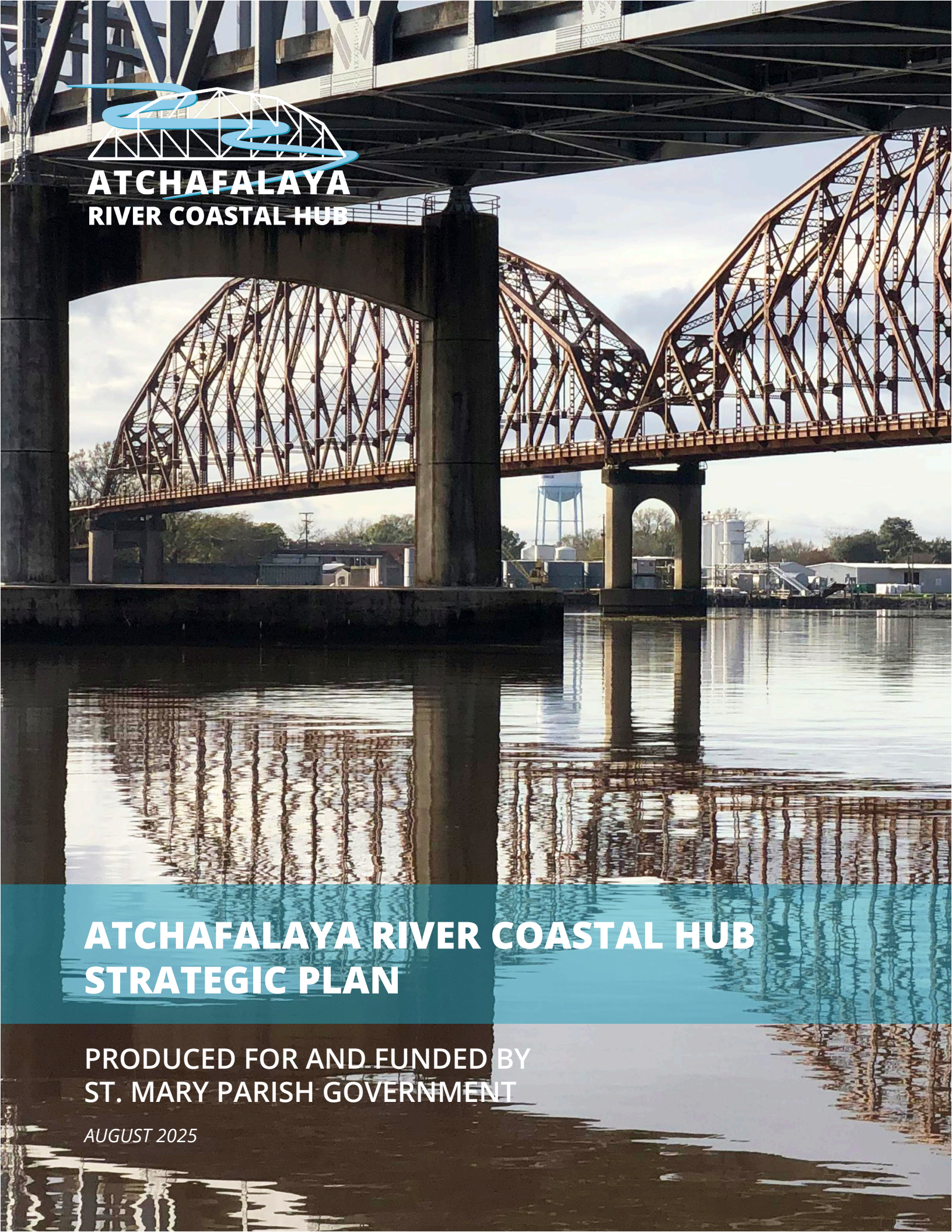

ATCHAFALAYA
RIVER COASTAL HUB

ATCHAFALAYA RIVER COASTAL HUB STRATEGIC PLAN

PRODUCED FOR AND FUNDED BY
ST. MARY PARISH GOVERNMENT

AUGUST 2025

LETTER FROM THE PARISH PRESIDENT

Dear St. Mary Parish Residents,

I am proud to be leading the parish as we release the Atchafalaya River Coastal Hub (ARCH) Strategic Plan. This plan looks to the future for St. Mary Parish and provides a path forward in entrepreneurial and industrial economic diversification in the region. ARCH will be a riverfront hub that facilitates collaboration with researchers to create innovative solutions to economic and environmental challenges through science, best practices, and local knowledge.

Our community is acutely aware of the challenges we face. In 2010, St. Mary Parish was significantly impacted by the Deepwater Horizon event; a tragedy that affected Gulf Coast parishes like ours through oil and gas industry job losses, ecosystem damage, and harm to the reputation of our legacy oil and gas community. Despite these challenges, St. Mary Parish continues to shine as home to a large portion of the Atchafalaya National Heritage Area, a destination for outdoor recreators and sportsmen, and the location of Louisiana's oldest chartered festival celebration—the annual Shrimp and Petroleum Festival.

In 2021, our local non-profit, St. Mary Excel, approached the St. Mary Parish Council requesting that District 3 Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast States (RESTORE) Act funds (funds that are designated to address the oil spill's impact through coastal activities) be used to implement a key recommendation from the 2018 Urban Land Institute (ULI) assessment, *Morgan City and Berwick, LA: Building the Foundation for a New Economy Along the Atchafalaya River.* Following a public hearing, the Parish Council adopted our RESTORE Act Multiyear Plan, including the resilience "lab" project.

As your Parish President, I commend our community's engagement throughout this process. St. Mary Excel's successful appeal to the Parish Council exemplifies the spirit of cooperation and transparency needed to be "proactive in building success," as ULI encouraged us to do while emerging from industry decline. The development of this plan has been strategic and inclusive—centering community voices and incorporating input from important partners from state and federal agencies to university researchers. The Louisiana Universities Marine Consortium, as the management agency for the planned Atchafalaya National Estuarine Research Reserve, has also provided critical insight throughout this planning process and will continue to be a trusted advisor and partner as we work to make ARCH a reality.

I am committed to supporting the implementation of the activities detailed in this plan as part of St. Mary Parish's path forward and pledge our parish's continued prioritization and cooperation in advancing these initiatives. Through the implementation of this plan, we will work to increase the resilience of infrastructure, the economy, and ecosystems in St. Mary Parish by bringing targeted, applied research projects to the area, creating higher education partnerships, and developing meaningful entrepreneurial opportunities that center the unique assets of our coastal communities.

Sincerely,

Sam Jones
Parish President

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ATCHAFALAYA RIVER COASTAL HUB

Figure 1. Boat on Lake Palourde Photo Credit: Bonnie C. Marquette

The Atchafalaya River Coastal Hub (ARCH) is envisioned as a centralized riverfront facility where coastal communities facing economic and environmental challenges collaborate with researchers through science, best practices, and local knowledge to create innovative solutions. Through research, pilot projects, and trainings ARCH sets out to 1) support Atchafalaya Basin communities in increasing the resilience of infrastructure, the economy, and ecosystems, and 2) facilitate the export of solutions to other coastal communities facing similar challenges.

Figure 2. Bridge in St.Mary Parish. Photo Source: St. Mary Excel

BACKGROUND

St. Mary Parish, located in the heart of the Atchafalaya River Basin, faces significant environmental challenges, including extreme rainfall events, coastal flooding, storm surge, and rising sea levels. The region's vulnerability is compounded by economic factors, such as declining populations and socioeconomic risk factors, including a lack of affordable housing and high poverty rates that have left many communities susceptible to the impacts of extreme weather events and changing economic conditions.

In response to these challenges, St. Mary Parish, in partnership with St. Mary Excel (a non-profit organization based in St. Mary Parish), is seeking to establish the Atchafalaya River Coastal Hub (ARCH) to provide leadership in coastal resilience in Louisiana. First proposed by the Urban Land Institute,[1] ARCH is envisioned as both a research center and a testing ground for innovative resilience solutions, providing a platform to address the many vulnerabilities that coastal communities face in St. Mary Parish, throughout coastal Louisiana, and beyond.

Initial focus areas identified for ARCH include enhancing infrastructure, economic, and ecosystem resilience in the Atchafalaya River Basin through research-based, but community-driven adaptation approaches. By leveraging scientific expertise and local knowledge, ARCH seeks to play a central role in advancing innovative solutions that foster both environmental adaptability and socioeconomic stability in the region.

This strategic plan provides an implementable set of recommended actions that will support the establishment of ARCH in St. Mary Parish and carry the hub through its first 6 years of operation. Implementing the actions in this strategy and continuing to tailor those actions to the needs of St. Mary Parish will position ARCH to support safe and thriving communities in the Atchafalaya River Basin for today's residents and future generations.

WHAT IS RESILIENCE?

*The word resilience can have many definitions depending on the context. For this strategic plan, the planning team defines **resilience** as the ability of people, infrastructure, the economy, and ecosystems to withstand and recover from the impacts of natural hazards and socioeconomic risks.*

A PARISH CREATED AND DEFINED BY WATER

St. Mary Parish is a region created and defined by water. Situated approximately 100 miles west of New Orleans and 100 miles south of Baton Rouge, the parish is in the central region of the Louisiana coast, and is part of three major watersheds, the Vermilion-Teche, the Atchafalaya River, and the Terrebonne Basin, which is locally known as the Lake Verret watershed (Figure 4).[2] In total, the parish contains 660 miles of navigable waterways. This abundance of water contributes to the parish's unique ecosystems, economy, and culture.

Figure 3. The Mississippi River and the Atchafalaya River on the Louisiana Coast

Figure 4. Location of St. Mary Parish within the Vermillion-Teche Watershed, Atchafalaya River system, and Terrebonne Basin. This figure highlights the Wax Lake and Atchafalaya River deltas, areas that continue to grow land in St. Mary Parish.

Figure 5. River basin map of the United States, which highlights many tributaries connected to the Mississippi River (large light pink area), that flow into the Atchafalaya River before reaching the Gulf (Figure 3). Credit: Robert Szucs. www.grasshoppergeography.com

ECOSYSTEMS

The area containing St. Mary Parish was initially built out through deltaic processes roughly 7,500 to 5,000 years ago. Approximately 500 years ago a portion of the Mississippi River diverted down the Atchafalaya River and began to build land.[3] Today, the U.S. Army Corps of Engineers (USACE) diverts approximately 30% of the flows from the Mississippi River to the Atchafalaya River, making the Atchafalaya the fifth largest river in North America by discharge.[4]

The Atchafalaya River watershed is one of the most heavily sediment-laden watersheds in coastal Louisiana. This sediment is carried into the Wax Lake and Atchafalaya deltas resulting in one of the few areas in coastal Louisiana experiencing a net land gain. Currently at 558.5 square miles, the growing St. Mary Parish landscape is ecologically diverse, with coastal marshes forming a narrow band near the shoreline, while the Wax Lake (Figure 6) and Atchafalaya deltas are dominated by woody and herbaceous vegetation.[5] These wetlands are crucial for supporting fisheries and wildlife, and for protection from storms. The growing deltas also provide an opportunity for researchers from around the world to study how a river builds land.

Figure 6. An aerial view of the Wax Lake Delta. Photo Credit: Elise Plunk/Louisiana Illuminator

Figure 7. Mr. Charlie Offshore Oil Rig Museum in Morgan City, which is a new National Historic Landmark. Photo Credit: St. Mary Excel

ECONOMY

The many environmental resources of St. Mary Parish play an essential role in its economy. The Bayou Teche National Wildlife Refuge, along with the parish's coastal marshlands and river systems, provide recreational opportunities like fishing, birding, boating, and eco-tourism. A significant percentage of the parish's land area is also dedicated to agriculture, with St. Mary Parish ranking among the top sugarcane producers in Louisiana.

The parish's 660 miles of inland navigable waterways are associated with ecotourism as well as a diversified industrial base and skilled workforce. The navigability of these waterways is critical to the national economy; with the Atchafalaya serving as a major industrial shipping channel and routing approximately 30% of the Mississippi River's flow.[6] Key industries across the parish include shipbuilding, oil and gas services, marine transportation, chemical manufacturing, diving and remotely operated vehicle operations, sugar milling, and seafood production. The parish is home to nationally recognized companies such as Oceaneering, Swiftships, and Conrad Industries, all of which originated locally and continue to play a significant role in the regional economy.

While the abundant sediment delivered to the region from the Atchafalaya River provides physical benefits in terms of land building, this benefit has also placed the parish and the rest of the country at economic risk. The Morgan City Harbor and Terminal District, which is home to approximately 175 privately owned facilities and primarily serves the inland and offshore oil and gas production industry, struggles to keep the river channels dredged to the required depth.[7] This risk compounds the already vulnerable economy of the region, which has struggled since the oil bust of the 1980s.

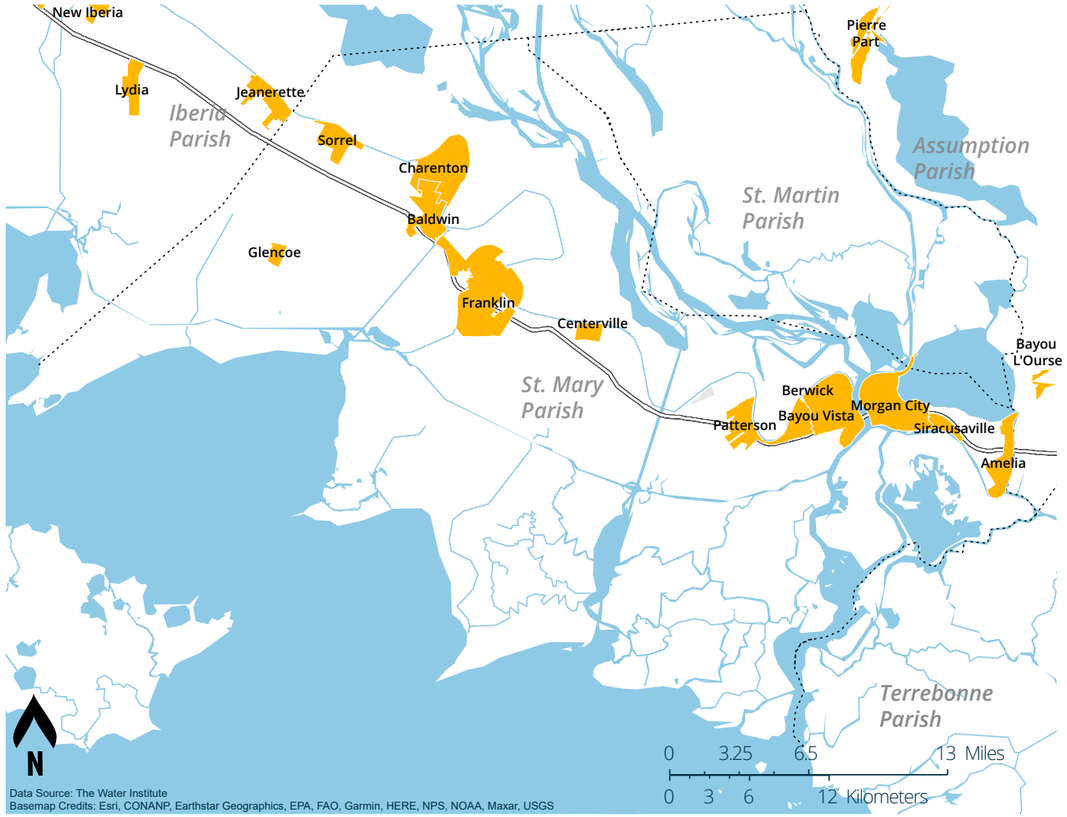


Figure 8. St. Mary Parish communities (highlighted in yellow).

CULTURE

First established in 1811, nearly 47,000 residents reside in St. Mary Parish today.[8] St. Mary Parish communities (Figure 8) are culturally and demographically diverse, home to Anglo-Americans, Creoles, Black Americans, and Indigenous communities. The Chitimacha Tribe of Louisiana, the only federally recognized Indigenous tribe in coastal Louisiana, maintains a reservation near the town of Charenton. This diversity contributes to a vibrant cultural landscape, preserved through language, art, music, and architecture.

The Franklin Historic District, encompassing eight blocks of Main Street in the parish seat of Franklin, was added to the National Register of Historic Places in 1982. The Mr. Charlie Offshore Oil Rig in Morgan City is considered a national historic landmark and is a tourist attraction (Figure 7). In total, more than 400 buildings in the parish are listed on the National Register, underscoring its historical significance.

Figure 9. Brownell Memorial Park in Morgan City, LA. This 9.5 acre park next to Lake Palourde attracts both residents and visitors. The park is a designated bird sanctuary and features a 106 ft tower housing bronze bells that play two selections every 15 minutes.
Photo Credit: St. Mary Excel.

Figure 10. Cajun Coast Visitors Center in Morgan City, LA.
Photo Credit: Cajun Coast

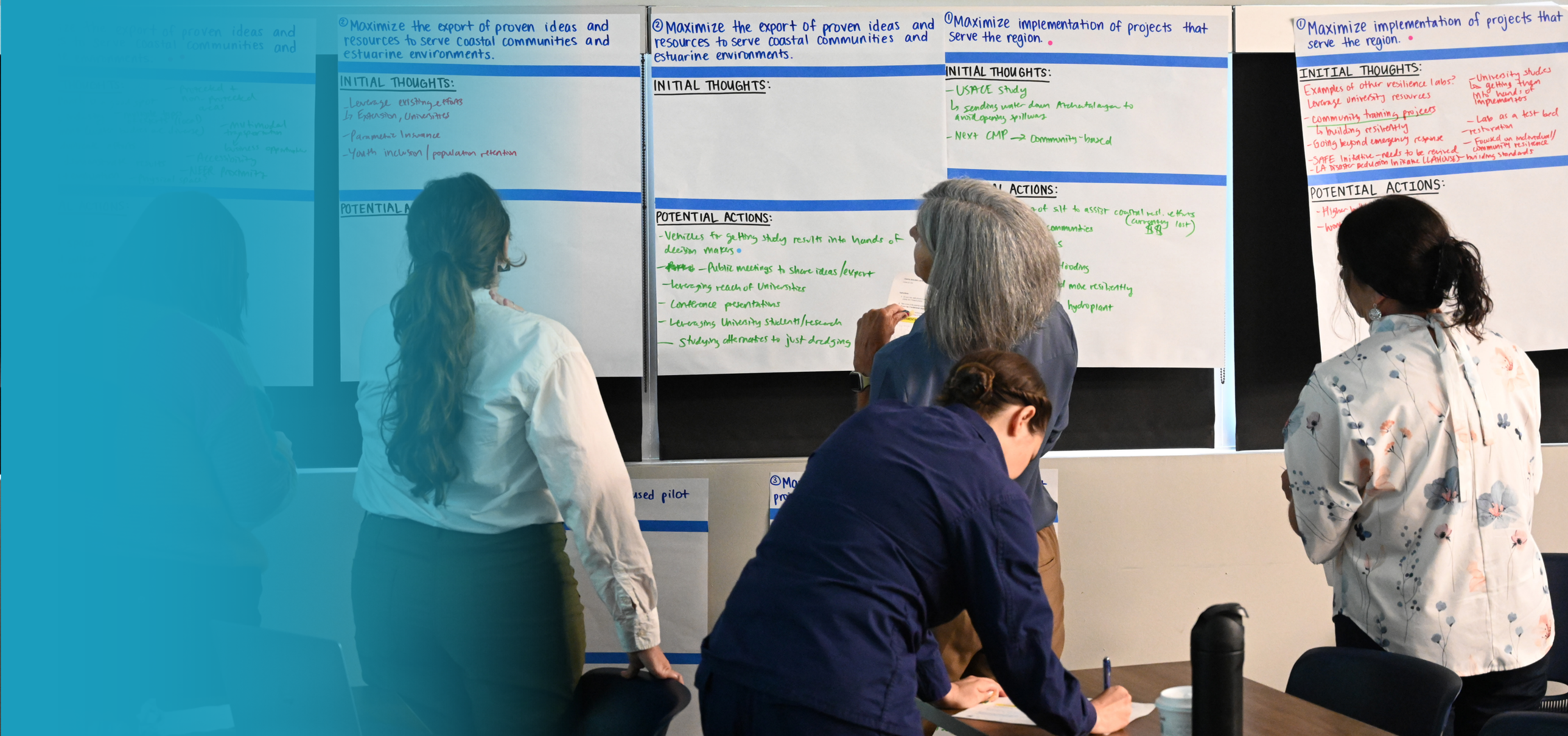
The parish is also known for its annual festivals, including the Shrimp and Petroleum Festival, the Soul Food Festival, and many Mardi Gras celebrations. These cultural events celebrate regional traditions and attract thousands of visitors to the parish each year. They enhance tourism, strengthen community identity, and support local economic activity. Cajun Coast Tourism, which runs a Welcome Center in Morgan City situated on an acre of mature cypress-tupelo gum swamp habitat (Figure 10), plays a central role in supporting tourism and promoting the parish's distinctive character.

Figure 11. Shrimp and Petroleum Festival Water Parade, 2019. Photo Credit: Peter Bello Photography & Video

"Stuck in the shadow of its former glory as an offshore boomtown and home to the Shrimp and Petroleum Festival some may say Morgan City has passed its prime. But, like many other residents of Morgan City, I know that this small town nestled right onside the Atchafalaya River has something special. From its spirit to its abundance of culture and rich history, ***Morgan City is just waiting for that something that will rekindle that spark.*** That is where ARCH and the ANERR (Atchafalaya National Estuarine Research Reserve) come in, and with them, a host of new possibilities for St. Mary Parish."

- Morgan City High School Student, 2025

DEVELOPING THE STRATEGIC PLAN



WHY A COASTAL HUB IN ST MARY PARISH?

In 2018, the Urban Land Institute (ULI) published a report suggesting that St. Mary Parish is an ideal location for a coastal hub—highlighting the area's celebrated history of innovation and leadership in business.[1] The coastal, riverine, and basin locale of the parish positions the area well for entrepreneurial innovation and application of the work of academic and partner institutions. The report also notes that despite a relatively high risk of sea-level rise in the parish cities of Morgan City and Berwick, levee upgrades have lowered the area's overall risk compared to surrounding communities. St. Mary Parish also contains Louisiana's only actively growing delta—which is currently building land as many other coastal communities across the state are losing land at exponential rates. The ULI report highlights the existence of surplus office and industrial space along the riverfront in the Morgan City area; noting that such a location could facilitate collaborative efforts among local entrepreneurs, fabricators, and researchers.[1]

A COLLABORATIVE PROCESS GROUNDED IN SCIENCE AND COMMUNITY PRIORITIES

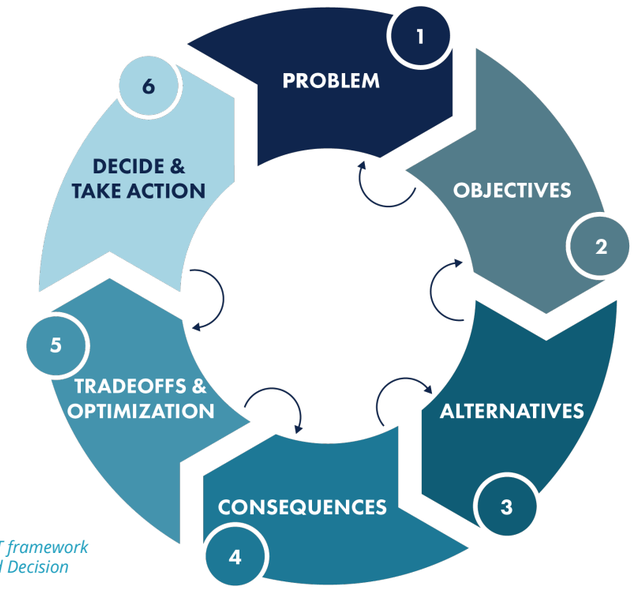


Figure 12. The PrOACT framework used in the Structured Decision Making process.

While the ULI report established the need for a coastal hub, it did not provide parish officials with a strategic plan for its development, noting that resilience in the area could be approached from many angles. To develop a strategic plan for ARCH, St. Mary Parish, supported by St. Mary Excel and a team of experts in planning, science and policy (Strategy Development Team), implemented a 12-month planning process that utilized a Structured Decision Making (SDM) framework (Figure 12). SDM is based in decision theory and risk analysis, and encompasses a simple set of steps that can help decisionmakers and stakeholders reach consensus in solving various types of complex problems.[9]

Rooted in best practices from the decision sciences, SDM allows groups to work collaboratively to clarify objectives, identify creative alternatives, and evaluate how well different objectives are satisfied by different alternatives. The SDM process takes a methodical, stepwise approach to complex decision-making by applying the steps of the PrOACT framework (Figure 12) that includes: (1) clarification of the **Pr**oblems impeding the decisions; (2) articulating the **O**bjectives of the decisionmakers and stakeholders; (3) identifying **A**lternatives that can advance those objectives; (4) evaluating the **C**onsequences of potential alternatives on the desired objectives; and (5) considering **T**radeoffs as part of optimizing selection of an alternative to ultimately support deciding and acting. For this planning process, the principles of SDM were applied by engaging decisionmakers and stakeholders from 30 organizations, including universities, businesses, non-profits, and local governments in collaborative planning workshops and meetings to work through each step of the SDM process. See below for the list of partners that were critical in conceptualizing a coastal hub for St. Mary Parish.

SUPPORTING ORGANIZATIONS

Barataria-Terrebonne National Estuary Program (BTNEP)
Berwick and Morgan City Housing Authority
Cajun Coast Tourism
City of Morgan City
City of Patterson
Louisiana Coastal Protection and Restoration Authority (CPRA)
Garber Bros Inc.
Halimar Shipyard
Kyle Machine
Louisiana Coastal Technical Assistance Center (CTAC)
Louisiana Governors' Office of Coastal Activities
Louisiana Sea Grant
Louisiana State University (LSU) AgCenter
LSU School of Landscape Architecture
The Louisiana Universities Marine Consortium (LUMCON)
Morgan City High School students
Natrx
New Industries
Nicholls State University Coastal Center
National Oceanic and Atmospheric Administration (NOAA)
Port of Morgan City
South Louisiana Community College (SoLACC)
St. Mary Excel
St. Mary Levee District
St. Mary Parish Chamber of Commerce
St. Mary Parish Government
Town of Berwick
Tulane ByWater Institute
United States Coast Guard (USCG)
United States Army Corps of Engineers (USACE)

TIMELINE OF STAKEHOLDER ENGAGEMENT

1 IDENTIFY KEY DECISIONS TO BE MADE: OCTOBER 2024

The first stakeholder workshop was held in October 2024. The aims of this workshop were to discuss the community's vision for ARCH and refine the problem and decision context. This resulted in the collective agreement that the strategic plan would be written for a "coastal hub" rather than for a traditional "lab". The hub will prioritize research and collaboration, while also supporting additional community-centered work like trainings, educational events, etc. The geographic scope of the strategic plan was also refined during this workshop to include the entire parish instead of the original focus, the Tri-City region of Morgan City, Berwick, and Patterson.

2 REFINE AND PRIORITIZE OBJECTIVES: OCTOBER 2024

The October 2024 workshop also focused on refining and ranking 7 draft objectives developed by the parish, St. Mary Excel, and the Strategy Development Team to ensure they reflected what the community wanted to see in a coastal hub. The objectives were finalized shortly after the October workshop and revisions were presented during a local stakeholder meeting in December 2024. The Strategy Development Team used the refined objectives to develop an overarching vision and mission for the hub that helped to further guide strategic planning.

3 DEVELOP ALTERNATIVES FOR ARCH OPERATIONS: DECEMBER 2024

During the October 2024 workshop, participants were asked to identify different actions and activities that the hub could implement that would align with the 7 objectives, and to vote on their top three actions for prioritization. The Strategy Development Team aggregated these actions into a set of draft potential alternative strategies related to the future hub's governance structure, and potential research focus areas. These were refined through discussions with the decisionmakers from St. Mary Parish and St. Mary Excel, and were presented to stakeholders during the second workshop in January 2025.

4 ANALYZE CONSEQUENCES OF EACH ALTERNATIVE: JANUARY 2025

As part of the January 2025 workshop, stakeholders participated in activities that evaluated alternatives for the hub's governance structure, staff needs, location, funding, outreach, and partnerships against the 7 objectives. Alternatives that ranked highest when scored against the objectives were selected for future implementation, and opportunities to adaptively manage the hub in its first 6 years were identified. This will allow for flexibility based on funding availability, future shocks, changes to government, or other factors. Stakeholders then collectively ranked the research focus areas (and associated pilot projects) according to alignment with ARCH objectives and priorities for the community.

5 DISCUSS TRADEOFFS AND OPTIMIZE DECISIONS: APRIL–JUNE 2025

In biweekly meetings and a half-day working session with the decisionmakers from St. Mary Parish and St. Mary Excel, the Strategy Development Team discussed the tradeoffs identified by stakeholders in their evaluation of the alternatives, and opportunities to optimize decisions around the hub's governance, operations, research focus areas, and pilot project opportunities. The team also held numerous meetings with potential hub partners from academia, industry, private and nonprofit organizations, and government to sharpen details around research focus areas and pilot project opportunities.

6 DECIDE & TAKE ACTION: JUNE 2025

Following the additional meetings and working sessions, decisions about the hub's governance structure, operations, research focus areas, and pilot projects were shared with stakeholders in the final workshop. This workshop included many of the same stakeholders that had been involved in the planning process since the first workshop in October 2024, and focused on refining and advancing the pilot projects included in this strategy.

A VISION FOR THE ATCHAFALAYA RIVER COASTAL HUB

VISION

A future in which Atchafalaya Basin and other coastal communities facing similar economic and environmental challenges have the opportunities and resources necessary to strengthen their resilience and thrive in the face of dynamic change.

MISSION

Strengthen the resilience of infrastructure, the economy, and ecosystems within Atchafalaya Basin communities and beyond through innovative research, pilot projects, and trainings.

OBJECTIVES

The objectives for ARCH—collaboratively developed by community stakeholders and decision-makers—are:

1. ***Ensure transparency through clear and representative decision-making,***
2. ***Export ideas beyond the region,***
3. ***Fund pilot projects that serve the region,***
4. ***Build and maintain financial stability,***
5. ***Build a culture of collaboration to facilitate the sharing of ideas and resources,***
6. ***Promote a positive image of the Tri-City region for future investment, and***
7. ***Strengthen the local economy through opportunities for economic development.***

Figure 13. The E. J. "Lionel" Grizzaffi Bridge from Morgan City, LA.

RISK AND VULNERABILITY IN ST. MARY PARISH

Figure 14. 2011 Atchafalaya River flooding resulting from the opening of the Morganza Spillway. Photo Credit: Scotty Tibbs

Developing a coastal hub to foster resilience in St. Mary Parish requires an understanding of the region's risk in the face of acute shocks (sudden, extreme events that threaten a community) and chronic stressors (long-term pressures that weaken the fabric of a community over time), and how that risk may change in the future. The process to develop this strategic plan included an assessment of the risks and vulnerabilities of the region. The list of acute shocks and chronic stressors below were identified as current and potential threats for Atchafalaya Basin communities through this assessment and by stakeholders in the region. An overview of socioeconomic challenges, hurricane and storm surge vulnerability, and flood risk is discussed in this section. For a detailed summary of the parish's risk and vulnerability, please reference the St. Mary Parish Risk and Vulnerability Tech Memo.[10] Additional discussion of St. Mary Parish's vulnerability to climate and economic challenges are also included throughout this strategy as a part of the discussion of pilot projects and programs ARCH can undertake to address them.

ACUTE SHOCKS	CHRONIC STRESSORS
Hurricanes	*Flooding*
Storm Surge	*Groundwater Threats*
Flooding	*Drought*
Extreme Heat	*Aging Infrastructure*
Infrastructure Failure	*Economic Downturn*
Power Outages	*Poverty*
Saltwater Intrusion	*Housing Instability*
Sea Level Rise	*Subsidence*
	Population Loss
	Collapsing Fisheries
	Sedimentation

SOCIOECONOMIC CHALLENGES

St. Mary Parish has been historically reliant upon natural resource-related industries such as logging, commercial fishing, and offshore petroleum. For many years, these industries sustained local economies and provided employment opportunities for a large percentage of parish residents. However, in recent decades, the area has faced significant economic decline due to falling oil prices and structural changes in the offshore oil and gas industry.

During the 1970s and 1980s, the parish's economy was transformed by the rise of offshore oil and gas activities, which became the dominant industry. This shift spurred extensive growth in support industries and infrastructure but also led many young people to enter the well-paid offshore sector rather than pursue higher education, resulting in a workforce with limited transferable skills.[11] The collapse of the offshore industry in Louisiana in the 1990s led to unemployment rates exceeding 20% in some coastal parishes, with unemployment levels in St. Mary Parish peaking at 14.7% in 1992. Unemployment data from 1990 onward shows cyclical peaks linked to economic crises including spikes in 1992, during the 2008–2009 financial crisis, and the COVID-19 pandemic—highlighting persistent economic instability that has contributed to ongoing population loss and community hardship in St. Mary Parish.[12]

The region is also faced with challenges related to increasing flood risk and related flood insurance issues. In recent years, the insurance industry has intensified its focus on flood and storm-related exposures, prompting the Federal Emergency Management Agency (FEMA) to release the National Flood Insurance Program's Risk Rating 2.0, which utilizes new data, flooding models, and technology to develop a more localized approach to risk assessment.[13] This new approach focuses on factors such as frequency of flooding, multiple flood types, proximity to flood sources, and building characteristics such as first floor elevation and the cost to rebuild. These updates have led to rising flood insurance premiums throughout St. Mary Parish and, in some cases, reduced coverage for property owners. As a result, many residents and developers are being forced to invest in costly structural improvements to maintain or obtain coverage. In more extreme cases, the high cost or unavailability of flood insurance has made property development or redevelopment financially infeasible across many parts of the parish.[1]

Figure 15. Long-Allen Bridge in Morgan City. Photo Source: St. Mary Excel

HURRICANES AND STORM SURGE

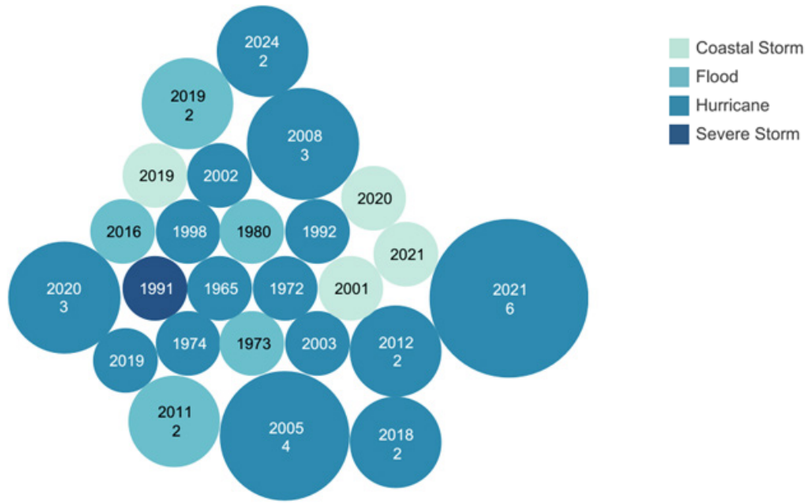


Figure 16. Historical extreme weather events impacting St. Mary Parish. Circle size is relative to the number of federal disaster declarations in a particular year.[21]

Throughout its history, St. Mary Parish has been heavily impacted by tropical storms, hurricanes, and other extreme weather events (Figure 16). In 1992, Hurricane Andrew, the second costliest hurricane in U.S. history behind Hurricane Katrina, made landfall approximately 23 miles west-southwest of Morgan City, heavily damaging property, agricultural crops, and fisheries. Over the last quarter of the 20th century, residents of the parish filed $6.9 million in National Flood Insurance Program flood loss claims, with Morgan City alone accounting for $1.1 million of these claims.[14] Although St. Mary Parish was not directly in the paths of either Hurricane Katrina or Hurricane Rita, most of St. Mary Parish south of Highway 90 was submerged during these storms.[15]

Commercial fisheries infrastructure also experienced a high level of economic damage from the two storms. The loss of infrastructure and revenue (estimated over a 5-year period) to seafood dealers in St. Mary Parish was approximately $9.1 million. The discounted losses due to damaged fishing vessels in the parish was estimated at an additional $2 million.[16] In total, from 1960 to 2003, when at least 11 tropical systems affected coastal Louisiana, St. Mary Parish suffered more property losses from tropical storms and hurricanes than any other parish in Louisiana, totaling approximately $177.7 million.[17] Most recently, Hurricane Francine brought about 10 inches of rain to Morgan City in less than a day on September 11, 2024, causing water damage to 350 homes.[18]

Despite the damage that tropical weather events have historically caused in St. Mary Parish, the region is largely buffered from the Gulf by relatively intact wetlands. According to the Louisiana Coastal Protection and Restoration Authority (CPRA), St. Mary Parish is projected to see increased wetland loss over the next 50 years, despite land gain in the Wax Lake and Atchafalaya deltas, resulting in increased future storm surge-based flood risk.[19] Much of the developed land in the parish today is enclosed by a ring levee, and as a result, many of the communities in the parish are not anticipated to experience significant levels of coastal flooding from a 100-year flood event (a flood event with a 1% chance of occurring or being exceeded in any given year) under current environmental conditions.[20] However, over the next 50 years, with no additional risk reduction or restoration investments, 100-year flood depths are projected to increase substantially to between 16 to 21 feet south of Highway 90.[17]

Geographical differences in coastal flood risk do exist within the parish, with the Atchafalaya River serving as a dividing line between areas of higher and lower risk. Communities west of the river, including Berwick, Patterson, Bayou Vista, Franklin, and Charenton are less likely to experience coastal storm surges than those to the east, such as Siracusaville, Amelia, and Morgan City.[18]

RAINFALL, RIVERINE, AND COMPOUND FLOOD RISK

The relative risk reduction St. Mary Parish receives from coastal storm surge does not eliminate the risk of other types of flooding. The dominant flood risk in Morgan City and surrounding communities is expected to result from river flooding, particularly in the spring when water levels in the Atchafalaya River begin to rise. In addition to the high river flows, the Atchafalaya River also captures flow from the Mississippi and Red rivers. Mississippi River flow into the Atchafalaya River is controlled by the Old River Control Structure. Red River flow is entirely captured by the Atchafalaya and is unregulated.

During peak floods, additional structures such as the Morganza Spillway can be opened to relieve pressure on levees along the downstream portion of the Mississippi River in Baton Rouge and New Orleans, diverting water into the Atchafalaya Basin and flooding the swamps and marshes along the entire length of the Atchafalaya River. While some areas such as Morgan City are largely protected from this flooding by the levees shielding the populated areas, some surrounding communities are not within these levees and are at higher risk of experiencing enhanced river flooding.[19]

In addition to riverine flooding, the area is also vulnerable to extreme rainfall events which can cause stormwater and compound flooding. Compound flooding is when different types of flooding occur at the same time—for example, when heavy rain falls during a coastal storm, resulting in flooding from both coastal storm surge as well as riverine or stormwater flooding (Figure 17). The vulnerability of St. Mary Parish to riverine flooding and extreme rainfall events was demonstrated in 2011 when Mississippi River floodwaters were diverted into the Atchafalaya River, inundating businesses in Morgan City and Berwick and causing backwater flooding in areas like Franklin and Amelia, which lack levee protection.[22] The ongoing threat of riverine and compound flooding is exacerbated by increasing relative sea level rise (the change in sea level at a specific location relative to the elevation of the land it borders) in the area.[23,24]

Figure 17. Compound flooding outside the flood protection system in Morgan City. The land inside of the floodwall was not flooded during this event. Photo Credit: St. Mary Excel

SUBSIDENCE

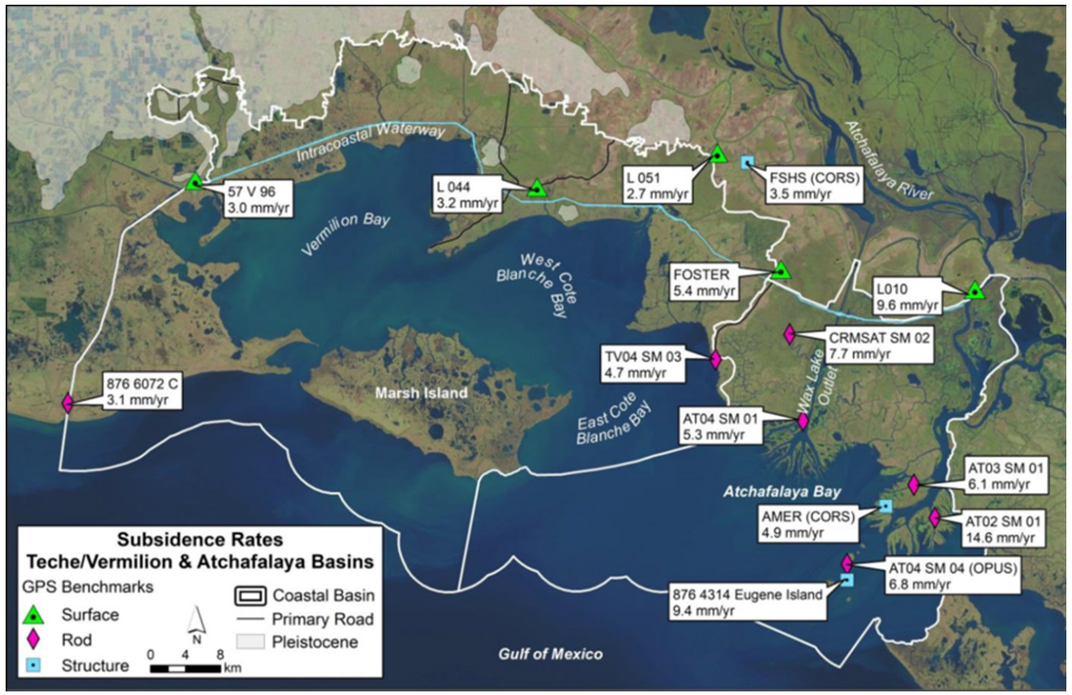


Figure 18. Subsidence rates (mm/yr) for primary and secondary benchmarks for Teche/Vermilion and Atchafalaya Basins demonstrate high subsidence velocities near the Atchafalaya River and Wax Lake Outlet. Background image: Landsat 8 OLI/TIRS, acquired Nov. 6, 2021.

Figure 19. Home with damaged foundation resulting from flooding and subsidence. Photo Credit: St. Mary Excel

Although the Atchafalaya Basin is one of the only places in Louisiana where sediment from the Mississippi River is still building new land above water, most of the mud and sand that has been building up is not very deep—usually less than 15 meters (about 50 feet)—and more recently, newer layers of softer, wetter sediment mud has been piling up on top. Because this sediment is loose, it can get packed down over time, causing the land to slowly sink through a process known as subsidence.[25] Figure 18 demonstrates high rates of subsidence for the Teche/Vermilion and Atchafalaya river basins. This subsidence has resulted in failing infrastructure and the need for costly remediation actions by business and homeowners.

Enhancing resilience in St. Mary Parish to the shocks and stressors discussed in this section will require a coastal hub that is implemented using a structured process that includes short- and long-term planning and opportunities for the hub to change course given evolving risks and funding opportunities.

Figure 20. Cutter dredge on the Atchafalaya waterfront at Morgan City. Photo Credit: St. Mary Excel

ARCH IMPLEMENTATION

Figure 21. Lake End Park Trail. Photo Source: Cajun Coast Tourism

SHORT- AND LONG-TERM IMPLEMENTATION

As part of this strategic planning process, stakeholders were asked to evaluate alternative strategies related to the future hub's governance structure, operations, and potential research focus areas against each of the identified objectives for ARCH. This helped stakeholders and decisionmakers prioritize decisions about ARCH's governance and research focus areas based on alignment with the agreed upon fundamental objectives for ARCH, rather than on arbitrary or biased preferences. This also helped to build consensus across the workshop participants on recommendations for ARCH in both the short-term (1–3 years) and long-term (5–6 years). The recommendations for ARCH governance, staff, and location are detailed in the following section and outlined in Table 1.

IMPLEMENTATION RECOMMENDATIONS

	FIRST 3 YEARS	WITHIN 5–6 YEARS
GOVERNANCE	Establish ARCH as a nonprofit with 501(c)(3) status and assemble a governing board (of approximately 6–8) to make funding and management decisions.	Establish advisory subcommittees to support decision making around research and pilot projects.
STAFF	Hire an Executive Director to establish a prioritized staffing plan and begin coordinating research activities.	Acquire at least 1–2 additional support staff and an intern.
LOCATION/ BUILDING	Begin research activities and programming in a temporary space.	Acquire a parcel of vacant, riverfront land in St. Mary Parish on the Atchafalaya River.
FUNDING	When making decisions about what to fund first (the physical infrastructure of ARCH or the research pilot projects themselves), prioritize pursuing sources of funding that are available first.	Pursue larger sources of funding through a federal earmark or philanthropic donations to support the construction of a building on the Atchafalaya River and continue to pursue grant funding for pilot projects.
OUTREACH	Create a short-term contract position tasked with marketing and communications as ARCH is being established.	Open up a full-time position for outreach and communications when resources allow.
PARTNERSHIPS	Continue to strategically develop partnerships with university researchers, local and state government agency partners, non-governmental organizations, and private sector partners to collaborate on grant writing, scoping, and implementation of pilot projects.	For the acquisition of land and construction of a building, strengthen partnerships with local business and industry leaders and local government partners that can support the pursuit of funding from either a federal earmark, state and local government, or donor(s) with a vested interest in the future of St. Mary Parish and its communities.

Table 1. Short- and long-term recommendations for ARCH governance, staffing, location, funding, outreach and partnerships.

GOVERNANCE AND OPERATIONS

GOVERNANCE

To ensure that the objectives set by stakeholders for ARCH (see Objectives) are at the forefront of planning for decisions about the hub's establishment, research activities, and future operations, it will be critical to implement a clear governance structure for ARCH. In the same way, decisions about governance structure for ARCH must align with the objectives that were decided by stakeholders during the strategic planning process. To establish a governance structure that best serves ARCH, stakeholders agreed **ARCH should be established as a nonprofit with 501(c)(3) status. Funding and management decisions for ARCH will be made by a 6–8 person governing board, with advisory subcommittees.** Stakeholders proposed starting with a governing board in the short-term (1–3 years), with the longer-term goal of building up multiple advisory subcommittees (5–6 years). The composition of the governing board should be established in the first year and should be responsible for securing the 501(c)(3) status and funding for ARCH. This type of governance structure will advance the objectives that were set by stakeholders—ensuring transparency through clear and representative decision-making, building and maintaining financial stability, and building a culture of collaboration to facilitate the sharing of ideas and resources.

STAFF

ARCH will need staff that has the experience necessary to coordinate research activities, build and maintain strategic partnerships, identify funding opportunities, support grant proposal writing, and communicate effectively with the St. Mary Parish community. Stakeholders identified the need for ARCH to directly employ at least one staff member at the onset of its establishment. This person, likely an Executive Director, would oversee and manage the non-profit and establish a prioritized staffing plan. Within 5-6 years, 1–2 additional support staff would be hired to be involved in the day-to-day implementation ARCH operations. Stakeholders also recommended hiring an intern for ARCH—ideally a student from one of the surrounding universities that would provide support for ARCH and receive a stipend.

LOCATION/BUILDING

The long-term goal (5–6 years) for ARCH's physical space includes acquiring a parcel of vacant, riverfront land in St. Mary Parish on the Atchafalaya River and building a structure to serve as a space for collaborative research, innovation, and community-based activities that support infrastructure, economic, and ecosystem resilience. An ideal building for ARCH would contain 1) direct access to the river; 2) flexible office and conference room space to facilitate collaboration between university partners, government and non-governmental organizations, and private sector partners; and 3) event space that could be used to host trainings, learning experiences for students, and could be rented out for formal events or ceremonies to generate revenue for utilities and other costs necessary to support ARCH operations. An exact location for a building is largely dependent on the availability of vacant land that meets this criteria, cost efficiency, and availability of significant funding. Industry leaders in St. Mary Parish have expressed interest in donating vacant riverfront property, and additional considerations for land acquisition include proximity to the future ANERR and proximity to riverfront attractions like the Mr. Charlie Rig Museum to support the revival of a more connected downtown corridor around Berwick Bay. In 2025, the City of Morgan City identified parcels of city property on the river side of the seawall where ARCH could potentially be located.

Until property is acquired and a building is constructed, ARCH will aim to begin research activities and programming in a temporary space. Options include renting existing space close to the river in St. Mary Parish or exploring the possibility of permanently docking a donated vessel to be used by ARCH personnel and collaborators until a new building is constructed. Decision-making about location for a temporary space will depend on soft costs like permitting fees, legal fees, insurance fees, and taxes, though non-profit status would alleviate some of these costs for ARCH. Once land is acquired and a building is constructed, there may be opportunities for ARCH to request the establishment of a Tax Increment Financing (TIF) District in the area where the building is located to support ARCH and help facilitate redevelopment efforts in that area.

FUNDING

Like many other nonprofits, ARCH will need to pursue and manage diverse funding streams that can be used for various purposes. For instance, resources for building construction, other associated soft costs, and staff salaries will need to come from a robust funding source like a federal earmark, a large corporate contribution, and/or a significant philanthropic donation. Certain pilot projects that can be implemented without a physical building in place will benefit from more "ad hoc" funding sources such as grants and smaller donations. Each pilot program or project detailed in this plan outlines potential funding sources that ARCH staff can pursue before the hub location is fully constructed.

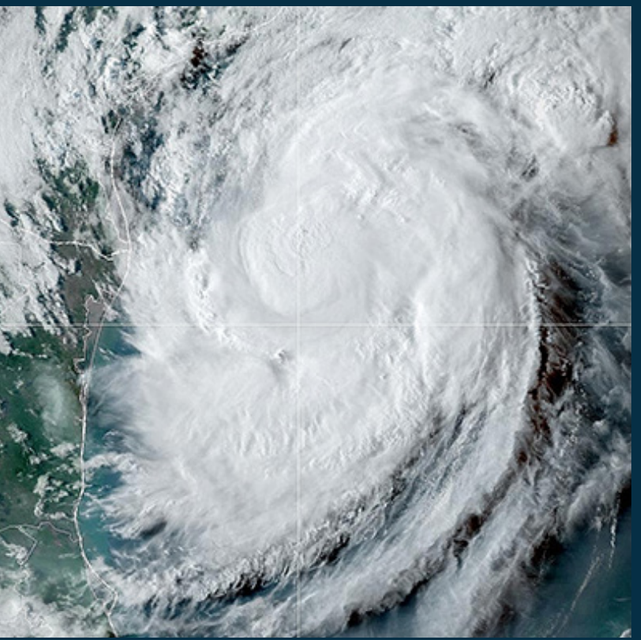


Figure 22. Hurricane Francine, September 10, 2024
Photo Credit: NOAA

FEDERAL DISASTER GRANTS

Because St. Mary Parish is vulnerable to multiple hazards and received a major disaster declaration between 2023 and 2024, there are opportunities to pursue federal funds to support ARCH in implementing pilot projects. For instance, the U.S. Economic Development Administration (EDA) provides a Disaster Supplemental Grant—specifically for Industry Transformation—that focuses on transforming local economies after disaster, improving economic outcomes for communities, and supporting efforts that increase resilience to future disasters through both construction and non-construction projects.

OUTREACH

Effective outreach and communication is a critical component of establishing and growing a nonprofit organization. Stakeholders identified the need for a short-term contract position tasked with marketing and communications as ARCH is being established. The priorities for a short-term contractor would involve developing brand guidelines for ARCH to formalize the hub's outreach and communications materials, tabling and presenting about ARCH at key community gatherings (festivals, local government meetings, chamber events, etc.), building a basic website, and establishing/running ARCH's social media accounts. If ARCH leadership is unable to identify a single contractor with both outreach and communications skillsets, it will be important to consider contracting two separate positions. A longer-term goal includes establishing a full-time position for outreach and communications when resources allow. A full-time employee would continue to table and present about ARCH activities within the community but would also prioritize presenting at conferences in other parts of the state to increase awareness and develop/strengthen collaborative partnerships. A full-time employee would also be tasked with designing marketing campaigns as well as building out and managing a Riverfront Industry Partners Program for ARCH.

Figure 23. St. Mary Parish community members and partners organizing to recommend an Atchafalaya National Estuarine Research Reserve.

PARTNER HIGHLIGHT: ATCHAFALAYA NATIONAL ESTUARINE RESEARCH RESERVE

The National Estuarine Research Reserve System (NERRS) represents a partnership between NOAA and coastal states. The Atchafalaya NERR (ANERR), which is currently under review by NOAA, will be Louisiana's first national estuarine research reserve. Once established, the ANERR will provide short-term and long-term targeted research, monitoring, education, and outreach to help enable a more resilient Louisiana coast. As part of the national network of NERRS, the ANERR will be a natural field laboratory to provide long-term opportunities for research, education, and interpretation in the only active delta estuarine system in the NERR network. The ANERR will be managed by the Louisiana Universities Marine Consortium, and will be a key partner for ARCH—collaborating on and supporting the coordination of ecosystem-related research projects as well as youth engagement and outreach initiatives within the region. Figure 23 demonstrates the community organization and support that went into the recommendation for the ANERR.

PARTNERSHIPS

The success of ARCH will rely on key partnerships. ARCH must continue to strategically develop partnerships with university researchers, local and state government agency partners, nongovernmental organizations, and private sector partners—including the diverse stakeholder groups involved in the strategic planning process— to collaborate on grant writing, scoping, and implementation of pilot projects. For ARCH to have a physical presence along the Atchafalaya River that serves as a collaborative space for partners from different agencies and institutions, the organization will depend on strong partnerships and community support. For the acquisition of land and construction of a building, ARCH will need to seek out both a land donation and one or more large sources of funding from either a federal earmark, state and local government, or donor(s) with a vested interest in the future of St. Mary Parish and its communities.

Potential partners for ARCH that have been involved with the development of the pilot projects outlined in this strategy are listed in the pilot project descriptions. ARCH will continue to work with these and other partners as the hub is established to leverage research, funding, and community resources.

"I can't wait to see what the future holds for our coastal community, and I am grateful for the youth outreach efforts that have been made."

-Junior, Morgan City High School, 2025

Figure 24. Catherine Holcomb from St. Mary Excel planting marsh grass with students from Morgan City and Patterson high schools.

CASE STUDY: EXPOSING STUDENTS TO COASTAL CAREERS THROUGH EXPERIENTIAL LEARNING

A partnership between Louisiana Sea Grant, Louisiana State University (LSU) AgCenter, NOAA, St. Mary Soil and Water Conservation District, 4-H, St. Mary Levee District, St. Mary Parish Sheriff's Office, United States Fish and Wildlife Service (USFWS), Morgan City High School and Patterson High School, has focused on organizing trips throughout the region to expose local students to career pathways in engineering and the coastal sciences (Figure 24). This initiative began in 2023 as a response to the shortage of engineers and coastal scientists in St. Mary Parish and has inspired students to pursue higher education in the fields of engineering and coastal science. These trips not only immerse students in the actual work that is being done all along the coast of Louisiana but also give them an appreciation for the land they live on and the region's natural areas.

Representatives from each organization have been working together to bring St. Mary Parish students to visit educational sites and hear from experts throughout the region, including:

1. Visiting the Center for River Studies in Baton Rouge; where students were given a tour of the physical model and the history of South Louisiana's river deltas,
2. Touring LaHouse on the LSU campus where students were introduced to innovative methods for home construction that make structures more efficient and resilient to harsh weather,
3. Visiting Burns Point in Bayou Sale Bay to participate in marsh grass planting to better protect the shoreline and reduce land loss, and
4. Hearing from coastal scientists and different types of engineers from local firms about potential career paths.

"I live in Stephensville, located near Morgan City, and I have an entire ecosystem in my backyard. I am fortunate enough to experience the beauty of my area every day but most of my peers, they do not have that same opportunity. The Atchafalaya Basin is home to the largest wetland in the United States and protection is vital to the growth of my town and the economy."

-Senior, Morgan City High School, 2019

PARTNER HIGHLIGHT: COASTAL TECHNICAL ASSISTANCE CENTER (CTAC)

CTAC is a program generated and funded through Louisiana Economic Development (LED) and CPRA and will be an important collaborator across several pilot projects outlined in this strategic plan. CTAC can assist with stakeholder outreach and engagement across coastal businesses, including gathering feedback on barriers and needs to ensure local input is incorporated into pilot implementation. CTAC can also help promote pilot outcomes and resources to coastal businesses through their newsletter, webinars, and direct outreach to strengthen adoption and visibility. Finally, CTAC is well-positioned to support ARCH by identifying coastal workforce development opportunities tied to the pilots and coordinating with local and regional partners like the Nicholls Coastal Center and others to align training or certification efforts as needed.

RIVERFRONT INDUSTRY PARTNERS PROGRAM

Industry and business leaders in St. Mary Parish have long supported the surrounding communities in many ways and will continue to do so into the future. Like many St. Mary Parish residents, business and industry leaders share concerns about "brain drain" due to population decline, reduced job opportunities, challenges related to housing stock, and the loss of cultural identity among young people in the region. These leaders are interested in working with ARCH as part of the Riverfront Industry Partners Program to help address some of these challenges and support a thriving future for St. Mary Parish. In developing the Riverfront Industry Partners Program, ARCH will be able to provide industry leaders and businesses in the parish with specific opportunities to demonstrate support for both ARCH and the future of Morgan City's Main Street in ways that are mutually beneficial. A build-out of this program should include 1) developing key goals and specific opportunities for industry and business leaders to get involved, and 2) establishing the systems, capacity, and materials needed to roll out the program—such as targeted marketing materials, a webpage, and sponsorship materials, organizing and hosting fundraising events, and developing donation tracking systems, charitable contribution documentation, and incentive and recognition systems (e.g., awards, annual reports, and other opportunities to recognize key supporters).

PILOT PROJECTS AND PROGRAMS

Figure 25. Paddlers in St. Mary Parish. Photo Source: Cajun Coast Tourism

RESEARCH FOCUS AREAS

St. Mary Parish stakeholders identified three research focus areas for ARCH to prioritize in the hub's first 6 years. These focus areas and their priority were determined by stakeholders during the strategic planning process by 1) discussing St. Mary Parish's unique shocks and stressors, and opportunities to increase resilience, 2) developing objectives for ARCH, 3) generating a list of potential pilot projects and programs aligned with ARCH's objectives, and 4) categorizing the pilot projects into their respective research focus areas. Stakeholders then collectively ranked the research focus areas according to alignment with ARCH objectives, and priorities for the community.

These areas, in order of priority are:

1 **Infrastructure Resilience**

2 **Economic Resilience**

3 **Ecosystem Resilience**

The nine pilot projects identified by the Parish and its stakeholders are described in this section, organized by their research focus area (summarized in Table 2).

Collectively, the set of pilot projects included in this strategy aim to help St. Mary Parish achieve its vision of a future in which the Atchafalaya Basin and other coastal communities facing similar challenges have the opportunities and resources necessary to strengthen their resilience and thrive in the face of economic and environmental challenges.

HOW TO READ A PILOT PROJECT

The nine pilot projects within this strategy are outlined following a consistent format, including the following:

PILOT PROJECT DESCRIPTION

The description paragraph for each pilot project explains the project in more detail as well as how it will help St. Mary Parish provide community benefits and enhance resilience to shocks and stressors.

TIMEFRAME

Each pilot project includes an implementation timeframe of near term (1–3 years), medium term (3–5 years), and long term (5–10 years) for when the project could be implemented by ARCH, according to the objectives and priorities outlined by stakeholders and decision-makers.

POTENTIAL PARTNERS

Each pilot project identifies key public, private, nonprofit, and academic collaborators that worked with the Strategy Development Team to develop the project descriptions and will be engaged in advancing the projects themselves. The specific partners listed are intended as a starting point for implementation, with the goal of identifying additional partners and stakeholders during the planning and implementation process.

ESTIMATED COST

Anticipated funds necessary for implementation of the pilot projects are included as rough order of magnitude costs (ROM) on a scale of $-$$$$, where "$" represents thousands, "$$" represents tens of thousands, "$$$" represents hundreds of thousands, and "$$$$" represents millions of US. Dollars.

POTENTIAL FUNDING MECHANISMS

While specific funding to support project pilots has not yet been secured, funding mechanisms that could be pursued are listed here. This includes potential grants, existing government budgets, potential private partnerships and philanthropic funds. Additional information about these funding mechanisms are provided in the Funding Mechanisms Glossary.

	TITLE	POTENTIAL FUNDING MECHANISMS	POTENTIAL PARTNERS	ESTIMATED TIME FRAME	ESTIMATED COST
INFRASTRUCTURE RESILIENCE	Promote resilient building and maintenance strategies • Community Training Program & "Living with Water" Education	Entergy, FEMA FMA, H&B Young Foundation, Shell, US EDA	LSU AgCenter/LaHouse, St. Mary Parish Chamber of Commerce, FORTIFIED Program, Local Banks, GOHSEP, State and Parish Emergency Preparedness, CRC, Association of Contractors, St. Mary Parish Municipal Planning and Zoning Directors, USACE (South Central Coast), LDWF	Near-term (1–3 years)	$$$
	• Green Stormwater Infrastructure Suitability Analysis and Implementation Pilot Projects	Entergy, LCDBG, LGAP, National Coastal Resilience Fund, Shell, US EDA	LSU School of Landscape Architecture, LSU Coastal Ecosystem Design Studio, Stormwater Modelers (Tulane or ULL), Local Engineering Partners, St. Mary Parish Schools	Near-term (1–3 years)	$$$
	Assess the status of energy capabilities and research energy opportunities for a more resilient power grid	CLECO, Direct Relief, Entergy, LSU Institute for Energy Innovation, Shell US EDA	LSU AgCenter, Local Energy and Utility Companies, St. Mary Parish Office of Economic Development, GOHSEP, Spotlight Solar, Inc	Medium-term (3–5 years)	$$$
	Identify opportunities and implementation pathways for beneficial use of sediment within St. Mary Parish	BOEM, CPRA, CWPPRA, Local Industry Partners, USACE, BUDMAT	Port of Morgan City, Local Industry Partners, Natrx, USACE, Tulane ByWater Institute, USGS, CPRA, Nicholls Coastal Center, Local Engineering Partners, LSU Coastal Ecosystem Design Studio, LSU Civil and Environmental Engineering	Medium-term (3–5 years)	$$$$
ECONOMIC RESILIENCE	Research opportunities for Riverfront Industry sustainability and expansion	BOEM, CLECO, Entergy, H&B Young Foundation , LCDBG, LMOGA, NAS-GRP, Norco, Shell	Riverfront Industry Partners, USCG, Nicholls Business Incubator, St. Mary Parish Schools	Medium-term (3–5 years)	$$$$
	Research solutions to address subsidence and support sustainable housing	FEMA FMA, LCDBG, St. Mary Parish Government, US EDA	LaHouse/LSU AgCenter, LSU School of Landscape Architecture, St. Mary Parish Chamber of Commerce, Local Banks, GOHSEP, State and Parish Emergency Preparedness, CRC, Association of Contractors, St. Mary Parish Municipal Planning and Zoning Directors, USACE (South Central Coast), LDWF, South Central Planning & Development Commission, LSU Coastal Ecosystem Design Studio, LSU Civil and Environmental Engineering	Near-term (1–3 years)	$$$
	Expand ecotourism opportunities through local research and training	Local Government, National Coastal Resilience Fund, Foundation for Louisiana, LAWFF, Sea Grant	Cajun Coast Tourism, LSU AgCenter/Department of Agricultural Economics and Agribusiness, St. Mary Parish Chamber of Commerce, SoLACC, St. Mary Parish Office of Economic Development, LDWF	Medium-term (3–5 years)	$$$
ECOSYSTEM RESILIENCE	Research ecosystem service potential in St. Mary Parish • Research how ecosystem protection measures can benefit local ecology and the economy • Research the ecosystem service value of local land and water	LAWFF, Local Government, National Coastal Resilience Fund, NOAA, Sea Grant Local Government, NOAA, State Government, Oil and Gas partners	LSU AgCenter/Department of Agricultural Economics and Agribusiness, LDWF, LA Sea Grant, Nicholls Coastal Center LSU AgCenter/Department of Agricultural Economics and Agribusiness, LSU Water Quality Extension Lab, The Water Institute, CPRA, Nicholls Coastal Center	Medium-term (3–5 years) Long-term (5–10) years)	$$$ $$$$
	Research the cause(s) of the decline in recreational fishing in the lower Atchafalaya Basin and potential solutions	NOAA, Sea Grant, USACE/TNC	St. Mary Parish Office of Economic Development, LSU AgCenter/ Department of Agricultural Economics and Agribusiness, ULL, LDWF, Louisiana Sea Grant, LUMCON, Local Landowners	Near-term (1–3 years)	$$
	Assess economic and ecological opportunities for expanding aquaculture for inland fisheries	Sea Grant, U.S. EDA, USDA	LSU AgCenter/Department of Agricultural Economics and Agribusiness, LDWF	Near-term (1–3 years)	$$$

Table 2. The matrix of Priority Pilot Projects provides a summary of the overall project, noting the key partners, potential funding mechanisms, projected timeframes, and relative costs. The relative costs are presented on scale of $-$$$$, where "$" represents thousands, "$$" represents tens of thousands, "$$$" represents hundreds of thousands, and "$$$$" represents millions of US. Dollars.

Acronyms: GOHSEP: Governor's Office of Homeland Security & Emergency Preparedness, CRC: Construction Resource Center, LDWF: Louisiana Department of Wildlife and Fisheries, ULL: University of Louisiana Lafayette, USGS: United States Geological Survey, SoLACC: South Louisiana Community College

INFRASTRUCTURE RESILIENCE

Figure 26. Shoreline protection along Lake Palourde, demonstrating how beneficial use of dredged material was used to protect Lake End Parkway and its infrastructure.

1 | PILOT PROJECT: PROMOTE RESILIENT BUILDING AND MAINTENANCE STRATEGIES

COMMUNITY TRAINING PROGRAM & "LIVING WITH WATER" EDUCATION

Description: Resilient building and maintenance strategies can mitigate the impacts of changing hazards on individuals, communities, and businesses, and help communities bounce back from disasters more quickly. St. Mary Parish and local stakeholders have highlighted the importance of supporting residents and small business owners in protecting their homes and buildings from intensifying hazards and extreme weather, and identified a need to develop and deliver educational materials and guides to help new and existing residents live with water more resiliently.

The future ARCH is well-positioned to collaborate with partners at the LSU AgCenter and LaHouse to support residents and business owners interested in strengthening their resilience. In collaboration with local and regional partners, ARCH will coordinate trainings for community members in St. Mary Parish focused on resilient building and maintenance practices—including building strategies that mitigate against hazards like flooding and high winds. Trainings will be built on an existing partnership with LSU AgCenter/LaHouse to educate residents about future flood risk, changes in land use, efficiency upgrades that can qualify for tax credits, and sustainable building features that can increase a home's appraisal value. This program will also provide trainings on FORTIFIED home designations and the impact they can have on insurance premiums. FORTIFIED is a voluntary construction and re-roofing program offered through the Louisiana Department of Insurance, designed to strengthen homes against severe weather events. Through this pilot program ARCH will organize, advertise, and host local events, and facilitate partnerships to bring technical knowledge about resilient and sustainable building practices to St. Mary Parish.

PARTNERS:

LSU AgCenter/LaHouse, St. Mary Parish Chamber of Commerce, FORTIFIED Program, Local Banks, GOHSEP, State and Parish Emergency Preparedness, CRC, Association of Contractors, St. Mary Parish Municipal Planning and Zoning Directors, USACE (South Central Coast), LDWF

FUNDING MECHANISMS:

Entergy, FEMA FMA, H&B Young Foundation, Shell, US EDA

TIMEFRAME: Near-term (1–3 years)

RELATIVE COST: $$

CASE STUDY: LAHOUSE

Figure 27. LaHouse Home and Landscape Resource Center is an educational exhibit house, landscape and outreach program at LSU AgCenter. LaHouse is located on the LSU campus in Baton Rouge and provides acccess to research-based building and maintenance solutions to the challenges of the Gulf region's climate and natural hazards. Photo Credit: LSU AgCenter

LaHouse, a research and education program through the LSU AgCenter, has resources, fact sheets, online information, and community-facing extension materials that ARCH can leverage to support residents in living with water more resiliently. Working in partnership, there are opportunities for ARCH and LaHouse to co-identify where resource gaps exist for St. Mary Parish and work to fill those gaps with location-specific educational materials that help residents reduce their vulnerability to hazards.

Learn more at: https://www.lsuagcenter.com/topics/family_home/home/lahouse

GREEN STORMWATER INFRASTRUCTURE SUITABILITY ANALYSIS AND IMPLEMENTATION PILOT PROJECTS

Description: St. Mary Parish has been experiencing more frequent and severe local flooding from tropical weather and extreme rainfall events. According to residents, streets that once drained without issue are often now completely flooded during these events. In 2014, the City of Morgan City identified a number of floodplain management and flood damage prevention strategies as part of its Unified Development Code. These codes call out specific methods of reducing flood losses like controlling filling, grading dredging, and other developments that may increase flood risk, as well as methods for controlling the alteration of natural floodplains, stream channels, and natural protective barriers involved in the accommodation of floodwater. The code also notes that any new development should be protected against flood damage at the time of initial construction.[26]

With increased impervious cover resulting from development, there is a critical need for creative stormwater management interventions across the parish. Green stormwater infrastructure (GSI), when paired with grey stormwater infrastructure can help mitigate flooding from extreme rainfall events and provide multiple benefits for communities. ARCH can serve as a connector between university partners—potentially including summer interns from LSU Coastal Ecosystem Design Studio, as well as nonprofit entities, local engineers, and decisionmakers— to pilot a coordinated system of effective green infrastructure interventions that complement and support existing hard infrastructure. These partners can work with ARCH to conduct suitability analyses for GSI interventions and implement GSI pilot projects that can be tested, monitored, and replicated or scaled. When planned strategically, GSI pilot project implementation can also create valuable opportunities for local youth education and training.

PARTNERS:

LSU School of Landscape Architecture, LSU Coastal Ecosystem Design Studio, Stormwater Modelers (Tulane or ULL), Local Engineering Partners, St. Mary Parish Schools

FUNDING MECHANISMS:

Entergy, LCDBG, LGAP, National Coastal Resilience Fund, Shell, US EDA

TIMEFRAME: Near-term (1–3 years)

RELATIVE COST: $$$

CASE STUDY: GROUNDWORK NEW ORLEANS

Figure 28. Rendering of green infrastructure demonstration site in the Lower 9th Ward neighborhood, New Orleans. Source: Groundwork New Orleans - Groundwork USA

Groundwork New Orleans is part of a national network of community-centered nonprofits that work to build more resilient neighborhoods by involving local youth to help foster a new generation of environmental leaders. The rendering below shows a green infrastructure demonstration site in the Lower 9th Ward neighborhood that Groundwork New Orleans is developing. It plans to feature a green roof, bioswale, pervious pavement, flow-through planters, rain barrels, and native plants. This project received grant funding from the New Orleans Sewerage and Water Board and contains plans for educational workshops and an environmental education program for high schoolers that teaches about green infrastructure and environmental stewardship.

Learn more at: https://groundworkusa.org/network/groundwork-new-orleans

2 | PILOT PROJECT: ASSESS THE STATUS OF ENERGY CAPABILITIES AND RESEARCH ENERGY OPPORTUNITIES FOR A MORE RESILIENT POWER GRID

Description: A resilient power grid is critical to the health and safety of a community, especially after a storm event when residents need immediate food, shelter, or medical care. A resilient power grid is also necessary for a community's ability to bounce back quickly after an extreme weather event. Small business owners, local government officials, public works employees, and other entities that provide essential services after an extreme weather event cannot operate at full capacity without a reliable power source. Hurricane Francine hit Louisiana's coast in 2024 and caused widespread power outages across the Gulf Coast—including in communities in St. Mary Parish. Prior to construction of the new electrical power plant in 2016, Morgan City utilized a backup diesel-powered generator to provide electricity when the primary feeder line was down. This generator has since been decommissioned, and extended power outages following recent storm events suggest a potential need to strengthen the existing energy grid in St. Mary Parish, upgrade or replace the backup generator system, and/or diversify energy sources through solar or other opportunities.

A research-focused pilot project exploring opportunities for a more resilient power grid would: identify critical pain points in the existing energy grid where storm hardening would increase network resilience; look into the possibility of using the municipal diesel plant for backup energy; explore opportunities for applying solar-powered energy solutions within St. Mary Parish; and examine the potential implementation of a hydropower plant powered by Wax Lake. The Wax Lake Outlet (south of the Highway 90 bridge) is an area that does not support commercial navigation and could potentially serve as a site for hydropower solutions.

For this prospective pilot project, ARCH would bring representatives from utility companies together with parish officials, researchers, and local stakeholders—including representatives from the hospital system, fire departments, and other critical facility managers—to identify locations where the energy grid is particularly vulnerable to flooding and other storm impacts. ARCH would also work with this group to map the cascading impacts of failures in the energy grid and identify potential impacts to critical and essential services in the parish, identify innovative solutions to strengthen the resilience of the existing energy grid, and explore backup energy sources that would allow for continued provision of critical and essential services following extreme weather events. This part of the project would explore concepts like Lily Pad Networks[27] and models similar to the community lighthouse model used in New Orleans[28] to produce commercial-scale solar power and back-up battery capacity and serve as resilience hubs in each of St. Mary Parish's municipalities during power outages.

PARTNERS:

LSU AgCenter, Local Energy and Utility Companies, St. Mary Parish Office of Economic Development, GOHSEP, Spotlight Solar, Inc

FUNDING MECHANISMS:

CLECO, Direct Relief, Entergy, LSU Institute for Energy Innovation, Shell, US EDA

TIMEFRAME: Medium-term (3–5 years)

RELATIVE COST: $$$

Figure 29. Researcher M.P. Hayes with a floating photovoltaic system at the LSU AgCenter research station in Hammond. Photo Source: Mason Marcantel

CASE STUDY: FLOATING PHOTOVOLTAIC (FPV) FOR RENEWABLE ENERGY (LSU AGCENTER)

LSU AgCenter has been studying floating photovoltaic (FPV) systems which produce solar energy in noneconomic waterbodies, including ponds used for industrial oxidation, municipal wastewater treatment and agricultural irrigation. The project is comparing the energy efficiency of water-cooled FPVs to generate renewable energy in communities. Phase I of the funding for this research was provided by the LSU Institute for Energy Innovation, which was established with a $25 million gift from Shell in 2022.[29]

CASE STUDY: NEW ORLEANS COMMUNITY LIGHTHOUSE MODEL

The New Orleans Community Lighthouse Project, organized by Together New Orleans, is a network of commercial-scale solar power and back-up battery capacity located within churches and community centers. Following any disaster, these lighthouses can assess needs and provide community support in the form of charging stations, food distribution, cooling and heating stations, oxygen exchange and light medical equipment. The initial pilot phase of 16 community lighthouses is underway, and when complete, every New Orleans resident will live within a 15-minute walk of one of 86 lighthouses. This effort is funded through federal funds, the Greater New Orleans Foundation, the City of New Orleans, Congressman Troy A. Carter, Sr., Caddo Parish, Baton Rouge Metropolitan Council, and Kresge Foundation and Direct Relief.

Learn more at: https://www.togethernola.org/community-lighthouse

3 | PILOT PROJECT: IDENTIFY OPPORTUNITIES AND IMPLEMENTATION PATHWAYS FOR BENEFICIAL USE OF SEDIMENT WITHIN ST. MARY PARISH

Description: Carrying the combined flow of the Red River and 30% of the Mississippi River, the Atchafalaya River serves as connective tissue for inland and coastal shipping routes. According to CPRA, modifications to the natural flow of the Atchafalaya River and adjacent swamps have caused sedimentation issues in the basin that threaten the ecosystem, navigation, flood control, and the communities that rely on the basin's natural and cultural resources. Along the channel in Morgan City, fluid mud can fill in at a rate of up to 3 feet per month in the bar channel,[30] and maintaining functioning navigation channels along the Atchafalaya requires frequent dredging. The Port of Morgan City (Port) is a leader in reusing dredged material—and has been reusing sediment in ways that provide varying levels of protection for landowners impacted by land loss from navigation. In 2023, ~16 million cubic yards of dredged material was beneficially used in Bayou Chene and on the west bank of the Atchafalaya River; creating land and providing significant environmental benefits. However, strategic beneficial use of dredged material is often limited by cost thresholds—with the Port of Morgan City funded to dispose of material derived from maintenance dredging of the navigation channel in the most cost-effective way, consistent with Federal economic, engineering, and environmental criteria. The Port, riverfront industry leaders, and others have expressed the need for a more strategic and system-wide approach for beneficial use of sediment throughout St. Mary Parish. Suggestions include using dredged material to adaptively manage river flow to better support navigation through a combination of open-water placement and bankline stabilization projects. Ideally, these projects would generate other co-benefits such as improved aquatic and wetland habitats. Beyond improving navigation, other options include exploring sediment placement for areas along the Atchafalaya River and Bayou Chene to protect key infrastructure and industry assets, implementing a smaller-scale, more localized sediment pipeline, and assessing opportunities for enhanced hurricane protection in the parish through modeling and damage calculations.

In addition to beneficially using sediment by moving dredged material for protection and restoration, there are other innovative sediment reuse projects—like Cajun Coral—that can be expanded to counter the impacts of bankline erosion within the shipping channel, while providing ecosystem benefits for fish and other marine life. Partners at Natrx have expressed interest in collaborating on research through public-private partnerships to support potential riverine applications of Cajun Coral that would provide multiple benefits (e.g., flow management, sediment stabilization, and ecological benefits)—noting that there may be opportunities for ARCH to support assessment of potential pilot sites throughout the delta, as well as future monitoring. To support future beneficial use projects in St. Mary Parish and prepare for implementing and evaluating these types of protection and restoration projects when funds become available, ARCH will serve as a coordinating body that will convene scientific researchers, residents, local stakeholders, the Port of Morgan City, Natrx, and other local partners to co-develop implementation-ready beneficial use projects that will maximize co-benefits for residents, infrastructure, and industry.

PARTNERS:

Port of Morgan City, Local Industry Partners, Natrx, USACE, Tulane ByWater Institute, USGS, CPRA, Nicholls Coastal Center, Local Engineering Partners, LSU Coastal Ecosystem Design Studio, LSU Civil and Environmental Engineering

FUNDING MECHANISMS:

BOEM, CPRA, CWPPRA, Local Industry Partners, USACE BUDMAT

TIMEFRAME: Medium-term (3–5 years)

RELATIVE COST: $$$$

Figure 30. The river island at Horseshoe Bend on the lower Atchafalaya River, Louisiana.

CASE STUDY: STRATEGIC SEDIMENT PLACEMENT-HORSESHOE BEND ISLAND, LOWER ATCHAFALAYA RIVER, LA

In the 1990s, USACE used nearby wetland development sites to place dredged sediment from Horseshoe Bend. When those areas filled up, they placed the dredged material directly into the river in carefully shaped piles (mounds) just upstream of a small island. This helped build up a new island over time, saved money on dredging, and improved navigation and the environment.

The new island, called Horseshoe Bend Island (Figure 30), now has four different types of habitats that support a wide range of plants, insects, birds, and other wildlife. It's mostly covered in native plants and even has more species and invertebrates than nearby natural islands as a result of this strategic and beneficial use of sediment.

Learn more at: https://ewn.erdc.dren.mil/built-projects/horseshoe-bend-island/

CASE STUDY: PARTNERSHIP FOR OUR WORKING COAST (POWC)

Recent work in Port Fourchon, Louisiana showed how dredge material could be used to construct natural and nature-based solutions that will generate multiple co-benefits for the Port, nearby communities, and the regional ecology.[31] To maximize co-benefits, Port Fourchon and its tenants worked directly with local landowners, recreational and commercial fishermen, representatives from local government, the local Sea Grant extension agent, and a group of modelers, geologists, and ecologists to conceptualize and construct natural and nature-based solutions with the material dredged by the port as it deepened its channels and slips to service larger vessels.

Learn more at: https://thewaterinstitute.org/projects/partnership-for-our-working-coast

ECONOMIC RESILIENCE

Figure 31. With the installation of new bike paths along stormwater infrastructure in Morgan City, St. Mary Parish is investing in infrastructure to support and expand ecotourism in the region. These trails connect residents to native plants and wildlife within the City.

1 | PILOT PROJECT: RESEARCH OPPORTUNITIES FOR RIVERFRONT INDUSTRY SUSTAINABILITY AND EXPANSION

Description: Oil and gas extraction and related activities have historically been a primary source of employment in St. Mary Parish. The expansion of offshore production in the latter half of the 20th century sustained regional economies, which drove urban growth across Louisiana's coastal zone. During this time, St. Mary Parish developed into a prominent hub for the offshore industry with an extensive network of onshore support infrastructure, including fabrication yards, shipyards, support bases, and terminals. However, as offshore drilling technology changed, fixed platforms were replaced by mobile deepwater drilling platforms, resulting in fewer total drilling platforms and some fabrication shifting to out-of-state locations. As a result, the parish now hosts a much-diminished platform fabrication industry and has lost much of the engineering base that existed when the oil and gas industry was thriving. In addition, industry and business leaders in the region have identified the lack of continuity of workers in St. Mary Parish, which can be a major inhibitor to innovation. These leaders also noted that the challenges the parish faces, like aging housing stock, contributes to the difficulty in retaining and attracting young people.

Despite these challenges, as St. Mary Parish is located in the only land-building area in Louisiana, the parish is increasingly recognized by industry as a safe harbor from tropical storms, often serving as a staging area for the oil and gas industry during major storm events. Local industry and business leaders have discussed how St. Mary Parish's strategic location could support industry expansion and increase sustainability of existing industry through public-private partnerships. ARCH could serve to connect industry, university researchers, business incubators, and other partners to identify and address opportunities to sustain and expand industry in the area. Some research and training opportunities ARCH could explore under this pilot project include:

- Modular construction: St. Mary Parish has recently emerged as a leader in modular construction, providing potential opportunities to create additional jobs up and down the supply chain (including transport). The location of the railroad might also be an asset to consider when researching opportunities for transporting materials.
- Construction of autonomous vessels: Evidenced by a recent $250 million investment in Franklin, Louisiana for production of these types of vessels. St. Mary Parish's access to the Atchafalaya makes it uniquely situated for the construction and testing of these vessels.
- Orphaned oil and gas infrastructure: Local representatives from the U.S. Coast Guard (USCG) have highlighted potential research opportunities that ARCH could coordinate to explore solutions that would address increased orphaning of oil and gas infrastructure. In St. Mary Parish, this type of orphaned infrastructure is not only a liability and a major risk to the health of water bodies, but also consumes USCG time as they are responsible for responding to this pollution.
- Youth training programs: Local Industry partners have identified a need for ARCH to act as a link between industry and students—both k–12 students and older students starting to make decisions about entering the workforce. Local industry already engages in partnerships with St. Mary Parish Schools through events like the Morgan City High School Welding Competition. There are opportunities to expand and build on these types of activities to provide high school students and students in the Nicholls Engineering Program with more exposure to local engineers through programs that interest young people and help keep St. Mary Parish students in the area after they attend college or trade school.

PARTNERS:

Riverfront Industry Partners, USCG, Nicholls Business Incubator, St. Mary Parish Schools

FUNDING MECHANISMS:

BOEM, CLECO, Entergy, H&B Young Foundation, LCDBG, LMOGA, NAS-GRP, Norco, Shell

TIMEFRAME: Medium-term (3–5 years)

RELATIVE COST: $$$$

Figure 32. Modular construction in St. Mary Parish. Photo Source: Gregory Guarisco (Guarisco Marketing)

CASE STUDY: ST. MARY PARISH'S ROLE AS A LEADER IN MODULAR CONSTRUCTION

St. Mary Parish has emerged as a leader in modular construction for liquefied natural gas (LNG) facilities; building modular structures to support LNG facilities across coastal Louisiana—from Calcasieu Parish to Plaquemines Parish.

CASE STUDY: MORGAN CITY HIGH SCHOOL WELDING COMPETITION

Figure 33. Morgan City High School Welding Competition (2025). Photo Source: New Industries LLC

Just as academic scholarships recognize students excelling in academic programs, the welding competition hosted by New Industries, LLC in Morgan City, provides a showcase for recognizing skilled welding craftsmanship, a highly sought talent in the fabrication industries of coastal Louisiana.

New Industries, LLC, along with its competition sponsorship partners, have led the region in recognizing craftsmanship of St. Mary Parish high school students enrolled in welding classes through a welding competition. The competition is in its inaugural years but has already met success through employment opportunities afforded to St. Mary Parish public school students. As part of the event, the students are provided with workforce employment information including opportunities for welding internships, part-time employment while still in school, and post high school full-time employment opportunities offered by the local fabrication industries.

2 | PILOT PROJECT: RESEARCH SOLUTIONS TO ADDRESS SUBSIDENCE AND SUPPORT SUSTAINABLE HOUSING

Figure 34. Home in St. Mary Parish with structural damage from subsidence.

Description: Safe and sustainable housing is a cornerstone for healthy, resilient communities that attract new residents and encourage young people to remain or to move back with their families and invest in their community. In St. Mary Parish, hazards such as subsidence (from forced drainage) and flooding (from extreme rainfall, boat wakes, and fluctuating canal water levels) have damaged roadways and building foundations, creating chronic stress and compromising safety for home and business owners (Figure 34). Acting as a connective and coordinating entity between geologists, local knowledge experts, and funding partners, ARCH will facilitate a research pilot project focused on measuring the impacts of subsidence, flooding, and canal water levels on built infrastructure. By determining the impacts of these hazards, ARCH can provide information on improvements that can be made to increase the resilience of residential and commercial buildings in St. Mary Parish. Highlighted below are opportunities for research that would advance this effort and potentially help save businesses and homeowners from costly rebuilds and repairs.

Subsidence: While the Atchafalaya Basin is one of the only places in Louisiana where sediment from the Mississippi River is still building new land above water, most of the mud and sand that has been building up is not very deep, and is loosely packed, resulting in subsidence. However, high-resolution subsidence data for many areas of St. Mary Parish are lacking, hindering the implementation of targeted subsidence mitigation and adaptation efforts. By connecting Atchafalaya communities with researchers from partner universities who could provide targeted high-resolution subsidence data, ARCH could help fill this knowledge gap, providing the necessary guidance on mitigating future damage from subsidence for homeowners and businesses.

Flooding: Proximity to water is part of St. Mary Parish's identity, however, this proximity can also result in costly damage to homes and businesses during extreme weather events as well as daily activities, such as vessel traffic and resulting wakes.

PARTNERS:

LaHouse/LSU AgCenter, LSU School of Landscape Architecture, St. Mary Parish Chamber of Commerce, Local Banks, GOHSEP, State and Parish Emergency Preparedness, CRC, Association of Contractors, St. Mary Parish Municipal Planning and Zoning Directors, USACE (South Central Coast), LDWF, South Central Planning & Development Commission, LSU Coastal Ecosystem Design Studio, LSU Civil and Environmental Engineering

FUNDING MECHANISMS:

FEMA FMA, LCDBG, St. Mary Parish Government, US EDA

TIMEFRAME: Near-term (1–3 years)

RELATIVE COST: $$$

CASE STUDY: PARAMETRIC INSURANCE PILOT IN FRANKLIN AND ST. MARY PARISH

In partnership with the City of Franklin, The Water Institute's Community Resilience Center led the early stages of a pilot project aimed at introducing parametric flood insurance—a type of insurance policy where rather than a conventional indemnity policy, pre-agreed payouts are triggered automatically if the parameter (such as specific wind speed) is met—for under-resourced residents in Franklin and St. Mary Parish. The 2-year initiative was designed to provide coverage to an estimated 1,000 to 3,000 families, with payouts ranging from $1,000 to $3,000 triggered by qualifying flood events. The broader goal was to assess the long-term feasibility of scaling parametric insurance models across coastal Louisiana.

Initial activities included convening local stakeholders such as the City of Franklin, St. Mary Parish, the St. Mary-Vermillion Community Action Agency, and other nonprofits and agencies—to co-design key elements of the pilot. These included eligibility criteria, coverage structure, policy ownership, and distribution strategies. The Water Institute and reinsurance partner Guy Carpenter also collaborated with local governments to ensure that flood risk pricing reflected the best available science by integrating advanced modeling and recent mitigation efforts.

The Center planned to evaluate the pilot's performance by collecting input from residents, municipal officials, nonprofit staff, and insurance professionals to assess effectiveness, feasibility, and perceptions of parametric insurance. Additionally, a 2-year working group was convened including state agencies, national insurance experts, and local organizations, to explore mechanisms for sustaining and expanding this model.

As of 2025, funding for this pilot has been placed on hold. However, this project made great progress and is implementation-ready if, and when, a funding source becomes available.

Learn more at: https://thewaterinstitute.org/crc/insurance-affordability-and-availability-focus-area

3 | PILOT PROJECT: EXPAND ECOTOURISM OPPORTUNITIES THROUGH LOCAL RESEARCH AND TRAINING

Description: Louisiana is nicknamed the "Sportsman's Paradise" because of the opportunities it offers to recreate among diverse landscapes and natural resources. St. Mary Parish is at the epicenter of the state's Cajun Coast with Morgan City considered the gateway to the Atchafalaya Basin. With close proximity to both the Atchafalaya River and the Gulf, communities within St. Mary Parish historically benefitted from commercial fishing and shrimping industries that were once the lifeblood of the local economy. Shrimping was an industry that was shared among different sub-communities within the Parish, but the expansion of the offshore petroleum industry and the migration and global competition of the seafood industry has meant that fishing and shrimping industries that once thrived in St. Mary Parish have largely been depleted.[32]

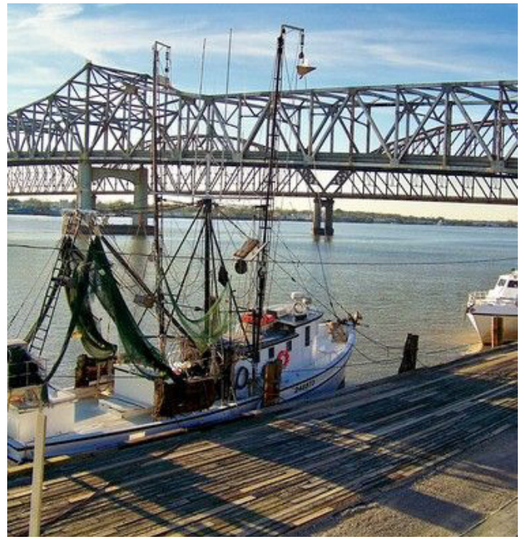


Figure 35. Shrimp boat in Berwick Bay.

While the industry may be diminished, some of the infrastructure that once supported the fishing and shrimping industries are still in existence (vessels, docks, trawling gear, etc.; Figure 35). St. Mary Parish leaders and residents—including young people and students—have discussed opportunities to build on the existing infrastructure to both strengthen ecotourism and revive a localized seafood industry. A pilot program to support ecotourism research and training has the potential to produce multiple benefits by bringing tourist dollars to the local economy through shrimp boat tours and excursions, supporting existing and future small business owners like boat captains and tour guides, preserving a cultural tradition that dates back to the early 20th century, and supporting education through field learning opportunities for students (local, regional, and from other parts of the U.S.). Reinvestment in Morgan City's historic Main Street will also play a significant role in creating the kind of infrastructure necessary to attract and accommodate larger numbers of visitors from both inside and outside of the region.

Working with Cajun Coast Tourism, ARCH will coordinate the distribution of a parish-wide survey to better understand the interest and capacity that St. Mary Parish residents have in expanding tourism opportunities. ARCH and Cajun Coast Tourism would then work together to develop and disseminate training materials to support capacity building workshops for local ecotour operators; providing critical information and resources related to licensing, insurance, safety, and marketing. There are also opportunities for research to support ecotourism expansion and sustainability. LSU Agricultural Economics researchers have experience and interest in leading research that seeks to understand how and where people choose to recreate (differentiating between local and out of state recreators), and this type of research has the ability to support Cajun Coast Tourism and the St. Mary Parish Chamber in making data-informed decisions about how and where to invest resources in ecotourism throughout St. Mary Parish.

PARTNERS:

Cajun Coast Tourism, LSU AgCenter/ Department of Agricultural Economics and Agribusiness, St. Mary Parish Chamber of Commerce, SoLACC, St. Mary Parish Office of Economic Development, LDWF

FUNDING MECHANISMS:

Local Government, National Coastal Resilience Fund, Foundation for Louisiana, LAWFF

TIMEFRAME: Medium term (3–5 years)

RELATIVE COST: $$$

Figure 36. Fisherman at Lake End Park. Photo Source: Cajun Coast Tourism

ECOSYSTEM RESILIENCE

Figure 37. Sunset on Lake Palourde in St. Mary Parish. Photo Credit: Bonnie C. Marquette

1 PILOT PROJECT: RESEARCH ECOSYSTEM SERVICE POTENTIAL IN ST. MARY PARISH

RESEARCH HOW ECOSYSTEM PROTECTION MEASURES (E.G.,WATER HYACINTH REMOVAL AND ALTERNATIVE USES) CAN BENEFIT LOCAL ECOLOGY AND THE ECONOMY

Description: Water hyacinth (*Pontederia crassipes*, also referred to as *Eichhornia crassipes*) is an invasive plant species that has caused severe environmental degradation and is an economic burden in many areas across many sub-tropical regions in the U.S. Native to the Amazon, water hyacinth invades freshwater waterways, reduces biodiversity, and negatively impacts water quality by displacing native species (Figure 39). Several waterways throughout St. Mary Parish, including Bayou Teche, have been impacted by dense water hyacinth colonies that crowd out native species. In 2021, Louisiana Department of Wildlife and Fisheries (LDWF) released an Aquatic Vegetation Control Plan for Bayou Teche that partially focused on water hyacinth removal—detailing past control measures and outlining recommendations for future management.[33] However, due to the high costs of manual removal, standard management often involves spraying herbicide which can have impacts on water quality and does not consider potential alternative uses like livestock feed and biofertilizers.[34]

Agricultural economics researchers at LSU AgCenter have experience using economic models to assess how people value water quality improvement through changes in housing prices and recreational decisions, including research that specifically examines how invasive species impact housing prices. Acting as a coordinating entity and leveraging local economic and ecological data available through LDWF, ARCH will work alongside partners to co-develop a scope for a pilot project focused on measuring the ecological and economic benefits of water hyacinth removal and removal of other invasives and exploring local alternative uses.

PARTNERS:

LSU AgCenter/ Department of Agricultural Economics and Agribusiness, LDWF, SeaGrant, Nicholls Coastal Center

FUNDING MECHANISMS:

LAWFF, Local Government, National Coastal Resilience Fund, NOAA, Sea Grant

TIMEFRAME: Medium-term (3-5 years)

RELATIVE COST: $$$

CASE STUDY: CAJUN CORAL

Figure 38. Cajun Coral, which provides habitat and supports productive marine life for fishing communities, can be customized for different types of water bodies and navigation needs.

Cajun Coral is an artificial reef that is being used to mitigate habitat loss, while functioning as a fishery habitat. Cajun Coral has been implemented in Terrebonne Bay and was built to avoid disruption to navigating channels. Some Cajun Coral reefs are made with cement balls or pyramids, while others feature recycled oyster shells crammed into stackable cages. Cajun Coral has been customized for a variety of uses but has primarily been implemented in estuarine environments. Coastal engineers at Natrx have highlighted an interest in collaborative research with ARCH that could support placement of Cajun Coral in riverine environments.

RESEARCH THE ECOSYSTEM SERVICE VALUE OF LOCAL LAND AND WATER

Description: The economy of St. Mary Parish is heavily dependent on its natural habitats and resources, including its navigable waterways, wetlands, and agricultural land. While each of these landscapes and ecological regimes can generate direct economic benefits for the parish, healthy ecosystems also generate a wide range of ecosystem services such as improved water quality, air quality, soil stabilization, and enhanced ecosystem functions.[35] Other ecosystem service values are directly related to the benefits of flood protection, such as water retention and storm surge reduction. In St. Mary Parish, like most of coastal Louisiana, the economy and local culture are also heavily tied to the consumptive and recreational use of coastal ecosystems for hunting and fishing. Finally, the ecosystems in St. Mary Parish have the potential to generate monetary credits to offset an emission made elsewhere, including carbon, nitrogen, and phosphorus credits (referred to as blue carbon credits). Similar efforts evaluating the potential revenue that could be generated through the creation or enhancement of coastal marshes through the potential sale of blue carbon have been conducted in other areas of coastal Louisiana, including in the Barataria Basin area of Port Fourchon.

Assessing the social, ecological, and economic costs and benefits of each of these ecosystem services requires data and information collected from a wide range of experts, including the local and traditional knowledge of residents. ARCH will convene these experts and other relevant partners to assess opportunities for data collection and ecosystem service valuation research, and subsequently identify funding mechanisms to support pilot project scoping, proposal development, and execution.

PARTNERS:

LSU AgCenter/ Department of Agricultural Economics and Agribusiness, LSU Water Quality Extension Lab, The Water Institute, CPRA, Nicholls Coastal Center

FUNDING MECHANISMS:

Local Government, NOAA, oil and gas partners, State Government

TIMEFRAME: Long-term (5–10 years)

RELATIVE COST: $$$$

CASE STUDY: CONVERTING WATER HYACINTH TO COMPOSTABLE FIBER

Figure 39. Invasive water hyacinth in a Louisiana swamp.

Cynthia Louisiana LLC, in collaboration with the LDWF, established its inaugural operational pilot site in Gibson, Louisiana in 2024. The facility processes water hyacinth (Figure 39) into a versatile fiber, which reduces its negative environmental and social impacts and creates employment opportunities for local residents.[36]

2 PILOT PROJECT: RESEARCH THE CAUSE(S) OF THE DECLINE IN RECREATIONAL FISHING IN THE LOWER ATCHAFALAYA BASIN AND POTENTIAL SOLUTIONS

Description: The lower Atchafalaya Basin has long been a popular destination for people to enjoy kayaking, canoeing, and recreational fishing among both hardwood cypress swamp and coastal marsh. However, in the first two decades of the 21st century, Louisiana has experienced a 40% decline in commercial freshwater finfish fishermen.[31] Some causes of this decline include increases in the cost of gear needed to catch finfish like hoop nets and grill nets and the negative impacts to fishing from invasive aquatic species like Asian carp and apple snails.[37] In addition to the documented decline in commercial freshwater finfish fishermen, residents of St. Mary Parish have noticed a decline in the amount of recreational fishing taking place in Bayou Teche and other local waterways over this same period. A 2023 LDWF report highlights key concerns regarding Atchafalaya Basin fishing, noting that channel training and dredging has disrupted the river's flow, contributing to loss of deep-water habitats critical for fisheries.[38] There has also been a reduction in public access due to the enforcement of trespassing laws on flooded private land reducing fishing access, particularly in private canals. Aquatic vegetation overgrowth also affects fishing in the area with problematic invasive aquatic plant species.[39]

Working with researchers involved with the Louisiana Fisheries Forward (LFF) program through LSU AgCenter, social scientists from the Blanco Center at ULL, Louisiana Sea Grant, LDWF,[40,41] and local landowners, ARCH will serve as the coordinating body to support a pilot project to collect local and traditional knowledge from fishers, residents, and local stakeholders in order to identify community based solutions for fishery habitat improvement. ARCH will also research flow management regimes for local ecological and fishery benefits. Finally, ARCH can work with these stakeholders to develop education materials to communicate key aspects of the project to residents from St. Mary Parish and beyond.

PARTNERS:

St. Mary Parish Office of Economic Development, LSU AgCenter/ Department of Agricultural Economics and Agribusiness, ULL, LDWF, Louisiana Sea Grant, LUMCON, Local Landowners

FUNDING MECHANISMS:

NOAA, NOAA Sea Grant, USACE/TNC Sustainable Rivers Program

TIMEFRAME: Near-term (1–3 years)

RELATIVE COST: $$

3 PILOT PROJECT: ASSESS ECONOMIC AND ECOLOGICAL OPPORTUNITIES FOR EXPANDING AQUACULTURE FOR INLAND FISHERIES

Description: In 2023, aquaculture and wildlife enterprises generated almost $13.5 million in St. Mary Parish. However, shrimpers in the parish are becoming increasingly concerned about the future of the shrimping industry as a result of seafood imports—nearly 800,000 metric tons were imported from other countries in 2023[42]—and the high cost of fuel, ice, and other provisions necessary to go out shrimping.[43] To expand and diversify the fisheries industry in St. Mary Parish, there is an opportunity to assess the potential ecological and economic impacts of inland commercial aquaculture. To avoid any disruption or unintended competition to the existing commercial fisheries industry near the coastline, this research would explore opportunities for expanding inland freshwater fisheries. For this effort, ARCH would serve as a connector between St. Mary Parish government officials (including the Office of Economic Development), university research partners, and local partners in the aquaculture and seafood industry to assess opportunities for expanding aquaculture that ensures economic benefit without disrupting the existing seafood industry.

PARTNERS:

LSU AgCenter/ Department of Agricultural Economics and Agribusiness, LDWF

FUNDING MECHANISMS:

Sea Grant, U.S. EDA, USDA

TIMEFRAME: Near-term (1–3 years)

RELATIVE COST: $$$

CASE STUDY: ATLANTIC SAPPHIRE BLUEHOUSE SALMON

Atlantic Sapphire is an inland aquaculture company based in South Florida, pioneering sustainable, land-based fish farming through its "Bluehouse" Salmon products. Located in Homestead, FL, the "Bluehouse" facility uses naturally purified water drawn from the Floridan Aquifer and recycles 99% of the water it uses. Treated wastewater is safely injected 3,000 feet underground into the subsurface.

The company aims to produce over 200,000 tons of sushi-grade salmon by 2031. These salmon are raised without antibiotics, in water free from mercury and microplastics, using a state-of-the-art recirculating aquaculture system (RAS). This system is purified through advanced filtration to maintain ideal water chemistry, temperature, and salinity for healthy fish growth.

Atlantic Sapphire has also partnered with feed nutrition company Skretting to innovate sustainable salmon feed. Its products are available at Publix grocery stores.

Learn more at: https://atlanticsapphire.com/

GLOSSARY

Basin: An area of land where surface water from precipitation drains into a single point, such as a lake, river, or ocean.

Beneficial use of dredged material: Reusing dredged sediment for productive purposes (e.g. flood protection or ecosystem restoration) rather than disposing of it as waste.

Compound flooding: When different types of flooding occur at the same time—for example, when heavy rain falls during a coastal storm—resulting in flooding from both coastal storm surge and waves as well as from riverine or stormwater flooding.

Delta: A landform created by the deposition of sediment at the mouth of a river where it flows into a larger body of water.

Ecosystem services: Goods or services provided by the natural environment to people.

FORTIFIED: A voluntary construction and re-roofing program offered through the Louisiana Department of Insurance, designed to strengthen homes against severe weather events.

Green stormwater infrastructure (GSI): Infrastructure replicating natural environments, such as permeable pavement, or bioswales, that can help mitigate against the impacts of flooding during and after storm events.

One hundred year flood event: a flood event with a 1% chance of occurring or being exceeded in any given year.

Rainfall flooding: Freshwater flooding that occurs as a result of heavy precipitation events.

Relative Sea Level Rise: the change in sea level at a specific location relative to the elevation of the land it borders.

Risk: A combination of the likelihood of a hazard; exposure and vulnerability of people, assets, or ecosystems to that hazard; and negative impacts from the hazard.

Riverine flooding: Also known as fluvial flooding, is when water in rivers, creeks, or canals overtop their banks.

Shock: A sudden, extreme event that threatens a community.

Stressor: A long-term pressure that weakens the fabric of a community over time.

Structured Decision Making (SDM): A decision making approach rooted in best practices from the decision sciences that allows groups to work collaboratively to clarify objectives, identify creative alternatives, and evaluate how well different objectives are satisfied by different alternatives. The SDM process takes a methodical, stepwise approach to complex decision-making.

Subsidence: The lowering of the Earth's land surface that can be caused by a variety of natural or human-induced processes.

Suitability analysis: A process used to determine the best locations for a specific purpose based on defined criteria.

Vulnerability: The tendency for an asset to be adversely affected if one or more hazards were to occur.

FUNDING MECHANISMS GLOSSARY

This section contains potential funding mechanisms for the pilot projects outlined in this strategic plan document. Each funding source contains a description, a list of pilots that could potentially qualify, and additional information and links where applicable. The abbreviations for each pilot project category are as follows:

Pilot Project Category	Abbreviation
Infrastructure Resilience	IN
Economic Resilience	EC
Ecosystem Resilience	ES

BUREAU OF OCEAN ENERGY MANAGEMENT (BOEM)

The Bureau of Ocean Energy Management (BOEM) is responsible for managing the development of U.S. Outer Continental Shelf (OCS) energy, mineral, and geological resources in an environmentally and economically responsible way. BOEM's Environmental Studies Program (ESP) develops, funds, and manages rigorous scientific research specifically to inform policy decisions on the development of energy and mineral resources on the OCS, as required by law. This environmental and social science research is designed to provide BOEM the necessary information to assess, predict, monitor, and manage potential environmental impacts of the activities it authorizes. Depending on funding availability BOEM may solicit study ideas for consideration in their 2-year planning cycle.

Pilots that could qualify: IN3, EC1

More info: https://www.boem.gov/

CLECO CORPORATE GIVING

Cleco supports Louisiana nonprofits aligned with its impact priorities—STEM (science, technology, engineering, and math) education, youth, health and wellness, low-income, diversity, and employee-supported causes. Nonprofits should register at least 8 weeks before funding is needed.

Pilots that could qualify: IN2, EC1

More info: https://www.cleco.com/community/corporate-giving

COASTAL PROTECTION AND RESTORATION AUTHORITY (CPRA)

The CPRA is established as the single Louisiana state entity with authority to articulate a clear statement of priorities and to focus development and implementation efforts to achieve comprehensive coastal protection for Louisiana. CPRA's mandate is to develop, implement, and enforce a comprehensive coastal protection and restoration Master Plan. This Coastal Master Plan (CMP) is updated every 6 years. As part of this process CPRA holds "New Project Solicitation Periods", where members of the public are encouraged to provide project ideas to reduce land loss and/or storm surge-based flood risk in coastal Louisiana.

Pilots that could quality: IN3

More info: https://coastal.la.gov/our-plan/2029-coastal-master-plan/

COASTAL WETLANDS PLANNING, PROTECTION, AND RESTORATION ACT (CWPPRA)

The Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) provides funding for projects that restore and protect coastal wetlands in Louisiana. Funding is primarily from the Sport Fish Restoration and Boating Safety Trust Fund and administered by the U.S. Army Corps of Engineers, New Orleans District. Local stakeholders can propose projects through Regional Planning Team (RPT) meetings and must have local support and align with the Louisiana Coastal Master Plan.

Pilots that could qualify: IN3

More info: https://www.mvn.usace.army.mil/Missions/Environmental/CWPPRA/

DIRECT RELIEF POWER FOR HEALTH INITIATIVE

Direct Relief's Power for Health Initiative seeks to bring clean, renewable backup power to community health centers and free clinics to ensure they can deliver critical healthcare services during power outages. The initiative provides grants to these centers and clinics for the installation of off-grid, renewable, reliable power systems, improving resiliency and continuity of care for critical health services in vulnerable communities.

Pilots that could qualify: IN2

More Info: https://www.directrelief.org/issue/resilient-power/

ENTERGY OPEN GRANTS PROGRAM

Supports community-wide initiatives in key areas: arts & culture, education & workforce development, poverty solutions & social services, healthy families, and community improvement/enrichment. Applications are accepted year-round and must be submitted at least 3 months before funds are needed.

Pilots that could qualify: IN1, IN2, EC1

More info: https://www.entergy.com/communities/open-grants

FEMA FLOOD MITIGATION ASSISTANCE (FMA)

This competitive grant program helps state, local, territorial, and tribal governments reduce repetitive flood damage to National Flood Insurance Program (NFIP)-insured structures. Funds support projects like home elevations, buyouts, local flood control, and technical planning.

Pilots that could qualify: IN1, EC2

More info: https://www.fema.gov/grants/mitigation/learn/flood-mitigation-assistance

FOUNDATION FOR LOUISIANA

Foundation for Louisiana (FFL) has invested $60 million in more than 260 mission-critical nonprofit organizations working across the state towards building a more just Louisiana. FFL provides by-invitation grantmaking in their key focus areas.

Pilots that could qualify: EC3

More info: https://www.foundationforlouisiana.org/what-we-do/

H&B YOUNG FOUNDATION

The H&B Young Foundation is a charitable organization based in Morgan City whose board is required to give at least 5% of its assets, which encompass land and money. It gives to St. Mary Outreach and other organizations, as well as Morgan City public and private schools.

Pilots that could qualify: IN1, EC1

LOUISIANA BLUE IMPACT GRANT

Provides up to $100K for 501(c)(3) nonprofits improving health and wellbeing. Focuses on measurable impact, capacity building, and community needs. Requires Letter of Intent (LOI) before full proposal.

Pilots that could qualify: IN2

More info: https://labluefoundation.org/wp-content/uploads/2025/02/Impact-Grant-RFP.pdf

LOUISIANA COMMUNITY DEVELOPMENT BLOCK GRANT (LCDBG) ECONOMIC DEVELOPMENT PROGRAM

Offers grants for infrastructure improvements tied to business development in low-income communities. Requires job creation, public-private match, and compliance with federal regulations.

Pilots that could qualify: EC1, EC2

More info: https://www.doa.la.gov/doa/ocd-lga/cdbg-and-cdbg-cv/lcdbg-programs/economic-development/

LCDBG PUBLIC FACILITIES PROGRAM

Provides infrastructure funding to small communities for sewer, water, and street improvements benefiting low- to moderate-income residents. Includes a competitive two-phase application process.

Pilots that could qualify : IN1, EC2

More info: https://www.doa.la.gov/doa/ocd-lga/cdbg-and-cdbg-cv/lcdbg-programs/public-facilities/

LOCAL GOVERNMENT ASSISTANCE PROGRAM AND COMMUNITY WATER ENRICHMENT FUND (LGAP & CWEF) PROGRAMS

State-funded grants for municipal/parish projects like water, sewer, drainage, or safety facilities. Provides up to $300K–$350K per parish; applications open Nov–Feb annually.

Pilots that could qualify: IN1

More info: https://www.doa.la.gov/doa/ocd-lga/lgap-and-cwef-programs/

LOUISIANA MID-CONTINENT OIL AND GAS ASSOCIATION (LMOGA)

LMOGA promotes and represents the oil and gas industry operating in Louisiana and the Gulf of Mexico. LMOGA engages with lawmakers, community leaders, and the public to highlight the industry's importance and promote its role in Louisiana's future. LMOGA members have also directly funded and implemented various coastal restoration projects in partnership with organizations like Ducks Unlimited and America's Wetland Foundation.

Pilots that could qualify: EC1

More info: https://www.lmoga.com/

LOUISIANA STATE UNIVERSITY INSTITUTE FOR ENERGY INNOVATION

The Institute for Energy Innovation aims to enable researchers to tackle complex energy challenges from multifaceted perspectives: engineering, chemistry, environmental science, geology, coastal science, economics, public administration, mass communication, policy analysis, law and more. By working collaboratively across disciplines, the institute can generate innovative solutions that effectively address the most pressing energy issues of our time. The institute is currently funding two categories of projects: short-term synthesis projects based on existing data and long-term research and development projects to produce new data and test, develop and demonstrate experimental technologies.

Pilots that could qualify: IN2

More info: https://www.lsu.edu/energy-innovation/research/index.php

LOUISIANA WILDLIFE AND FISHERIES FOUNDATION (LAWFF)

Louisiana Wildlife and Fisheries Foundation's (LAWFF) mission is to enhance and encourage public enjoyment and use of the wildlife and fisheries resources in this state. With this mission, they promote, develop, and expand the Louisiana Department of Wildlife and Fisheries (LDWF) in youth recruitment, environmental education and training, and habitat conservation.

Pilots that could qualify: EC3, ES1

More info: https://www.lawff.org/

NATIONAL COASTAL RESILIENCE FUND

The National Coastal Resilience Fund is a partnership between the National Fish and Wildlife Foundation and NOAA to enhance fish and wildlife habitat and protect coastal communities. The focus for these projects is on restoring, increasing, and strengthening natural infrastructure to protect communities while also enhancing habitats for fish and wildlife.

Pilots that could qualify: IN1, EC3, ES1

More info: https://coast.noaa.gov/funding/bil/ncrf/overview.html

NATIONAL ACADEMY OF SCIENCES GULF RESEARCH PROGRAM (NAS-GRP)

The National Academies of Sciences, Engineering, and Medicine's Gulf Research Program aims to contribute to the development of a prepared workforce and to increase the scientific literacy of the Gulf States residents who will become the skilled leaders and professionals of tomorrow. The NAS-GRP provides funding opportunities for research and training in Gulf Offshore Energy and Safety.

Pilots that could qualify: EC1

More info: https://www.nationalacademies.org/gulf/fellowships-and-grants

NOAA TRANSFORMATIONAL HABITAT RESTORATION & COASTAL RESILIENCE GRANTS

Provides awards ranging from $750,000 to $10 million, to fund large-scale projects that restore coastal and Great Lakes habitats, boost fisheries, support endangered species, and build climate resilience. Eligible activities include wetland restoration, living shorelines, dam removal, and coral outplanting.

Pilots that could qualify: ES1, ES2

More info: https://www.fisheries.noaa.gov/grant/transformational-habitat-restoration-and-coastal-resilience-grants

NOAA SEA GRANT

Sea Grant provides a variety of funding opportunities based on its work in four focus areas: Healthy Coastal Ecosystems, Sustainable Fisheries and Aquaculture, Resilient Coastal Communities and Economies, and Environmental Literacy and Workforce Development. Funding opportunities include National Strategic Investments, Special Projects, focused opportunities through each of the 34 Sea Grant programs, and more.

Pilots that could qualify: EC3, ES1, ES2, ES3

More info: https://seagrant.noaa.gov/inside-sea-grant/

NORCO ECONOMIC DEVELOPMENT FUND

Grants of $10,000–$50,000 for initiatives that strengthen local businesses, workforce training, community events, and industry–program collaboration.

Pilots that could qualify : EC1

More info: https://www.gnof.org/program/norco-community-and-economic-development-funds/

SHELL OIL COMPANY

Shell will partner with local, regional and national organizations to build collaborations that foster change for individuals and communities. Their goals include cultivating economic growth, helping build community resilience, and strengthening relationships with customers.

PILOTS THAT COULD QUALIFY: IN1, IN2, EC1

More info: https://www.shell.us/about-us/sustainability/people-and-communities/partnering-in-communities.html

U.S. ARMY CORPS OF ENGINEERS (USACE) BENEFICIAL USE OF DREDGED MATERIAL (BUDMAT)

The LCA Beneficial Use of Dredged Material (BUDMAT) Program objective is to cost effectively increase the beneficial use of material dredged from federally maintained waterways at a total cost of $100 million over a ten year period. Implementation of the LCA BUDMAT Program is authorized by the Water Resources Development Act (WRDA) of 2007 - Section 7006(d) within the Louisiana Coastal Area Program. The BUDMAT Goal is to use federal maintenance dredged material to restore, and/or create coastal landscape features using a synergistic approach to ecosystem performance, flood risk reduction, and navigation. Construction of BUDMAT activities is cost shared at 75% Federal.

Pilots that could qualify: IN3

More info: https://www.mvn.usace.army.mil/Missions/Environmental/Louisiana-Coastal-Area/Beneficial-Use-of-Dredged-Material/

USACE/THE NATURE CONSERVANCY SUSTAINABLE RIVERS PROGRAM (SRP)

A collaborative effort between USACE and The Nature Conservancy, the Sustainable Rivers Program (SRP) aims to find more sustainable ways to manage river infrastructure to optimize benefits for people and nature. Now known as the Sustainable Rivers Program (SRP), this collaboration has grown from eight rivers in 2002 to 44 rivers in 2022, influencing 12,079 miles of U.S. waterways and including 90 associated reservoirs and dams. The SRP focuses on determining environmental flow requirements for rivers and then creating operating plans for dams that incorporate these flows.

Pilots that could qualify: ES2

More info: https://www.nature.org/en-us/what-we-do/our-priorities/protect-water-and-land/land-and-water-stories/sustainable-rivers-project/

U.S. DEPARTMENT OF AGRICULTURE, NATIONAL INSTITUTE OF FOOD AND AGRICULTURE (NIFA)

The Special Research Grants Program (SRGP) for Aquaculture Research, administered by the USDA's National Institute of Food and Agriculture (NIFA), funds projects focused on addressing major constraints to the U.S. aquaculture industry. These projects should focus on areas like genetics of commercial aquaculture species, disease management, and efficient farming system design. Applications are submitted through Grants.gov.

Pilots that could qualify: ES3

More info: https://www.nifa.usda.gov/grants/programs/animal-programs/aquaculture

U.S. ECONOMIC DEVELOPMENT ADMINISTRATION (EDA) DISASTER SUPPLEMENTAL GRANT PROGRAM

This initiative provides approximately $1.45 billion to support economic recovery in communities hit by major disasters in 2023–2024. Grants are available through three tailored pathways: Readiness: Non-construction grants ($250K–$500K) for planning, strategy, capacity building, and preparation. Implementation: Construction and non-construction grants ($100K–$20M) to rebuild infrastructure and drive economic growth. Industry Transformation: Coalition-led economic development portfolios ($20M–$50M) to fundamentally transform regional economies through industry development. Applications for Readiness and Implementation are rolling until funds run out; Industry Transformation proposals are due March 3, 2026, 5 pm ET. Projects must benefit regions under FEMA-declared major disasters (2023–2024) and align with EDA's economic recovery and resilience objectives.

Pilots that could qualify :IN1, EC2, ES3

More info: https://www.eda.gov/strategic-initiatives/disaster-recovery/supplemental/2025

ARCH FY2025–2026 WORKPLAN TEMPLATE

Focus: Build ARCH's foundation through legal formation, interim operations, visibility, and resource development

Lead Implementer: St. Mary Excel and Partners

Constraints: Limited funding; emphasis on 501(c)(3) formation, securing a temporary hub space, and raising startup funds

Objective	Key Activities (FY25–26)	Timeline	Lead	Resources Needed	Indicators of Success
1. Establish ARCH as a legal entity	• Finalize and submit 501(c)(3) application • Draft bylaws and governance policies • Assemble initial governing board (6–8 members)	Q1–Q2	St. Mary Excel Legal counsel	Legal support Board recruitment	501(c)(3) status approved Board actively meeting
2. Secure a temporary operational space	• Evaluate options: lease space or dock a vessel • Select and set up temporary HQ • Conduct initial internal and public meetings	Q2–Q3	St. Mary Excel	Facility leads Startup funds Permits	Temporary space functional 3+ stakeholder meetings hosted
3. Develop visibility and brand identity	• Build brand guidelines • Launch simple website and social media • Table at community events and regional conferences	Q2–Q4	Communications contractor	Design/web tools Event fees	Website live Social media active Participation in 5+ events
4. Build organizational capacity	• Hire Executive Director to support planning and coordination • Bring on short-term communications contractor • Develop staff/board onboarding materials	Q2–Q3	St. Mary Excel	Hiring budget HR tools	Staff in place Outreach activities underway
5. Secure funding through grants and partnerships	• Identify and prioritize funding opportunities (NOAA, FEMA, foundations, etc.) • Submit 3–5 small-to-mid-scale grant proposals • Cultivate local and industry partners for sponsorship and donations	Q1–Q4	St. Mary Excel Board Partners	Grant writers Leads Templates	3+ proposals submitted At least one award or pledge secured Fundraising goal met (customizable)
6. Cultivate research and pilot project partnerships	• Convene discussions with LUMCON, LSU, NGOs, and others • Identify 1–2 near-term pilot projects to scope • Align partnerships with grant opportunities	Q3–Q4	St. Mary Excel Advisors Board Partners	Meeting facilitation Partner time	2+ pilot projects scoped MOUs/LOIs in development

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ATCHAFALAYA
RIVER COASTAL HUB