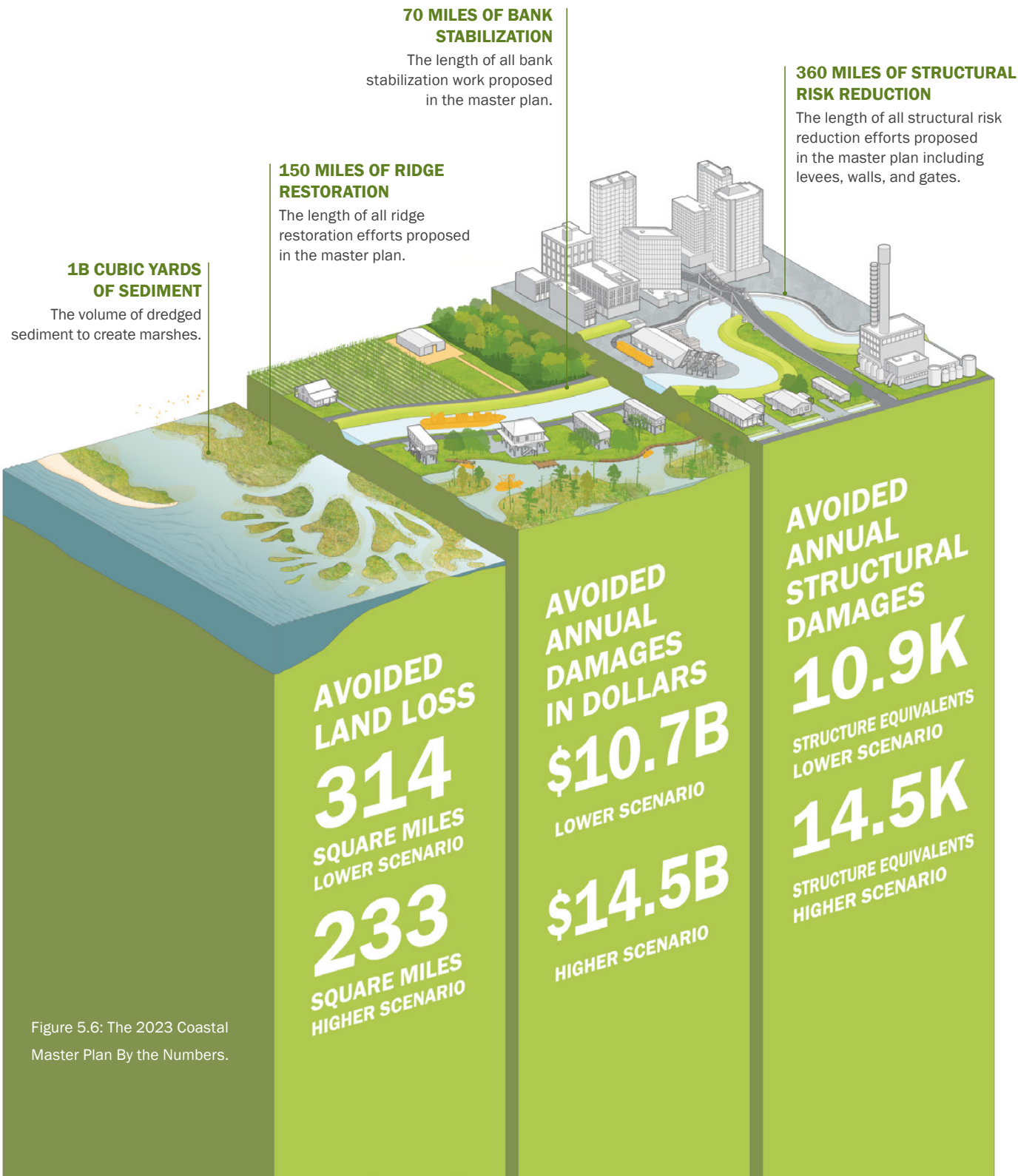


Figure 5.6: The 2023 Coastal Master Plan By the Numbers.

FREQUENTLY ASKED QUESTIONS

What if we don't have the funding to build all the projects in the master plan? The master plan is developed to provide a list that has more projects than the state currently has funding to implement. Funding for restoration and risk reduction projects comes from various sources and is often required to be used for certain project types or to meet particular goals. Because of this, the plan identifies a variety of worthy projects in anticipation of future funding opportunities. Additionally, the master plan is not an all-or-nothing undertaking. Each project is evaluated and selected based on its individual benefits before being modeled as part of the full master plan. This means that all investments toward project implementation, no matter the number or location, will provide benefits in terms of reducing land loss and/or flood risk.

Why is there still damage from storms if so much is spent on risk reduction projects? The project selection for risk reduction projects was based on maximizing the amount of flood risk reduction that could be attained across a wide range of storm surge events in coastal Louisiana. The structural risk reduction projects are designed to provide protection up to a given design event, often the 1% AEP flood depths. However, some storms and extreme events produce greater flood depths than these design elevations, possibly resulting in overtopping of levees and floodwalls. This means there will be some residual risk of damage from large events. It is simply not possible to protect every community from every possible eventuality.

What about areas where no 2023 Coastal Master Plan projects have been selected? It is important to remember that the master plan is part of a much broader coastal program for Louisiana and that restoration and risk reduction efforts have been underway for decades. As the fourth edition of the master plan, the projects selected are in addition to projects already funded and/or implemented and, therefore, included in our baseline FWOA landscape. Areas without selected projects may already have solutions in place or may be less vulnerable to coastal change than those with projects in this plan.

If I live in area where flood depths are high, will I be forced to move? The state will not force anyone to move. But we may offer support to help you elevate your home or move out of a vulnerable area – the 2023 Coastal Master Plan proposes billions of dollars for these types of activities. Many federal programs provide funds for elevation and voluntary acquisition, and most are managed by Parish governments. Properties are usually evaluated on a house by house basis, but some apply only where the whole neighborhood agrees to move. If you might be interested in moving out of an area that may be subject to severe flooding in the future, you are encouraged to contact your Parish government.

>>> HAVE MORE QUESTIONS?
Visit us online at coastal.la.gov or contact us directly at masterplan@la.gov.



CHAPTER 6

REGIONAL APPROACH

A regional approach to understand challenges, predict potential change, and evaluate project impacts helps to ensure that the communities that define coastal Louisiana are at the forefront of the planning process. This section includes analyses and vignettes that go beyond project selection to present a fuller picture of how each region experiences the coast now and into the future.

INTRODUCTION

UNDERSTAND

PREDICT

EVALUATE

TAKE ACTION

REGIONAL
APPROACH

BEYOND
THE MASTER
PLAN

Image: Rockefeller Wildlife Refuge, 2020 (CPRA)



CHENIER PLAIN

P 98

CENTRAL COAST

P 110

TERREBONNE

P 122

BARATARIA

P 134

PONTCHARTRAIN / BRETON

P 146

A REGIONAL APPROACH

UNIQUE CHALLENGES, TARGETED SOLUTIONS

Coastal Louisiana is home to a wide variety of landscapes and communities that influence the social, economic, and ecological character of the local area. Recognizing this, the 2023 Coastal Master Plan has identified five regions across the coast – Chenier Plain, Central Coast, Terrebonne Basin, Barataria Basin, and Pontchartrain/Breton Basin – that will experience climate and environmental change in distinct ways.

Throughout the master plan development process CPRA has met with residents and convened Regional Workgroups to discuss issues, priorities, and possible solutions for

each of the regions. These conversations informed every step of the process from the development of project concepts to the analysis that informed the regionally-specific storylines in this chapter.

Through a better understanding of the unique concerns of each region, the 2023 Coastal Master Plan developed tailored approaches to address issues of future land loss and storm surge-based flood risk. The result is a master plan that better reflects the experiences of coastal residents and that supports those that live, work, and play in coastal Louisiana, today and into the future.

Gulf of Mexico

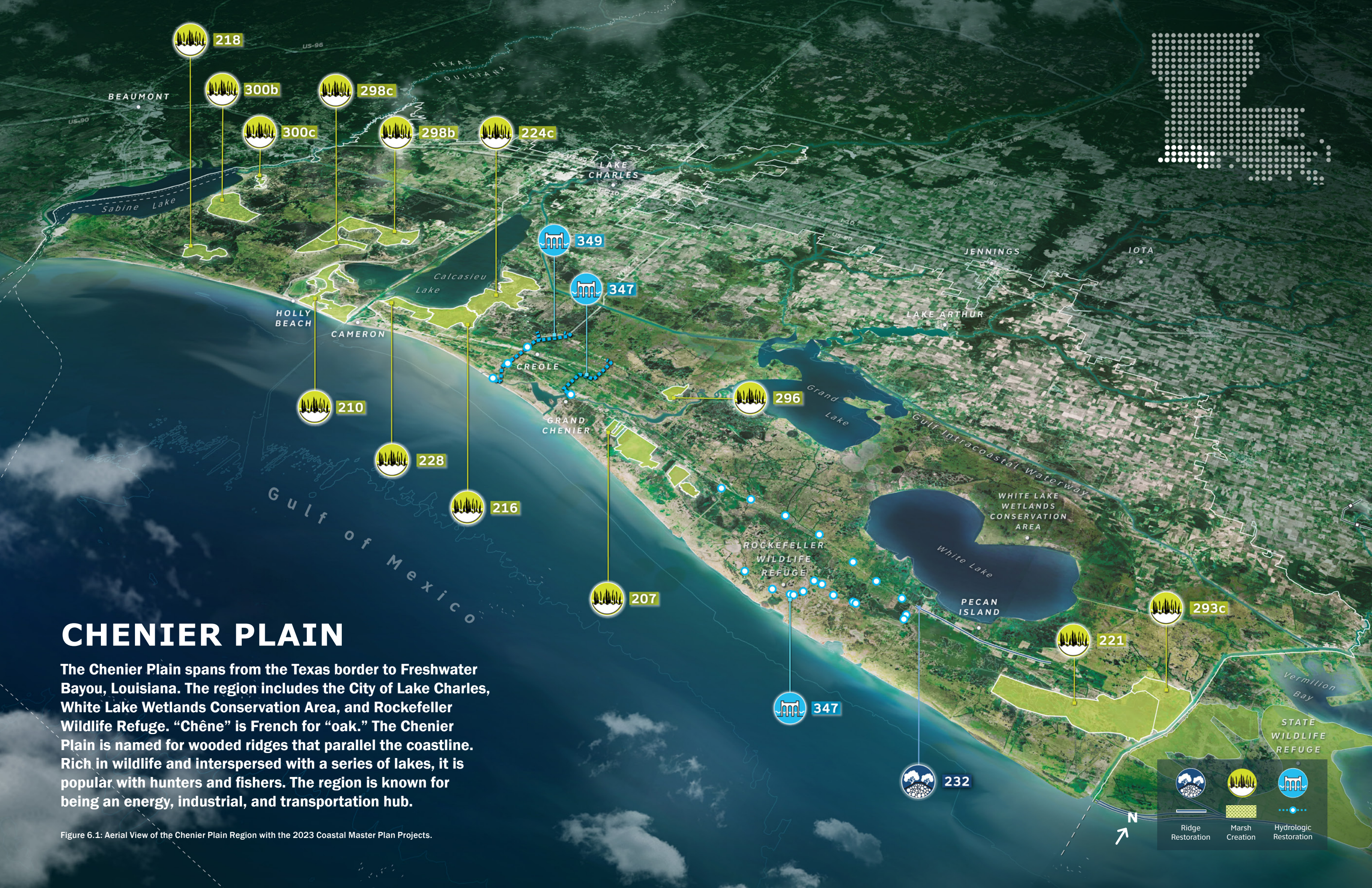
Map 6.1: The Five Regions of the Louisiana Coast.



CHENIER PLAIN

The Chenier Plain spans from the Texas border to Freshwater Bayou, Louisiana. The region includes the City of Lake Charles, White Lake Wetlands Conservation Area, and Rockefeller Wildlife Refuge. “Chêne” is French for “oak.” The Chenier Plain is named for wooded ridges that parallel the coastline. Rich in wildlife and interspersed with a series of lakes, it is popular with hunters and fishers. The region is known for being an energy, industrial, and transportation hub.

Figure 6.1: Aerial View of the Chenier Plain Region with the 2023 Coastal Master Plan Projects.



ABOUT THE CHENIER PLAIN

AN INTRODUCTION

Dotted with lakes and marshes, the Chenier Plain is a place where fishing and hunting enthusiasts thrive. The region is also a vital contributor to Louisiana’s working coast. The Chenier Plain has suffered greatly from hurricane impacts over the last two decades. Today, many residents in the region are still struggling to recover. The 2023 Coastal Master Plan proposes a number of projects to restore habitats and support the region’s continued productivity and economic vitality.

Residents and visitors to the Chenier Plain enjoy the beauty and productivity of the region’s vast lake and marsh ecosystems. This area includes the White Lake Wetlands Conservation Area; the Rockefeller Wildlife Refuge; and the Lacassine, Cameron Prairie, and Sabine National Wildlife Refuges and is one of North America’s most important waterfowl habitats.

As a vital contributor to Louisiana’s working coast, commercial and residential development is centered in the Lake Charles-Sulphur area. The primary economic base of the region includes the chemical and refining industries and oil and liquefied natural gas (LNG) production. Hackberry, south of Lake Charles, is home to a storage site for the Strategic Petroleum Reserve, a system of underground salt

caverns that can hold up to 220.4 million barrels of oil. Agricultural communities also contribute to the region’s economy with significant production of rice, crawfish, and cattle. According to 2019 data from the LSU AgCenter, 35% of Louisiana’s total rice and crawfish acreage is located within the parishes that comprise the Chenier Plain region.

The Chenier Plain has suffered greatly from the impacts of hurricanes over the last two decades. In 2005, Hurricane Rita made landfall in Johnson Bayou with an 18 ft storm surge that flooded or destroyed most of the structures in Cameron, Holly Beach, Hackberry, Creole, Johnson Bayou, Grand Chenier, and Pecan Island. Three years later, Hurricane Ike brought a 22 ft storm surge that flooded many of these same communities. In August 2020, Hurricane Laura brought catastrophic flooding to many parts of Cameron Parish, including flood depths greater than 12 ft around the communities of Creole and Grand Chenier, and devastating winds throughout the Chenier Plain, including Lake Charles. Recovery efforts were delayed and damages were experienced again by Hurricane Delta that arrived just a month later. Today, many residents in the region are still struggling to recover. These recent hurricanes have brought renewed interest in structural risk reduction measures for the Chenier Plain. CPRA will help local



Image: Harvesting crawfish (Burt Tietje)

entities develop and evaluate structural measures using the tools developed for the master plan. In the near-term, communities and residents should take advantage of nonstructural and disaster recovery programs to mitigate and rebuild in resilient ways.

The Southwest Coastal Louisiana Study is the first federally authorized feasibility-level study with the dual purpose of addressing hurricane and storm damage risk reduction and restoring the coastal ecosystem. The project was authorized by Congress in 2016 and \$296 million was appropriated through the 2022 IIJA. More information about Southwest Coastal can be found in Chapter 7.

The 2023 Coastal Master Plan proposes a number of marsh creation and hydrologic restoration projects for the region. The Chenier Plain’s hydrology is highly managed with numerous major water control structures like locks and flap-gated culverts, as well as countless smaller ditches, culverts, and plugs. The master plan evaluated and selected

large-scale hydrologic restoration projects to improve drainage at the basin scale. At a more local scale, cleaning ditches and drainage canals or installing culverts can have a significant impact on wetland productivity. These types of local solutions often rely on the expertise of landowners, land managers, and local coastal zone managers and are considered programmatically consistent with the master plan. More information about programmatic project types can be found in Chapter 4.

To address enormous challenges facing southwest Louisiana, the Cameron Parish Police Jury (CPPJ) and the Chenier Plain Coastal Restoration and Protection Authority (CPCRP) have both developed local coastal plans. These plans were the source of many project concepts selected for the 2023 Coastal Master Plan and they contain objectives, values, and a vision that align with the master plan. CPRA supports the efforts of the CPPJ and CPCRP to plan for the future of the coast and will continue to partner closely with them for the betterment of the region.



**230K residents
at risk from storm
surge-based flooding**



**35% of Louisiana’s
total rice and
crawfish acreage**



**220.4M barrels of oil
stored as part of Strategic
Petroleum Reserve**



**6M overwintering
waterfowl**

HIGH TIDE FLOODING (HTF)
IN CAMERON PARISH

In addition to storm surge-based flood risk, Louisiana's coastal communities often contend with localized flooding, also known as high tide flooding which can impede day-to-day travel and activity as well as emergency services. The low-lying areas in and around Cameron can expect to experience increased frequency and severity of this localized flooding over the next 50 years, as shown below. Cameron Parish's population mostly lives atop remnant chenier ridges. Forced drainage, i.e., low levees with small pumps, is already used to remove rainfall-runoff from most of this area. Expected sea level rise will impede gravity drainage while exacerbating the frequency and extent of high tide flooding events. Currently, areas near the Cameron Ferry West Landing, the low point on the Highway 27 hurricane evacuation route, almost never experience high tide flooding. In 50 years, under the Lower Environmental Scenario, these areas may experience high tide flood events on more than half of the days in a year.

	YEAR 1	YEAR 25	YEAR 50
Ferry West Landing	<5%	12%	62%
Cameron Evacuation	<5%	<5%	52%

Link, LA-27 Low Point

Figure 6.2: Percentage of days that may see HTF at key locations in the Town of Cameron, Lower Environmental Scenario. For more information see Attachment H3.



Image: Town of Cameron, Louisiana
(Louisiana Sea Grant College Program)



Image: Crabbing at Rockefeller Wildlife Refuge
(Louisiana Sea Grant College Program)

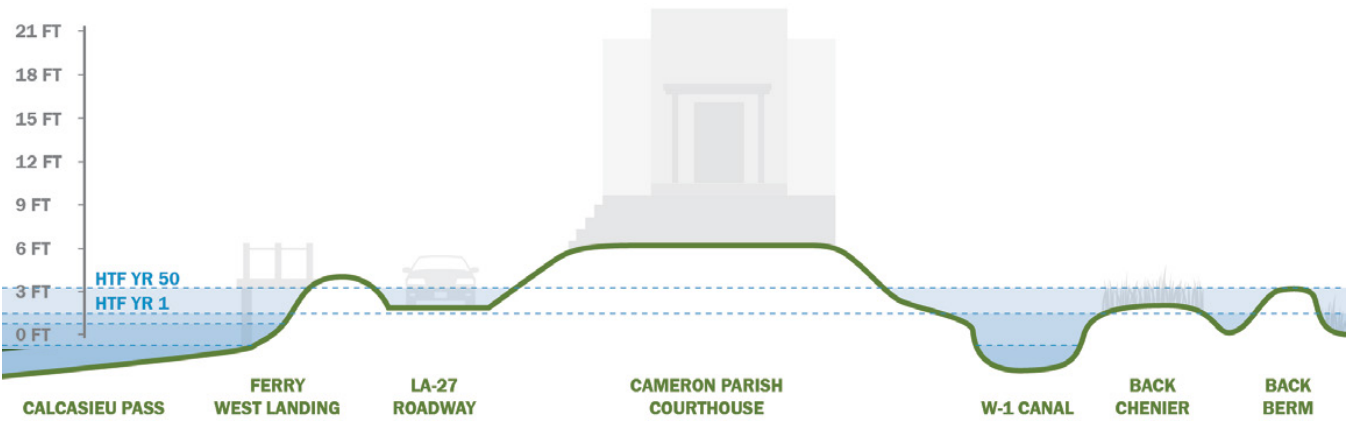
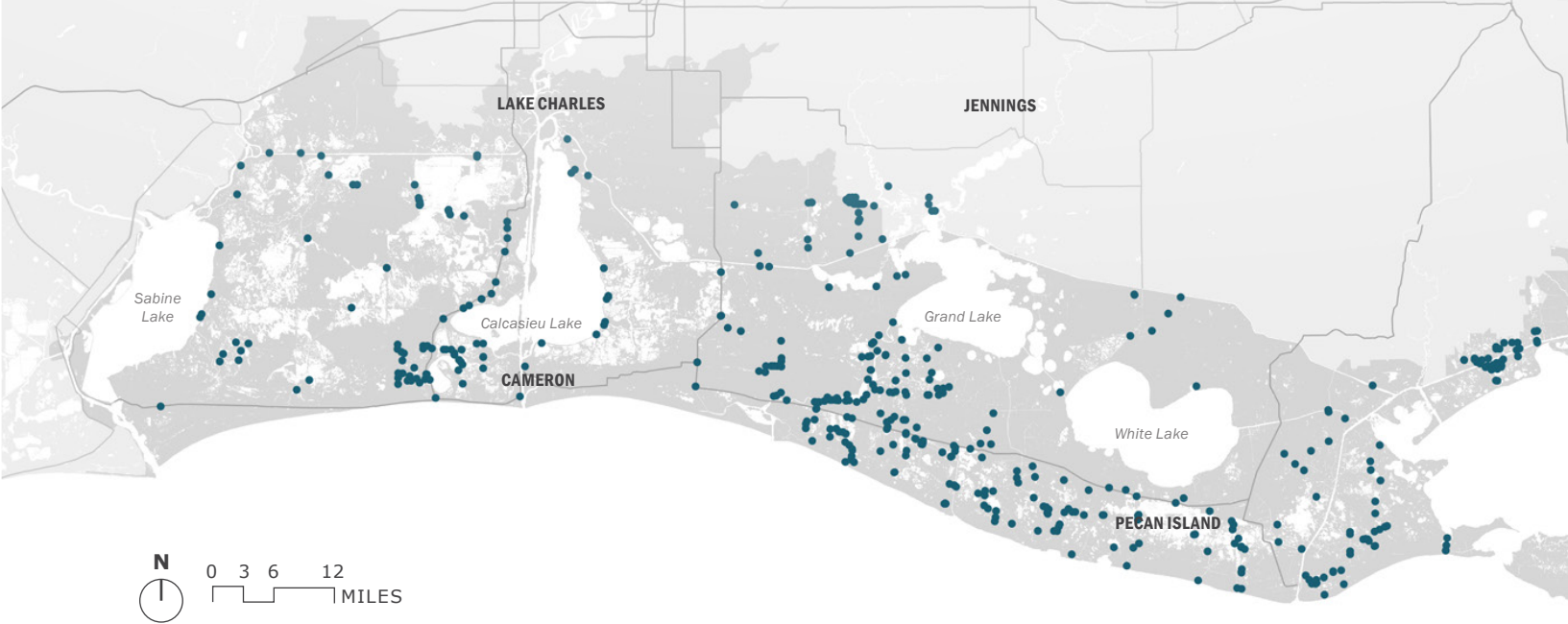


Figure 6.3: Representative High Tide Flooding (HTF) Elevations for the Town of Cameron at Year 1 and 50 in the Lower Scenario.



Map 6.2: Existing Hydraulic Control Structures
Identified throughout the Chenier Plain.

DRAINAGE CONCERNS

Over the last century, the hydrology of the Chenier Plain has been altered dramatically through a combination of navigation channels, canals, drainage, and water control features. Major historic changes include dredging the Calcasieu and Sabine-Neches Ship Channels and the GIWW along the northern portion of the region that connects the ship channels. Smaller, more localized changes to oilfield canals, construction of salinity and water-level control structures and levees, and impoundment of large areas of the marsh for wildlife management have also impacted the area's hydrology. At the current sea level, opportunities for drainage from the managed marsh ecosystem into coastal lakes are already highly limited — all but the tidally connected marshes are flooded too deeply and for too long to continue to support healthy marsh vegetation. With continued sea level rise in the future, drainage is expected to become more challenging in the region. The hydrologic restoration projects selected for this region in the 2023 Coastal Master Plan address flooding and drainage while maintaining salinity control. More information about these issues can be found in [McGinnis, T. et al., 2019. 2019 Basin Summary Report for the Calcasieu-Sabine Basin. CPRA.](#)



Image: Cameron-Creole Hydrologic Control Structure, 2022 (CPRA)