

Connecting Our City and Coast

**A Framework for City of New Orleans Action
on Coastal Resilience**



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Sustainability**
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Lowlander Center

Restore or Retreat

St. Bernard Parish

Swiss Re

The Data Center

The Water Institute of the Gulf

Trust for Public Land

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Assessment, Response, & Technology (UNO -
CHART)

100 Resilient Cities

GLOSSARY | LIST OF ABBREVIATIONS

Capitalized “City”	City of New Orleans government
CPRA	Coastal Protection and Restoration Authority
CRO	Chief Resilience Officer
CWPPRA	Coastal Wetlands Planning, Protection and Restoration Act
GNO, Inc.	Greater New Orleans, Inc
GOMESA	Gulf of Mexico Energy Security Act
HMTF	Harbor Maintenance Trust Fund
HSDRRS	Hurricane and Storm Damage Risk Reduction System
MRGO	Mississippi River Gulf Outlet
NRDA	Natural Resource Damage Assessment
NGO	Non-Governmental Organization
P3s	Public-Private Partnerships
RFI	Request for Information
RFP	Request for Proposals
RPC	Regional Planning Commission
SLFPA-E	Southeast Louisiana Flood Protection Authority - East
SLFPA-W	Southeast Louisiana Flood Protection Authority - West
USACE	U.S. Army Corps of Engineers
RESTORE Act	Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States Act

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Executive Summary

The coastal system surrounding New Orleans is essential to the safety and security of our city. The Gulf is a key component of the economy of greater New Orleans, in the forms of our seafood, shipping, and tourism industries, but it also provides critical protection through the wetlands that buffer storm surge before it reaches our city. Unfortunately, the health of this coastal system is experiencing rapid decline. Threats from climate change such as sea level rise and severe storms are increasing, causing higher levels of flood risk for New Orleans and the region. According to the State of Louisiana's Coastal Master Plan, a future without action could mean a loss of roughly 2,250 square miles of land over the next 50 years. Now is the time for aggressive action to protect our coast, city, and communities from these shocks and stresses.

In order to outline actions the City of New Orleans can take in response to these risks, the Office of Resilience and Sustainability hosted a workshop with coastal leaders:

Connecting Our City and Coast: Developing a Framework for City Action on Coastal Resilience (Coastal Convening).

Held in January 2018, this Coastal Convening brought together top thought leaders in the space of coastal action, adaptation, and resilience for a discussion on how the City of New Orleans can take an active role in making coastal Louisiana a more physically, economically, and socially resilient system. The event focused on our role as the City – and particularly on how the City can best engage and be helpful – in dealing with the broader issues facing Louisiana's coastal communities, jurisdictions, ecosystem, and economy.

The Coastal Convening participants spanned the public, private, and non-profit sectors; represented locally, regionally, and nationally-focused organizations; and contributed expertise from academia, advocacy, government, community, and other areas. Over 40 experts from these fields attended and participated in a day-long series of facilitated discussions. Participants were asked to develop specific strategies and actions that would enable the City to accomplish critical and immediate coastal priorities while ensuring equitable outcomes and strong community engagement.

The primary outcome of the Coastal Convening is the following set of recommendations. The recommendations are organized into three key themes that cut across the topic areas discussed at the event, in order to highlight key areas of agreement and urgency identified by the participants.

These themes are:

1. **Coordinate with Regional Partners and Across City Departments**
2. **Communicate the Rationale for Immediate and Sustained Action**
3. **Promote Equitable Solutions that Enable Our City and Region to Thrive**

We are grateful to all of the participants in this event and hopeful that this document will help empower residents, public officials, businesses, and non-profit partners in New Orleans to jointly act to preserve and protect our coast.

RECOMMENDATIONS SUMMARY

Theme 1: Coordinate with Regional Partners and Across City Departments

Coordinate at multiple scales to address coastal issues: The City should be an active participant in regional strategies related to flood protection, coastal restoration, and resilience.

- Recommendation: Coordinate on coastal restoration.
- Recommendation: Coordinate on the operation and maintenance of protection systems.
- Recommendation: Stimulate regional collaboration by connecting coastal priorities with other regional initiatives.

Fund coastal efforts strategically: The City should develop partnerships, plans, and best practices in order to use existing resources strategically and leverage new resources for restoration and adaptation.

- Recommendation: Leverage the City's existing funding sources effectively through local initiatives and regional partnerships.
- Recommendation: Connect local and regional coastal projects to the City's recovery and mitigation planning efforts in order to attract funding for these projects.
- Recommendation: Pursue the creation of new funding streams for coastal restoration, adaptation, and protection.

Collaborate and coordinate within the City:

The City should ensure that relevant departments, agencies, and branches of government are communicating regularly about coastal priorities and efforts.

- Recommendation: Make sure the Mayor's office is engaged in regular communications with regional levee authorities with regards to the status of levee protection system.
- Recommendation: Involve the Chief Resilience Officer in a leadership role on coastal issues within the City and with other levels of government.
- Recommendation: Keep the City Council informed about coastal resilience efforts.

Theme 2: Communicate the Rationale for Immediate and Sustained Action

Clearly state the case for City and constituent involvement in coastal

action: The City should adopt and amplify a consistent message on coastal issues to ensure New Orleans residents are informed and ready to act.

- Recommendation: Create a consistent message to constituents. First step: ensure consistent and clear voices stating that "New Orleans is a coastal city."
- Recommendation: Promote coastal action as an issue of good governance.

- Recommendation: Use New Orleans' status as a cultural landmark to communicate to national and international audiences about coastal land loss in Louisiana.
- Recommendation: Enable local residents and businesses to act in support of New Orleans' coastal priorities.

Deepen knowledge on risks and

solutions: Build support and political will to implement long-term solutions by working with interested residents, businesses, NGOs, and researchers.

- Recommendation: Leverage local, national and international research institutions by publishing the City's top research questions.
- Recommendation: Leverage open data as a tool for public education and planning.
- Recommendation: Provide information that helps New Orleanians manage risk.
- Recommendation: Inform the public about local and regional adaptation solutions that can help reduce risk.

Theme 3: Promote Equitable Solutions that Enable Our City and Region to Thrive

Prioritize equity and environmental

justice: Ensure that policies and projects benefit the most at-risk communities in the delta region, including African Americans and Native Americans.

- Recommendation: Be a champion of equitable decision-making at the local, regional, and state levels.
- Recommendation: Support New Orleans communities inside and outside the levee system.
- Recommendation: Maintain affordable insurance options for residents and businesses.

Develop the water economy: For all of the negatives around coastal land loss in Louisiana, there are opportunities to make land loss into a driver for the local economy.

- Recommendation: Create an economic development plan for the water economy, including needs and gaps.
- Recommendation: Support growth of critical programs in local community colleges and universities.
- Recommendation: Showcase jobs in the coastal sector.

Bring youth into the conversation:

Develop our next generation of coastal stewards by supporting programs that engage youth in our coastal environment and water systems.

- Recommendation: Connect curriculum to local water issues.
- Recommendation: Ensure teens and high schoolers are engaged.



Photo Credit: Craig Guillot / NWF

INTRODUCTION

New Orleans is a coastal city. Our history, economy, and culture stem directly from the coastal geography on which our city was built. Positioned in the heart of the Mississippi River Delta, New Orleans was established as a port city and much of the region's growth and profit can be attributed to its close proximity to the Gulf. From historic industries, such as lumber and trapping, to modern markets, like oil and gas, seafood, shipping, and tourism, the coast has provided New Orleans with ample economic opportunity, while simultaneously providing protection from hurricanes and flooding, through the wetlands that separated the city from the open waters of the Gulf.

The coastal system surrounding New Orleans is essential to the safety and security of the city, but is rapidly deteriorating due to a variety of factors. Human interference with the natural coastal ecosystem of Southern Louisiana has led to many of the problems we face today. Oil and gas development along the coast has caused widespread wetland degradation through construction of canals and saltwater intrusion, which undermines the ability of these ecosystems to buffer storm surge during a hurricane. In fact, during Hurricane Katrina, the Mississippi River Gulf Outlet (MRGO) channel caused massive amounts of flooding and storm surge to breach the levees and enter the city. Historic decisions about leveeing the Mississippi River has also contributed to the land loss crisis we are experiencing by cutting off our delta landscape from the necessary sediment deposits to maintain land mass.

Just as decisions along the coast have shaped our past and present, we know that the future of New Orleans will be equally tied to the coast. We have already seen an increase in severe storms, such as Hurricanes Katrina,

Rita, Gustav, Ike, and Isaac, which harm our communities and accelerate the rate of coastal land loss. Climate change will continue to cause the frequency and intensity of storms to increase, while sea level rise and other environmental stresses will contribute to the high rate of land loss along the coast. We can also expect to see these unnatural symptoms of climate change coupled by rapid subsidence due to a lack of land building sediment flowing over the delta. According to the State of Louisiana's Coastal Master Plan, a future without action could mean a loss of roughly 2,250 square miles of land over the next 50 years. Now is the time for aggressive action to protect our coast, city, and communities from these shocks and stresses.

In recent years, the City of New Orleans has made great strides in creating policies and programs that build the resilience of our city. In 2015, New Orleans became the first city in the country to release a comprehensive resilience strategy, Resilient New Orleans. This strategy outlined a commitment to adapt to thrive to our changing environment, and as we advance this work at the city level, we also know that the future resilience of New Orleans relies heavily on the stability of the broader region of South Louisiana. The recommendations outlined in this document are a product of a larger effort on the part of the City of New Orleans to better define its role in advancing coastal protection and restoration, both in the city and throughout the region.

How this document was developed

On January 10, 2018, the City of New Orleans hosted the workshop Connecting Our City and Coast: Developing a Framework for City Action on Coastal Resilience (Coastal Convening). This day-long event brought together top thought leaders in the fields of coastal action, adaptation, and resilience for a discussion on how the City of New Orleans can take an active role in making coastal Louisiana a more physically, economically, and socially resilient system. The event focused on the City's role – and particularly on how the City can best engage and be helpful – in dealing with the broader issues facing Louisiana's coastal communities, jurisdictions, ecosystem, and economy.

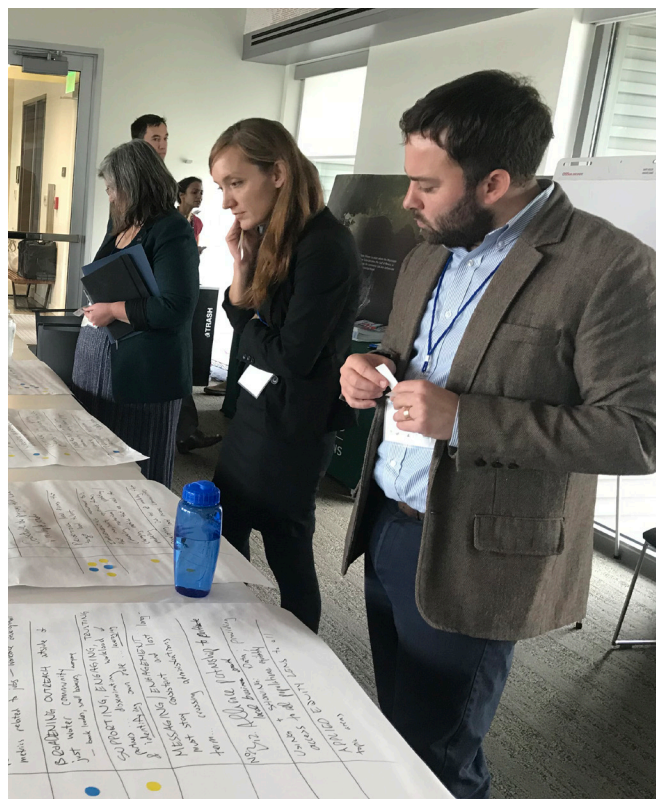
The Coastal Convening participants spanned the public, private, and non-profit sectors; represented locally, regionally, and nationally-focused organizations; and contributed expertise from academia,

advocacy, government, community, and other areas. Over 40 experts from these fields attended and participated in a day-long series of facilitated discussions. Participants were asked to comment on four topic areas and develop specific strategies and actions that would enable the City to accomplish critical and immediate coastal priorities while ensuring equitable outcomes and strong community engagement.

The day's activities included a facilitated brainstorm session that generated a broad set of strategies and potential action steps. Participants then voted on the most impactful and most urgent actions that the City could undertake based on this brainstorm. In-depth discussions on each topic area followed this vote; these discussions explored potential implementation steps and focused on the City's many roles as a partner, an impactful voice, a convener, and a funder of coastal projects.

Example Strategies that Coastal Convening Participants Considered

- Research and implement best practices
- Pass local ordinances, laws, regulations
- Support the use of best available science + data
- Support critical coastal projects
- Coordinate and convene regional interests
- Advocate and cooperate at the state level
- Advocate and cooperate at the federal level
- Bring private-sector resources to bear
- Bring philanthropic resources to bear
- Establish new funding mechanisms





Outcome of the Coastal Convening

The key outcome of the Coastal Convening is this externally driven document of recommendations that seeks to establish the City's policy role in building coastal resilience across the region. The recommendations are organized into three **key themes** that cut across the topic areas discussed at the event, in order to highlight key areas of agreement and urgency identified by the participants.

This document will help to inform relevant City departments, as well as the incoming City administration and Councilmembers, about areas where the City can effectively engage in coastal action, and could serve as the foundation for the City's coastal policy during the upcoming years.

The three key themes that form the organizing principle for the recommendations in this document are:

1. Coordinate with Regional Partners and Across City Departments
2. Communicate the Rationale for Immediate and Sustained Action
3. Promote Equitable Solutions that Enable Our City and Region to Thrive

RECOMMENDATIONS FROM COASTAL EXPERTS

THEME 1: COORDINATE WITH REGIONAL PARTNERS AND ACROSS CITY DEPARTMENTS

Coordinate at multiple scales to address coastal issues: The City should be an active participant in regional strategies related to flood protection, coastal restoration, and resilience.

Recommendation: Coordinate regionally on coastal restoration.

Coastal restoration, protection, funding, and operations and maintenance are all problems that will require multi-jurisdictional collaboration. However, the partner agencies, institutions, and NGOs focused on these various issues are generally distinct; for example, the scale and mechanisms for collaborating on restoration of wetlands and habitats are different than the scale and mechanisms needed to address levee and protection systems. This recommendation addresses innovative ways to coordinate at a regional level on coastal restoration activities specifically.

Hydrological basins, or watersheds, are areas where a drop of water falling anywhere in the basin will drain to the same water feature. The City of New Orleans drains to four total watersheds. Most of the East Bank drains to Lake Pontchartrain, although portions of New Orleans East also drain to the Eastern Louisiana Coastal watershed on Lake Borgne. The West Bank drains to both the Lower Mississippi and the East Central Louisiana Coastal watersheds. New Orleans and other parishes that surround these watersheds therefore have common interests

in preserving and protecting coastal wetlands. To restore the Lake Pontchartrain basin, for example, might require coordinated efforts with St. Tammany, St. John the Baptist, Jefferson, Livingston, and Tangipahoa parishes, all of which are adjacent to the lake and all of which would benefit from ensuring that the lake does not become more affected by storm surge from the Gulf of Mexico.

The federal Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) has established a model for coordination at the hydrological basin scale that New Orleans can build upon. CWPPRA allows the State of Louisiana to leverage federal funds and resources for 75% of coastal restoration projects with a 25% local match. The CWPPRA legislation requires the State to develop a Near-Term Strategy for projects that restore wetlands at the basin scale, as well as a Long-Term Strategy that contemplates larger and more complex projects that connect multiple basins.¹ Additionally, CWPPRA projects are voted on at a basin scale, which requires multiple parishes within a basin to must work together to vote for projects that provide benefits across parishes and will be competitive with other basins across the State. The collaborative models established through CWPPRA that have included coordination between the State and parishes may form a base for New Orleans to coordinate with neighboring parishes and potentially plan and fund coordinated projects.

Recommendation: Coordinate on the operation and maintenance of protection systems.

After Hurricane Katrina exposed the weaknesses of the New Orleans area's levee

¹ https://lacoast.gov/new/Data/cwppra_compiled-legislation.pdf

systems, the U.S. Army Corps of Engineers upgraded local levee systems via the Greater New Orleans Hurricane and Storm Damage Risk Reduction System (HSDRRS). This system offers a higher level of risk reduction for major sections of Orleans, Jefferson, and St. Bernard Parishes through levee improvements, pump station repairs, outfall canal gates and closures, and a 1.8 mile surge barrier. The construction of this system cost \$14.5 billion, and the State of Louisiana is responsible for a cost share of \$1.5 billion. However, the responsibility for securing funding for the long-term operations and maintenance of HSDRRS falls to the local levee districts, and will require new processes for collaboration and unique funding strategies given the fragmented taxing authorities that fund these levee boards.

New Orleans is covered by two flood protection authorities, one of which protects St. Bernard Parish and the East Bank of Orleans and Jefferson Parishes, and one of which protects the West Bank of Orleans and Jefferson Parishes. These regional entities reduce the level of bureaucratic difficulty in cross-parish levee management between Orleans Parish and neighboring parishes. However, funding for these authorities is still fragmented: the East Bank flood protection authority (SFLPA-E) is funded by separate property taxes from three separate levee districts, all of which must be authorized by voters.² Failures to fund maintenance of the HSDRRS could affect residents and businesses across these three levee districts. SFLPA-E has pursued a State constitutional change in the past to enable a single tax across all three parishes, but this plan has not yet come to fruition. The City's active support for such a change could help increase the security of local levees by ensuring that all protected parishes contribute to levee maintenance and operations.

² https://www.rand.org/pubs/technical_reports/TR1223.html



Recommendation: Stimulate regional collaboration by connecting coastal priorities with other regional initiatives.

Coastal erosion and sea level rise know no political boundaries. Likewise, many typical social and economic challenges - such as ensuring access to affordable housing and living wage employment - are regional in nature and shared by several communities. And because demographics vary by community, equitable outcomes require cross-jurisdictional solutions. The City should therefore leverage its participation in the several regional organizations and partnerships that already convene stakeholders across Parish and municipal boundaries to mitigate harmful coastal changes.

As the area's Metropolitan Planning Organization, the **Regional Planning Commission** for Jefferson, Orleans, Plaquemines, St. Bernard, St. Tammany and Tangipahoa Parishes (RPC) prioritizes federally-funded transportation projects through its Transportation Improvement Plan.

Through this process, the City should identify and advance infrastructure projects that meet both transportation and coastal resilience objectives in our region. These might include improvements to key arterials, ports, and transit systems that connect New Orleans to the coast. For example, Chef Menteur Highway, which connects New Orleans to St. Tammany Parish, serves as a critical evacuation route for many residents and is highly vulnerable to flooding because the wetlands surrounding this road have virtually disappeared in the last two decades. Action to protect this transit asset will require multi-parish coordination and in-depth conversations about coastal restoration. The RPC is also the region's federally designated Economic Development District, and maintains the five-year Comprehensive Economic Development Strategy (CEDS), which establishes a roadmap for regional collaboration on economic development. The City should continue to participate in the development of the CEDS and advocate for strategies that make New Orleans and the region attractive to water management sector employers.

GNO, Inc., the economic alliance for Southeast Louisiana, creates jobs and wealth for the region and improves the business climate via marketing, policy, workforce development, and research. GNO, Inc. administered the Urban Water Plan, a vision for integrated urban water management in Jefferson, Orleans and St. Bernard Parishes, and created the Coalition for Coastal Resilience and Economy which advocates for the Coastal Master Plan. The City should continue to engage GNO, Inc. to facilitate the growth of the environmental management sector and related workforce opportunities.

Since 2007, a partnership of **Workforce Investment Boards in Region One** (which includes St. Bernard, St. Tammany, Jefferson,

St. Charles, St. James and St. John the Baptist Parishes) has advanced regional workforce development priorities. The Orleans Parish Workforce Investment Board has noted the challenge of connecting city residents to regional job opportunities due to lack of transportation. The City should participate in the Region One partnership to address this challenge and others such as connecting workers to training programs.

Fund coastal efforts strategically: The City should develop partnerships, plans, and best practices in order to use existing resources strategically and leverage new resources for restoration and adaptation.

Recommendation: Leverage the City's existing funding sources effectively through local initiatives and regional partnerships.

The first step to determining how the City can leverage its funding sources is to ensure transparency related to the amounts and eligibility requirements for existing coastal funding sources. This will help show how multiple sources can be combined to realize common goals. Currently, the State of Louisiana and the City of New Orleans have access to multiple sources of funding, but each comes with highly specific criteria. For example, RESTORE Act funds are narrowly focused on coastal restoration because they are meant to stimulate environmental recovery from the BP oil spill; however, funding sources like Gulf of Mexico Energy Security Act (GOMESA) can be applied to a wider set of coastal priorities, including protection systems and infrastructure.

The funding sources on the following page are currently available to the City to accomplish coastal goals.

DIRECT FUNDING FOR CITY OF NEW ORLEANS			
Funding Program	Source and Purpose	Estimated Amount for New Orleans	Allowable Uses of Funding
RESTORE Act Direct Component Funding	The RESTORE Act ensures that 80% of all Clean Water Act penalties (from the spill) are used for Gulf Coast restoration. The City of New Orleans receives a direct component of this funding annually.	\$8 million over 15 years	<ul style="list-style-type: none"> Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches and coastal wetlands of the Gulf Coast Region; Mitigation of damage to fish, wildlife and natural resources; Implementation of a Federally approved marine, coastal, or comprehensive conservation management plan, including fisheries monitoring; Workforce development and job creation; Improvements to or on state parks located in coastal areas affected by the Deepwater Horizon oil spill; Infrastructure projects benefitting the economy or ecological resources, including port infrastructure; Coastal flood protection and related infrastructure; Planning assistance; Promotion of tourism in the Gulf Coast Region, including promotion of recreational fishing; and Promotion of the consumption of seafood harvested from the Gulf Coast Region.
Gulf of Mexico Energy Security Act (GOMESA)	GOMESA is a revenue sharing program that returns up to \$500 million per year in oil drilling revenue with the four oil-producing Gulf States. For the State of Louisiana, roughly 30% of this funding will go to parishes, and the majority will go to the Coastal Protection and Restoration Authority (CPRA). The City of New Orleans will receive a share of this revenue on an annual basis.	Estimated \$1 million per year beginning in 2018	GOMESA funding can be used only for the purposes of coastal protection, including conservation, coastal restoration, hurricane protection, and infrastructure directly impacted by coastal wetland losses.
INDIRECT FUNDING FOR THE CITY TO LEVERAGE			
Funding Program	Source and Purpose	Estimated Amount for Louisiana	Potential Partnership Opportunities
Coastal Wetlands Planning Protection and Restoration Act (CWPPRA)	Enacted in 1990, CWPPRA is designed to identify, prepare, and fund construction of coastal wetlands restoration projects. This competitive funding program is run on an annual basis and has benefited approximately 100,000 acres of coastal land in Louisiana since its inception.	\$80 million per year (\$4 billion total)	The City has the opportunity to work with Federal Agencies to develop and propose CWPPRA projects that can provide benefits to the New Orleans region.
State Funding Projects	From 2007-2009 the State of Louisiana allocated surplus funding for coastal protection and restoration activities.	\$158 million	The City has the opportunity to work with the State to identify projects in the New Orleans region that are consistent with the goals of the surplus funding.

Source: Restore the Mississippi River Delta, <http://mississippiriverdelta.org/restoration-solutions/funding/>

Recommendation: Connect local and regional coastal projects to the City's recovery and mitigation planning efforts in order to attract funding for these projects.

Recovery, mitigation, and resilience planning at the City level needs to incorporate coastal projects as an important element of maintaining the city's ability to recover from severe storms. Coastal environments are often severely damaged by storm impacts, and their restoration is essential to countering future storm surges. Discretionary federal grants for restoration projects also tend to favor those localities and areas with active restoration plans and programs.³

One immediate opportunity would be to incorporate an explicit coastal element into future recovery and mitigation planning in order to set coastal projects up for recovery funds in the wake of a storm. The City of New Orleans Office of Homeland Security and Emergency Preparedness recently issued a Request for Information (RFI) to identify new innovative and inclusive methods for developing and implementing a Comprehensive Recovery Plan.

As the City examines its RFI responses, it should specifically look for opportunities to include coastal recovery within any future Request for Proposals for this effort. In the event of a disaster, inclusion of the City's coastal interests in the recovery plan will make recovery fund allocation easier and allow the City to act quickly to begin the restoration process.

The regional Greater New Orleans Urban Water Plan focuses primarily on managing stormwater and groundwater within the levee system. Creating a corollary document focused primarily on regional coastal projects could also help focus local and regional resources in a coordinated way. This type of planning effort could also help command philanthropic funds by helping to bring together NGOs and governmental agencies to identify areas of near-term interest that could benefit from volunteer-driven or NGO-driven restoration efforts.

Use Urban Water Plan as a Model for Coastal Collaboration

The Greater New Orleans Urban Water Plan, completed in 2013, has been a major factor in transforming the way our region manages urban stormwater and rainfall. As a result of the plan, New Orleans and other local jurisdictions have changed policy, created regional partnerships, and submitted successful funding applications for efforts such as New Orleans' Gentilly Resilience District. The Urban Water Plan was crafted by local stakeholders in collaboration with national and international experts on resilience and water management. It provides both a compelling narrative and fundable projects that have since advanced to the implementation stage. Applying this proven model to our coastal challenges, with New Orleans and surrounding parishes all able to take leadership roles, will help to stimulate interest and funding for coastal projects that will benefit our city.

³ http://docs.wixstatic.com/ugd/32079b_333bc8956d9d4d56ae8b76253c8270ef.pdf

Recommendation: Pursue the creation of new funding streams for coastal restoration, adaptation, and protection.

While the State of Louisiana has many sources of funding currently flowing to its coastal restoration programs, there is not nearly enough funding identified to fully implement the State's Coastal Master Plan. "Financing the Future" is a series of white papers published by the Tulane Institute on Water Resources Law and Policy that address the necessary financing to fund state, regional, and local plans to restore Louisiana's coast. In 2014, the first Financing the Future report estimated that over \$100 billion dollars would be needed to complete all projects in Louisiana's Coastal Master Plan.⁴ The most recent report, published in 2017, noted that \$71 billion of current estimated Coastal Master Plan costs have no funding sources identified, while many federal sources are subject to Congressional appropriations on an annual timeline.⁵

The situation demands exploration of non-traditional sources to help fill the funding gap for regional coastal restoration in the New Orleans area. Coastal Convening participants mentioned public-private partnerships, water quality funding sources, transportation infrastructure funds, and national and international best practices as potential new funding streams that the City should explore. The 2017 Financing the Future report identifies additional sources that have historically been underutilized; these are generally sources available to the State of Louisiana, but the City could advocate for their use and help direct technical expertise to overcome any barriers.

⁴ http://www.law.tulane.edu/uploadedFiles/Institutes_and_Centers/Water_Resources_Law_and_Policy/Content/Financing%20the%20Future%20Pt%201--The%20Cost.pdf

⁵ http://docs.wixstatic.com/ugd/32079b_333bc8956d9d4d56ae8b76253c8270ef.pdf

These underutilized funding sources include:

- The federal Harbor Maintenance Trust Fund (HMTF), which could potentially fund the U.S. Army Corps of Engineers (USACE) to utilize the sediment they consistently dredge from the Mississippi River to build wetlands in nearby areas.
- Department of Defense spending to enhance coastal protection for critical military installations, such as the Naval Air Station Joint Reserve Base New Orleans in Belle Chasse.
- State of Louisiana removal of the horizontal drilling tax exemption.
- State of Louisiana public-private partnerships (P3s) based on mineral rights agreements.

In contrast to restoration, which is primarily funded at the state level, the City's role in funding local protection systems and levees is likely to be more active. Orleans Levee District costs will rise as the HSDRRS system is turned over to local control. Estimates from a RAND report in 2012 place added Orleans Levee District costs at approximately \$2.8 million per year, in addition to the over \$17 million per year required to maintain the pre-Katrina protection infrastructure. This leads to total costs of approximately \$20 million per year for East Bank Orleans levee maintenance. To date, property taxes have kept pace with this need. However, adopting a more regional system of levee taxation as recommended earlier in this report could impact the funding situation, depending on the total tax rate that would be applied across multiple parishes to fund the SFLPA-E and SFLPA-W.

Collaborate and coordinate within the City: The City should ensure that relevant departments, agencies, and branches of government are communicating regularly about coastal priorities and efforts.

Recommendation: Involve the Chief Resilience Officer in a leadership role on coastal issues within the City and with other levels of government.

The City's Chief Resilience Officer (CRO) is the Mayor's voice on resilience issues and policy, and one of the CRO's charges is to coordinate and engage multiple parties on issues that affect the City's ability to mitigate and recover from the shocks and stresses of disaster. This is a uniquely applicable position for engaging in the City's coastal work, which often requires working across City departments and bringing together regional, state, and national stakeholders.

The CRO should therefore serve a lead role in implementing the City's coastal policy. This would involve being the central communicator with leadership in neighboring government jurisdictions, state agencies and federal partners pertaining to issues of coastal resilience, including flood protection.

Recommendation: Make sure the Mayor's office is engaged in regular communications with regards to the levee protection system.

In 2006, the state legislature created the Southeast Flood Protection Authorities serving the East and West Banks of the Mississippi River to consolidate levee districts. Each authority manages the operation of levee systems and the Storm Damage Risk Reduction System. The governor appoints a nine-member board for the East and a seven-member board for the West, comprised of residents of Orleans, Jefferson and St. Bernard

Parishes. The USACE is in the process of transferring ownership of the lakefront outfall canal floodgates and pumping systems to the Southeast Louisiana Flood Protection Authority - East (SLFPA-E). SLFPA-E is already managing major sections of the HSDRRS system, including the IHNC Lake Borgne Surge Barrier.

The proper management and maintenance of HSDRRS is key to the long-term safety and security of New Orleans. In particular, it is critical to ensure that the SFLPA-E pumping systems on the lakefront operate in sync with the pumping systems operated by the Sewerage and Water Board that drain the interior of the city. Therefore, the City should ensure a strong communication channel is established between the Mayor's Office, the Office of Resilience and Sustainability, the Sewerage and Water Board, and SFLPA-E in order to protect the integrity and successful operation of the city's levee protections.

Recommendation: Keep the City Council informed about coastal resilience efforts.

As the City's lawmaking and budgeting body, the New Orleans City Council plays a critical role in city policy making, including enforcement of the future land use element of the City's Master Plan. District council members also play an important role in facilitating exchange of information between constituents and city government. Deep understanding of the needs for reducing the risk of coastal inundation is essential to allocating appropriate funding for relevant capital projects and operations. The Chief Resilience Officer and staff should be responsible for keeping councilmembers and staff informed on coastal policy and funding issues and the efforts of the Mayor's office to collaborate with neighboring jurisdictions and elected state and federal officials that represent Orleans Parish.



Image Credit: Waggonner & Ball / Greater New Orleans Urban Water Plan

THEME 2: COMMUNICATE THE RATIONALE FOR IMMEDIATE AND SUSTAINED ACTION

Clearly state the case for City and constituent involvement in coastal action: The City should adopt and amplify a consistent message on coastal issues to ensure New Orleans residents are informed and ready to act.

Recommendation: Create a consistent message to constituents on New Orleans' status as a coastal city.

There has never been a single best way to describe New Orleans, but for the City to become a more proactive agent in affecting resilience for itself and surrounding communities it needs to consistently identify itself as a coastal city. Only by doing this will it be able to overcome the impulse to see city problems as separate from coastal problems, which they are not. And this message needs to be echoed across the full spectrum of public and private partners, civic organizations, and residents to have an impact. Indeed, the City is a powerful messenger, but its staff and elected officials cannot develop or deliver this message alone.

Given that a variety of organizations and community leaders have already been active in developing this message, an important upfront role for the City in this effort is to provide direction and support by creating a process that acknowledges concurrent efforts, works to coordinate and strengthen them, and allows others to help inform the message and carry it across the region. The Office of Resilience and Sustainability has already begun this effort, but it needs to be expanded, informed, and translated by those working at the community

level who will be most effective at sharing the message.

Some opportunities to move this process forward could include:

- Partnering with stakeholders to craft messaging and develop a public information strategy. The City should involve the many community-based partners who can deliver the message across audiences including: public school systems, religious institutions, community and neighborhood organizations, social clubs, sporting organizations, environmental organizations, academic institutions, and relevant City departments.
- Developing a set of expectations for the public information strategy, including consistent talking points for City staff, elected officials, and community leaders, guidelines for how and when to amplify the message, places where the message can be integrated into existing protocols such as park signage and regular communications from the City, and ideas for building a greater network of community ambassadors to deliver the message.
- Gathering anecdotal experiences to connect and reinforce all of the ways that residents already identify New Orleans as a coastal city, including: the landscape of the City shaped by the unique dynamics of the Mississippi River Delta, the economy of the city linked to coastal industries, the food of the city dependent on a healthy coast, the culture of the city borne from the unique mix of influences that can only come from a coastal place, and the outdoor recreational opportunities existing in coastal environments.

Recommendation: Promote coastal action as an issue of good governance.

As New Orleans celebrates its 300th anniversary, it is clear that more than ever in its history, the City cannot afford to ignore what is happening beyond its levees. The 21st century dynamics of a coastal environment-- namely rising waters, subsiding and eroding landmass, and saltwater intrusion, and all of the secondary effects that these create-- are becoming increasingly visible within the urban landscape of New Orleans itself, and causing many nearby communities to confront the difficult questions of relocation. It is also clear that there is a dramatic economic benefit to engaging these issues now rather than waiting to absorb the consequences which are rapidly compounding.

If the City takes a much more proactive role in protecting the coast, it stands to gain much more than mere survival. The data suggests that the City's action now on coastal restoration, mitigation, adaptation, and protection, will cost a sixth of what it will cost later to remedy the situation, making a strong

economic case for action.⁶ In addition to direct benefits from investing in hazard mitigation, preserving the coast is an essential goal for many sectors of the city's economy. Many local jobs are fueled by coastal industries such as energy, fisheries, and shipping; the city's tourism benefits from proximity to coastal natural resources, and we are the epicenter of a food industry that supplies Gulf seafood around the U.S.

The City also needs to plan for the fact that residents of outlying coastal parishes may see the New Orleans region, with its relatively strong levee protection, as an attractive destination when migrating away from areas more vulnerable to sea level rise. There are currently few studies that examine the opportunities and challenges that New Orleans may face when this type of climate-induced migration occurs, but it is clear that a proactive approach to planning will benefit the region in the long run.

⁶ <https://www.nibs.org/news/381874/National-Institute-of-Building-Sciences-Issues-New-Report-on-the-Value-of-Mitigation.htm>

Economic Impact of the Coast

- The tourism industry supports 20,000 to 30,000 jobs in the New Orleans metro area
- Over 55,000 visitors attend the Louisiana Seafood Festival in City Park each year
- Approximately 15,000 jobs associated with the water transportation sector and the Port of New Orleans



Photo Credit: Joel Lucks

Recommendation: Use New Orleans' status as a cultural landmark to communicate to national and international audiences about coastal land loss in Louisiana.

As a tourism center with over 10 million visitors per year, New Orleans has a unique opportunity to raise awareness about coastal land loss and the impacts of sea level rise at a national and international level. Creating new opportunities for ecotourism that focuses on the coast, and incorporating coastal awareness into the urban landscape, are two important ways to convey the extent of the threat and build support for efforts to restore our coast.

Coordinate education and outreach efforts with local, state, and national parks. The City should work with parks along the coast to improve existing educational programming to create consistent messaging coastal restoration. Notable, established parks in the region include Audubon Nature Center, Jean Lafitte National Park and Preserve, Bayou Sauvage, and Bayou Bienvenue. The city should consider how to connect these experiences and expand the number of tourists who take advantage of them by incorporating them into local tourism marketing efforts. Some potential mechanisms for growing visitorship include:

- Tying park-based experiences together. The City could consider working with parks to promote a "Coastal Trail" that could facilitate individual exploration or group trip services.
- Expanding existing field trip opportunities for schools. For example, the City could encourage the expansion of the Coastal Education Research Facility that hosts seventh graders from Lusher Middle School to learn about wetland habitats and wildlife, or facilitate school trips to the LSU Center for River Studies in Baton Rouge.

- Amplifying the notion that field trips are not just for kids. New Orleans has a number of tours celebrating the music, food and culture of the area. The City should expand the field trips for younger students to local businesses, universities and visitors to bolster the water economy in New Orleans.

Incorporate coastal awareness into the urban landscape. In addition to reinforcing park programming in existing parks, the City should consider other ways to welcome residents and tourists to local coastal environments. For example, there may be opportunities to expand U.S. Fish and Wildlife Urban Initiative programming at Bayou Sauvage, and to examine incorporation of in-city assets such as City Park, Audubon Park, Bayou St. John, new Gentilly Resilience District water management features, and local canals into an urban educational effort. Signage, interactive exhibits, public art, and guided tours could all play a part in connecting the coast to our urban environment. This program could attract locals and tourists alike. While the City would not necessarily be the lead partner on this effort, its power to convene multiple parties could help stimulate dialogue and coordinate funding efforts around urban coastal education.

Recommendation: Enable local residents and businesses to act in support of New Orleans' coastal priorities.

Educating and informing residents and visitors about coastal land loss, coastal habitats, and efforts to restore coastal environments will help increase awareness. In order to translate this awareness into action, residents and visitors need guidance about how best to push for better coastal policies, sustainable funding sources, and important restoration projects. The City should work closely with non-

governmental organizations (NGOs) working on coastal issues in order to identify when an important issue emerges at a regional, state, or national level and mobilize residents to advocate.

A few steps that the City and partner NGOs can take to facilitate action include:

- Providing clear, succinct guidance on the governance and funding of various coastal systems. Residents need to know, for example, that local decisions on funding and levee boards matter for the maintenance of our coastal protection systems, while maintaining federal allocations dedicated to the coast will ensure restoration activities can move forward.
- Ensuring residents know we don't have all the resources we need to fully restore the coast. Informed residents will be able to advocate for Congressional action when appropriate, and will know that recovery planning should always include funding for coastal restoration.
- Making residents aware of key projects and upcoming decisions that may be occurring at the federal, state, or regional level. For example, residents and businesses need to know about the Coastal Master Plan update cycle so they can have input on the plan's goals for New Orleans and the region.



Photo Credit: Craig Guillot / NWF

Deepen knowledge on risks and solutions: Build support and political will to implement long-term solutions by working with interested residents, businesses, NGOs, and researchers.

Recommendation: Leverage local, national and international research institutions by publishing the City's top research questions.

New Orleans is a hotbed of academic research; it is the focus of top-quality local, national, and international scholarship. The City can capitalize on this level of interest by publishing its top research questions related to coastal issues and encouraging researchers to pursue projects related to these questions. This reverses the typical dynamic of waiting for researchers to come up with an idea that will help New Orleans -- instead, New Orleans can proactively decide what information policy makers need to support the City's resilience goals. Researchers who decide to work on these research questions will then most likely be more competitive for grant funding, which creates a win-win scenario for the City and the participating colleges and universities.

Example Questions Generated by Coastal Convening Participants:

- How can we best visualize the risk of coastal land loss for New Orleans?
- How is migration of coastal populations likely to impact New Orleans over the next 20 years?
- What is the best way to finance the elevation of properties?
- How does the picture for climate impacts on New Orleans change after the 50-year period of the Coastal Master Plan – what does New Orleans look like in 100 years?
- How can the City of New Orleans protect its credit rating?

The City should be conscious about how it formulates its research questions to address the core challenges for New Orleans and the region. For example, many of our challenges are rooted not just in climate change or sea level rise, but also in issues of socioeconomic or racial inequality that exacerbate the effects of these phenomena on local communities. This type of multifaceted problem requires an interdisciplinary research approach, but it is often difficult to assemble and fund interdisciplinary teams of scholars due to siloed structures within academia. The City should explicitly call out questions it feels would be best answered through an interdisciplinary approach, and potentially suggest a set of disciplines appropriate to answering each question thoroughly.

Recommendation: Leverage data as a tool for public education and planning.

Over the past few years, the State of Louisiana has taken great strides to create pathways for sharing coastal data with the public in a manner that increases understanding of coastal dynamics, risks, and solutions. The Coastal Master Plan Data Viewer, released in conjunction with the 2017 Coastal Master Plan, gives residents the opportunity to interact with multiple sets of data to show how the coast will respond the different environmental scenarios and action plans. The Data Viewer is based on the same data sets and models that CPRA uses to make decisions on developing projects for the Coastal Master Plan, but through the Data Viewer these data sets are now also providing a critical educational service.

The City has the opportunity to build on this model of data transparency and create tools that show the impacts of coastal land loss on the New Orleans region. Making information on land loss and the benefits of restoration resonate for New Orleanians will

be necessary for building community support of coastal initiatives. While the State's Coastal Master Plan Data Viewer is a useful resource for environmental modeling, the City has the potential to go further by connecting environmental data sets to other economic and social data sets. For example, showing how coastal land loss will impact the number and location of jobs in the New Orleans would help build the economic case for coastal restoration work and would show the broader implications of inaction.

Recommendation: Provide information that helps New Orleanians manage risk.

With the high level of uncertainty about the future of our coastal landscape, communicating accurate levels of risk to residents presents a challenge. As the City provides residents with information and tools for managing their current levels risk, such as NOLA Ready's outreach conducted before the start of each hurricane season, there is also a need for the City to be more involved in communicating the long-term risks facing New Orleans as a result of sea-level rise and stronger storm seasons. Making residents aware of how their homes and essential services will be impacted by coastal decisions being made today, will give New Orleanians the information they need to take action. For instance, future flood risk projections in the State's Coastal Master Plan make the assumption that the levee protection system around New Orleans will be maintained to its current level of risk reduction, and residents will be key stakeholders in advancing funding measures to make this maintenance possible. Additionally, providing accurate information on flood risk that combine rainfall and storm surge projections can help residents make informed decisions about buying or elevating their homes or businesses.

Recommendation: Inform the public about local and regional adaptation solutions that can help reduce risk.

Coastal Convening participants commented that the City will need to balance sharing information about the coastal risks to New Orleans with additional information about adaptation and other solutions. Informing residents about how we can make our city safer will help promote action and advocacy, rather than concern or fear for the future.

One critical project for City advocacy and education efforts is the restoration and protection of the Orleans Land Bridge, which is essential to prevent Lake Pontchartrain from fully merging with the Gulf of Mexico. The CPRA has emphasized the importance of conducting restoration in this area, saying: "The eventual destruction of the landbridge due to subsidence, high wave energy, and the resulting shoreline retreat (averaging 7.7 feet per year) could result in Lake Pontchartrain—and thus New Orleans and Northshore communities—being subjected to increased storm surge damage."⁷ Supporting this project will help maintain the City's level of risk reduction in the event of a major storm.

Another project the City can support is the ongoing restoration of Bayou Bienvenue and the Central Wetlands Unit, which will create new wetland habitat, restore degraded marsh and swamp and provide recreational opportunities in the Lower 9th Ward of New Orleans. This project will provide a powerful educational resource for local residents about the key components of coastal restoration.

⁷ <http://coastal.la.gov/project/orleans-landbridge/>

THEME 3: PROMOTE EQUITABLE SOLUTIONS THAT ENABLE OUR CITY AND REGION TO THRIVE

Prioritize equity and environmental justice: Ensure that policies and projects benefit the most at-risk communities in the delta region, including African Americans and Native Americans.

Recommendation: Be a champion of equitable decision-making at the local, regional, and state levels.

New Orleans is a leader in the State of Louisiana for adopting equitable policies that work to expand opportunity for disadvantaged groups. However, these policies do not apply to state-level agencies such as the Coastal Restoration and Protection Authority (CPRA), Office of Community Development, and other State of Louisiana entities that oversee the planning, funding, and contracting of regional-scale coastal restoration programs and projects.

At a broad level, the City should ensure that equity-related factors are incorporated into the State's Coastal Master Plan process to help ensure that low-income residents, residents of affected communities, and local businesses benefit from coastal restoration and protection efforts. Some critical opportunities include:

- **Contracting Procedures:** CPRA contracts with private companies to carry out massive coastal restoration projects, such as sediment diversions, barrier island restoration, and marsh creation. These firms provide thousands of moderate- to high-wage jobs including construction laborers and supervisors, engineers, and carpenters. Ensuring that the funds expended on coastal restoration

projects remain in the local economy - particular through employment of the local population - would strengthen our local economy and build a skilled local workforce. The City should therefore advocate for local hiring and DBE hiring requirements for CPRA contractors.

- **Incorporation of Equity into Project Selection Criteria:** The CPRA created a "Social Vulnerability Index" to aid policymakers in understanding the impact of the Coastal Master Plan's modeled scenarios on low-income households, minorities, children, the elderly, and the disabled. However, the index is not "linked directly to the master plan modeling tools," making it difficult to compare social and natural impacts side-by-side. The displacement of vulnerable populations may create disproportionately greater needs for social services in their resettled communities, which will challenge communities that already face deep socio-economic disparities among their residents. The City should therefore lobby to make consideration of these specific demographic groups a priority of project modeling in the Coastal Master Plan.
- **Incorporation of Traditional Ecological Knowledge:** CPRA budgets funds on an annual basis to facilitate "adaptive management" of coastal environments and coastal restoration and protection projects. Because coastal environments are complex systems, it can be hard to monitor the quality and success of coastal restoration projects. Research from the University of New Orleans' Center for Hazards Assessment, Response & Technology (UNO-CHART) shows that incorporating traditional ecological knowledge from coastal residents, fishermen, recreational boaters, and other people who regularly

interact with the coastal environment can be highly beneficial in project design and monitoring.⁸ Training and employing these populations in adaptive management activities could provide economic benefits to coastal communities and help ensure project success. The City could advocate for incorporation of traditional ecological knowledge and ensure that our local populations of fishermen, boaters, and others are connected to this process.

- **Transparency of Adaptive Management Procedures:** While there are good potential jobs available in the construction stage of coastal projects, long-term jobs will mostly stem from maintaining, operating, and managing these projects over time. Currently, there is little clarity on what “adaptive management” really entails for coastal projects, and therefore little ability to connect New Orleans businesses and workforce training to these long-term jobs. The City should work with CPRA and local experts to better understand the process for funding and contracting for adaptive management of coastal projects so that our

⁸ http://conference.ifas.ufl.edu/ceer2014/Speaker%20Presentations/July%2029,%20Tuesday_Sessions%2001%20-%2030/Salon%20I_sessions_08_18_28/1620_Matthew%20Bethel.pdf

residents and businesses can compete for employment in this area.

Recommendation: Support New Orleans communities inside and outside the levee system.

While it's easy to think of coastal land loss as a distant issue, in reality over 1/3 of the land area in New Orleans is wetlands and there are New Orleans communities that reside in the coastal landscape outside the Federal levee protection system. Communities along the Orleans Landbridge, such as Venetian Isles and Lake Catherine, face drastically different levels of risk from storm surge and have a vested interest in coastal restoration along the landbridge to provide a buffer to their homes and critical services, such as evacuation roads. Restoration of wetlands outside the levee system will have a direct effect on residents, businesses, and infrastructure for communities like Venetian Isles and Lake Catherine, not to mention protect the Highway 90 Hurricane evacuation route. Restoring the coastal landscape of the Orleans Landbridge must be a top priority of the City's coastal program in order to provide New Orleans communities outside the levee system with better natural protection.

What is Adaptive Management?

The Water Institute of the Gulf's Adaptive Management Framework for Coastal Louisiana notes that “Future conditions of coastal Louisiana are highly uncertain, due to the dynamics of riverine and marine processes, climate change, population growth, economic activity, and ongoing human reliance on the natural resources the coast provides...Adaptive management provides a structured process for making decisions over time through active learning and enables adjustments in program implementation as new information is gleaned. Adaptive management embraces a scientific approach that involves identifying explicit goals and objectives, developing and implementing management actions, assessing the system's response to the action(s), and then using that knowledge to make management decisions. It is designed to be iterative, allowing for the incorporation of new knowledge through every step of the process.”

Additionally, restoring the health of wetlands outside the levee system can actually benefit communities inside the levee system by reducing storm surge during a hurricane. For instance, the Orleans Landbridge is one of the last solid land barriers between Lake Pontchartrain and the open waters leading to the Gulf of Mexico. Advancing restoration projects along this stretch of land will benefit all communities along the shores of Lake Pontchartrain, from New Orleans to the North Shore, by providing a barrier between the Lake and the Gulf in the event of a hurricane.

Both inside and outside the levee system, there are New Orleans residents that face repetitive flooding from either rainfall or storm surge that would benefit from elevating their homes. The Flood Mitigation Assistance (FMA) program administered by FEMA is one mechanism for homeowners of properties with repetitive losses to get financial support in elevating their homes. The City currently notifies repetitive loss home owners when FEMA releases a Notice of Funding Opportunity, and the City should assist in reaching out to at-risk residents as future FMA and other grant opportunities become available.

Recommendation: Maintain affordable insurance options for residents and businesses.

Flood insurance is the most significant method of protection against financial loss during floods. Maintaining affordable insurance options for residents and businesses in the City of New Orleans is vital. The National Flood Insurance Program (NFIP) is one of the most significant contributors to keeping flood insurance affordable. NFIP must be renewed periodically by Congress, but the program currently has an uncertain future. Multiple short-term extensions have recently kept NFIP in operation, and the next deadline to

reauthorize the program is July 31, 2018. Were the program to lapse, FEMA would still have authority to disperse currently available funds for valid claims, but they would not be able to sell or renew policies. Private insurers might fill some of the gap, but Insurance rates would increase significantly.

Locally, this programmatic lapse and subsequent rate increase would be felt by everyone. The communities most impacted by rising insurance rates, however, will be low-income households and households without access to generational wealth. In New Orleans, these households are disproportionately black. With the hazy future of flood insurance, reinsurance – which spreads risk between multiple insurers and lessens the risk for any single company in the event of a disaster – is an option for the City to manage risk down the line.

Another mechanism for maintaining affordable insurance is through the Community Rating System (CRS). CRS is a program run by FEMA that seeks to recognize and encourage floodplain management activities at the community level that exceed the minimum NFIP standards. The City of New Orleans has the opportunity to take proactive steps towards flood mitigation that will improve the City's CRS score and subsequent insurance rates. Current projects underway that will have a positive effect on the City's CRS score include ongoing outreach and education around flood risk through NOLA Ready, and the development of a repetitive loss analysis in partnership with UNO-CHART. Additionally, the City could invest in resilience and improve CRS by passing a local building ordinance that would require new construction in coastal A zones to account for flood risk in its design and construction. Leveraging the CRS program is one of the most direct ways the City can maintain affordable insurance rates for New Orleans residents, and

the City should maximize the potential of this program through strategic planning between Safety and Permits, the Office of Resilience and Sustainability, and the Hazard Mitigation Office.

Develop the water economy: For all of the negatives around coastal land loss in Louisiana, there are opportunities to make land loss into a driver for the local economy.

Recommendation: Create an economic development plan for the water economy, including needs and gaps.

The New Orleans Business Alliance (NOLABA) Prosperity NOLA economic development plan targets “sustainable industries” as one of five sectors for strategic growth. As New Orleans confronts the challenges of managing stormwater and sea level rise at the same time, the plan identifies opportunities for the city to export locally-generated knowledge and expertise. Through contracting requirements and workforce development programs, the City and an array of local NGO partners have been working to ensure that local disadvantaged business enterprises, returning citizens, and other target populations can work on City-funded water projects such as those planned for the Gentilly Resilience District.

The economic development plan needs to capture the risks of inaction for the economy: for example, the City could examine the results of the recent national Risky Business Project studies that examined climate change risks for our national economy. This study should be complemented by outreach to local businesses, including both small, Main Street-based employers and larger employers to understand their differing perceptions about risk and local investment. However, the bulk of the plan should be devoted to analyzing feedback from existing water economy businesses at the local

and national levels, educational and workforce development partners, economic development organizations, and water economy stakeholders, to produce a mission, goals and an implementation plan. The plan should enable New Orleans to be a net exporter of water economy services and knowledge to the rest of the country and the world.

Economic development organizations such as GNO, Inc. and the New Orleans Business Alliance (NOLABA) will be strategic partners in creating and implementing a water economy plan. These organizations have existing connections to businesses in the water economy, and their involvement will provide insight to and guidance for the plan.

Recommendation: Support growth of critical programs in local community colleges and universities.

Coastal Convening participants identified local universities and community colleges as key partners who need to be fully engaged in the City’s efforts to develop a workforce that can fuel the water economy. The City and its local and regional economic development partners have a unique ability to examine programming across local academic institutions and determine where there are opportunities and gaps to grow disciplines such as engineering, landscape architecture, drafting, surveying, and other programs that can help a variety of residents access jobs in coastal and urban water management. . Specifically, the University of New Orleans, Tulane University, Dillard University, Xavier University, Loyola University New Orleans, Southern University of New Orleans, and Louisiana State University were all listed as technical partners who ought to be involved in coastal work.

When asked “What are ways we can utilize funding and partnership resources more strategically?”, multiple attendees agreed that

workforce training at educational institutions was a top priority. Community colleges, such as Delgado, already have partnerships with local employers. These strategic partnerships create pipelines from workforce training to employment. The pipelines therefore increase access to well-paying jobs for a wider variety of educational attainment levels. Strengthening the pipeline to include water economy jobs will connect more residents to coastal restoration efforts as well as urban water management opportunities

Recommendation: Showcase jobs in the coastal sector.

Many New Orleans residents are not aware of the job potential in coastal restoration and water economy activities, or what types of education and training these jobs require. Community outreach that showcases jobs in the coastal sector will help local residents access opportunity while developing the water economy. While the water sector includes many jobs that require advanced degrees, there are also jobs such as construction, drafting, and surveying that pay relatively high wages yet require less than a bachelor's degree. The City should examine the degree to which the credentials for jobs in urban green infrastructure overlap with coastal restoration and protection work, and encourage development and awareness of workforce pipelines that serve both of these critical needs.

Programmatic measures to support awareness of water management and coastal restoration jobs include:

- Job fairs focused on coastal and urban green infrastructure opportunities.

- Job shadowing programs for high school and community college students to further engage local youth and families in the water economy.
- High school volunteer requirements and potential paid internships or summer programs related to coastal restoration or urban water management.

Bring youth into the conversation: Develop our next generation of coastal stewards by supporting programs that engage youth in our coastal environment and water systems.

Recommendation: Connect curriculum to local water issues.

In all aspects of coastal work, future generations must be prepared as stewards of coastal environments and water systems. Local youth-centered water education programming such as that offered by Ripple Effect, Lake Pontchartrain Basin Foundation, Groundwork NOLA, STEM NOLA, and the Youth Wetlands Program has helped to integrate in-classroom and community-based education on New Orleans' water issues. Founded in 2012, Ripple Effect works with youth "... by redefining environmental education through place-based teaching, learning, research, and design." Additionally, STEM NOLA does citywide youth programming for hands on activities in Science, Technology, Engineering, and Mathematics (STEM) and has emphasized water-based activities that engage and excite students.

Supporting these programs is essential to develop our next generation of coastal stewards. The City has already partnered with

some of these programs to hold educational events, and should continue to identify funding and partnership opportunities to support these programs and those like them. To directly engage the coast through these efforts, the City could support field trips to coastal places through the parks-based educational program recommended in Theme 2.

Recommendation: Ensure teens and high schoolers are engaged.

Teens should be directly engaged in activities such as job shadowing, summer programs, and internships that highlight potential future career opportunities and educational pathways. For example, JOB1-NOLA Youth Works provides summer jobs for teens ages 13-21. They work to provide youth with much needed paychecks, and to build pipelines to future careers. The City should work with JOB1

and similar programs to connect teens with opportunities in the water economy.

At a more fundamental level, teens and high schoolers are often hungry for programs that recognize their agency and intelligence; the local ReThink New Orleans Schools program displays the ability of teens and younger students to think critically about their environment. Engaging teens directly via youth focus groups may provide an even more fundamental opportunity to build interest and awareness around the existential importance of water management to our city. These focus groups, preferably conducted by youth workers, will provide direct access to identifying needs and gaps for youth participation in current and future water economies. Conducting these focus groups will also show investment in local youth and their families.



Photo Credit: Groundwork New Orleans

CONCLUSION

This document represents a vision, guided by external experts and partners, for the City of New Orleans' future coastal policy and programs. The recommendations in this document are neither comprehensive nor prescriptive, but they provide a critical foundation for the City's participation in coastal restoration and protection.

The partners and stakeholders who worked to craft the recommendations in this document came to a clear consensus: the City needs to expand its involvement in coastal issues to ensure a secure future for New Orleans.

Coastal degradation is a regional issue; it threatens our regional systems of flood protection and management, and thus requires cross-jurisdictional collaboration. As the largest city in Louisiana and the Lower Mississippi River Delta, New Orleans has a responsibility to provide leadership and expertise to combat this land loss crisis.

New Orleans also has a unique ability to communicate with local, national, and international audiences about the urgency of coastal restoration. The City should use this

platform to support the needs of our local residents and businesses, and to advocate for increased protection of our city and landscape to national and international visitors.

We also know that some of New Orleans' residents, and residents of coastal Louisiana more broadly, are more vulnerable to the effects of coastal land loss than others. These include residents who live outside the levee system; low-income residents who live in increasingly flood-prone areas; and residents who currently face unemployment or other economic challenges. Helping to connect residents to jobs, provide education and training, and advocate for those people who are most at risk will advance resilience for New Orleans and the region.

As we celebrate the 300th anniversary of our beloved city, this document serves as a reminder that our next 300 years of our city and coast will be shaped by the decisions made today. Now is the time for robust action on the part of the City of New Orleans to ensure coastal Louisiana remains a healthy and thriving landscape for generations to come.



