Executive Summary

Louisiana Coastal Protection and Restoration Authority Fiscal Year Annual Plan

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Louisiana has initiated a bold new direction for protecting and restoring the largest expanse of coastal wetlands in the lower 48 states.

Source: Library of Congress

Since the 1930s, approximately 2,300 square miles of wetlands in coastal Louisiana have been lost.

Integrated Solutions

The Louisiana coast is a significant component of our overall national security, economy, and natural resources. In addition to being home to approximately half of the state's population, it supports a vibrant array of nationally significant commercial and industrial activities, and provides habitat for diverse fish and wildlife species. Yet long-term sustainability of Louisiana's precious coastal resources is greatly threatened. Approximately 2,300 square miles of wetlands in coastal Louisiana have converted to open water, exposing coastal Louisiana to increased flood risk from hurricane-related flood damage. With more land lost each year, Louisiana is under increased pressure to develop sustainable solutions to expand and expedite its efforts to restore the coast and protect communities. In 2008, the State of Louisiana (State) initiated the integration of flood protection and coastal restoration efforts under the Office of Coastal Protection and Restoration (OCPR), which serves as the implementation arm of the Coastal Protection and Restoration Authority of Louisiana (CPRA). In addition to overseeing development of existing projects, OCPR is addressing other planning, engineering, and scientific needs through its Louisiana Applied Coastal Engineering and Science (LACES) Division, which coordinates science and engineering activities of State and Federal agencies, academia, and coastal communities. Through LACES, the State will ensure that research is conducted in the areas of greatest need and that the best possible technical information is used for decision making.

Breaking New Ground

The CPRA is directed by the Legislature to develop an annual coastal plan containing an inventory of ongoing and future coastal projects and schedules by which these projects will be implemented. This document fulfills that requirement, but also breaks new ground by providing a discussion of progress in project implementation during Fiscal Year (FY) 2010, and presenting new efforts to improve the State's planning process. These changes were made to improve transparency and increase the amount of useful information that the Annual Plan offers to stakeholders and the public.

Progress in the Coastal Program

While coastal Louisiana's challenges remain formidable, the State has made tremendous progress in protecting Louisiana's citizens and restoring its coast. In 2009, the Louisiana Legislature granted the coastal program $290 million in funding from the 2009 surplus and Tax Amnesty Act revenues. Together with other sources of funding, including $500 million from the 2007 and 2008 surpluses, these allocations represent the largest investment in coastal protection and restoration efforts in Louisiana history. Including other State funds and Federal dollars leveraged by these funds, nearly $17 billion in projects are fully financed and underway, with billions of dollars in additional projects authorized for construction by Congress.

The State has utilized this funding to move quickly, funding construction of existing protection projects throughout the coast and exploring protection and restoration plans for regions that are currently without appreciable hurricane protection. The State also allocated budget funds to 15 coastal restoration projects, many of which have now progressed ahead of their original schedules because of this funding. In FY 2010, the State began or continued construction on 30 large-scale coastal protection and restoration projects, of which nine were completed. In addition to on-the-ground progress in constructing projects, the State has made significant progress with its ongoing programs that further research, management,

Source: Library of Congress Map 1814.

training, monitoring, and assessment. Many of these efforts were spearheaded by LACES.

Innovative Initiatives

The State has explored innovative concepts and initiatives to both improve efficiency within the coastal program and streamline future efforts. These efforts include initiatives to reform the Federal water resource project planning process, market carbon and water quality credits from State projects to fund the coastal program, implement a single project database system to address all project management needs, and identify ways to streamline the coastal program to improve efficiency while reducing expenditures. Chapter 2 presents additional information on these and other efforts.

Prioritization Tool

Although significant progress has been made in the coastal program in recent years, the State acknowledges that it cannot address all protection and restoration concerns throughout coastal Louisiana. Additionally, the State acknowledges that sufficient resources (either financial or natural) will never be available to implement every conceivable protection and restoration activity within coastal Louisiana. It is imperative, therefore, that the State's coastal program operates as efficiently as possible to maximize benefits through the highest and best use of available resources. To improve the planning process, the State has developed a tool that will prioritize and sequence projects into portfolios that will provide the most progress toward restoring coastal ecosystems and protecting coastal Louisiana's citizens, homes, and businesses from hurricane and storm flood damages. This prioritization tool is designed to take into account state-of-the-art science and engineering, uncertainties, and other factors to identify the best uses of limited resources. The tool will be guided by the concepts and objectives described in the State's Master Plan and will be driven by inputs that include a vision of a sustainable coast. Computer models will produce data outputs that relate to quantifiable targets, which will help to measure the degree to which projects meet the vision. Although many of the inputs for the prioritization tool are still under development, the planning team was able to utilize existing models and data to perform a proof-of-concept (POC) analysis, which demonstrated how the tool can be used to evaluate and prioritize projects. Chapter 3 describes the development of the tool and presents the results of the POC analysis.

The tool shows great potential for expanding and enhancing the State's planning capacity by providing a decision process based on coastal needs and on tax dollar value, rather than one that allows politics to intrude or that merely funds projects with the most vocal advocates.

Stakeholder Participation

To respond to the public's request for increased engagement in its planning process, the State established three Regional Stakeholder Workgroups (RSWs), each of which represents a major geographic region of Louisiana's coast. The State first met with the RSWs in September 2009 to ensure solidarity of mission, solicit feedback on proposed planning efforts, and provide updates on project implementation. RSW members could then report back to their communities. RSW engagement with the State will significantly improve the Annual Plan's responsiveness to dynamic regional forces and concerns within the affected coastal communities.

Implementation Plan

Development of the implementation plan required an intensive data collection effort. The initial step in this effort was to update the inven-tory of State coastal projects created for the Annual Plan from State in-house coastal project databases. The planning team updated the database by reviewing various State databases and compiling information on project size, cost, projected benefits, and the timeframe for each phase.

To develop project implementation schedules and expenditure projections, the State expanded and refined its database of coastal proj-ects first developed for the Annual Plan. The database currently contains only State proj-ects and projects in which the State is a partner. However, in an effort to fulfill Act 523's mandate that State Annual Plans include descriptions of all projects and programs relating to hurri-cane protection, restoration, and infrastructure in coastal Louisiana, the Annual Plan team conducted outreach to coastal parishes and levee districts to obtain information on local, non-State coastal projects. Appendix C contains an inven-tory of local and Federal coastal projects identified through this outreach effort. The planning team will continue to expand and refine its inventory of non-State projects in future Annual Plans.

Fund Allocations

The Annual Plan contains budget projec-tions (Tables ES-1 and ES-2) that show the amount of State funds that would actually be needed to accomplish the proposed implemen-tation plan for the next three fiscal years. These budget projections improve further on previous projections by more closely reflecting actual expenditures and the amount of work to be performed, allowing citizens and legislators to track progress on individual projects more accurately. Funding projections take into account State budget surplus funds allocated for coastal protection and restoration projects. The funding projections presented in this Annual Plan represent a fore-cast based on a snapshot in time. However, the coastal program needs some degree of funding flexibility to enable the State to respond appropri-ately to the issues discussed above. Reprogram-ming of existing and new funds will likely occur, with approval from the CPRA, to protect the lives, livelihoods, and heritage of the people of coastal Louisiana and restore its ecosystems.

Based on these projections, the State has developed a three-year implementation plan that envisions the following activities for the interval

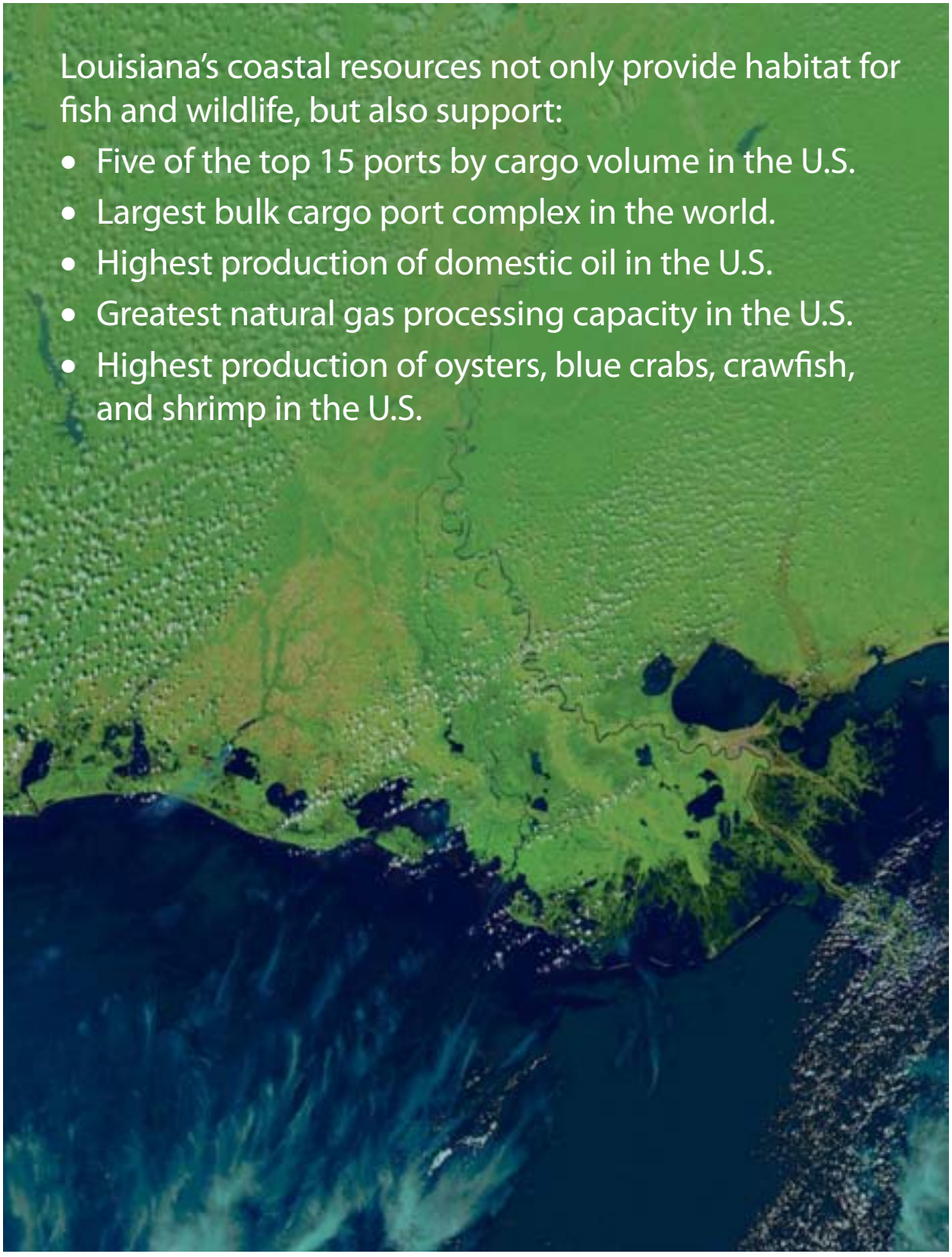
As these figures indicate, the State will focus resources over the next three years on constructing coastal projects that have already been planned and/or designed (Figure ES-1). The State is constructing projects at a faster rate than ever before. Consequently, the State must be ready to meet the costs associated with operations, maintenance, and monitoring of these constructed projects.

Although the current funding climate is extremely uncertain, new funding sources may become available. For example, if Federal part-ners gain Congressional approval and funding for major new coastal projects in Louisiana, the State might need to contribute a percentage of the proj-ects' costs (cost share), or risk losing the opportu-nity to maximize Federal investment in our coast. The CPRA has been granted authority to repro-gram dollars from approved funding streams and allocate the dollars to best meet new opportunities or needs. Such flexibility ensures that the coastal program can respond effectively to unforeseen events that take place outside the legislatively-mandated planning cycle.

Adapting to the Future

New developments in science and engineering may cause the State to change its approach to project design and construction; in this event, shifts in funding would also be needed. As more data are collected about how constructed projects work, the State will adjust priorities to focus on the most effective project concepts. In this way, the State can allocate its limited funds to projects with high rates of return. These projects will be refined continually based on input from engineers, scientists, and regional and technical stakeholders.

1. Introduction



Louisiana's coastal resources not only provide habitat for fish and wildlife, but also support:

- Five of the top 15 ports by cargo volume in the U.S.
- Largest bulk cargo port complex in the world.
- Highest production of domestic oil in the U.S.
- Greatest natural gas processing capacity in the U.S.
- Highest production of oysters, blue crabs, crawfish, and shrimp in the U.S.

Source: NASA

Urgency, Action, Innovation

Louisiana has the largest expanse of coastal wetlands in the lower 48 states. In addition to providing habitat for diverse fish and wildlife species, this vital natural resource supports a vibrant array of commercial and industrial activities that together account for 21 percent of commercial fish landings in the continental U.S., 18 percent of annual U.S. waterborne commerce, and 30 percent of the nation's oil and gas production. Louisiana's coast is also home to approximately two million people, roughly half the population of the state, and supports a rich and diverse array of cultures not found anywhere else on earth. Yet Louisiana's coastal communities, resources, and heritage are also among the most imperiled in the nation. Since the 1930s, approximately 2,300 square miles of wetlands in coastal Louisiana have been lost (Figure 1-1).

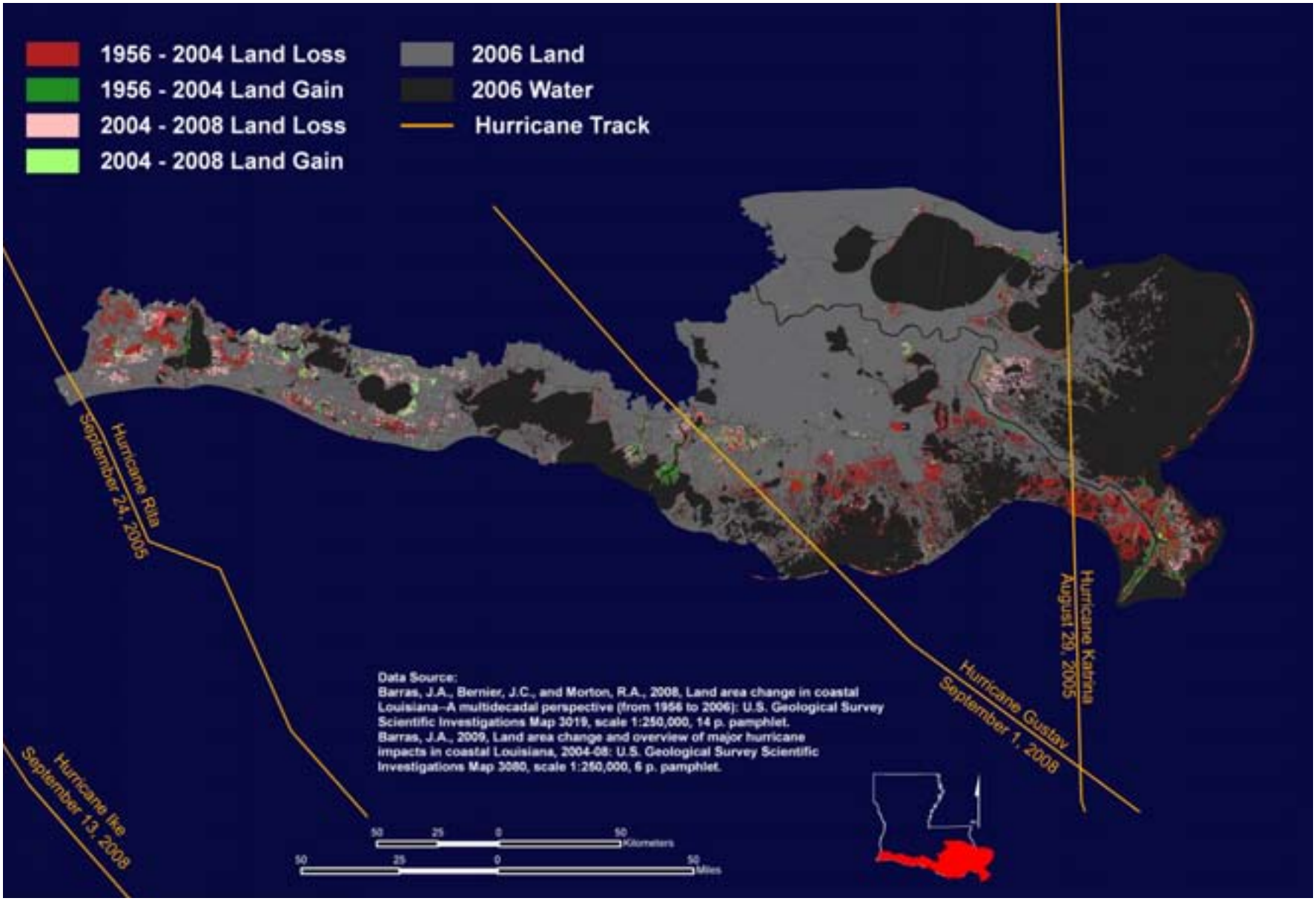
Within recent decades, the coastal erosion rate exceeded 35-40 square miles a year, resulting in substantial socioeconomic and environmental losses, and displacing coastal residents and wildlife. Due in part to management improvements, education efforts, and protection and restoration activities, the annual loss rate has been reduced to approximately 15 square miles per year. Nonetheless, coastal Louisiana remains at risk from land loss and hurricane-related flood damage. Furthermore, these issues have been compounded in recent years by the effects of four major hurricanes (Katrina, Rita, Gustav, and Ike) within a three-year period (2005–2008). These four storms together resulted in a cumulative net loss of 328 square miles of land and billions of dollars in flood damages.[1]

1 Barras, J.A., 2009, Land area change and overview of major hurricane impacts in coastal Louisiana, 2004-08: U.S. Geological Survey Scientific Investigations Map 3080, scale 1:250,000, 6 p. pamphlet.

Photo: Tom Downs

Louisiana's coast is also home to approximately two million people, roughly half the population of the state, and supports a rich and diverse array of cultures not found anywhere else on earth.

Figure 1-1. Map of Coastal Land Change in Louisiana over the Period 1956-2006.



Source: USGS

Louisiana is under increased pressure to develop innovative solutions for coastal protection and restoration needs that maximize benefits within funding constraints.

With more land lost each year, and with limited funds available, the State of Louisiana (State) is under increased pressure to develop innovative solutions that expand and expedite its efforts to protect the lives and livelihoods of coastal residents and to restore coastal environments while providing maximum benefit within funding constraints. Responding to the need for urgent action, the State allocated funding from budget surpluses in 2007, 2008, and 2009 to expedite the design and construction of numerous coastal protection and restoration projects. Many of these projects are now under construction or have otherwise progressed ahead of their original schedules because of this funding.

Despite this progress, coastal Louisiana's challenges remain formidable. The State is projecting funding shortfalls in coming fiscal years. The State is aggressively pursuing new sources of funding to maintain and, where possible, accelerate its current rate of project implementation. Given these potential future funding limitations, and that existing State and Federal funding are constrained by competing priorities, it is essential that available funding be used efficiently to ensure optimum benefit to Louisiana's coastal resources. Toward this end, the State has initiated development of a tool that will prioritize and sequence projects into portfolios that will make the highest and best use of available resources in restoring the ecosystem and protecting coastal Louisiana's homes and businesses from hurricane and storm flood damages. This tool, when fully functional, will support a decision process based on coastal needs and on tax dollar value, rather than one that allows politics to intrude or that merely funds projects with the most vocal advocates. Early demonstrations of the tool's capabilities, as presented in this Plan, indicate that the tool shows great potential for enhancing the State's planning capacity. The State continues to look for ways to

Preserving the coastal ecosystem is a priority. Preparing Annual Plans and updating the Master Plan every five years will help the planning process to both address urgent needs and prepare for long-term implementation.

projects, presents implementation schedules for these projects, and identifies funding and budgets.

Evolution of the Annual Plan

Historically, Louisiana's Annual Plans for coastal projects provided two sets of information:

1. An inventory of projects for which the State would need to spend money and use staff resources for a given fiscal year (FY). Since FY 2006, these schedules have included hurricane protection and ecosystem restoration projects.
2. Recommendations for allocating Coastal Protection and Restoration Funds to projects on the schedule.

The Annual Plan was the first plan to address the new integrated planning and priori-tization directives. The Annual Plan included the two traditional Annual Plan compo-nents and introduced a new planning tool that utilized a decision support model to assess the benefits of coastal projects with respect to meeting the Master Plan's objectives. These tools provide decision makers with improved informa-tion to help with selecting and sequencing projects to enhance the State's coastal planning efforts.

A decision support model organizes data, calculates outcomes, and presents information in ways that help decision makers compare options, make choices, and set priorities. Decision support models can help make sense out of highly complex processes.

The Annual Plan builds on the plan and provides an expanded discussion of the State's progress in protecting and restoring the coast. This plan also presents the results of new efforts to improve the State's planning process (discussed below) and its progress in project implementation (Chapter 2). Chapter 3 describes the tools and methods that will help to improve the information available to decision makers. Chapter 4 lists coastal proj-ects and programs and their status and provides a detailed projection of how the State expects to receive and allocate funds. Chapter 4 also includes an implementation plan.

These changes in format were made to increase the amount of useful information the Annual

Source: NOAA

The fragmented marsh in this fragile "bird foot" delta is typical of the Louisiana coast. Recognizing the urgent need for action in the face of the complex issues that confront coastal Louisiana, the State is forging ahead to successfully plan and design large-scale projects that are essential to the coastal program.

EXECUTION OF THE ANNUAL PLAN: TRANSPARENCY AND ACCOUNTABILITY

The Annual Plan was developed with the help of many partners. Throughout the plan development process, the planning team convened technical stakeholder meetings with government agency and non-government organization (NGO) representatives, many of whom also contributed to the development of the FY 2010 Annual Plan. These meetings offered stakeholders the opportunity to provide feedback on the planning framework under development and give their perspective on the next steps in the State's planning process.

Regional Stakeholder Workgroup (RSW) meetings provided another vehicle for incorporating new ideas into the Annual Plan and the State's planning process. During these meetings, the planning team learned that public participants appreciate being engaged in the planning process, that they are eager to see the State coordinate its activities across agencies and mandates, and that they are eager to see greater cooperation between the State and local governments, as well as private landowners. Above all, the planning team learned that citizens care deeply about the coast and are adamant that the State act with urgency and show progress on the projects constructed or on the ground. Finally, citizens have demonstrated a desire to help the State confront and address the tough questions about how the coast can best be protected and restored. The State looks forward to continuing its work with citizens to develop and achieve their vision of a sustainable coast and will document its progress toward that goal in future Annual Plans. The planning team incorporated stakeholder comments into the Annual Plan, as reflected in this draft. Information on the RSW meetings can be viewed online at www.lacpra.org.

WHAT IS THE "PLANNING FRAMEWORK?"

The new "planning framework" is a way to organize the State's thinking about the massive amount of work that needs to be done—a tool that allows decision makers to see useful comparisons of various coastal protection and restoration approaches. The framework will help to show how projects might operate in a regional, as well as coastwide, system and whether their construction would contribute significantly to achieving desired outcomes for the coast. The framework will help make decisions about which projects should be done first and aid in keeping track of how well the finished projects are performing.

PLAN TIMELINE

2009	May	Planning team initiated
	June–December	Project data collected and planning framework developed
	August	First technical stakeholder meeting
	September	First RSW meetings
	October	Second technical stakeholder meeting
	December	Second RSW meetings
2010	January	Draft Annual Plan released to public
	February	Proof-of-concept analysis using planning framework
	February	Public meetings for Draft plan
	March	End of pubic comment period on Draft plan
	February-March	Draft plan revised and sent to CPRA for approval
	April 12	Final Annual Plan submitted to legislature for approval

The Annual Plan presents a course of action that embraces the Multiple Lines of Defense strategy.

As was the case with the Master Plan and past Annual Plans, the Annual Plan is a component in an ever-evolving process that changes with the state of science and engi-neering. Consequently, the plan should not be considered the final word. Rather, the Annual Plan should be viewed as one part of a process that will evolve as the State's understanding of coastal processes and interactions advances. Many of the new tools, initiatives, and concepts presented in the Annual Plan are in their formative stages and not expected to be finalized until the completion of the Master Plan update. However, the Annual Plan documents important progress and inno-vation, representing a benchmark in developing the necessary means for fully integrating protec-tion and restoration and establishing a quantifi-able vision for a sustainable coast. The Annual Plan also fulfills the primary purpose of the State's Annual Plans by presenting the State's three-year program for funding and implementing projects.

A Realistic Approach to Planning: Working Within Constraints

Like the Master Plan, the Annual Plan acknowledges that the extent and nature of a sustainable coast is limited by real world constraints, like the availability of sediment to build marsh or the availability of funding to construct projects, and some historical land-scapes and coastal uses are no longer achiev-able because of these constraints. Nonetheless, the situation is urgent, and innovative action is needed to confront the complex issues that chal-lenge coastal Louisiana. The State is forging ahead while these issues are being examined and, where possible, resolved. The Annual Plan identified five key constraints affecting coastal protection and restoration efforts. This Annual Plan presents strategies developed by the State to achieve optimum project perfor-mance within these constraints.

Key constraints affecting coastal protection and restoration include:

- Availability of resources.
- Inefficient laws and policies.
- Need for additional analysis of complex projects.
- Uncertainty about future environmental factors.
- Timeframes for implementation of large-scale projects.

Availability of Resources

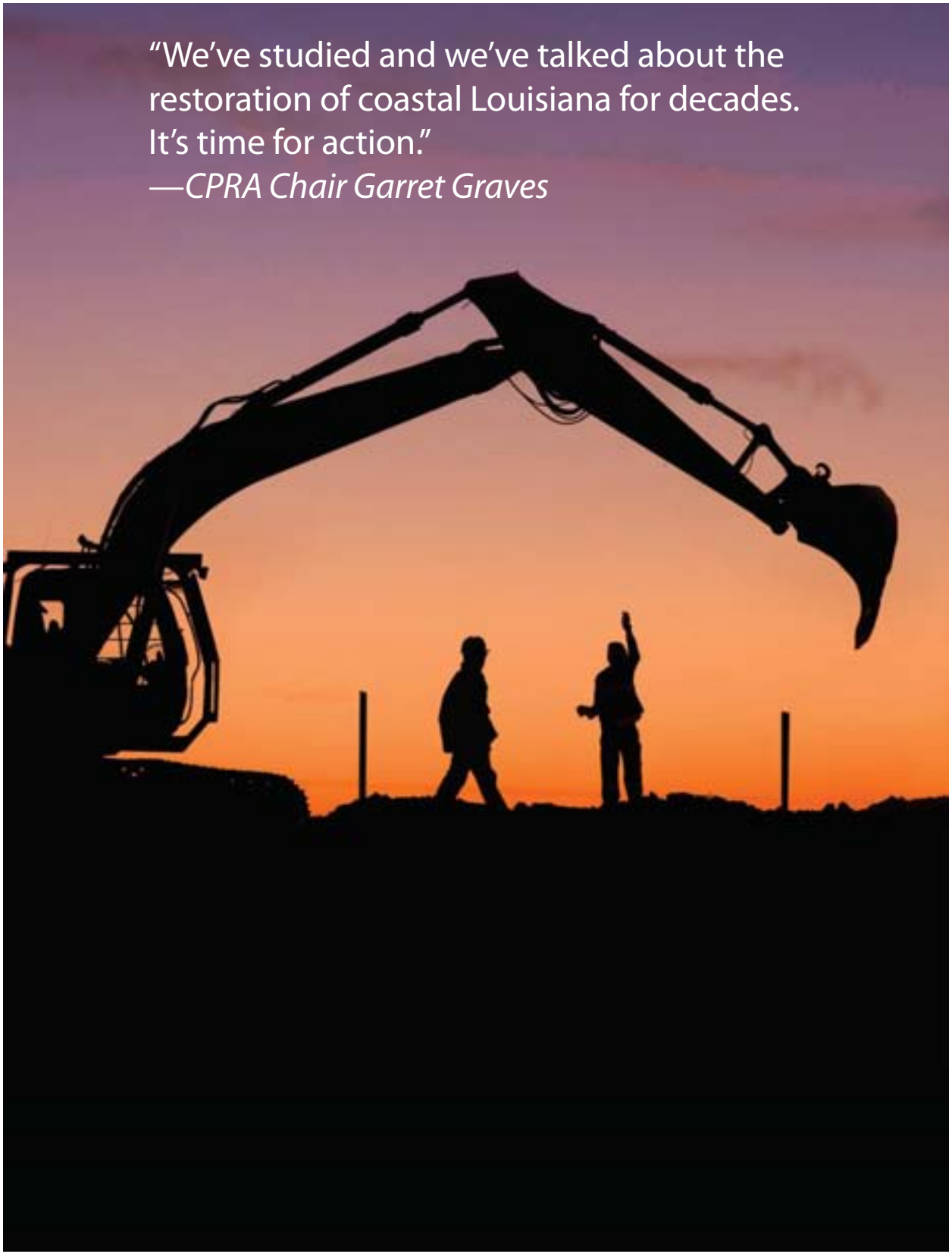
"The rate at which projects can be constructed is dependent on the availability of resources, both financial (funding) and natural (sediment, fresh water). Resource limitations require that some projects must be built before others."

The State is addressing this constraint by exploring new funding sources, identifying ways to maximize funding by participating in the State's Streamlining Government Initiative, and devel-oping a new planning framework to determine the optimum sequencing of projects.

Inefficient Laws and Policies

"Some laws and policies must be revisited if the coast is to be restored and protected as envi-sioned in the Master Plan."

2. Responding to a Call to Action



While coastal Louisiana's challenges remain formidable, the State has made tremendous progress in protecting and restoring Louisiana's coast (Figures 2-1 through 2-9). Responding to the need for urgent action, the State stepped out ahead of its Federal partners to expedite hurricane protection and restoration projects in coastal Louisiana. The State moved quickly, using surplus dollars to fund protection projects, including the Morganza to the Gulf of Mexico, Larose to Golden Meadow, and Lafitte Hurricane Protection Projects. The State also allocated surplus funds to initiate protection and restoration plans for South-Central Louisiana and the North Shore of Lake Pontchartrain—regions currently without appreciable hurricane protection.

After the devastation wrought by Hurricane Katrina in 2005, the State and its Federal partners began an intense effort to repair and improve the greater New Orleans area hurricane protection system. While vulnerabilities still exist, these efforts will produce the strongest system ever protecting this vital region of the coast. These efforts, together with other protection projects throughout coastal Louisiana, will provide 100-year level hurricane protection to an estimated half of the coastal population (approximately one million people).

The State's efforts in coastal restoration have been no less aggressive than its protection efforts. The State allocated funding from budget surpluses to 15 coastal restoration projects to expedite their design and construction. Many of these projects are now under construc-tion or have otherwise progressed ahead of their original schedules because of this funding. A total of 41 restoration projects were in plan-ning, design, or construction. The State continues to look for ways to expedite the implementation of restoration projects to ensure that progress on the ground is made as fast as possible.

Today, nearly $17 billion in protection and restoration projects are fully financed and underway in coastal Louisiana. Every dollar invested by the State in coastal protection and restoration leverages $11 from its partners. The State is engaged in planning or designing numerous additional projects authorized for construction by Congress. These ongoing efforts have resulted in an increase of approximately 1,500 percent in State planning, engineering, design, and construction work since 2007 and have been accomplished with an increase of less than 20 new positions in

Figure 2-1. Rockefeller Refuge Gulf Shoreline Stabilization Demonstration Project (ME-18 [EB]). This project evaluates three different methods of shoreline protection, which will be monitored post-construction to determine the best method to prevent erosion of clay shorelines throughout the coast.

Figure 2-4. Projects under Construction.

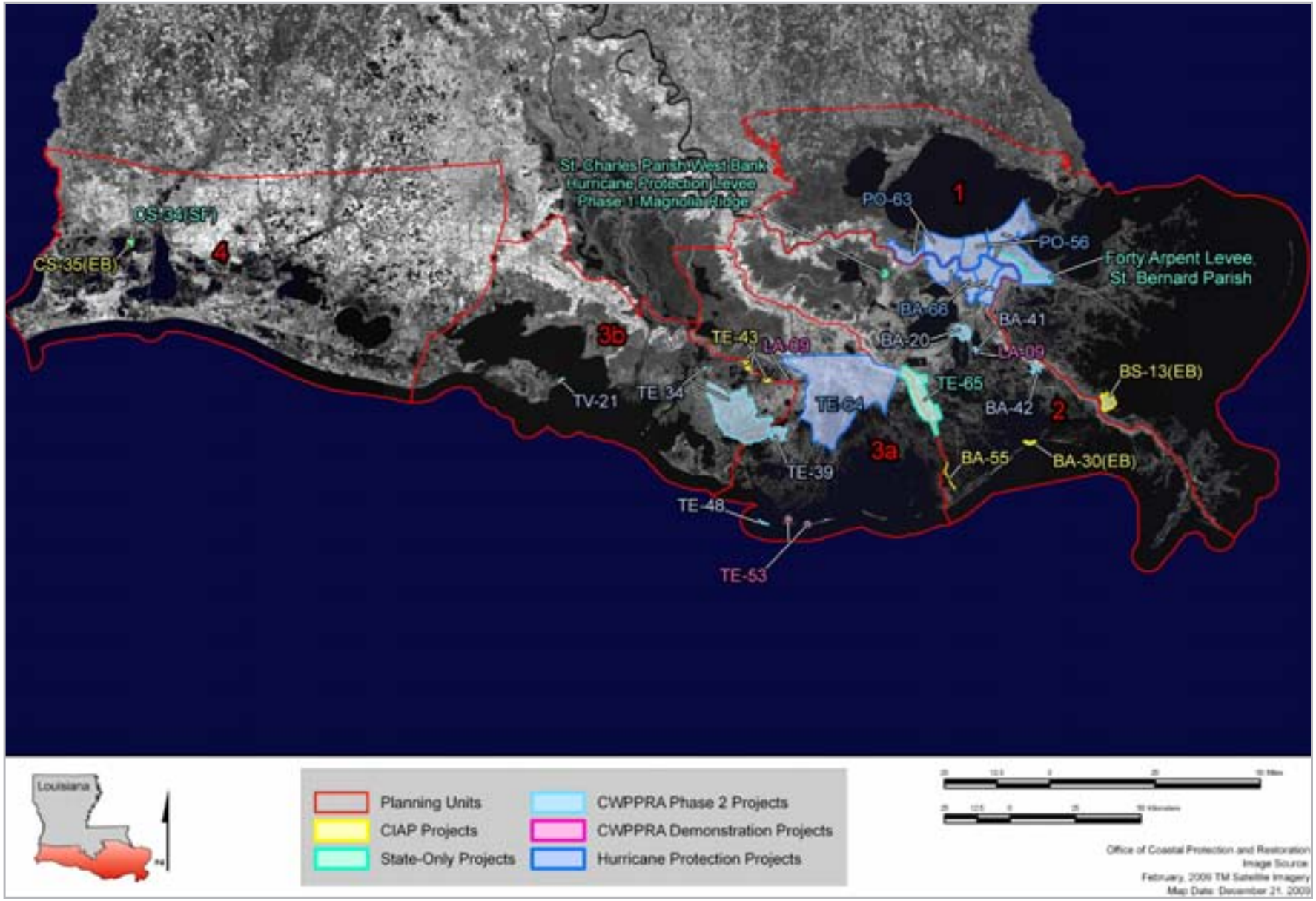
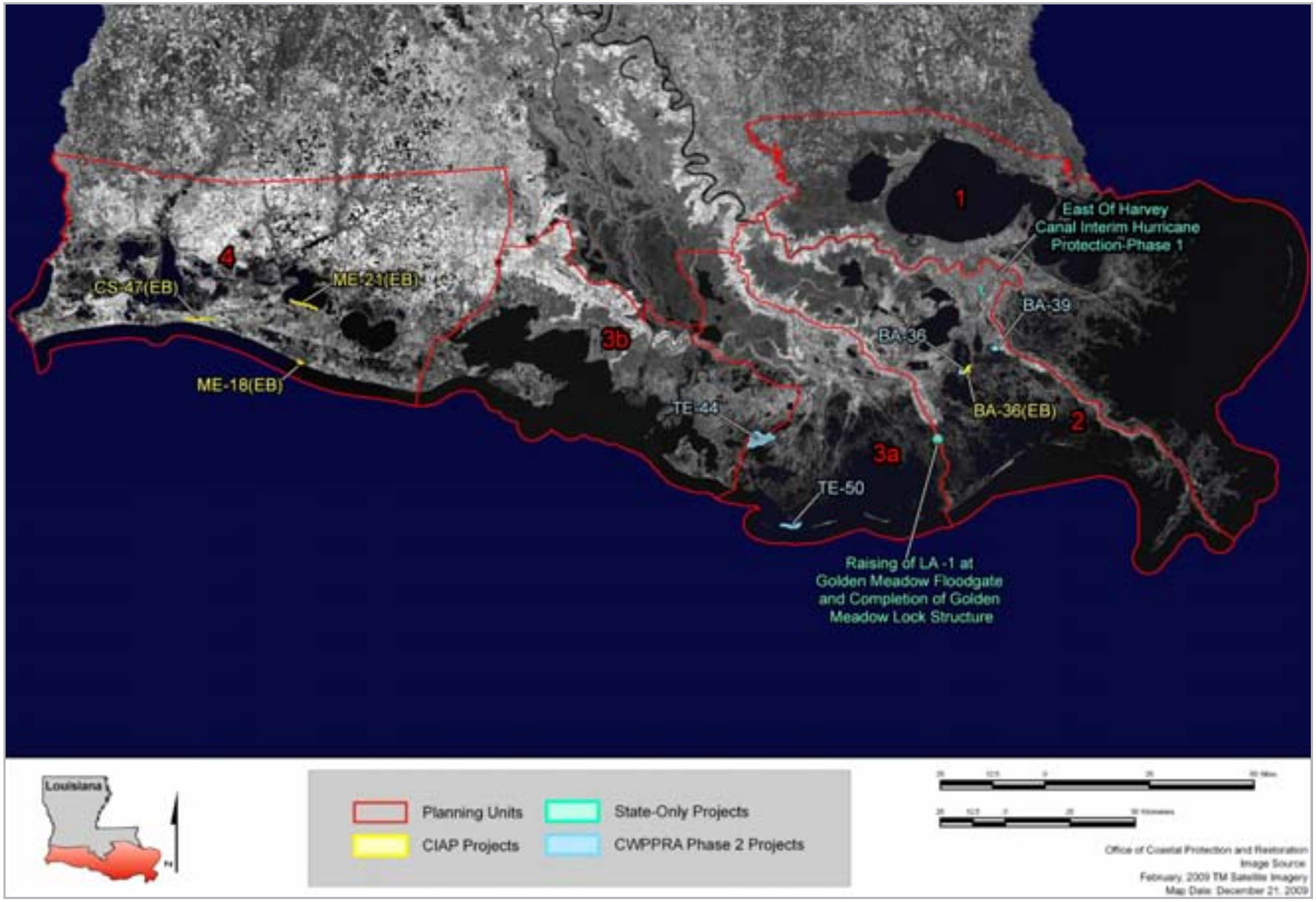


Figure 2-5. Projects Completed.



Coastal Protection and
Restoration Authority of Louisiana

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