LOUISIANA COASTAL MANAGEMENT PROGRAM

Coastal Zone Management Act

Section 309

Assessment and Strategy for

2016 – 2020 Enhancement Cycle

Submitted to the

National Oceanic and Atmospheric Administration

Office of Coastal Management

For the Determination of Priority Enhancement Areas

Authorized by Section 309 Coastal Zone Protection Act of 1972
(As amended in 1990 and 1996)

Louisiana Department of Natural Resources
Office of Coastal Management
617 N. 3rd Street, Suite 1048
Baton Rouge, LA 70802

Contents

INTRODUCTION

The assessment and strategy is a public document. Therefore, the introduction should include a brief description of the National Coastal Zone Management Program and Section 309 Enhancement Program, including the purpose of the assessment and strategy. It should also summarize how the Coastal Management Program (CMP) developed the assessment and strategy, engaged stakeholders, and allowed the public to review and comment.

Section 309 of the Coastal Zone Management Act (CZMA), as amended in 1990 and 1996, established a voluntary coastal zone enhancement grants program. This program encourages states and territories to strengthen and improve the federally approved coastal management program in one or more of nine areas. These areas, or enhancement areas, include:

- Wetlands
- Coastal Hazards
- Public Access
- Marine Debris
- Cumulative and Secondary Impacts
- Special Area Management Planning
- Ocean Resources
- Energy and Government Facility Siting
- Aquaculture

Every five years, states and territories conduct self-assessments of their coastal management programs to assess the effectiveness of existing programs and identify potential enhancement opportunities within each of the nine enhancement areas. In close coordination with the U.S. National Oceanic and Atmospheric Administration's Office of Coastal Management (NOAA OCM), the state coastal management program develops strategies to improve program operations in one or more of these enhancement areas. Furthermore, the strategies must be designed to lead to programmatic changes to the Louisiana Coastal Resources Program (LCRP) that support attainment of the objectives of one or more of the section 309 enhancement areas.

This document is the Louisiana Coastal Management Program's Assessment and Strategy for the time period of Fiscal Year (FY) 2016-2020. The document outlines the efforts for enhancing LCRP using section 309 funding from the U.S. Department of Commerce for the time period of FY 2016-2020. The document includes

- an introduction to Louisiana's Section 309 program,
- an overview of past 309 efforts,
- Phase 1 (High-Level) assessments of coastal resources as they pertain to the nine pre-identified enhancement areas,
- Phase 2 (In-depth) assessments for each of the enhancement area(s) that are identified as high priority in the Phase 1 assessment,
- Multi-year strategies which address high-priority needs for program enhancement.

Public comment and input was sought throughout the development of the 309 Assessment and Strategy document. During the initial phase of development, a public notice was published in "The Advocate," Louisiana's official state journal, on September 5, 2014. In addition, OCM requested comments from each of the ten approved local coastal parish programs representatives to solicit comments. The public comment period closed on December 31, 2014.

Following the development and internal review process, the draft Assessment and Strategy document was published in "The Advocate" on April 28, 2015. Additionally, OCM made the document publicly available on the Louisiana Department of Natural Resources/Office of Coastal Management (LDNR/OCM) webpage at http://data.dnr.la.gov/309_draft_document_04232015.pdf (See Public Comment/Response Section).

The FY 2016-2020 assessment resulted in the following changes (highlighted) to the priority level from the FY 2011-2015 reporting period:

Enhancement Area	2011-2015 Priority Level	2016-2020 Priority Level
Coastal Hazards	High	High
Cumulative and Secondary Impacts	Low	High
Wetlands	High	High
Energy and Government Facility Siting	Medium	Medium
Marine Debris	High	Medium
Aquaculture	Low	Low
Ocean Resources and Special Area Management	Medium	Low
Public Access	Low	Low
Special Area Management Plans	Medium	Low

Please see the assessment for each enhancement area for detailed discussion and rationale.

SUMMARY OF RECENT SECTION 309 ACHIEVEMENTS

CMPs should provide a brief summary of completed efforts under the Section 309 Enhancement Program since the last assessment and strategy. This section should clearly identify and summarize program changes and other major accomplishments completed under previous strategies that may have come to fruition during the past five years. While most accomplishments will likely be from the 2011-2015 assessment cycle, there could be program changes from earlier assessment periods that were finally achieved during the past five years. For program changes that were formally submitted to OCRM in accordance with the program change regulations at 15 CFR part 923, subpart H, note the date that the change was approved by OCRM. If the program intends to submit a formal program change for OCRM's review and approval, identify the expected submission date.

STRATEGY TITLE: IMPLEMENTING AN UPDATED INLAND BOUNDARY FOR LOUISIANA'S COASTAL ZONE

The coastal region of Louisiana has changed significantly since federal approval of the Louisiana Coastal Resources Program (LCRP) in 1980. During that time, coastal Louisiana has experienced unprecedented land and wetlands loss through erosion, subsidence, and sea level rise; as well as population growth and infrastructure development. In recognition of these changes, Louisiana's legislature passed the Louisiana Senate Concurrent Resolution No. 60 (SCR 60) in the 2009 legislative session, requesting a science-based study to assess Louisiana's inland coastal zone boundary.

As part of the study, Office of Coastal Management (OCM) staff gathered background material pertaining to the original designation of the Louisiana Coastal Zone and made contacts within state and federal agencies to seek existing spatial data sets germane to the project, and established a public/stakeholder participation mechanism for the project. Multiple data sets were compiled and analyzed, including: base industry exporting economic goods and services, coastal habitats, coastal wildlife, coastal hydrology and geomorphology and geological composition. In addition, a stakeholder advisory group was established and met regularly to provide input to OCM throughout the project.

Throughout this process, recommendations for an expanded coastal zone and an adjacent intergovernmental coordination area were developed. The science-based study was completed in late 2010, with formal vote of acceptance of the study report by the Coastal Protection and Restoration Authority (CPRA) in May of 2011. Upon delivery of the report to the Louisiana legislature in June 2011, and pursuant to Act 956 of the 2010 legislative session, a portion of Ascension Parish was effectively added to Louisiana's coastal zone. Although the original task of evaluating the current boundary was complete, work continued into 2011 to assist Ascension Parish to develop a local coastal management program and to formalize that change to the LCRP with U.S. National Oceanic and Atmospheric Administration (NOAA).

Implementing boundary changes required an act of the legislature. The legislation had to be drafted. Surveyors helped to translate the conceptual boundary to a line on the ground, described in legal language. Contracts were arranged for scientific advisors to be available to testify to the legislature. Public outreach efforts and open dialogue continued, especially with local government officials in the affected parishes. In the spring of 2012, the legislature passed House Bill 656, which the Governor signed into law as Act 588 on June 7, 2012, giving Louisiana an expanded coastal zone.

The changes added a net 1,887 square miles to the previous coastal zone, and affected ten of the twenty existing coastal parishes. Of the twenty parishes in the coastal zone: eight parishes (Calcasieu, Cameron, Iberia, St. Martin, St. Mary, Terrebonne, Lafourche, and Assumption) had acreage added to the coastal zone; and two parishes (Tangipahoa and Livingston) had their coastal zone area reduced by the recent legislation. No boundary changes occurred in the remaining ten coastal parishes (Vermilion, St. John, St. James, St. Charles, Jefferson, Plaquemines, Orleans, St. Bernard, St. Tammany and Ascension).

STRATEGY TITLE: IMPLEMENTATION OF PREVIOUSLY REVISED FEDERAL CONSISTENCY PROCEDURES TO IMPROVE BENEFICIAL USE OF DREDGED MATERIAL

The OCM contracted with the Louisiana Sea Grant Law and Policy Program (LSGLPP) to analyze the state's existing enforceable policies relating to beneficial use of dredged material and regulations, promulgated in 2009, that require beneficial use of dredged material when an activity performed under a coastal use permit involves the dredging of >25,000 cubic yards of material (Louisiana Administrative Code, Title 43, Part I, Chapter 7, § 723.H http://www.doa.louisiana.gov/osr/lac/43v01/43v01-05.doc). After analyzing the state's legal position under existing law the LSGLPP advised the OCM on options the state may utilize under federal consistency authority and other authority to maximize the amount of dredged material from activities conducted in the coastal zone that is used in a beneficial manner. LSGLPP provided these findings in the 2011 report titled "Beneficial Use of Dredged Material: Federal Consistency Implications of the State's Proposed Beneficial Use Regulations." OCM reviewed the options provided, and selected to integrate one of the options into the program. A Standard Operating Procedure was completed in 2013 to memorialize this process.

Implementation of this task began in fiscal year 2014 and continues today. Consistency staff applies the beneficial use policies developed in this task to all consistency determinations and certifications involving dredging. Since implementation of these policies began, 22 dredging projects included beneficial use, and 7 dredging projects were found to have no feasible beneficial use options. Two projects are in planning - which the State and others are providing supplemental funding to increase the amount of material used beneficially. Additional coordination continues with U.S. Army Corps of Engineers New Orleans District (USACE), CPRA, Ducks Unlimited, Chevron, and Terrebonne Parish, on beneficial use of material along the

Houma Navigation Canal. Funding constraints make channel dredging opportunities difficult to predict, but the coordination is leading to a beneficial use plan that will be in-place and ready to use with little additional preparation necessary.

On the Calcasieu Ship Channel, supplemental funding provided by the Port of Lake Charles and by Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) allowed for a significant increase in beneficial use over originally-proposed dredging plans for fiscal year 2014. An additional 2.1 million cubic yards of dredged material were used to restore wetlands in Sabine National Wildlife Refuge. Also, using funds provided by the state, the USACE performed a demonstration project in which consolidated material from an upland confined disposal site was pushed out into Calcasieu Lake by earth moving equipment, where it eventually will subside to wetland elevations.

Beneficial use of material dredged from the Mississippi River Southwest Pass navigation channel has increased over the past few years. Fiscal year 2014 was the first time that more than 50% of material dredged was used beneficially to create or restore wetlands, or reinforce channel banks.

STRATEGY TITLE: NEW MITIGATION REGULATIONS FOR UNAVOIDABLE IMPACTS DUE TO PERMITTED ACTIVITIES IN COASTAL LOUISIANA

The OCM requires compensatory mitigation for unavoidable impacts to coastal wetland habitats and other coastal resources in the Louisiana coastal zone. These requirements state that the secretary shall not grant a coastal use permit for an individual activity unless the authorization is conditioned to include a requirement for compensatory mitigation to offset any net loss of wetland ecological value that is anticipated to occur. Compensatory mitigation is assessed according to the State's mitigation rules and procedures which were promulgated in 1995 (LAC, Title 43, Part I, Chapter 7, Subchapter C, Section 724 http://www.doa.louisiana.gov/osr/lac/43v01/43v01-05.doc). The State identified a need to update the rules and procedures in an effort to become more compatible with the latest revision to the Federal Rules for Mitigation and to better complement the State's Comprehensive Master Plan for a Sustainable Coast.

In the initial phase of revisions to the mitigation rules and procedures for Subsection E and F (*Compensatory Mitigation Options* and *Mitigation Banks*), a Potpourri Notice was published in the December 2012 edition of the *Louisiana Register*. By this notice, the Department of Natural Resources (DNR) informed the public that it intended to promulgate revised rules for Subsections E and F of Section 724 and that these rules and procedures provide the methods available for accomplishing compensatory mitigation, general procedures for establishing wetland mitigation banks, and the procedures for the review of mitigation bank proposals. In an effort to effect the codification of existing mitigation bank review practices and procedures, rule revisions are essential and assist in: streamlining the present mitigation bank review process; making mitigation bank review more consistent with federal agencies' review; making

the state review process of mitigation banks less burdensome on mitigation bank sponsors; and reducing the time required for mitigation bank proposal review.

As required through the rulemaking process in Louisiana, the Notice of Intent and Final Rule for amendments are published in the *Louisiana Register.* The Notice of Intent was published on March 20, 2013 and the Final Rule was published on June 20, 2013 for Subsections E and F. The Notice of Intent was published on July 20, 2013 and the Final Rule was published on October 20, 2013 for proposed revisions to Subsections A, B, C, G, H, I, and K (Subsection D was not amended). The Notice of Intent was published on October 20, 2013, and the Final Rule and was published January 20, 2014 for Subsection J (*Selecting Compensatory Mitigation*). The final amended rules for all Subsections can be viewed at http://www.doa.louisiana.gov/osr/lac/43v01/43v01-05.doc.

As part of the outreach efforts during the rulemaking amendment process, OCM provided several presentations to the public, as well as other stakeholders to solicit public input on the proposed changes and posted notification on the DNR website. Following the rulemaking process, OCM staff presented information regarding the State's In-Lieu Fee (ILF) Program and the State's revised mitigation regulations to stakeholders on February 4, 2014. In addition, OCM staff provided a presentation outlining the rule changes and how these revisions affect the permitting process during the "Coastal Use Permitting in the Louisiana Coastal Zone Seminar" on June 26, 2014, the "SONRIS to SUNSET Conference" on August 27, 2014, the "Local Coastal Management Programs' Quarterly Meeting" on September 10, 2014, the "Louisiana Oil and Gas Industry Seminar" on September 16, 2014 in New Orleans, and the "Chenier Plain Coastal Restoration and Protection Authority Meeting" serving Calcasieu, Cameron, and Vermilion Parishes on October 21, 2014 in Vermilion Parish. In addition to presentations on rule changes, OCM provided one-on-one assistance to mitigation bank sponsors, Local coastal management programs, and agents as well as Coastal Use Permitting applicants on an as-needed basis following the rule and procedure changes.

The revised mitigation rules allow for a more consistent and transparent permitting process, especially in regard to mitigating for unavoidable losses to wetlands and other coastal habitats. In general, the revised mitigation regulations, procedures for mitigation review and assessment, and other associated landowner mitigation issues will lead to a more efficient and effective permitting process. The revised regulations also address the tracking and monitoring of mitigation, thus reducing the burden on limited public resources. Ultimately, the revised mitigation regulations allow more flexible options and opportunities for sustainable mitigation in coastal Louisiana, while also providing for mitigation projects that have a more significant and synergistic impact on building and sustaining our coastal habitats.

STRATEGY TITLE: COASTAL HAZARDS: RESILIENCY AND SEA LEVEL RISE: BEST PRACTICES MANUAL, NEW PROCEDURES FOR ASSISTING LOCAL PROGRAMS

The purpose of this project was to analyze existing policy and procedures utilized and/or implemented primarily by local (community and parish) land use planning authority to address coastal hazards, in order to identify what new policies and procedures might be implemented by the Office of Coastal Management's state and federally approved LCRP primarily through its local coastal management programs. OCM and St. Tammany Parish local coastal management program coordinating with the parish Engineering Department, Legal Department, and the Parish Council revised the Parish Coastal Zone Management Ordinance to incorporate improved coastal resiliency. The revision includes the minimum elevation requirement: a minimum 6.0' NAVD for any new road constructed within the coastal zone. This revision increases the resiliency of development in the coastal zone, improves emergency response capabilities, and reduces maintenance costs long term. Roads built to minimum required altitudes serve to dissuade unsafe developments in areas of inadequate elevation throughout coastal areas. This new policy has led to an incorporated review component into the coastal permit review process. The final phase of this program is an outreach component to additional Louisiana communities that is scheduled for this final year of the five year strategy.

STRATEGY TITLE: NEW PERMIT PROCEDURES FOR AVOIDING AND MITIGATING OIL AND GAS FACILITY SITING CONFLICTS

The OCM recognized the need to modify the coastal use permit process to aid regulators and planners in making informed decisions regarding potential coastal oil and gas facilities (pipeline and platform) siting conflicts and hazards. The OCM identified the first step in the process to be to ensure that applicants are aware of applicable relevant federal, state and local laws, and rules and regulations related to prevention and containment of hydrocarbon products. In 2011, the OCM amended its permit application to include a section where the applicant must certify and attest that effective emergency or contingency plans are developed and that the applicant is and will remain in compliance. In addition, the applicant must now submit a list of the applicable spill prevention laws and regulations with the Coastal Use Permit application before OCM will issue a permit for sites that store or produce hydrocarbons.

To further integrate this analysis into the permit review process, OCM identified the need to expand upon the oil and gas facility geographic information system (GIS) platform layer. In the review of existing oil and gas facility platforms, OCM utilized the dataset from the Louisiana Office of Conservation (OC) for data validation. Due to the fact that both OCM and OC are permitting bodies for oil and gas facilities, both parties determined that it was necessary to revisit the standing 1980 Memorandum of Understanding between the offices. There were multiple consultation meetings to identify areas for improvement and determine pathways of

communication between offices. A mutual agreement was reached, and a Memorandum of Understanding between the offices was signed and went into effect on October 4, 2013.

Throughout this process OCM continued to update the geographic information system (GIS) layer information for platform and pipeline locations in inland bays, lakes and marshes of the coastal zone of Louisiana. OCM entered into a contract with an outside firm to develop this GIS platform layer. Data provided from the contractor on each facility was to include at a minimum the coordinates, method of determination (photo/map, Global Positioning Satellite/existing GIS data, file review with source, etc.), coastal use permit number if applicable, status (active or inactive), general use (production, transfer facility, etc.), type (barge, platform, land based, etc.), number of structures, and comments. In addition, the contractor was tasked to verify the locations of these facilities via aerial photography, ground inspection, and other means necessary. Data integration into OCM's GIS platform layer continues on a daily basis as the data set is reviewed, information audited, and GIS layer updated. The final GIS layer will contain current locations of on-the-ground oil and gas platforms/facilities. During the permitting process, this updated GIS layer will assist permitting staff in determining if a proposed project will conflict with an existing facility or if a proposed facility will conflict with existing activities or uses, such as fairways and anchorage areas, navigation channels, or flood control and restoration features. This updated expanded GIS layer will lead to new and improved procedures for permit review and a more efficient and effective permitting process.

STRATEGY TITLE: IMPROVED DECISION-MAKING REGARDING WATER MANAGEMENT

In efforts to gain a better understanding of how water management features may affect broader ecosystem function, the OCM sought to identify and assess water management programs and water control features in the coastal zone. OCM entered into a cooperative agreement with the Louisiana State University (LSU) Agriculture Center to develop a GIS platform for water control features, levees, culverts, gates, etc. Furthermore, the platform documents and ground-proofs the features as maintained by federal, state, local, or private entities. Through the data collection process, each feature was analyzed to ensure compatibility with the State Master Plan for a Sustainable Coast. Throughout the process OCM and LSU staff met multiple times to collaborate on the datasets that were being collected and to guide the development framework. In the end, LSU provided OCM with a complete dataset of levees and pump stations which included feature location, site details (elevation, size, capacity) and contact information. OCM is in the process of integrating the dataset into the Strategic Online Natural Resources Information System (SONRIS), Louisiana Department of Natural Resources' electronic database and mapping portal.

OCM is continuing the process of integrating water management features into the coastal use permit review process. Once the dataset is available through SONRIS, preliminary permitting procedures will include review of the GIS layer to identify any features within one-quarter mile and one mile of a proposed coastal use. If any features are identified, and it is determined that

the feature will affect or be affected by the proposed coastal use, consultation with the managing entity can be initiated. The consultation may result in project modification to reduce any anticipated adverse impacts. If, after implementation of the new permitting procedures, any program changes are determined to be necessary, official policy and rule changes will be initiated.

PHASE I (HIGH-LEVEL) ASSESSMENTS

The assessment section responds to the Phase I and Phase II assessment questions for each of the nine enhancement (see Appendixes A and B and discussion of the assessment development process in Section 6). CMPs should rely on existing data and information, when possible, to complete the enhancement area assessment. Answers should be succinct and can include provided tables, figures, and bulleted text as long as sufficient information is provided to respond to each question. Additional reports or studies that support the responses should be cited and web links included, as appropriate.

The Phase I Assessment is to quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Phase I Assessments have been completed for all nine enhancement areas.

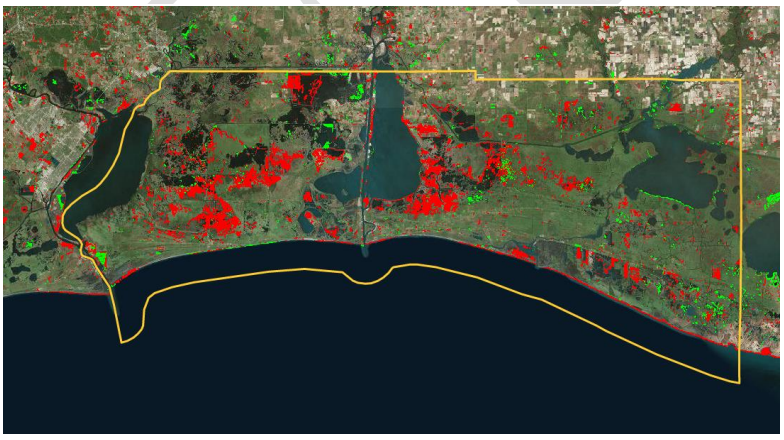
WETLANDS PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands. §309(a)(1)

Resource Characterization:

1. Using provided reports from NOAA's Land Cover Atlas[1] or high-resolution C-CAP data[2] (Pacific and Caribbean Islands only), please indicate the extent, status, and trends of wetlands in the state's coastal counties. You can provide additional or alternative information or use graphs or other visuals to help illustrate or replace the table entirely if better data are available. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period the data represents. Also note that Puerto Rico and the Commonwealth of the Northern Mariana Islands (CNMI) currently only have data for one time point so will not be able to report trend data. Instead, Puerto Rico and CNMI should just report current land use cover for all wetlands and each wetlands type.

Coastal Wetlands Status and Trends		
Current state of wetlands in 2011 (acres)	**6,179,907 acres**	
Percent net change in total wetlands (% gained or lost)*	from 1996-2011	from 2006-2011
	-3.27 %	-1.21 %
Percent net change in freshwater (palustrine wetlands) (% gained or lost)*	from 1996-2011	from 2006-2011
	-2.74 %	-2.01 %
Percent net change in saltwater (estuarine) wetlands (% gained or lost)*	from 1996-2011	from 2006-2011
	-8.54 %	0.75 %



Wetlands Losses/Gains in Cameron Parish from 1996-2010

Wetlands Gain

Wetlands Losses

Source: http://www.coast.noaa.gov/ccapatlas/#

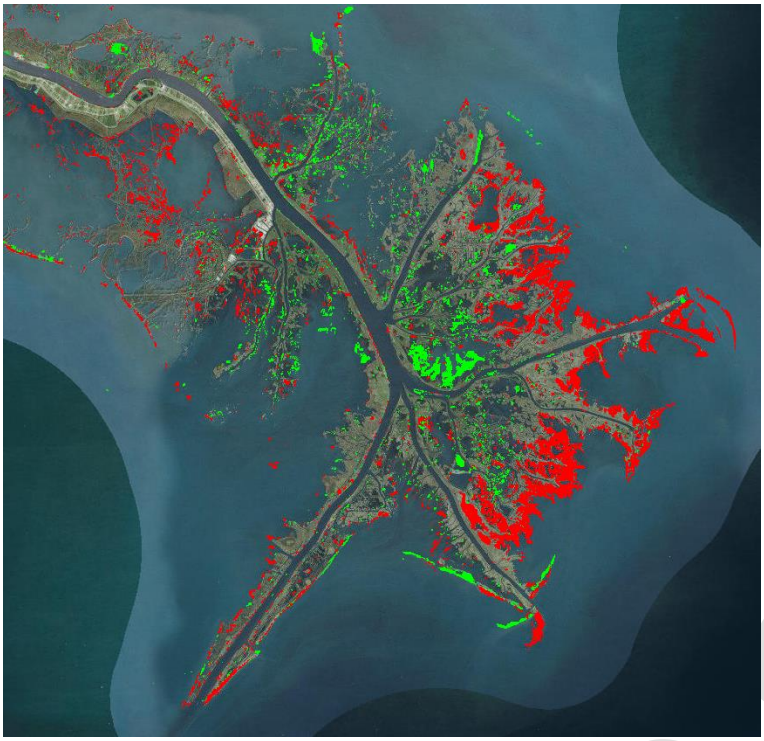
[1] http://www.csc.noaa.gov/ccapatlas/. Summary reports compiling each state's coastal county data are provided on the ftp site.
[2] http://www.csc.noaa.gov/digitalcoast/data/ccaphighres

How Wetlands Are Changing*		
Land Cover Type	**Area of Wetlands Transformed to Another Type of Land Cover between 1996-2011 (Sq. Miles)**	**Area of Wetlands Transformed to Another Type of Land Cover between 2006-2011 (Sq. Miles)**
Development	27.28	10.85
Agriculture	17.11	0.0
Barren Land	12.64	10.42
Water	264.39	199.63

** Note: Islands likely have data for another time period and may only have one time interval to report. If so, only report the change in wetlands for the time period for which high-resolution C-CAP data are available. Puerto Rico and CNMI do not report.*

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of coastal wetlands since the last assessment to augment the national data sets.

Estimated historic extent	**Current trends and achievements**	**Year and source(s) of Data**
Since 1932, estimates indicate 1,880 square miles of land have been lost.	• Additional loss of 1,750 square miles are threatened over the next 50 years • Coastal restoration has benefited 19,405 acres of coastal habitat • Built or improved 159 miles of levees	2012 *Louisiana's Comprehensive Master Plan for a Sustainable Coast*
Analyses show that coastal Louisiana has undergone a net change in land area of about -1,883 square miles from 1932 to 2010. This net change in land area amounts to a decrease of about 25% of the 1932 coastal land area. Persistent losses account for 95% of this land area decrease; the remainder are areas that have converted to water but have not yet exhibited the persistence necessary to be classified as "loss."	• Trend analyses from 1985 to 2010 show a wetland loss rate of 16.57 square miles per year.	2011 USGS NWRC http://pubs.usgs.gov/sim/3164/



Wetlands Losses/Gains
Louisiana's "Bird Foot" Delta
from 1996 - 2010

Wetlands Gain

Wetlands Losses

Source:
http://www.coast.noaa.gov/ccapatlas/#

Management Characterization:

1. Indicate if there have been any significant changes at the state or territory level (positive or negative) that could impact the future protection, restoration, enhancement, or creation of coastal wetlands since the last assessment.

Management Category	Significant Changes Since Last Assessment (Y or N)
Statutes, **regulations**, policies, or case law interpreting these	**Y**
Wetlands programs (e.g., regulatory, mitigation, restoration, acquisition)	**Y**

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes:

    Amendments to 10 Subsections of mitigation rules and procedures were completed on January 20, 2014. The Office of Coastal Management (OCM) has been implementing these amended rules and procedures. The main amendments are:

- Revised and updated definitions for clarification (Coastal Resources, Louisiana Coastal Wetlands Conservation Plan, Mitigation Measures)
- Provided assessment methodology options to allow for the use of other habitat evaluation methodology or revisions to the existing methodology. (Subsection C)
- Restructured the mitigation option hierarchy. Options are the same but the options are no longer based on hierarchy system.
    - implementation of a mitigation measure/project
    - mitigation bank purchase
    - ILF purchase (Subsection E)
- The information required for Mitigation Bank prospectus, Mitigation Banking Instruments, and Mitigation Bank Work Plans is more detailed and thorough. (Subsection F)
- Applicants are now required to notify all landowners with impacts of 1 acre or more. (Subsection J)
- More detailed project specifics are required for each onsite mitigation proposal/mitigation measure. (Subsection J)

On January 24, 2014 the instrument for the Louisiana Department of Natural Resources' In-Lieu Fee (ILF) Program was approved by the U.S. Army Corps of Engineers, New Orleans District. The intent of this program is to provide an alternative means of compensatory mitigation for permittees to the purchase of mitigation bank credits and permittee-responsible mitigation projects. Compensatory mitigation is required in order to offset the impacts caused by certain authorized activities in coastal Louisiana and maintain no net loss of coastal resources.

b. Specify if they were 309 or other CZM-driven changes; and

Changes to the mitigation rules and procedures were 309 driven. This task is currently in the implementation phase. Approval of the ILF Instrument and implementation of the ILF Program was not a 309 driven change, but was a CZM driven change.

c. Characterize the outcomes or likely future outcomes of the changes.

The changes to the mitigation rules and procedures as specified above require applicants to submit more detailed information in an effort to assist the OCM in streamlining the mitigation process. The outcomes for each amendment are summarized above in 2.a.

The approval of the ILF Instrument will provide applicants an additional option to meet compensatory mitigation requirements and provide effective

compensatory mitigation by funding the construction of projects that will re-establish marsh in coastal Louisiana. These marsh projects will contribute to healthy, productive fisheries that will enhance the sustainability of a viable and diverse estuarine and marine ecosystem. The Program will offset permitted impacts to wetlands to achieve the primary goal of no net wetland losses.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	✓
Medium	
Low	

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

   Wetland loss is a critical problem for Louisiana. Louisiana exhibits some of the highest erosion rates in the world. It is predicted that approximately an additional 1,750 square miles of land loss is projected over the next 50 years if no action is taken. Louisiana's resources (oil and gas, commercial fisheries, storm protection to communities and ports, beach, marsh, and wetland habitats that are essential for threatened and endangered species, etc.) are critical to the nation and to the economy and quality of life in Louisiana. A sustainable balance between the multiple uses of these coastal resources in this fragile ecosystem is crucial.

   OCM has requested input into our 309 Assessment and Strategy process though our web based public notices, at our quarterly coastal parish coastal management meetings, in our local coastal management programs' newsletter, and in our state journal. OCM will report on responses received in our Phase 2 Assessment.

COASTAL HAZARDS PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Prevent or significantly reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and anticipating and managing the effects of potential sea level rise and Great Lakes level change. §309(a)(2)

> *Note: For purposes of the Hazards Assessment, coastal hazards include the following traditional hazards and those identified in the CZMA: flooding; coastal storms (including associated storm surge); geological hazards (e.g., tsunamis, earthquakes); shoreline erosion (including bluff and dune erosion); sea level rise; Great Lake level change; land subsidence; and saltwater intrusion.*

Phase I (High-Level) Assessment: *(Must be completed by all states.)*
Purpose: To quickly determine whether the enhancement area is a high priority enhancement objective for the CMP that warrants a more in-depth assessment. The more in-depth assessments of Phase II will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems.

Resource Characterization:

1. **Flooding:** Using data from *NOAA's State of the Coast* "Population in the Floodplain" viewer[3] and summarized by coastal county through NOAA's Coastal County Snapshots for Flood Exposure,[4] indicate how many people were located within the state's coastal floodplain as of 2010 and how that has changed since 2000. You may to use other information or graphs or other visuals to help illustrate.

Population in the Coastal Floodplain			
	2000	**2010**	**Percent Change from 2000-2010**
No. of people in coastal floodplain[5]	1.4 Million	1.3 Million	-1.07%
No. of people in coastal counties[6]	2,222,082	2,215,864	-1.0%
Percentage of people in coastal counties in coastal	64%	59%	----------

[3] http://stateofthecoast.noaa.gov/pop100yr/welcome.html. Note FEMA is in the process of updating the floodplain data. This viewer reflects floodplains as of 2010. If you know the floodplain for your state has been revised since 2010, you can either use data for your new boundary, if available, or include a short narrative acknowledging the floodplain has changed and generally characterizing how it has changed.
[4] www.csc.noaa.gov/digitalcoast/tools/snapshots
[5] To obtain exact population numbers for the coastal floodplain, download the Excel data file on the State of the Coast "Population in the Floodplain" viewer: http://stateofthecoast.noaa.gov/pop100yr/welcome.html. Summary population data for each coastal state is available on the ftp site.
[6] To obtain population numbers for coastal counties, see spreadsheet of coastal population and critical facilities data provided or download directly from http://www.csc.noaa.gov/digitalcoast/data/stics. Summary population data for each coastal state is available on the ftp site.

floodplain			

2. **Shoreline Erosion** (for all states other than Great Lakes and islands; for Great Lakes and islands, see Question 5): Using data from *NOAA's State of the Coast* "Coastal Vulnerability Index,"[7] indicate the vulnerability of the state's shoreline to erosion. You may use other information or graphs or other visuals to help illustrate or replace the table entirely if better data is available. *Note: For New York and Pennsylvania that have both Atlantic and Great Lakes shorelines, fill out the table below for the Atlantic shoreline only.*

Vulnerability to Shoreline Erosion		
Vulnerability Ranking	**Miles of Shoreline Vulnerable**[11]	**Percent of Coastline**[8]
Very low (>2.0m/yr) accretion	0	0%
Low (1.0-2.0 m/yr) accretion)	100	7%
Moderate (-1.0 to 1.0 m/yr) stable	480	34%
High (-1.1 to -2.0 m/yr) erosion	40	3%
Very high (<-2.0 m/yr) erosion	780	56%

3. **Sea Level Rise** (for all states other than Great Lakes and islands; for Great Lakes and islands, see Question 5): Using data from *NOAA's State of the Coast* "Coastal Vulnerability Index",[9] indicate the vulnerability of the state's shoreline to sea level rise. You may provide other information or use graphs or other visuals to help illustrate or replace table entirely if better data is available. *Note: For New York and Pennsylvania that have both Atlantic and Great Lakes shorelines, fill out the table below for your Atlantic shoreline only.*

Coastal Vulnerability to Historic Sea Level Rise		
Vulnerability Ranking	**Miles of Shoreline Vulnerable**[11]	**Percent of Coastline**
Very low	0	0%
Low	0	0%
Moderate	0	0%
High	0	0%
Very high	1,400	100%

[7] http://stateofthecoast.noaa.gov/vulnerability/welcome.html (see specifically "Erosion Rate" drop-down on map). The State of the Coast visually displays the data from USGS's Coastal Vulnerability Index.
[8] To obtain exact shoreline miles and percent of coastline, mouse over the colored bar for each level of risk or download the Excel data file.
[9] http://stateofthecoast.noaa.gov/vulnerability/welcome.html (see "Vulnerability Index Rating" drop-down on map). The State of the Coast visually displays the data from USGS's Coastal Vulnerability Index.

4. **Other Coastal Hazards:** In the table below, indicate the general level of risk in the coastal zone for each of the coastal hazards. The state's multi-hazard mitigation plan is a good additional resource to support these responses.

Type of Hazard	General Level of Risk[10] (H, M, L) (a)
Flooding (riverine, stormwater)	High
Coastal storms (including storm surge)[11]	High
Geological hazards (e.g., tsunamis, earthquakes)	Low
Shoreline erosion[12]	High
Sea level rise[13,14,15]	High
Great Lake level change[14]	N/A
Land subsidence	High
Saltwater intrusion	High
Other (please specify) Tornado	High

5. If available, briefly list and summarize the results of any additional data or reports on the level of risk and vulnerability to coastal hazards within your state since the last assessment. The state's multi-hazard mitigation plan or climate change risk assessment or plan may be a good resource to help respond to this question.

   The State of Louisiana Hazard Mitigation Plan (SHMP) approved by FEMA on April 2, 2014, and the 2014 SHMP plan update continues to build on Louisiana's commitment to hazard mitigation. The State of Louisiana's vision was to produce a hazard mitigation plan that is educational and easy to read for the average person. The most recent plan can be viewed at http://www.getagameplan.org/mitigateplanupdate.htm.

   The entire state remains extremely vulnerable to water inundation from numerous sources. Tropical storms and flooding were also the two natural hazards that the 64 Louisiana parishes considered the gravest in their individual assessments. Both NOAA's state of the Coast's Sea Level Rise Viewer and the U.S. Global Change Research Program's 2014 National Climate Assessment point to the severity of erosion and the extreme vulnerability to sea level rise along the entirety of Louisiana's coast.

[10] Risk is defined as "the estimated impact that a hazard would have on people, services, facilities and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage." *Understanding Your Risks: Identifying Hazards and Estimating Losses. FEMA 386-2. August 2001*

[11] In addition to any state- or territory-specific information that may help respond to this question, the U.S. Global Change Research Program has an interactive website that provides key findings from the 2014 National Climate Assessment for each region of the country, including regions for the coasts and oceans, and various sectors. The report includes findings related to coastal storms and sea level rise that may be helpful in determining the general level of risk. See http://nca2014.globalchange.gov/.

[12] See NOAA State of the Coastal Vulnerability to Sea Level Rise Tool (select "Erosion Rate" from drop-down box) http://stateofthecoast.noaa.gov/vulnerability/welcome.html. The State of the Coast visually displays the data from USGS's Coastal Vulnerability Index.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred that could impact the CMP's ability to prevent or significantly reduce coastal hazards risk since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these that address:			
elimination of development/redevelopment in high-hazard areas[13]	N	N	N
management of development/redevelopment in other hazard areas	Y	Y	N
climate change impacts, including sea level rise or Great Lake level change	N	N	N
Hazards planning programs or initiatives that address:			
hazard mitigation	Y	Y	N
climate change impacts, including sea level rise or Great Lake level change	Y	Y	N
Hazards mapping or modeling programs or initiatives for:			
sea level rise or Great Lake level change	Y	Y	N
other hazards: Chenier Research	Y	Y	N

2. Briefly state how "high-hazard areas" are defined in your coastal zone.

   Geographically, historically and climatologically, Louisiana is perhaps the most complicated state in the nation. Low elevations, subtropical latitude and a warm and humid climate contribute to Louisiana's propensity toward hazards. Louisiana also has a large amount of manmade infrastructure in the coastal area which is at risk both for repetitive loss due to storms and for changing environmental conditions. The loss of our protective wetland systems has greatly exacerbated these risks. The State of Louisiana's Hazard Mitigation Plan rates an event probability as "high" if it occurs 20 times in the past 25 years.

[13] Use state's definition of high-hazard areas.

3. For any management categories with significant changes briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

    a. Describe the significance of the changes;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

    Comprehensive characterization of the management categories above will be provided in the Coastal Hazards Phase Two Assessment. Louisianans experienced dramatic changes in its management categories that address hazards in the aftermath of Hurricanes Katrina and Rita in 2005. Louisiana's hazard management efforts, in the management categories that Louisiana has selected to utilize, are therefore even more highly evolved than most other areas in the country. Louisiana has continued the implementation of programs and policies that were developed or enhanced as a consequence of the 2005 major hazard events.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

    High ✓
    Medium
    Low

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

    Louisiana has selected high prioritization for the Coastal Hazard Enhancement Area.

    Coastal Louisiana is one of the most imperiled landscapes in the world. With the effects of subsidence and sea level rise, much of coastal Louisiana may be inundated in less than 50 years.

    The loss of Louisiana's protective wetland habitat has achieved critical proportions. Our geographic situation on the Gulf of Mexico, our sub-tropical humid climate and low topography make coastal hazards a significant area of concern. The experiences of Hurricanes Katrina and Rita have taught Louisiana residents and officials some valuable lessons and have actually advanced our hazard planning and preparation practices today. Louisiana takes hazard preparation seriously. There are many varied Federal, State, Parish,

and Municipal planning efforts regarding hazard mitigation in Louisiana; therefore, there is an increasing opportunity to categorize and coordinate these efforts. For that reason, OCM has chosen to prepare a Phase 2, In-Depth Resource Characterization for the Coastal Hazard Enhancement Area. OCM has requested input into our 309 Assessment and Strategy process though our web based public notices, at our quarterly coastal parish coastal management meeting, in our local coastal management programs' newsletter and in our state journal. We will report on responses received in our Phase 2 Assessment.

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Resources and Tools:

Below are a few national resources and tools that may be useful in conducting your assessment or developing coastal hazards strategies. States likely have other state-specific resources, tools, and data that would be useful as well.

Climate.gov

NOAA's Climate.gov provides science and information for a climate-smart nation. The "Supporting Decisions" is a clearinghouse of reports, resources, and decision-support tools for planners and policy leaders who want authoritative climate science information to help them understand and manage climate-related risks and opportunities.

Geographic Scope: Various by resource
Website: www.climate.gov

CZMA Performance Management System Data

Annual CZMA performance measurement data for coastal hazards measures. Online database can be used to synthesize existing state and territory data reported during the assessment period.

Geographic Scope: All coastal states and territories
Website: www8.nos.noaa.gov/PMD/Login.aspx?ReturnUrl=%2fPMD%2fdefault.aspx

National Climate Assessment Web Tool

The U.S. Global Change Research Program provides an interactive web tool to quickly view key findings from the 2014 National Climate Assessment. Data are summarized by region (including ones for oceans and coasts) and sector.

Geographic Scope: Entire United States (including territories)
Website: http://nca2014.globalchange.gov/

NOAA C-CAP Coastal Land Atlas

Online data viewer provides user-friendly access to regional land cover and land cover change information developed through NOAA's Coastal Change Analysis Program (C-CAP). Users can investigate how land cover changed between 1996, 2001, 2006, and 2011. Although data are provided by county, NOAA staff members are able to help states easily aggregate county data into statewide summary.

Geographic Scope: Contiguous United States and Hawaii

Website: www.csc.noaa.gov/digitalcoast/tools/lca

NOAA Coastal County Snapshots: Flood Exposure

Assesses a county's exposure and resilience to flooding. Analyzes a county's dependence on the ocean or Great Lakes for a healthy economy. Examines the benefits a county receives from its wetlands. Compares counties to each other or for regional analysis. Allows users to download a PDF report for the snapshot of their choice.

Geographic Scope: Coastal states only. Currently not available for territories.

Website: www.csc.noaa.gov/digitalcoast/tools/snapshots

NOAA High-Resolution C-CAP Data

Nationally standardized database of land cover information (developed using remotely sensed imagery) for the coastal regions of the United States. C-CAP products provide inventories of coastal intertidal areas, wetlands, and adjacent uplands. High-resolution C-CAP products focus on bringing NOAA's national mapping framework to the local level by providing data relevant for addressing site-specific management decisions. Although the data require desktop GIS and some GIS technical skills, NOAA staff members are able to help states analyze data to support wetlands assessment.

Geographic Scope: Targeted watershed and other hotspots in the Caribbean, Pacific Islands, and Monterey Bay, California

Website: www.csc.noaa.gov/digitalcoast/data/ccaphighres

NOAA Sea Level Rise Viewer

Displays potential future sea levels and provides simulations of sea level rise at local landmarks, including modeling potential marsh migration due to sea level rise. Overlays social and economic data onto potential sea level rise. Examines how tidal flooding will become more frequent with sea level rise.

Geographic Scope: Select regions currently available. More coming soon so check back.

Website: www.csc.noaa.gov/digitalcoast/tools/slrviewer

NOAA Spatial Trends in Coastal Socioeconomics

The Spatial Trends in Coastal Socioeconomics recompiles socioeconomic data to estimate demographic and economic attributes for a variety of important coastal management jurisdictions like watersheds, floodplains, coastal counties, and place-based coastal management programs. Currently available data sets include Demographics Trends (1970-2011) from the U.S. Census Bureau; Economic Trends (1990-2011) from the Bureau of Labor Statistics and Bureau of Economic Analysis; Demographic Projections (1970-2040) from Woods and Poole Economics, Inc.; and Critical Facilities (2012) from the Federal Emergency Management Agency.

Geographic Scope: Varies by data

Website: http://csc.noaa.gov/digitalcoast/data/stics

NOAA State of the Coast

The State of the Coast website fosters an increased awareness of the crucial importance of healthy coastal ecosystems to a robust U.S. economy, a safe population, and a sustainable quality of life for coastal residents. The site offers quick facts and more detailed statistics through interactive indicator visualizations. Visualizations focused on coastal hazards issues include Coastal Vulnerability to Sea Level Rise, Coastal Population in the Floodplain, and Federally Insured Assets in the Coastal Floodplain.

Geographic Scope: Generally all coastal states and territories but a few viewers may have more limited coverage

Website: http://stateofthecoast.noaa.gov/

Spatial Hazards Events and Loss Database for the United States (SHELDUS)

SHELDUS is a county-level hazard data set for the United States for 18 different natural hazard event types such as thunderstorms, hurricanes, floods, wildfires, and tornados. For each event, the database includes the beginning date, location (county and state), property losses, crop losses, injuries, and fatalities that affected each county.

Geographic Scope: All states (does not include territories)

Website: http://webra.cas.sc.edu/hvri/products/sheldus.aspx

Social Vulnerability Index

The Social Vulnerability Index (SoVI) 2006-2010 measures the social vulnerability of U.S. counties to environmental hazards. The index is a comparative metric that facilitates the examination of the differences in social vulnerability among counties. It shows where there is uneven capacity for preparedness and response and where resources might be used most effectively to reduce the pre-existing vulnerability. SoVI also is useful as an indicator in determining the differential recovery from disasters.

Geographic Scope: All states (does not include territories)

Website: http://webra.cas.sc.edu/hvri/products/sovi.aspx

U.S. Global Change Research Program Scenarios for Climate Assessment and Adaptation

The U.S. Global Change Research Program has developed several interactive scenario maps. Scenarios are ways to help understand what future conditions might be, with each scenario an example of what might happen under different assumptions. Scenarios are not predictions or forecasts, and no probabilities are associated with them. Instead, they provide a range of future conditions to bound uncertainty. Scenarios displayed include climate, sea level change, land use, and socioeconomic conditions. They are based on peer-reviewed, published sources, including materials prepared by the Intergovernmental Panel on Climate Change.

Geographic Scope: National

Website: http://scenarios.globalchange.gov/content/scenarios

PUBLIC ACCESS PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Attain increased opportunities for public access, taking into account current and future public access needs, to coastal areas of recreational, historical, aesthetic, ecological, or cultural value. §309(a)(3)

Resource Characterization:

1. Use the table below to provide data on public access availability within the coastal zone.

Public Access Status and Trends			
Type of Access	**Current number**[14]	**Changes or Trends Since Last Assessment**[15] (↑, ↓, –, unknown)	**Cite data source**
Beach access sites	Not Available	unknown	LDNR
Shoreline (other than beach) access sites	24,979 Total shoreline miles	-	LDNR
Recreational boat (power or non-motorized) access sites	297	↑	LOSCO
Number of designated scenic vistas or overlook points	Not Available	unknown	Not Available
Number of fishing access points (i.e. piers, jetties)	Not Available	unknown	Not Available
Coastal trails/ boardwalks	No. of Trails/ boardwalks Not Available Miles of Trails/boardwalks Not Available	unknown	Not Available
Number of acres parkland/open space	Total sites 13/10263 acres Sites per miles of shoreline	-	LA State Parks Land Holding

[14] Be as specific as possible. For example, if you have data on many access sites but know it is not an exhaustive list, note "more than" before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

[15] If you know specific numbers, please provide. However, if specific numbers are unknown but you know that the general trend was increasing or decreasing or relatively stable or unchanged since the last assessment, note that with a ↑ (increased), ↓ (decreased), – (unchanged). If the trend is completely unknown, simply put "unkwn."

Public Access Status and Trends			
Type of Access	**Current number**[14]	**Changes or Trends Since Last Assessment**[15] (↑, ↓, –, unknown)	**Cite data source**
Other (please specify)	-	-	-

Louisiana's varying landscapes provide the opportunity for outdoor activity such as hiking, biking, swimming, fishing, kayaking, boating, camping, hunting, and birding. Coastal Louisiana is home to 17 Wildlife Management Areas and Wildlife Refuges, 7 National Wildlife Refuges, 7 State Parks, 1 National Heritage Area, and 1 National Park. These areas provide public access to recreational and cultural resources for locals and tourists.

Public recreation efforts in Louisiana are managed and maintained by a variety of groups, including but not limited to: parish and local governments, the Louisiana Department of Wildlife and Fisheries (LDWF), the Louisiana Department of Agriculture and Forestry (LDAF), the Louisiana Department of Culture, Recreation and Tourism (LCRT), the United States Forest Service, the United States Army Corps of Engineers (USACE), the National Park Service, and the United States Fish and Wildlife Service (USFWS).

2. Briefly characterize the demand for coastal public access and the process for periodically assessing demand. Include a statement on the projected population increase for your coastal counties.[16] There are several additional sources of statewide information that may help inform this response, such as the Statewide Comprehensive Outdoor Recreation Plan,[17] the National Survey on Fishing, Hunting, and Wildlife Associated Recreation,[18] and your state's tourism office.

   According to 2011 statistics from the U.S. Census Bureau, the coastal watershed areas are heavily populated portions of the state. Additionally, the population within the Louisiana's coastal shoreline counties is projected to increase by 10% between 2010 and 2020.

[16] See NOAA's Coastal Population Report: 1970-2020 (Table 5, pg. 9): http://stateofthecoast.noaa.gov/coastal-population-report.pdf

[17] Most states routinely develop "Statewide Comprehensive Outdoor Recreation Plans", or SCROPs, that include an assessment of demand for public recreational opportunities. Although not focused on coastal public access, SCORPs could be useful to get some sense of public outdoor recreation preferences and demand. Download state SCROPs at www.recpro.org/scorps.

[18] The National Survey on Fishing, Hunting, and Wildlife Associated Recreation produces state-specific reports on fishing, hunting, and wildlife associated recreational use for each state. While not focused on coastal areas, the reports do include information on saltwater and Great Lakes fishing, and some coastal wildlife viewing that may be informative and compares 2011 data to 2006 and 2001 information to understand how usage has changed. See www.census.gov/prod/www/fishing.html.

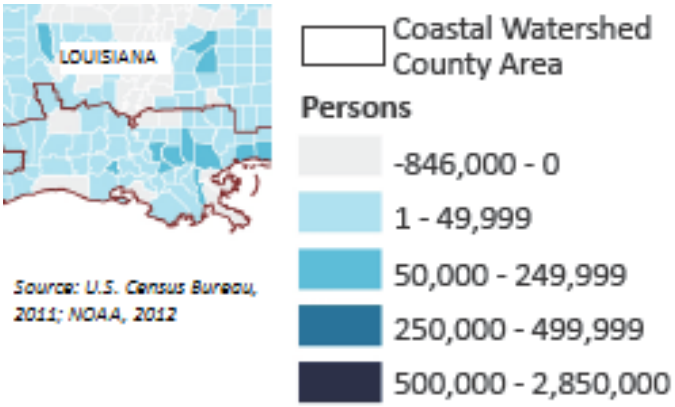


Figure 1. Coastal Watershed County Populations

Not only home to its citizens Louisiana offers a unique variety of recreational opportunities to residents and tourists. With over 1 million anglers and hunters and another 1 million wildlife watchers during 2011 alone, there is an obvious demand for public access and public resources (http://www.census.gov/prod/www/fishing.html). Louisiana's 2014-2019 Statewide Comprehensive Outdoor Recreation Plan, developed by the LCRT, reported a high public demand for parks, trails, and outdoor recreation facilities.

3. If available, briefly list and summarize the results of any additional data or reports on the status or trends for coastal public access since the last assessment.

   As referenced above, Louisiana has recently completed the 2014-2019 Statewide Comprehensive Outdoor Recreation Plan. The report identifies available outdoor infrastructure, the priorities and trends for users, and also prioritizes plans for future development. The full report can be viewed at: http://www.crt.state.la.us/louisiana-state-parks/grant-opportunities-for-outdoor-recreation/louisiana-outdoor-recreation/2014-2019-scorp/index.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	N
Operation/maintenance of existing facilities	Y	N	N
Acquisition/enhancement programs	Y	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

    a. Describe the significance of the changes;

    There have been no significant changes since the last assessment.

    b. Specify if they were 309 or other CZM-driven changes; and

    There have been no significant 309 or CZM driven changes since the last assessment.

    c. Characterize the outcomes or likely future outcomes of the changes.

    CZM will continue its role in the development and improvement of public access through the Coastal Use Permitting Process.

3. Indicate if your state or territory has a publically available public access guide. How current is the publication and how frequently it is updated?[19]

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	N	N	unknown
Web address (if applicable)	N/A	N/A	N/A
Date of last update	N/A	N/A	N/A
Frequency of update	N/A	N/A	N/A

The State of Louisiana does not publish a Public Access Guide or keep a website listing the public access locations across the state or the coastal zone. As mentioned previously, the LCRT maintains much of the information regarding recreational areas and opportunities throughout the state. The LCRT website is http://www.crt.state.la.us/. Additionally, the LDWF manages and maintains a website that includes information about wildlife management areas as well as other pertinent information. The LDWF website is http://www.wlf.louisiana.gov/.

[19] Note some states may have regional or local guides in addition to state public access guides. Unless you want to list all local guides as well, there is no need to list additional guides beyond the state access guide. However, you may choose to note that the local guides do exist and may provide additional information that expands upon the state guides.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	
Medium	
Low	✓

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

   CZM will continue to partner with other departments as appropriate; however, our main function in improvements to public access and development will be through the Coastal Use Permitting process.

   OCM requested input into our 309 Assessment and Strategy process through our web based public notices, at our quarterly coastal parish coastal management meetings, in our local coastal management programs' newsletter and in our state journal.

MARINE DEBRIS PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris. §309(a)(4)

Resource Characterization:

1. In the table below, characterize the existing status and trends of marine debris in the state's coastal zone based on the best available data.

Source of Marine Debris	Existing Status and Trends of Marine Debris in Coastal Zone		
	Significance of Source (H, M, L, unknown)	**Type of Impact**[20] (aesthetic, resource damage, user conflicts, other)	**Change Since Last Assessment** (↑, ↓, –, unknown)
Land-based			
Beach/shore litter	M	Aesthetic, resource damage	↑
Dumping	M	Aesthetic, resource damage	-
Storm drains and runoff	M	Aesthetic, resource damage	-
Fishing (e.g., fishing line, gear)	M	Aesthetic, resource damage	-
Other (BP Oil Spill related debris)	H	Aesthetic, resource damage, user conflicts	-
Ocean or Great Lake-based			
Fishing (e.g., derelict fishing gear)	M	Aesthetic, resource damage, user conflicts	-
Derelict vessels	M	Aesthetic, resource damage, user conflicts	↑
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	M	Aesthetic, resource damage	-
Hurricane/Storm	H	Aesthetic, resource damage, user conflicts	↑
Tsunami	N/A	N/A	N/A
Other (please specify)			

[20] You can select more than one, if applicable.

2. If available, briefly list and summarize the results of any additional state or territory specific data or reports on the status and trends or potential impacts from marine debris in the coastal zone since the last assessment.

   There are no significant changes to state or territory specific data or trends from marine debris impact in the coastal zone since the last assessment. However, there has been a large effort to remove thousands of tons of hurricane-related marine debris remaining from the 2005 and 2008 hurricane seasons and more recent storms such as Hurricanes Isaac and Tropical Storm Lee. This debris included natural debris such as woody debris as well as building wreckage, vehicles, derelict vessels, and hazardous materials. More recent tropical storms also had an impact the state and its waterways. Efforts by the Federal Emergency Management Agency (FEMA), the United States Coast Guard (USCG), the state, and local parishes to remove storm debris are ongoing.

   Additionally, the Deepwater Horizon Oil Spill in 2010 continues to pose new challenges in marine debris recon and removal. These include, but are not limited to: oil spill cleanup materials, boom, boom anchors, oil field related debris, animal carcasses, etc.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state or territory level management changes (positive or negative) for how marine debris is managed in the coastal zone.

Management Category	**Employed by State/Territory** (Y or N)	**CMP Provides Assistance to Locals that Employ** (Y or N)	**Significant Changes Since Last Assessment** (Y or N)
Marine debris statutes, regulations, policies, or case law interpreting these	Y	N	N
Marine debris removal programs	Y	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
   a. Describe the significance of the changes;
      There have been no significant changes since the last assessment.

   b. Specify if they were 309 or other CZM-driven changes; and
      There were no 309 or CZM driven changes.

c. Characterize the outcomes and likely future outcomes of the changes.
This will continue to be a multi-agency endeavor requiring the cooperation of local, State, Federal and non-governmental organizations.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	
Medium	✓
Low	

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Marine debris remains a priority to the state of Louisiana, particularly in relation to the region's frequency of hurricanes and meteorological history, the importance of commercial fishing industry to the state and nation, the high level of activity from oil and gas industry, and a focus on tourism including active hunting and fishing grounds. Currently, marine debris, litter, and recycling are under the jurisdiction of other state agencies as well as local governments. At this point in time, CZM will continue to provide assistance and cooperation where appropriate, and will remain involved to the extent that the marine debris removal activities would require a coastal use permit.

CUMULATIVE AND SECONDARY IMPACTS ASSESSMENT PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources. §309(a)(5)

Resource Characterization:

1. Using National Ocean Economics Program Data on population and housing,[21] please indicate the change in population and housing units in the state's coastal counties between 2012 and 2007. You may wish to add additional trend comparisons to look at longer time horizons as well (data available back to 1970), but at a minimum, please show change over the most recent five year period (2012-2007) to approximate current assessment period.

Trends in Coastal Population and Housing Units				
Year	**Population**		**Housing**	
	Total (# of people)	% Change (compared to 2002)	Total (# of housing units)	% Change (compared to 2002)
2002	1,920,076	-	797,982	-
2007	1,674,437	-12.79%	707,213	-11.37%
2012	1,884,522	-1.85%	818,829	+2.61%

Please note that the coastal population of Louisiana experienced a reduction in 2005 as the result of Hurricane Katrina. For example, between 2000 and 2010 coastal areas such as Venice and Cameron saw drops in population of 51.9% and 79.2%, respectively. (http://censusviewer.com/cities/LA)

2. Using provided reports from NOAA's Land Cover Atlas[22] or high-resolution C-CAP data[23] (Pacific and Caribbean Islands only), please indicate the status and trends for various land uses in the state's coastal counties between 2006 and 2011. You may use other information and include graphs and figures, as appropriate, to help illustrate the information. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period the data represents. Also note that Puerto Rico and the Commonwealth of the Northern Mariana Islands (CNMI) currently only have data for one time point so will not be able to report trend data. Instead, Puerto Rico and CNMI should just report current land use cover for developed areas and impervious surfaces.

[21] www.oceaneconomics.org/. Enter "Population and Housing" section. From drop-down boxes, select your state, and "all counties." Select the year (2012) and the year to compare it to (2007). Then select "coastal zone counties." Finally, be sure to check the "include density" box under the "Other Options" section.

[22] www.csc.noaa.gov/ccapatlas/. Summary data on land use trends for each coastal state is available on the ftp site.

[23] www.csc.noaa.gov/digitalcoast/data/ccaphighres. Summary data on land use trends for each coastal state is available on the ftp site.

Distribution of Land Cover Types in Coastal Counties		
Land Cover Type	**Land Area Coverage in 2010*** **(Acres)**	**Gain/Loss Since 2006** **(Acres)**
Developed, High /Medium Intensity	144,115	17,792
Developed, Low Intensity	377,035	4,512
Developed, Open Space	87,532	9,446
Grassland	104,288	-30,233
Scrub/Shrub	412,549	64,185
Barren Land	115,692	12,013
Open Water	5,180,645	89,689
Agriculture	1,473,121	-25,370
Forested	394,898	-54,560
Woody Wetland	2,028,760	1,146
Emergent Wetland	2,790,920	-88,633

*Please note that the distribution of land cover types in the coastal parishes of Louisiana was only available to 2010.

3. Using provided reports from NOAA's Land Cover Atlas[24] or high-resolution C-CAP data[25] (Pacific and Caribbean Islands only), please indicate the status and trends for developed areas in the state's coastal counties between 2006 and 2011 in the two tables below. You may use other information and include graphs and figures, as appropriate, to help illustrate the information. Note that the data available for the islands may be for a different time frame than the time periods reflected below. In that case, please specify the time period the data represents. Also note that Puerto Rico and CNMI currently only have data for one time point so will not be able to report trend data. Unless Puerto Rico and CNMI have similar trend data to report on changes in land use type, they should just report current land use cover for developed areas and impervious surfaces.

Development Status and Trends for Coastal Counties			
	2006	**2010***	**Percent Net Change**
Percent land area developed	4.40%	4.64%	+5.50%
Percent impervious surface area	1.55%	1.66%	+7.1%

** Note: Islands likely have data for another time period and may only have one time interval to report. If so, only report the change in development and impervious surface area for the time period for which high-resolution C-CAP data are available. Puerto Rico and CNMI do not need to report trend data.*

[24] www.csc.noaa.gov/ccapatlas/. Summary data on land use trends for each coastal state is available on the ftp site.

[25] www.csc.noaa.gov/digitalcoast/data/ccaphighres. Summary data on land use trends for each coastal state is available on the ftp site.

* Please note that the development status and trends in the coastal parishes of Louisiana was only available to 2010.

How Land Use Is Changing in Coastal Counties	
Land Cover Type	**Areas Lost to Development Between 2006-2010*** (Acres)
Barren Land	1,011
Emergent Wetland	1,862
Woody Wetland	5,299
Open Water	826
Agriculture	6,086
Scrub/Shrub	4,678
Grassland	2,214
Forested	12,198

** Note: Islands likely have data for another time period and may only have one time interval to report. If so, only report the change in land use for the time period for which high-resolution C-CAP data are available. Puerto Rico and CNMI do not report.*

*Please note that the land use change in the coastal parishes of Louisiana was only available to 2010.

4. Using data from NOAA's State of the Coast "Shoreline Type" viewer,[26] indicate the percent of shoreline that falls into each shoreline type.[27] You may provide other information or use graphs or other visuals to help illustrate.

Shoreline Types	
Surveyed Shoreline Type	**Percent of Shoreline**
Armored	3%
Beaches	12%
Flats	23%
Rocky	8%
Vegetated	53%

*Please note that the shoreline types in the coastal parishes of Louisiana have a date year of 2003.

5. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the cumulative and secondary impacts of coastal growth and development, such as water quality and habitat fragmentation, since the last assessment to augment the national data sets.

   There are no additional state-specific data available.

[26] http://stateofthecoast.noaa.gov/shoreline/welcome.html

[27] Note: Data are from NOAA's Environmental Sensitivity Index (ESI) Maps. Data from each state was collected in different years and some data may be over ten years old now. However, it can still provide a useful reference point absent more recent statewide data. Feel free to use more recent state data, if available, in place of ESI map data. Use a footnote to convey data's age and source (if other than ESI maps).

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state-level changes (positive or negative) in the development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development, including the collective effect on various individual uses or activities on coastal resources, such as coastal wetlands and fishery resources, since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	N	N	N
Guidance documents	N	N	N
Management plans (including SAMPs)	N	N	N

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    There were no changes.

    b. Specify if they were 309 or other CZM-driven changes; and
    There were no changes.

    c. Characterize the outcomes or likely future outcomes of the changes.
    There were no changes.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

    High ✓
    Medium _____
    Low _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

This area of enhancement was previously identified as low priority; however, in recent years there has been increased pressure by the resources agencies, local government and stakeholders. One such example is that of the Southwest Pass Area. OCM has recently contended that repeated dredging events by the Corps of Engineers may be, over the course of many dredging cycles, altering hydrology on the Pass a Loutre Wildlife Management Area. Additionally, as Louisiana continues to research the efficacy of river diversions – it is clear that secondary and cumulative impacts must be more clearly understood. These issues have brought the importance of understanding potential cumulative and secondary impacts to the forefront, and OCM has determined that this topic should be further evaluated.

OCM requested input into our 309 Assessment and Strategy process through the public notice process in our state journal, at a quarterly local coastal parish coastal management meeting, and through the local coastal management programs' newsletter. Specific issues and stakeholder comments will be discussed more in depth in the Phase 2 evaluation.

SPECIAL AREA MANAGEMENT PLANNING ASSESSMENT PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Preparing and implementing special area management plans for important coastal areas. §309(a)(6)

The Coastal Zone Management Act defines a Special Area Management Plan (SAMP) as "a comprehensive plan providing for natural resource protection and reasonable coastal-dependent economic growth containing a detailed and comprehensive statement of policies; standards and criteria to guide public and private uses of lands and waters; and mechanisms for timely implementation in specific geographic areas within the coastal zone. In addition, SAMPs provide for increased specificity in protecting natural resources, reasonable coastal-dependent economic growth, improved protection of life and property in hazardous areas, including those areas likely to be affected by land subsidence, sea level rise, or fluctuating water levels of the Great Lakes, and improved predictability in governmental decision making."

Resource Characterization:

1. In the table below, identify geographic areas in the coastal zone subject to use conflicts that may be able to be addressed through a SAMP. This can include areas that are already covered by a SAMP but where new issues or conflicts have emerged that are not addressed through the current SAMP.

Geographic Area	Opportunities for New or Updated Special Area Management Plans
	Major conflicts/issues
Mississippi River	Oil and Gas Pipeline crossings/inhibiting sediment pipeline siting
Louisiana Highway 1	Adjacent Sand or Clay Mining / destabilization of road

The two areas listed above have recently gained greater attention from the State, Local Parish Governments, and concerned citizens. The focus is a result of efforts set in motion for protection and restoration of the state's coast. The Mississippi River is a resource that the CZM requires balancing the intersection of the oil and gas pipeline industry and restoration efforts by state and federal agencies. The intersection occurs where proposed oil and gas pipelines overlap identified sediment delivery pipelines and the borrow areas to support them. CZM has not ruled out the development of a SAMP for the intersecting areas, but it is anticipated that siting conflicts can be avoided through the continued existing State Master Plan coordination.

In regard to Louisiana State Highway 1, the state passed a bill to recognize and protect the adjacent area of the highway so that no future destabilization of the road will occur during the 2014 legislative session. CZM is utilizing its regulating authority to direct users to obtain sand and clay resources from areas that are not located adjacent to the highway. It is anticipated that a SAMP will not be needed to protect this resource.

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends of SAMPs since the last assessment.

   In the last assessment of this enhancement area it was determined that the possibility of protecting chenier ridges may require a SAMP. Since the last assessment the protection of cheniers and other natural ridge features in the coastal zone has been incorporated into the CZM through the regulating authority of the local coastal management program (LCMP). OCM and the LCMP will continue the efforts to protect the sustainability of these ridge systems as natural hazard protection features and to protect them from increasing vulnerability to human degradation due to development activities.

   Louisiana has two Special Management Areas they are the Louisiana Offshore Oil Port (LOOP) and the Marsh Island Wildlife Management Area and Game Preserve managed by the Louisiana Department of Wildlife and Fisheries (LDWF). These areas continue to operate as they have since original program submittal and approval by NOAA.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any significant state- or territory-level management changes (positive or negative) that could help prepare and implement SAMPs in the coastal zone.

Management Category	**Employed by State or Territory** (Y or N)	**CMP Provides Assistance to Locals that Employ** (Y or N)	**Significant Changes Since Last Assessment** (Y or N)
SAMP policies, or case law interpreting these	NONE		
SAMP plans	NONE		

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
   a. Describe the significance of the changes;
      There have been no significant changes since the last assessment

   b. Specify if they were 309 or other CZM-driven changes; and
      There were no 309 or other CZM driven changes since the last assessment.

   c. Characterize the outcomes or likely future outcomes of the changes.
      There were no 309 or other CZM driven changes since the last assessment.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	
Medium	
Low	✓

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

   OCM recognizes the opportunities of designating areas as SAMPs; however, recent coastal issues - such as the chenier ridges - have been adequately handled by policy or procedure changes. OCM anticipates working with stakeholders to address coastal issues as they arise, and will engage federal partners on SAMP development as the need arises.

OCEAN/GREAT LAKES RESOURCES ASSESSMENT PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Planning for the use of ocean [and Great Lakes] resources. §309(a)(7)

Resource Characterization:

1. Understanding the ocean and Great Lakes economy can help improve management of the resources it depends on. Using Economics: National Ocean Watch (ENOW),[28] indicate the status of the ocean and Great Lakes economy as of 2010, as well as the change since 2005, in the tables below. Include graphs and figures, as appropriate, to help illustrate the information. Note ENOW data are not available for the territories. The territories can provide alternative data, if available, or a general narrative, to capture the value of their ocean economy.

Status of Ocean and Great Lakes Economy for Coastal Counties (2010)				
	Establishments (# of Establishments)	**Employment** (# of Jobs)	**Wages** (Millions of Dollars)	**GDP** (Millions of Dollars)
Living Resources	***334***	***3169***	***$92.8***	***$375.5***
Marine Construction + Ship & Boatbuilding	***300***	***18299***	***1,010.1***	***1640***
Marine Transportation	***613***	***19744***	***1,300***	***2,600***
Offshore Mineral Extraction	***765***	***21380***	***1,900***	***13,000***
Tourism & Recreation	***2229***	***41475***	***777.3***	***1,800***
All Ocean Sectors	***4241***	***104071***	***$5,100***	***$19,300***

Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2010)				
	Establishments (% change)	**Employment** (% change)	**Wages** (% change)	**GDP** (% change)
Living Resources	***+4.38***	***-7.88***	***+47.9***	***+85.99***
Marine Construction + Ship & Boatbuilding	***-2.28***	***-7.31***	***+29.43***	***-23.03***
Marine Transportation	***+1.32***	***+4.77***	***+40.95***	***+45.46***
Offshore Mineral Extraction	***+7.59***	***+1.64***	***+26.94***	***+18.94***
Tourism & Recreation	***+1.09***	***-4.71***	***+17.37***	***+12.83***
All Ocean Sectors	***+2.24***	***-2.33***	***+29.5***	***+16.67***

[28] www.csc.noaa.gov/enow/explorer/. If you select any coastal county for your state, you receive a table comparing county data to state coastal county, regional, and national information. Use the state column for your responses.

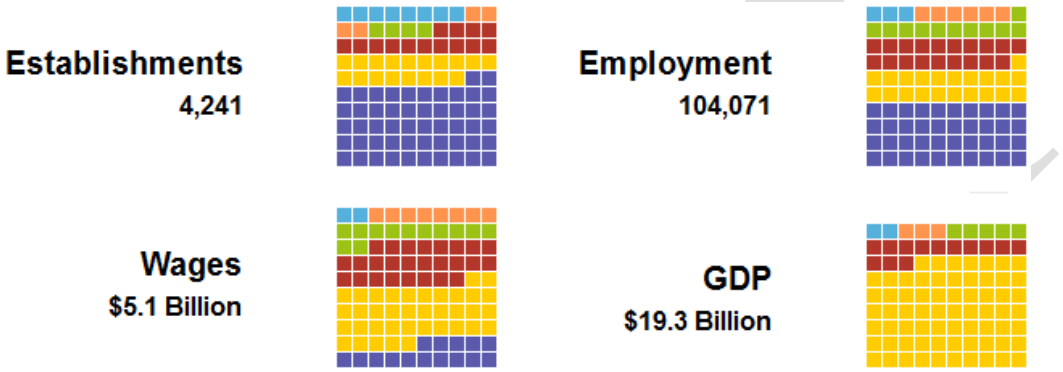
See following page for tables and graphs

RESOURCE CHARACTERIZATION

Key: All Ocean Sectors | Living Resources | Marine Construction | Ship and Boat Building | Marine Transportation | Offshore Mineral Extraction | Tourism and Recreation

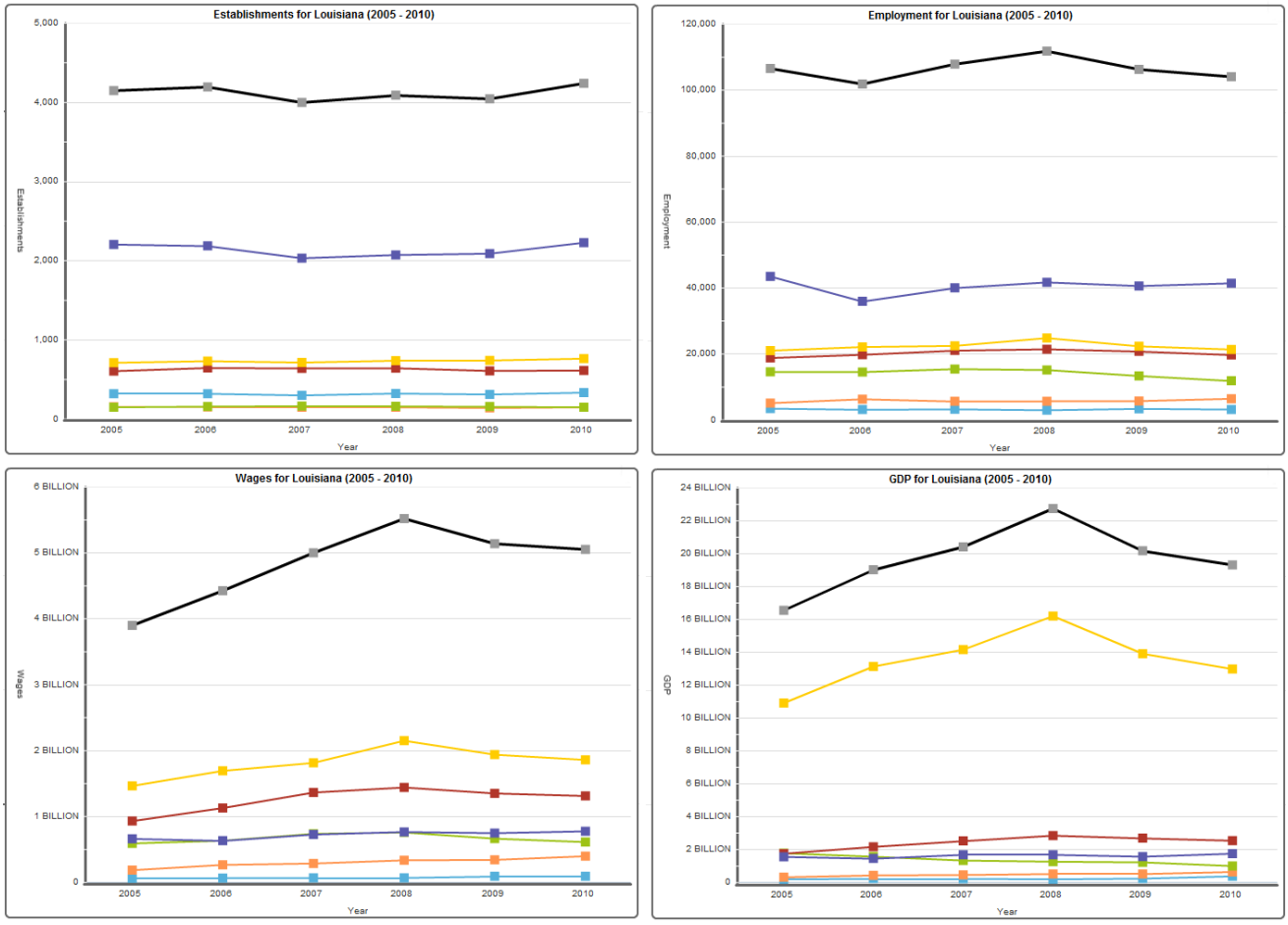
Source: www.csc.noaa.gov/enow/explorer/ Accessed 09/08/2014

Status of Ocean and Great Lakes Economy for Coastal Parishes (2010)



One square = 1% of the economy of the coastal parishes for each of the four economic indicators. Colors refer to individual economic sectors.

Change in Ocean and Great Lakes Economy for Coastal Parishes (2005-2010)



2. In the table below, characterize how the threats to and use conflicts over ocean and Great Lakes resources in the state's or territory's coastal zone have changed since the last assessment.

Significant Changes to Ocean and Great Lakes Resources and Uses	
Resource/Use	**Change in the Threat to the Resource or Use Conflict Since Last Assessment** (↑, ↓, –, unknown)
Resource	
Benthic habitat (including coral reefs)	–
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	unknown
Sand/gravel	↓ Conflict decreasing as Hurricane Protection Levees near completion
Cultural/historic	–
Other (please specify) Coastal Resiliency	↑ Hurricane severity, global sea level rise
Use	
Transportation/navigation	↑ Land loss threatens navigation channels ↑ Conflict between navigation and freshwater diversions
Offshore development[29]	–
Energy production	↑ land loss exposes old infrastructure
Fishing (commercial and recreational)	–
Recreation/tourism	unknown
Sand/gravel extraction	↓ Conflict decreasing as Hurricane Protection Levees near completion
Dredge disposal	↑ Convenient disposal sites nearing capacity. Federal funding decreasing
Aquaculture	–
Other (please specify) Coastal Resiliency	↓ Hurricane Protection Levee system around New Orleans nearing completion

[29] Offshore development includes underwater cables and pipelines, although any infrastructure specifically associated with the energy industry should be captured under the "energy production" category.

3. For the ocean and Great Lakes resources and uses in Table 2 (above) that had an increase in threat to the resource or increased use conflict in the state's or territory's coastal zone since the last assessment, characterize the major contributors to that increase.

Major Contributors to an Increase in Threat or Use Conflict to Ocean and Great Lakes Resources												
Resource	**Major Reasons Contributing to Increased Resource Threat or Use Conflict** (Note All that Apply with "X")											
	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Comm & Rec)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Coastal land loss
Transportation/Navigation & Energy Production												**X**
Dredge Disposal									**X**			

4. If available, briefly list and summarize the results of any additional state or territory specific data or reports on the status and trends of ocean and Great Lakes resources or threats to those resources since the last assessment to augment the national data sets.

   This office utilized the data resources provided in the 309 Assessment and Strategy Guidance as well as staff experience and on-the-ground knowledge to assess economic impacts and determine resource conflicts.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if any significant state- or territory-level changes (positive or negative) in the management of ocean and Great Lakes resources have occurred since the last assessment?

Management Category	**Employed by State or Territory** (Y or N)	**CMP Provides Assistance to Locals that Employ** (Y or N)	**Significant Changes Since Last Assessment** (Y or N)
Statutes, regulations, policies, or case law interpreting these	**Y**	**Y**	**N**
Regional comprehensive ocean/Great Lakes management plans	**Y**	**Y**	**N**
State comprehensive ocean/Great Lakes management plans	**N**	**N**	**N**
Single-sector management plans	**N**	**N**	**N**

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
   a. Describe the significance of the changes;
      There have been no significant changes since the last assessment.

b. Specify if they were 309 or other CZM-driven changes; and
There were no 309 or other CZM driven changes since the last assessment.

c. Characterize the outcomes or likely future outcomes of the changes.
OCM will continue its efforts to address issues as they arise. Additionally, OCM will continue to participate in activities to better address ocean resources that may affect Louisiana.

3. Indicate if your state or territory has a comprehensive ocean or Great Lakes management plan.

Comprehensive Ocean/Great Lakes Management Plan	State Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	Y 2012	N
Under development (Y/N)	Y 2017 plan under development	Y
Web address (if available)	http://issuu.com/coastalmasterplan/docs/coastal_master_plan-v2?mode=window&layout=http://coastalmasterplan.la.gov/issuu/mpmar2012/layout.xml	N
Area covered by plan	Southern Louisiana	Gulf of Mexico

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High _____
Medium _____
Low ✓ _____

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Although threats and resource conflicts currently exist in the Coastal Zone – the state has existing laws, regulations, and programs that adequately deal with changing threats and use conflicts.

ENERGY & GOVERNMENT FACILITY SITING ASSESSMENT PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities and energy-related activities and Government activities which may be of greater than local significance. §309(a)(8)30

Resource Characterization:

1. In the table below, characterize the status and trends of different types of energy facilities and activities in the state's or territory's coastal zone based on best available data. If available, identify the approximate number of facilities by type. The MarineCadastre.gov may be helpful in locating many types of energy facilities in the coastal zone.

Status and Trends in Energy Facilities and Activities in the Coastal Zone				
Type of Energy Facility/Activity	**Exists in CZ**		**Proposed in CZ**	
	(# or Y/N) **2010**	Change Since Last Assessment **1/2010 -1/2014** (↑, ↓, –, unknown)	(# or Y/N) **2010-**	Change Since Last Assessment **1/2010 -1/2014** (↑, ↓, –, unknown)
Energy Transport				
Pipelines[31]	>70,000 mi.	↑	Y	↑
Electrical grid (transmission cables)	Y	↑	Y	↑
Ports	12	--	1	↑
Liquid natural gas (LNG)[32]	2	↑	3	↑
Other (please specify)	--	--	--	--
Energy Facilities				
Oil and gas	Y	--	Y	--
Coal	0	--	0	--
Nuclear[33]	1	--	0	--
Wind	0	--	1	↑
Wave[34]	0	--	--	--
Tidal[36]	0	--	--	--
Current (ocean, lake, river) [36]	0	--	--	--
Hydropower	0	--	5	↑
Ocean thermal energy conversion	0	--	--	--
Solar	0	--	--	--
Biomass	0	--	--	--

[31] For approved pipelines (1997-present): www.ferc.gov/industries/gas/indus-act/pipelines/approved-projects.asp
[32] For approved FERC jurisdictional LNG import/export terminals: www.ferc.gov/industries/gas/indus-act/lng/exist-term.asp
[33] The Nuclear Regulatory Commission provides a coarse national map of where nuclear power reactors are located as well as a list that reflects there general locations: www.nrc.gov/reactors/operating/map-power-reactors.html
[34] For FERC hydrokinetic projects: www.ferc.gov/industries/hydropower/gen-info/licensing/hydrokinetics.asp

Status and Trends in Energy Facilities and Activities in the Coastal Zone				
Type of Energy Facility/Activity	**Exists in CZ**		**Proposed in CZ**	
	(# or Y/N) **2010**	Change Since Last Assessment **1/2010 -1/2014** (↑, ↓, –, unknown)	(# or Y/N) **2010-**	Change Since Last Assessment **1/2010 -1/2014** (↑, ↓, –, unknown)
Other (LNG)	2	--	4	↑

2. If available, briefly list and summarize the results of any additional state- or territory-specific information, data, or reports on the status and trends for energy facilities and activities of greater than local significance in the coastal zone since the last assessment.

   CZM provides comments on energy facility siting and provides information to applicants regarding the state's requirements for development within the Louisiana Coastal Zone as much as possible. Due to the nature of these projects as matters of homeland security, not all information is publicly available; however, Louisiana is a heavily industrialized state regarding the production and transportation of oil and gas.

   Since 2000, the U.S. Bureau of Ocean Energy Management (BOEM) and its predecessors have submitted consistency determinations on 32 Outer Continental Shelf lease sales in the Gulf of Mexico. Ten of these were after the August, 2011, end of the 16-month hiatus following the Deepwater Horizon Oil Spill. BOEM also solicited comments on future actions from the state on some 25 occasions. LDNR/OCM has and will continue to provide comments on these potential impacts and the requirements for Coastal Zone Management (CZM) compliance at every opportunity.

   During the period 2000-2014, oil and gas industry activity in the Louisiana coastal zone and offshore federal waters exhibited a significant drop and partial recovery, due mostly to the national recession. Generally, prior to 2009 OCM received 1,300-1,500 applications per year (or 63 to 72% of all applications received) for oil and gas activities. In 2009, applications for oil and gas activities dropped to 915, their lowest level in this 15-year period, but then climbed back to about 1,100 per year by 2011 (46 to 55 % of all applications received), where they remain.

   Some examples of other energy facility trends in coastal Louisiana include Port Fourchon, a major support facility for OCS oil and gas development. Port Fourchon and most other offshore support facilities have expanded their facilities throughout this time period. One new offshore support port has been proposed in western Louisiana. Six liquefied natural gas (LNG) storage and transport facilities are located in the Louisiana coastal zone, and generally are adapting to economic opportunities, particularly for exporting natural gas. One Strategic Petroleum Reserve facility has remained relatively inactive through this period. Two new coal transshipment facilities have been proposed for the coastal zone.

3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance[35] in the state's coastal zone since the last assessment.

   As a result of impacts from recent hurricanes, two federal government facilities that were sited within the coastal zone remain closed. Three National Wildlife Refuges have expanded slightly in the reporting period.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) that could facilitate or impede energy and government facility siting and activities have occurred since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Statutes, regulations, policies, or case law interpreting these	Y	N	N
State comprehensive siting plans or procedures	Y	N	Y

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:

   a. Describe the significance of the changes;

   Following an Executive Order issued by the Governor in 2008, all regulatory authority exercised by OCM must comply with the Coastal Protection and Restoration Authority (CPRA) Master Plan. The Master Plan was updated in 2012, and OCM ensures compliance with this overall plan for Louisiana's coast. A copy of the plan can be found at http://issuu.com/coastalmasterplan/docs/coastal_master_plan-v2?mode=window&layout=http://coastalmasterplan.la.gov/issuu/mpmar2012/layout.xml

   b. Specify if they were 309 or other CZM-driven changes; and

   These changes were not CZM-driven.

[35] The CMP should make its own assessment of what Government facilities may be considered "greater than local significance" in its coastal zone, but these facilities could include military installations or a significant federal government complex. An individual federal building may not rise to a level worthy of discussion here beyond a very cursory (if any at all) mention).

c. Characterize the outcomes or likely future outcomes of the changes.

To date, the Master Plan has been effective in ensuring that new development is consistent with the objective of a sustainable coast. In addition, the Master Plan is slated to be updated again in 2017.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	
Medium	✓
Low	

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

Louisiana has been an energy-producing state for many years, and oil and gas exploration and production remains a major part of the State's economy and culture. The petroleum industry and other coastal users have, broadly, found an equilibrium in which all parties have satisfactory access to coastal resources; however, the dynamic nature of the industry and of the Louisiana coast itself requires the coastal management program to keep abreast of trends and developments.

AQUACULTURE PHASE I (HIGH-LEVEL) ASSESSMENT:

Section 309 Enhancement Objective: Adoption of procedures and policies to evaluate and facilitate the siting of public and private aquaculture facilities in the coastal zone, which will enable states to formulate, administer, and implement strategic plans for marine aquaculture. §309(a)(9)

Resource Characterization:

1. In the table below, characterize the existing status and trends of aquaculture facilities in the state's coastal zone based on the best available data. Your state Sea Grant Program may have information to help with this assessment.[36]

Type of Facility/Activity	Status and Trends of Aquaculture Facilities and Activities		
	# of Facilities[37]	Approximate Economic Value	Change Since Last Assessment (↑, ↓, –, unknown)
Food Fish	35	Undisclosed	unknown
Sport Fish	4	Undisclosed	unknown
Baitfish	8	Undisclosed	unknown
Ornamental Fish	2	Undisclosed	unknown
Crustaceans	606	Undisclosed	unknown
Mollusks	135	$28,499,000	Unknown
Misc. Aquaculture	95	$35,410,000	Unknown

2. If available, briefly list and summarize the results of any additional state- or territory-specific data or reports on the status and trends or potential impacts from aquaculture activities in the coastal zone since the last assessment.

   At this point in time, regulation of the aquaculture industry is subject to regulation by the CZM program to the extent that an applicant would require a coastal use permit for the proposed use.

Management Characterization:

1. Indicate if the approach is employed by the state or territory and if there have been any state- or territory-level changes (positive or negative) that could facilitate or impede the siting of public or private aquaculture facilities in the coastal zone.

[36] While focused on statewide aquaculture data rather than just within the coastal zone, the *Census of Aquaculture* (www.agcensus.usda.gov/Publications/2002/Aquaculture/) may help in developing your aquaculture assessment. The 2002 report, updated in 2005, provides a variety of state-specific aquaculture data for 2005 and 1998 to understand current status and recent trends. The next census is scheduled to come out late 2014 and will provide 2013 data.

[37] Be as specific as possible. For example, if you have specific information of the number of each type of facility or activity, note that. If you only have approximate figures, note "more than" or "approximately" before the number. If information is unknown, note that and use the narrative section below to provide a brief qualitative description based on the best information available.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Aquaculture comprehensive siting plans or procedures	Yes	No	No
Other aquaculture statutes, regulations, policies, or case law interpreting these	Yes	No	No

2. For any management categories with significant changes, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information:
    a. Describe the significance of the changes;
    There were no changes in state policies

    b. Specify if they were 309 or other CZM-driven changes; and
    There were no changes in state policies

    c. Characterize the outcomes or likely future outcomes of the changes.
    At this time, LDNR/OCM does not play a role in aquaculture regulation for the state of Louisiana.

Enhancement Area Prioritization:

1. What level of priority is the enhancement area for the coastal management program?

High	
Medium	
Low	✓

2. Briefly explain the reason for this level of priority. Include input from stakeholder engagement, including the types of stakeholders engaged.

    Aquaculture is an important priority to Louisiana both economically and culturally, OCM intends to explore Louisiana's more immediate issues of wetland loss and coastal hazards. Stakeholder input was sought from multiple federal, state, local user groups.

PHASE II ASSESSMENTS

The assessment section responds to the Phase II assessment questions for the high priority enhancement areas (see Appendixes A and B and discussion of the assessment development process in Section 6). CMPs should rely on existing data and information, when possible, to complete the enhancement area assessment. Answers should be succinct and can include provided tables, figures, and bulleted text as long as sufficient information is provided to respond to each question. Additional reports or studies that support the responses should be cited and web links included, as appropriate.

Phase II assessments are used only for enhancement areas that are identified as high priority for the CMP after the Phase I (high-level) assessments. Phase II Assessments are more in-depth assessments that will help the CMP understand key problems and opportunities that exist for program enhancement and determine the effectiveness of existing management efforts to address those problems. Identifying an enhancement area as a high priority does not necessarily mean the CMP would be required to develop a strategy for the enhancement area given other priority enhancement areas and available resources.

Phase II Assessments have been completed for the following enhancement areas:

- *Wetlands*
- *Coastal Hazards*
- *Cumulative and Secondary Impacts*

WETLANDS PHASE II ASSESSMENT

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities to improve the CMP's ability to protect, restore, and enhance wetlands.

1. What are the three most significant existing or emerging physical stressors or threats to wetlands within the coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout the coastal zone or specific areas that are most threatened? Stressors can be development/fill; hydrological alteration/channelization; erosion; pollution; invasive species; freshwater input; sea level rise/Great Lake level change; or other (please specify). When selecting significant stressors, also consider how climate change may exacerbate each stressor.

	Stressor/Threat	**Geographic Scope** (throughout coastal zone or specific areas most threatened)
Stressor 1	Erosion	Extensive problem throughout the coastal zone
Stressor 2	Development/Fill	Extensive problem throughout the coastal zone
Stressor 3	Other – storm surge/hurricane protection	Extensive problem throughout the coastal zone

2. Briefly explain why these are currently the most significant stressors or threats to wetlands within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

   Louisiana is in the midst of a land loss scenario unlike any other. Since the 1930s, coastal erosion has claimed nearly 1,900 square miles, and experts predict that approximately 1,750 additional square miles of land loss is projected over the next 50 years (2012 *Louisiana's Comprehensive Master Plan for a Sustainable Coast)*. Louisiana offers a unique coastal line for the nation because it is comprised of approximately 40% of the nation's wetlands; however, it also experiences approximately 90% of the coastal wetland loss in the lower 48 states (America's Wetlands). At that estimated current rate of loss Louisiana loses an area the size of one football field per hour (2011 USGS NWRC).

   Although Louisiana's coast is a natural coast, it is also a working coast that is important to both our state and our nation. Louisiana is the third largest producer of petroleum and leading producer of natural gas in the United States (Louisiana Division of Administration). In addition, over 25% of the nation's waterborne exports pass through one of Louisiana's five major ports, and Louisiana's commercial fishing industry produces 25% of all the seafood in America (Louisiana Division of Administration). Development goes hand-in-hand with this level of industry, and land is at a premium. It is vital that Louisiana maintains a balance among the multiple uses of coastal resources for its citizens and the future.

   As important as the natural and working environments of the coast are, the people that live in these vulnerable areas are just as much of an asset. The coastal area is home to over 1

million people, and if we continue to lose wetland habitats, the vulnerability of communities and infrastructure will increase substantially. In addition, our flood protection systems will become more vulnerable as the land around them erodes. Given the dynamic nature of the coast, Louisiana is striving to create a coast that offers communities substantially improved risk reduction while making strides toward building a sustainable ecosystem that is resilient over time years (2012 *Louisiana's Comprehensive Master Plan for a Sustainable Coast)*.

3. Are there emerging issues of concern but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Wetland evaluation methodologies	Review current wetland assessment methodology to update evaluation criteria, review alternative wetland assessment methods, and improve tracking of wetland impacts.
Wetland mapping and GIS	Updated habitat information

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the wetlands enhancement objective.

1. For each additional wetland management category below that was not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Management Category	Employed By State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Wetland assessment methodologies	Y	Y	N
Wetland mapping and GIS	Y	Y	N
Watershed or special area management plans addressing wetlands	N	N	N
Wetland technical assistance, education, and outreach	Y	Y	N
Other (Updates to Mitigation Rules and Procedures)	Y	Y	Y

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.

    a. Describe significant changes since the last assessment;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

    SEE WETLANDS PHASE I ASSESSMENT

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in protecting, restoring, and enhancing coastal wetlands since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's or territory's management efforts?

    OCM's management efforts have never been formally assessed by an outside party, but internal metrics show that management efforts have been successful. For example OCM continues to ensure that mitigation efforts are optimized to the fullest extent possible in order to achieve no net loss of coastal resources. Habitat restoration falls under the umbrella of the Coastal Protection and Restoration Authority (OCPR); however, OCM has assisted in the re-establishment of approximately thirty five acres of brackish marsh and is in the process of constructing the re-establishment of approximately twenty acres of intermediate marsh. The efforts were accomplished through the adoption of the In-Lieu Fee instrument that provides an additional option for applicants to meet compensatory mitigation requirements as well as provide effective compensatory mitigation by funding the construction of projects that will re-establish marsh in coastal Louisiana.

Identification of Priorities:

1. Considering changes in wetlands and wetland management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively respond to significant wetlands stressors. *(Approximately 1-3 sentences per management priority.)*

    <u>Management Priority 1: Increasing Efficiency in Wetland Assessment Process for Compensatory Mitigation</u>

    Description: The OCM mitigation section updated its regulations in 2014 through the 309 process. The revised mitigation regulations allow for OCM to utilize the most appropriate assessment tool for the quantification of net gains and net losses of ecological value for the proposed use. The state currently employs the Wetland Value Assessment to calculate

impacts and benefits from projects located throughout the coastal zone. However, the state sees potential benefit in reviewing other assessment methodologies to determine if they would provide a better fit for Louisiana.

Additionally, currently state and federal agencies utilize different scientifically proven assessment methodology tools to assess coastal habitat values, and some methodologies or versions of the same methodology are utilized for different assessments (i.e. impacts vs. benefits). The multiple and varying methodologies lead to multiple interpretations of input parameters for the respective models. As a result of the variation of input parameters, there can be multiple differing results for quantified wetland impacts and/or benefits. The OCM anticipates that a result of this evaluation process will be increased transparency for coastal users, state, and federal agencies.

The state recognizes the need to review the selected wetland assessment tool in use and to ensure that impacts and benefits to wetlands are accurately quantified. This strategy will address the priority needs and gaps by assisting OCM in determining the most appropriate tool available in coastal habitat assessments for compensatory mitigation purposes and in turn, may influence other state and federal agencies to adopt similar methodologies. New or improved polices and/or updates to permitting procedures may potentially improve the mitigation process and ensure that adequate compensatory mitigation is assessed for projects located within the coastal zone.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	**Need?** (Y or N)	**Brief Explanation of Need/Gap**
Research	Y	Additional research to identify and assess alternative wetland assessment methodologies as well as parameter input updates would be required.
Mapping/GIS	Y	Mapping efforts for mitigative efforts throughout the state would help review of potential assessment tools. Comprehensive assessment layers could be developed through this process.
Data and information management	Y	Comparative database management would be assist in the review impact to benefit ratios, input parameters, etc.
Training/capacity building	Y	Training for staff as well as Local coastal management programs would be required.
Decision-support tools	Y	Coastal User's Guide updates and updates to Standard Operating procedures
Communication and outreach	Y	Outreach to user groups prior, throughout the process, and rolling out the findings would be necessary.

Other (Specify)		

Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

   Yes ✓
   No _____

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

   Strategies will be developed for this enhancement area in order to help OCM in its mission to preserve, create, enhance and restore wetlands and to mitigate impacts to wetlands.

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities to improve the CMP's ability to prevent or significantly reduce coastal hazard risks by eliminating development and redevelopment in high-hazard areas and managing the effects of potential sea level rise and Great Lakes level change.

1a. **Flooding In-depth** (for all states besides territories): Using data from *NOAA's State of the Coast* "Population in the Floodplain" viewer[38] and summarized by coastal county through NOAA's Coastal County Snapshots for Flood Exposure,[39] indicate how many people at potentially elevated risk were located within the state's coastal floodplain as of 2010. These data only reflect two types of vulnerable populations. You can provide additional or alternative information or use graphs or other visuals to help illustrate or replace the table entirely if better data are available. *Note: National data are not available for territories. Territories can omit this question unless they have similar alternative data or include a brief qualitative narrative description as a substitute.*

2010 Populations in Coastal Counties at Potentially Elevated Risk to Coastal Flooding[40]				
	Under 5 and Over 65 years old		In Poverty	
	# of people	% Under 5/Over 65	# of people	% in Poverty
Inside Floodplain	273,000	21%	200,507	15%
Outside Floodplain	266,224	12%	134,528	15%

1b. **Flooding In-depth** (for all states besides territories): Using summary data provided for critical facilities, derived from FEMA's HAZUS[41] and displayed by coastal county through NOAA's Coastal County Snapshots for Flood Exposure,[42] indicate how many different establishments (businesses or employers) and critical facilities are located in the FEMA floodplain. You can provide more information or use graphs or other visuals to help illustrate or replace the table entirely if better information is available.

Critical Facilities in the FEMA Floodplain[44]						
	Schools	Police Stations	Fire Stations	Emergency Centers	Medical Facilities	Communication Towers
Inside Floodplain	359	85	65	2	32	59
Coastal Counties	771	228	189	6	72	96

[38] http://stateofthecoast.noaa.gov/pop100yr/welcome.html
[39] http://www.csc.noaa.gov/digitalcoast/tools/snapshots
[40] To obtain exact population numbers for the coastal floodplain, download the excel data file from the State of the Coast's "Population in Floodplain" viewer.
[41] http://www.fema.gov/hazus; can also download data from NOAA STICS http://www.csc.noaa.gov/digitalcoast/data/stics. Summary data on critical facilities for each coastal state is available on the ftp site.
[42] http://www.csc.noaa.gov/digitalcoast/tools/snapshots

2. Based on the characterization of coastal hazard risk, what are the three most significant coastal hazards[43] within the coastal zone? Also indicate the geographic scope of the hazard, i.e., is it prevalent throughout the coastal zone or are specific areas most at risk?

	Type of Hazard	**Geographic Scope** (throughout coastal zone or specific areas most threatened)
Hazard 1	Flooding	Throughout Coastal Zone
Hazard 2	Tropical Storms	Throughout Coastal Zone
Hazard 3	Erosion/Wetland Loss/Relative Sea Level Rise	Throughout Coastal Zone

3. Briefly explain why these are currently the most significant coastal hazards within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

   "Floods, whether riverine, backwater, surge-related or caused by levee failure, present the most costly and pervasive hazard in Louisiana." 2014 State of Louisiana Hazard Mitigation Plan A complicated geography in the coastal zone comprised mostly of remnants of natural levee ridges surrounded by extremely low elevation marshes, abundant water sources, high rainfall and close proximity to the Gulf of Mexico all contribute significantly to Louisiana's risk of floods. Louisiana's coast is unique in that much of it is comprised of wetlands that lack a distinct, easily-identifiable, coastline but instead gradually transitions from freshwater wetland systems to brackish water wetland systems, then to saltwater wetland systems, and then eventually into open water. As vulnerable wetlands continue to vanish at an alarming rate the Louisiana coast is under growing risk from coastal hazards such as flooding, tropical storms, relative sea level rise and coastal erosion.

   In addition, Louisiana has suffered significant loss of life, injury and property damage from tropical storms. The prominent hurricanes of 2005: Katrina in eastern Louisiana and Rita in western Louisiana, drastically changed the hazard preparation and mitigation landscape in Louisiana. In December of 2005 shortly after the storms, a law was enacted that called for the adoption of the International Building Code (IBC) for all new construction. Louisiana has adopted numerous other policies and programs as a result of the extreme devastation suffered from these two storms. For example, all affected jurisdictions adopted post-Katrina/Rita Advisory Base Flood Elevations (ABFEs) and as of 2013, 30 of Louisiana's 64 parishes have completed Digital Flood Insurance Rate Maps (DFIRMs) and 22 more parishes are in the development stage 2014 State of Louisiana Hazard Mitigation Plan.

   The Louisiana Fuel Team is another example of a policy that has been adopted as a result of Louisiana's experiences with storm preparation and recovery. The Louisiana Fuel Team is a group of governmental and industry leaders who are committed to reducing the impacts of energy supply disruptions to the public during times of emergency. Since its development

[43] See list of coastal hazards at the beginning of this assessment template.

in 2009, the Louisiana Fuel Team has been activated twelve times ranging from hurricanes and river flooding to winter weather. Louisiana recognizes that its roles as a major supplier of fuel not only to its citizens but also to the nation. The Louisiana Fuel Team was developed as a supplement to the state's emergency response to the public's need for fuel during times of emergency and also to lessen the downstream effects of energy supply disruptions.

As evidenced in our high level assessment prepared this 309 Assessment and Strategy period based on data from NOAA's State of the Coast, Vulnerability to Sea Level Rise and the Erosion Tool, all of Louisiana's coast has a very high susceptibility to sea level rise and more than half of its coast is subject to very high rates of erosion. Wetland loss has historically been a primary concern of Louisiana's Coastal Management Program. All of these contribute significantly to the level of risk remaining high for flooding, coastal storms, relative sea level rise and severe erosion in Louisiana.

4. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Lack of local planning for hazard recovery prior to hazard events	Coordination between local community and state hazard planning efforts
Lack of integration of local and state hazard efforts	Local community efforts to participate in CRS
Hazard planning through current OCM structure and programs	Information on hazards that may be regulated through local coastal management program or other OCM programs
Navigation hazards posed by abandoned pipelines	Information on navigation hazards that may be regulated through an OCM program

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the coastal hazards enhancement objective.

1. For each coastal hazard management category below, indicate if the approach is employed by the state or territory and if there has been a significant change since the last assessment.

Management Category	Employed by State/Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Change Since the Last Assessment (Y or N)
Statutes, Regulations, and Policies:			
Shorefront setbacks/no build areas	N	N	N
Rolling easements	N	N	N

Repair/rebuilding restrictions	Y	N	N
Hard shoreline protection structure restrictions	N	N	N
Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)	N	N	N
Repair/replacement of shore protection structure restrictions	N	N	N
Inlet management	Y	Y	N
Protection of important natural resources for hazard mitigation benefits (e.g., dunes, wetlands, barrier islands, coral reefs) (other than setbacks/no build areas)	Y	Y	Y *309 driven project implemented Cameron Parish Chenier Protection Ordinance Adoption*
Repetitive flood loss policies (e.g., relocation, buyouts)	Y	N	N
Freeboard requirements	Y *Some Parishes*	N	N
Real estate sales disclosure requirements	Y	N	N
Restrictions on publicly funded infrastructure	Y	N	N *State Facility Planning Control**
Infrastructure protection (e.g., considering hazards in siting and design)	Y	N	N
Other (please specify)			
Management Planning Programs or Initiatives:			
Hazard mitigation plans	Y	Y	N
Sea level rise/Great Lake level change or climate change adaptation plans	N	N	N
Statewide requirement for local post-disaster recovery planning	Y	N	N *Louisiana Recovery Authority**
Sediment management plans	Y	Y	N *CPRA State Master Plan**
Beach nourishment plans	Y	Y	N *CPRA State Master Plan**
Special Area Management Plans (that address hazards issues)	N	N	N
Managed retreat plans	N	N	N
Other (please specify)			
Research, Mapping, and Education Programs or Initiatives:			
General hazards mapping or modeling	Y	Y	N
Sea level rise mapping or modeling	Y	N	N
Hazards monitoring (e.g., erosion rate, shoreline change, high-water marks)	Y	Y	N
Hazards education and outreach	Y	Y	N
Other (please specify)			

*not part of OCM's activities

2. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's management efforts in addressing coastal hazards since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state's management efforts?

   The State of Louisiana's Hazard Mitigation Plan must be updated at least every three years and submitted to the Federal Emergency Management Agency (FEMA) for re-approval. The evaluations consider several basic factors, similar to the issues covered in the monitoring process; these periodic evaluations of the Plan include:

   1) Changes in vulnerability assessments and loss estimations. The evaluation includes an examination of the analyses conducted for hazards identified in the Plan and determines if there have been changes in the level of risk to the State and its citizens to the extent that the Plan (in particular the strategies and prioritized actions the State is considering) should be modified.
   2) Changes in laws, policies, or regulations. The evaluation includes an assessment of the impact of changes in relevant laws, policies and regulations on the basic assumptions included in the Plan.
   3) Changes in state agencies or their procedures that will affect how mitigation programs or funds are administered.
   4) Significant changes in funding sources or capabilities; and
   5) Progress on mitigation actions (including project closeouts) or new mitigation actions that the State is considering.

   By the update of the 2014 State of Louisiana Hazard Mitigation Plan all 64 Louisiana parishes had approved Hazard Mitigation Plans. The State of Louisiana prioritized funding for them, and provided technical assistance to all local jurisdictions, ensuring that all localities had them approved. Overall, the state has approved all 93 jurisdictional Hazard Mitigation Plans: 64 parish-level, 14 local community, 9 universities, 5 special districts, and 1 Native American tribe plan.

   The Louisiana Department of Natural Resources (LDNR) and the Cameron Parish Local Coastal Management Program became concerned when it was recognized that there were insufficient enforceable legal polices regarding possibly destructive practices being permitted on the parish's chenier ridges. These important natural resource features offer important hazard mitigation benefits and are the parish's first line of defense from storm surges. In response to these deficiencies the LDNR Office of Coastal Management (OCM) developed a multi-tasked Section 309 assessment and strategy designed to scientifically assess the situation and offer remediation potential.

   After extensive research and with considerable technical assistance from OCM in September of 2012 Cameron Parish enacted a new ordinance that calls for detailed and specific justification, alternatives and mitigation for activities that may negatively impact cheniers. The new, more restrictive, ordinance also prohibits known destructive practices

and calls for the remediation of any damaging impacts. There have been two local permit application denials for sand mining on Cameron cheniers, denied on the grounds of creating adverse natural resource and hazard effects and increasing the potential for flood and storm damage. There have also been numerous inquiries regarding the feasibility of new sand mining operations where the potential applicant was informed that mining of cheniers would not be allowed. This was a 309 driven project.

In order to assist Louisiana parish communities in achieving greater coastal resiliency to tropical storms and the corresponding storm surge, riverine flooding and other disasters or emergencies, the OCM facilitated 11 initial and 5 follow up Coastal Resilience Index (CRI) determinations in 11 different communities across our entire coast during the 2011-2015, 309 strategy period. The CRI is a tool communities can use to examine how prepared they are for storms and storm recovery. To complete the index, community leaders get together and use the tool to guide discussion about their community's resilience to coastal hazards. The types of activities that have been recently implemented in the Louisiana communities as a result of these communities' CRIs participation include:

- perform additional, and in some cases yearly, follow up CRI to gauge on-going resiliency improvements in the community,
- perform additional Community Rating System (CRS) qualifying activities to enable communities to receive discounts on National Flood Insurance Program (NFIP) rates,
- form a Southwestern and Chenier Plains Parishes CRS User Group that will coordinate activities across the Western Louisiana Coast and qualify for even further lower NFIP rates,
- purchase recovery preparedness equipment such as portable electric generators and re-entry badge processing machines,
- continue to coordinate and hold planning meetings and drills with first responders and other parish emergency services personal to further refine disaster preparedness plans,
- continue to survey critical area businesses, formulate critical business re-entry procedures, and provide disaster preparedness outreach and response equipment and plans,
- continue to network with other local communities, state and federal emergency preparedness resource partners, and
- continue public outreach meetings to area businesses and residents.

In addition, the Mississippi-Alabama Sea Grant Consortium is preparing a study titled: Evaluation of the Community Resilience Index that incorporates data provided by the Gulf of Mexico States (Mississippi, Alabama, Florida, Louisiana, and Texas) CRI meeting facilitators from CRI held in their respective states. The study concluded that 100% of the surveyed respondents felt that the (CRI) exercise helped them to understand the potential risks that their community faces from a coastal storm, and 100% felt the CRI reflects their needs as a community. The majority (93.3%) of respondents felt the CRI helped them

understand the steps needed to improve their community's resiliency. The vast majority (93.8%) of reporting participants felt participation in the CRI exercise was a good use of their time, and the same percentage felt participation in the CRI has made their community better prepared for major coastal storms.

Since the first oil well was drilled in Louisiana in June of 1901 the oil and gas industry has been an integral part of the state resiliency as well as the state's ability to support the needs of the nation. That industry operated under what was thought to be the best regulations at the time, and once the nation and the states enacted better regulations - siting conflicts began to be avoided. In Louisiana, it was in 1978 when the Louisiana State and Local Resources Management Act was passed that multiple uses of resources and adequate economic growth in the coastal zone could be balanced while minimizing adverse impacts of one resource use upon another.

In Louisiana's Coastal Zone, over time, due to various coastal processes such as hurricanes and storm surge, erosion, subsidence, and changing sea levels pipelines installed pre-program have become exposed. Once exposed these pipelines must be recovered so as to not present a hazard to navigation. The importance of this to the state was highlighted in the 2014 regular legislative session where House Concurrent Resolution (HCR) 143 identified and requested action to identify these exposed pipelines that have become risks to navigation. A copy of the HCR 143 can be found at http://www.legis.la.gov/legis/ViewDocument.aspx?d=901975.

Identification of Priorities:

1. Considering changes in coastal hazard risk and coastal hazard management since the last assessment and stakeholder input identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve its ability to more effectively address the most significant hazard risks. *(Approximately 1-3 sentences per management priority.)*

   Management Priority 1: Coordination with Hazard Mitigation Activities of Local Louisiana Communities and the State and Local Coastal Management Programs and Assisting Local Communities in their Efforts to Facilitate Rapid Recovery from Hazards

   Description: Parishes and communities in Louisiana vary widely in their capacity for planning and regulation relevant to hazard mitigation. OCM intends to increase local coastal parish capacity for resiliency planning and regulation though our Local Coastal Management Program (LCMP) as a priority and to explore additional ways to assist in more rapid recovery.

   OCM has been involved in hazard mitigation activities with local communities primarily through interactions with the ten LCMP. This 309 period OCM seeks to more formalize our assistance to the LCMP participating communities related to resilience.

Management Priority 2: Avoid, minimize, and mitigate hazards to navigation from pipelines installed pre-program through the LCRP

Description: Increased intensity of coastal storms and a critical coastal erosion situation in Louisiana has exacerbated the hazard of exposed oil and gas pipelines presenting a serious hazard to the vast water navigation industry that operates in coastal Louisiana.

2. Identify and briefly explain priority needs and information gaps the CMP has for addressing the management priorities identified above. The needs and gaps identified here should not be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	Y	Additional research on and coordination with local level hazard mitigation policies and plans and with policy improvement that can improve resiliency in the fuel supply chain for recovery after hazard events.
Mapping/GIS/modeling	Y	Louisiana has not been able to participate in NOAA sea level model efforts due to additional levee identification and mapping needs. In addition existing and abandoned pipeline location mapping is a critical need.
Data and information management	Y	Additional GIS data collection and analysis on levees, pipelines, land loss, erosion and salt water intrusion is needed
Training/Capacity building	Y	Regulatory analysts will need instruction on new policy development; formal and informal agreements with local authorities would be productive
Decision-support tools		Coastal Hazards Analysis Guide for CUP applicants
Communication and outreach	Y	Quantification of various outreach efforts occurring in Louisiana
Other (Specify)		

Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

Yes ✓
No _____

a. Briefly explain why a strategy will or will not be developed for this enhancement area.

The 2014 State of Louisiana Hazard Mitigation Plan states: "Some programs and policies, might use complementary tools to achieve a common end, but fail to coordinate with or support each other. Thus, coordination between state and local mitigation policies and programs is essential to hazard mitigation." The plan also notes that many programs full potential for effective mitigation is unrealized due to shortages of funding, staff and technical support.

Coordination with existing hazard mitigation efforts, especially at the local level, and the formulation of new policies and procedures to assist at the state and local level are goals of this period's 309 hazard assessment and strategy. OCM would like to explore offering additional hazard preparedness assistance and the process of formalizing that assistance through additional analysis, policy or program development activities this 309 strategy period.

OCM will research and review technologies and policy improvements that can improve resiliency in the fuel supply chain and engage Parish Emergency Operations Centers to strengthen communications and improve and develop a fuel system resiliency plan for use during times of emergency to help expedite both rapid evacuation and enhanced recovery.

New or improved polices and/or permitting procedures could alleviate the potential for serious accidents from exposed oil and gas pipelines. OCM has identified a need to find and map these hazard structures and develop a policy to assist in their avoidance.

CUMULATIVE AND SECONDARY IMPACTS PHASE II ASSESSMENT:

In-Depth Resource Characterization:

Purpose: To determine key problems and opportunities to improve the CMP's ability to address cumulative and secondary impacts (CSI) of coastal growth and development.

1. What are the three most significant existing or emerging cumulative and secondary stressors or threats within the coastal zone? Indicate the geographic scope of the stressor, i.e., is it prevalent throughout the coastal zone or are there specific areas that are most threatened? Stressors can be coastal development and impervious surfaces; polluted runoff; agriculture activities; forestry activities; shoreline modification; or other (please specify). Coastal resources and uses can be habitat (wetland or shoreline, etc.); water quality; public access; or other (please specify). When selecting significant stressors, also consider how climate change may exacerbate each stressor.

	Stressor/Threat	**Coastal Resource(s)/Use(s) Most Threatened**	**Geographic Scope** (throughout coastal zone or specific areas most threatened)
Stressor 1	Coastal Dev. & Impervious Surf.	Wetland, Shoreline & Water Quality	Whole Coastal Zone
Stressor 2	Energy Prod.	Wetland & Water Quality	Whole Coastal Zone
Stressor 3	Shipping	Wetland & Shoreline	Whole Coastal Zone

2. Briefly explain why these are currently the most significant cumulative and secondary stressors or threats from coastal growth and development within the coastal zone. Cite stakeholder input and/or existing reports or studies to support this assessment.

   Louisiana is a coastal state. Over 1 million people reside within the Coastal Zone. Ongoing development as well as energy exploration and shipping have in the past and continue stressing coastal resources. OCM has a robust public notice period, and throughout time the OCM has received comments regarding cumulative and secondary impacts for individual requests for authorizations. In addition, stakeholders have also provided input on permits regarding certain types of activities within the coastal zone. Stakeholder groups include groups such as the Louisiana Landowner Association, non-governmental organizations (NGOs)- such as The Nature Conservancy and the National Audubon Society, as well as local, state, and federal agencies. Although it is the policy of the coastal resources program to avoid adverse effects of cumulative and secondary impacts through the use of the Coastal Use Guidelines (Louisiana Administrative Code, Title 43, Part I, Chapter 7, §701.G.10), OCM has identified a need to re-investigate this topic. This investigation will include collaborating with commenting partners to identify the current state of affairs and to identify a path forward to address these concerns though the LCRP.

3. Are there emerging issues of concern, but which lack sufficient information to evaluate the level of the potential threat? If so, please list. Include additional lines if needed.

Emerging Issue	Information Needed
Accurate habitat maps	Updated information
Hydrologic data/Water level information	Increased measurement density
High resolution LIDAR imagery	Detailed elevation measurements

In-Depth Management Characterization:

Purpose: To determine the effectiveness of management efforts to address identified problems related to the cumulative and secondary impacts enhancement objective.

1. For each additional cumulative and secondary impact management category below that is not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

Management Category	Employed by State or Territory (Y or N)	CMP Provides Assistance to Locals that Employ (Y or N)	Significant Changes Since Last Assessment (Y or N)
Methodologies for determining CSI impacts	Y	Y	N
CSI research, assessment, monitoring	Y	Y	N
CSI GIS mapping/database	Y	Y	N
CSI technical assistance, education and outreach	Y	y	N
Other (please specify)			

2. For management categories with significant changes since the last assessment, briefly provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference to the other section rather than duplicate the information.
    a. Describe significant changes since the last assessment;
    b. Specify if they were 309 or other CZM-driven changes; and
    c. Characterize the outcomes or likely future outcomes of the changes.

    There were no changes since the last assessment.

3. Identify and describe the conclusions of any studies that have been done that illustrate the effectiveness of the state's or territory's management efforts in addressing cumulative and secondary impacts of development since the last assessment. If none, is there any information that you are lacking to assess the effectiveness of the state and territory's management efforts?

No studies available. The lack of reliable information is the issue that has been identified to be a major issue with this matter.

Identification of Priorities:

1. Considering changes in cumulative and secondary impact threats and management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve the effectiveness of its management effort to better assess, consider, and control the most significant threats from cumulative and secondary impacts of coastal growth and development. *(Approximately 1-3 sentences per management priority.)*

   Management Priority 1: Develop and implement guidelines for the evaluation and regulation for cumulative and secondary impacts

   Description: Although it is the policy of the coastal resources program to avoid adverse effects of cumulative and secondary impacts through the use of the Coastal Use Guidelines (Louisiana Administrative Code, Title 43, Part I, Chapter 7, §701.G.10), the OCM has received comments on this topic over time from various stakeholder groups. As a result of receipt of these comments, OCM has identified a need to re-investigate cumulative and secondary impacts to gain a better understanding of activities that can be regulated by LCRP.

2. Identify and briefly explain priority needs and information gaps the CMP has to help it address the management priorities identified above. The needs and gaps identified here do not need to be limited to those items that will be addressed through a Section 309 strategy but should include any items that will be part of a strategy.

Priority Needs	**Need?** (Y or N)	**Brief Explanation of Need/Gap**
Research	Y	Legal
Mapping/GIS	Y	Detailed elevation measurement layers
Data and information management	Y	Gathering of data would be required to develop a database
Training/Capacity building	Y	Training of staff and improving electronic system would assist
Decision-support tools	Y	Legal assistance and coastal user guidance documents
Communication and outreach	Y	Outreach to user groups and local coastal management programs throughout the process
Other (Specify)		

Legal research will be needed to evaluate the current regulatory environment and evaluate whether existing regulation are sufficient to address the cumulative and secondary impacts. Legal research will also take place to review if enhancement needs to take place for regulation to address the issues of enforceable policies toward selected cumulative and secondary impacts. Geographic information systems (GIS) integrated detailed light detection and ranging (LiDAR) imagery would provide invaluable information to assess direct and indirect changes in the coastal hydrology.

Enhancement Area Strategy Development:

1. Will the CMP develop one or more strategies for this enhancement area?

   Yes ✓
   No _____

2. Briefly explain why a strategy will or will not be developed for this enhancement area.

   CZM has identified this area as a priority and potential information gap that the state can address through the 309 process. A strategy will be developed for those activities that can be regulated.

STRATEGY SUMMARIES

Strategy summaries are comprehensive, multi-year statement of goals to address high priority needs, identified in the assessment, for improving a state's or territory's CMP. Strategies must address high priority needs for program enhancement within one or more enhancement areas that were identified through the CMP's self-assessment. The strategy establishes clear goals and a pathway and method to reach those goals during the next five years.

CMPs should only develop strategies for activities the state intends to fund and work on given their anticipated level of Section 309 funding. Strategies could either address a single high priority enhancement area or cut across several high priority enhancement areas. Strategies must be designed to lead to a program change such as

- *A change to coastal zone boundaries;*
- *New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;*
- *New or revised local coastal programs and implementing ordinances;*
- *New or revised coastal land acquisition, management, and restoration programs;*
- *New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,*
- *New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.*

Enhancement area strategies must include estimated costs, a schedule, and a general work plan listing necessary steps for achieving the strategy goals. Detailed information on annual tasks, budgets, and work products will be determined through the annual award negotiation process.

The state has developed five strategies for the 2016-2020 Program Enhancement Cycle. One strategy has been developed for Wetlands, three strategies have been developed for Coastal Hazards, and one strategy has been developed for Cumulative and Secondary Impacts.

WETLAND ASSESSMENT METHODOLOGY EVALUATION

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- ☐ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☒ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Strategy Description

A. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

☐ A change to coastal zone boundaries;

☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;

☐ New or revised local coastal management programs and implementing ordinances;

☐ New or revised coastal land acquisition, management, and restoration programs;

☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,

☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

B. Strategy Goal: State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature or consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

The strategy goal for the Wetlands Enhancement Area is to assess various types of scientifically proven methodologies used to assess coastal habitat in an effort to utilize the

most efficient and appropriate assessment tool when determining mitigation requirements. Should a coastal habitat assessment methodology be found to be more efficient and appropriate than the methodology currently being utilized by OCM, a programmatic change would be implemented.

C. Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

The Office of Coastal Management will conduct extensive research on scientifically proven coastal habitat assessment methodologies currently available and determine which methodology provides the most efficient and accurate evaluation of coastal habitats for Louisiana. Once the background research has been completed, the methodologies have been assessed, and the most efficient and accurate methodology have been determined; the OCM will prepare a White Paper on the research, data collection, and findings. The OCM will incorporate the most appropriate assessment tool into the Standard Operating Procedures and will implement use of the assessment tool.

III. Needs and Gaps Addressed

Identify what priority needs and gaps the strategy addresses and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.

Currently state and federal agencies utilize different scientifically proven assessment methodology tools to assess coastal habitat values. In addition, some methodologies or different iterations of the same methodology are utilized for different types of assessments (i.e. impacts vs. benefits). This strategy will address the priority needs and gaps by assisting OCM in determining the most appropriate tool available in coastal habitat assessments for compensatory mitigation purposes and in turn, may influence other state and federal agencies to adopt similar methodologies.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

This strategy will assist OCM in determining the most efficient and most appropriate tool available in coastal habitat assessments for compensatory mitigation purposes, and the White Paper will provide the necessary validation of these findings. In addition, identifying more efficient wetland assessment methodologies would increase transparency for coastal users and other interest groups. The process will assist OCM in meeting the mission of

ensuring no net loss in the amount of impacted wetland acres versus acres of restored, enhanced, and/or protected wetlands serving as compensatory mitigation.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change and the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

The likelihood of attaining this strategy goal is very high due to the availability of current literature on the various types of scientifically approved methodologies used to assess coastal habitat and the feasibility of data collection and implementation within our current program. In addition, once the most appropriate assessment tool for mitigation has been determined, the OCM will be able to provide outreach events to the public and local coastal management programs in the form of group training sessions, one-on-one training sessions, and PowerPoint presentations.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions). If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCRM recognizes that they may change somewhat over the course of the five-year strategy unforeseen circumstances. Further detailing and adjustment of annual activities and milestones will be determined through the annual cooperative agreement negotiation process.

Strategy Goal:

The strategy goal for the Wetlands enhancement area is to assess various types of scientifically approved methodologies used to assess coastal habitat in an effort to utilize the most efficient and appropriate assessment tool when determining mitigation requirements.

Total Years: 5
Total Budget: $520,000

Year(s): 1
Description of activities: Research and development of data collection strategy.

Major Milestone(s):
1. List of resources assessment methodologies
2. Establish stakeholder list
3. Develop plan for data collection process
4. Initiate development of white paper

Budget: $100,000

Year(s): 2
Description of activities: Collect and compile data from the methodologies tested for comparison purposes.

Major Milestone(s):
1. Initiate stakeholder feedback
2. Create database framework to house data
3. Implement data collection plan for multiple wetland assessment methodologies
4. Continue development of the draft of white paper

Budget: $110,000

Year(s): 3
Description of activities: Analyze and validate data, determine the most efficient and appropriate assessment methodology, finalize findings in white paper, initiate stakeholder feedback, and circulate white paper to the stakeholders.

Major Milestone(s):
1. Continue to implement data collection plan
2. Analyze information that has been collected in the database
3. Engage with stakeholders and solicit feedback
4. Finalization of white paper

Budget: $120,000

Year(s): 4
Description of activities: Initiate implementation.

Major Milestone(s): Implementation and Outreach
1. Circulate white paper to the stakeholder groups and to the public
2. Implement recommendations from white paper
3. Conduct outreach sessions
4. Conduct training sessions

Budget: $100,000

Year(s): 5
Description of activities: Implementation, provide outreach and training for methodology.

Major Milestone(s): Implementation and Outreach
1. Conduct outreach sessions
2. Conduct training sessions
3. Develop Standard Operating Procedure or policy document for findings

Budget: $90,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.

The state anticipates 309 funding will be sufficient to carry out the proposed strategy. If additional resources are needed, the OCM will look to outside partners to provide additional capacity.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The state does possess staff with the technical knowledge and skills necessary to carry out the proposed strategy assessment.

RESILIENCE FOR LOCAL COASTAL MANAGEMENT PROGRAMS

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- ☒ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Strategy Description

1. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

   ☐ A change to coastal zone boundaries;

   ☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;

   ☐ New or revised local coastal management programs and implementing ordinances;

   ☐ New or revised coastal land acquisition, management, and restoration programs;

   ☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,

   ☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

2. **Strategy Goal:** State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature or consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

   The strategy goal for this project is to develop new and revised standard operating procedures and policy documents to be adopted by a parish local coastal management

program with the state program's assistance and will be offered through an outreach program to the remaining parish local coastal management programs. This project will increase coastal community resiliency and mitigate hazards by improving construction and other development practices in high hazard areas in the Louisiana coastal zone.

3. Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

   The Office of Coastal Management (OCM) will conduct research to develop a method by which to incorporate the Community Rating System (CRS) criteria from the National Flood Insurance Program (NFIP) into local coastal use permit authorizations utilizing a Local Coastal Management Program (LCMP) as the model for development. This research can serve as a pilot program that can then be extended to other LCMP programs in Louisiana and other states. This will have the dual benefit of improving resiliency aspects of coastal use permitting and assisting communities to improve their CRS rating. This project should lead to smarter and safer development as well as assist the community economically by reducing their flood insurance premiums. OCM envisions the process will educate the applicant about best practices for site planning and construction methods, and the application can then be revised to reflect a safer, smarter, more resilient community. OCM envisions the process will call for an evaluation of the permit application for possible CRS improvements and then educate the applicant about best practices for the site planning and construction methods. The permit applications can then be revised or amended to reflect a smarter, safer and more resilient design.

III. Needs and Gaps Addressed

Identify what priority needs and gaps the strategy addresses and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.

This project meets several priority needs and gaps. First, coastal Louisiana residents face numerous hazards from tropical storms, relative sea level rise and ground water flooding. Improved construction methods and site planning practices will lead to more resilient communities that are better able to weather storm and flood events. Second, since the implementation of Louisiana's State and Local Coastal Resources Management Act (SLCRMA), there have been imperfect opportunities to use coastal management's regulatory program to increase the safety of Louisiana coastal residents. This project represents an opportunity to overcome a gap in the Louisiana Coastal Resources Program (LCRP)'s ability to assist communities in mitigating coastal hazards; identifiable mechanisms to mitigating coastal hazards have not been readily presented. Third, recent legislation dramatically increased NFIP insurance premiums. While subsequent legislation

has temporality delayed some of the effects of these increases, it is certain that significant increases will occur in the not too distant future. This project will assist local governments in achieving insurance discounts through the CRS program, which will reduce flood insurance premiums for local homeowners and businesses, provide economic benefits, and lead to smarter and safer development in coastal areas.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

This project meets several priority needs and gaps such as decreasing repetitive and non-repetitive damage resulting from storms, decreasing National Flood Insurance Program (NFIP) premiums for local coastal parish citizens, and reducing risk from coastal storms. This project furthers OCM's compliance with Louisiana's Master Plan for a sustainable coast. This project also helps utilize OCM regulatory aspects in a more beneficial manner towards the comfort and safety of our citizens. And finally this project should foster significant good will at the local planning level to state and federal assistance, especially coastal management assistance.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change and the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

Because of the importance of coastal community resiliency and the high levels of devastating natural disasters in coastal Louisiana, we feel that there is a high likelihood of success. The Louisiana's Master Plan stated that "Development has expanded into low-lying areas in Louisiana in the past; serving to increase overall levels of risk. Louisiana's Comprehensive Master Plan for a Sustainable Coast is ever increasing its analysis of nonstructural resiliency components. This will strengthen the LCRP and LCMP components of the Master Plan. Also, due to the significance and relevance of the intelligent and resilient rebuilding of coastal Louisiana, OCM anticipates strong statewide, local parish and local community support of this endeavor. In addition, OCM has a proven track record of success with joint state/parish coastal management program cooperative ventures.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables,

activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCRM recognizes that they may change somewhat over the course of the five-year strategy unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

Strategy Goal:

To incorporate a new resiliency policy into OCM's parish coastal programs permit review process

Total Years: 5
Total Budget: $510,000

Year(s): 1
Description of activities: Research the NFIP-CRS process and existing laws and regulations.
Major Milestone(s):
1. Identify a LCMP to work with towards implementing resiliency policy
2. Conduct research of existing local and state regulations and laws with regards to the NFIP-CRS process
3. Identify stakeholder groups to engage for implementing this process
4. Initiate development of plan to incorporate NFIP-CRS into parish LCMP permit review process

Budget: $90,000

Year(s): 2
Description of activities: Incorporate NFIP-CRS into LCMP permit review process.
Major Milestone(s):
1. Coordinate with parish representative(s) and LCMP personnel
2. Initiate stakeholder engagement
3. Initiate development of tool(s) to integrate the NFIP-CRS into the permit review process
4. Identify criteria for monitoring and tracking
5. Develop draft permit review procedure document(s) with a focus on the specified LCMP

Budget: $110,000

Year(s): 3
Description of activities: Implement coastal use permit review procedure(s).

Major Milestone(s):

1. Integrate NFIP-CRS tool into the permit review process
2. Develop database for tracking, monitoring, and evaluating criteria
3. Mediate stakeholder engagement sessions

Budget: $110,000

Year(s): 4
Description of activities: Implementation.
Major Milestone(s):

1. Initiate the development of standard operating procedure document and/or policy documents
2. Conduct outreach and/or training activities
3. Initiate development of framework for coast wide implementation
4. Monitor and review new procedure
5. Identify other LCMPs to integrate into policy

Budget: $110,000

Year(s): 5
Description of activities: Implementation and Outreach.
Major Milestone(s):

1. Continue to implement new process in permit review
2. Finalize standard operating procedure document and/or policy documents
3. Initiate implementation process in other LCMPs
4. Conduct outreach and/or training activities

Budget: $90,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.

The state anticipates 309 funding will be sufficient to carry out the proposed strategy. If additional resources are needed, the OCM will look to outside partners to provide additional capacity.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

OCM may contract with an outside party to obtain legal and technical assistance regarding the National Flood Insurance Programs and the Community Rating Systems (CRS) Discount Programs. OCM's local coastal management program staff will also continue to self-education on these types of programs by participating in the formation of the Louisiana CRS user group and selected Louisiana communities CRS Programs for Public Information and other workshops and training venues on hazard mitigation/preparation.

NAVIGATION SAFETY

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas *(check all that apply)*:

- ☐ Aquaculture
- ☒ Energy & Government Facility Siting
- ☒ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Strategy Description

1. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

☐ A change to coastal zone boundaries;

☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;

☐ New or revised local coastal management programs and implementing ordinances;

☐ New or revised coastal land acquisition, management, and restoration programs;

☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,

☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

2. **Strategy Goal:**

State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature or consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

Develop a plan/program that will lead to avoiding, minimizing and mitigating hazards posed by pipelines through the Louisiana Coastal Resources Program (LCRP), by increased coordination between regulating agencies and pipeline operators which will result in new or revised policy and standard operating procedures

3. Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

   In addition to storm events, Louisiana has recognized that an aging infrastructure poses another type of coastal hazard. During the 2014 legislative session, House Concurrent Resolution Number (HCR) 143 was passed. The resolution recognized that the coastal zone of Louisiana supports numerous natural and economic resources, including nationally important energy and maritime infrastructure and resources as well as commercial and recreational fisheries. HCR 143 also recognizes that many pipeline segments traverse the many waterways within the coastal zone where recreational and commercial maritime navigation occurs. Due to significant land loss in the coastal zone, many pipeline segments in the coastal zone that were initially installed, designed, and permitted to be constructed on land are now beneath water where recreational and commercial maritime navigation occurs. The legislature recognized the significant potential risks and gravity of harm to the public health, safety, and welfare posed by pipelines that are inadequately covered, marked, or protected and that are no longer buried as originally designed or permitted. As such, there is legislative support for an evaluation of pipelines in the coastal zone. See the Phase 2 Assessment for more information.

   The purpose of this strategy is to develop a new or revised policy and standard operating procedures for the LCRP to deal with 77 plus years of existing pipelines that may have become exposed. This will be accomplished by incorporating the identified exposed pipelines into the LCRP permitting GIS databases, contacting the responsible parties, tracking the status of remedial efforts, and continuing coordination efforts between regulating agencies and responsible operators.

III. Needs and Gaps Addressed

Identify what priority needs and gaps the strategy addresses and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.

This strategy will fill current information gaps about how the LCRP may apply new regulations to a pre-regulated activity which will result in new or revised policies. This strategy will also provide clarity to siting conflicts and hazards through additional mapping

and data management work. Finally, operators will be educated on the importance of this issue and how it relates to the resiliency of the state and the nation.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

DNR/OCM recognizes the opportunity to inform stakeholder groups about the hazards posed by exposed pipelines and the opportunity to aid regulators, planners, and restoration implementers in making more informed emergency planning and assisting in response activities.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change and the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

It is anticipated that this strategy will succeed in achieving its stated goal as well as the program changes of revised policies and procedures. Based on an increased awareness as a result of legislative actions, and intended stakeholder engagement, OCM does not envision any restraints to implementing new procedure to support this effort.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCRM recognizes that they may change somewhat over the course of the five-year strategy unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

Strategy Goal:

Avoid, minimize, and mitigate hazards to navigation from pipelines installed pre-program through the LCRP, by increased coordination between regulating agencies and pipeline operators which will result in new or revised policy and standard operating procedures.

Total Years: 5
Total Budget: $ 500,000

Year(s): 1
Description of activities: Review of existing laws, regulations, datasets, etc.
Major Milestone(s):

1. Complete desktop analyses
2. Identify data gaps and needs
3. Identify and meet with stakeholder groups
4. Identify criteria to categorize hazards
5. Develop database to house information that is collected

Budget: $ 110,000

Year(s): 2
Description of activities: Develop new or revise existing policies.
Major Milestone(s):

1. Develop draft policy
2. Incorporate data into database and GIS
3. Coordinate meetings with stakeholder groups
4. Development management plan for hazards

Budget: $ 100,000

Year(s): 3
Description of activities*:* Monitoring and tracking.
Major Milestone(s):

1. Coordinate meetings with stakeholders and public outreach
2. Identify criteria for tracking and monitoring
3. Initiate development of database/GIS framework for tracking purposes
4. Develop and publish information for public education

Budget: $ 100,000

Year(s): 4
Description of activities: Implement permit review policy.
Major Milestone(s):

1. Incorporate policy into the permitting process
2. Finalize development of database and GIS framework
3. Review and monitor policy effectiveness
4. Public outreach

Budget: $95,000

Year(s): 5

Description of activities: Final standard operating procedure or policy.
Major Milestone(s):

1. Implementation
2. Tracking database finalization
3. Final standard operating procedure or policy

Budget: $95,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.

The state anticipates 309 funding will be sufficient to carry out the proposed strategy. If additional resources are needed, the OCM will look to outside partners to provide additional capacity.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The state does possess staff with the technical knowledge and skills necessary to carry out the proposed strategy assessment.

COMMUNITY RESILIENCY LOUISIANA FUEL TEAM

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- ☒ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☐ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Strategy Description

1. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

☐ A change to coastal zone boundaries;

☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;

☐ New or revised local coastal management programs and implementing ordinances;

☐ New or revised coastal land acquisition, management, and restoration programs;

☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,

☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

2. ***Strategy Goal:***

State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature or consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

The increasing number and intensity of coastal storms, and other natural hazards have put an increasing number of people and property at risk along Louisiana's coast. The Louisiana Fuel Team will work with the local coastal management programs to improve overall emergency preparedness for energy supply disruptions and assist coastal communities in becoming more resilient.

3. Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

   Coastal communities have been affected coast wide throughout Louisiana's extensive history in dealing with natural disasters. One lesson that has been learned is that energy availability is an integral component to a resilient community. The Louisiana Fuel Team serves as a facilitator for the fueling community in Louisiana, and assists with the delivery of critical supplies to affected areas to expedite evacuation and recovery efforts. OCM recognizes the need to assist coastal areas in improving resiliency, and will coordinate with local, state, and federal to identify and catalog critical energy infrastructure within the coastal Louisiana. OCM will integrate this catalogued information into a GIS platform. The OCM will partner with each local coastal management program through a memorandum of understanding or other policy document to ensure that the list of critical energy supply infrastructure is maintained and updated regularly.

III. Needs and Gaps Addressed

Identify what priority needs and gaps the strategy addresses and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.

Throughout Louisiana's experience in dealing with natural disasters, it has been recognized that disruptions to a community's energy supply inhibit the community's ability to be resilient. This vulnerability was exposed most predominantly in the aftermath of Hurricanes Katrina and Rita in 2005. Hurricane Katrina hit first and caused tremendous disruption to the supply chain for fuel by impacting producers, refiners, transporters, as well as retailers – particularly in southeastern Louisiana. The supply chain was strained, trying to deliver and distribute a limited supply of critical resources to heavily impacted areas - one of the key resources was fuel. While Louisiana was still recovering from damages from Hurricane Katrina, Hurricane Rita assailed the southwestern portion of Louisiana, crippling infrastructure once again.

Impacts from disruptions to the fuel supply were not only felt locally during this time, they reached the regional and national level as major fuel suppliers recovered. That is in part because Louisiana sits in a unique position - Louisiana not only sells fuel in the retail setting,

but it is also a major producer and supplier of fuel for the nation. When there is a localized disruption to the fuel supply chain, the downstream effects can be felt across the nation.

As one of the lessons learned from previous storm events, LDNR/OCM developed and has served as the Coordinator for the Louisiana Fuel Team in 2009. The Louisiana Fuel Team is made up of government and industry representatives who partner during times of emergency to reduce and minimize impacts to the public fuel supply. The Louisiana Fuel Team recognizes the important role that fuel serves in public safety, and recognizes that during times of emergency the availability of fuel can make the difference between a citizen's ability to evacuate out of danger or not.

In addition, the Louisiana Fuel Team recognizes that fuel is a key component to recovery efforts for affected communities. Community involvement on the local level is one of the keys to reducing the negative impacts of energy supply disruptions to coastal communities, and the Fuel Team can utilize avenues through the local coastal management programs (LCRP) to assist in community level resiliency and provide life-saving supplies.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

Improved coastal resiliency provides benefits on multiple levels. The project would assist the local coastal management programs (LCMP) in improving their overall resiliency, and concurrently improving the safety of its citizens by reducing the number of energy supply chain disruptions after a storm, reducing the time frame for communities to get back online after a storm event, and increasing the safety of citizens. Additionally, the project should foster significant good will towards state and federal commitment towards encouraging emergency preparedness at the local level.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change and the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

The Louisiana Fuel Team was established in December 2008 and is comprised of multiple local, state, and federal government representatives as well as multiple representatives from industry. Members of the Louisiana Fuel Team partner during times of emergency in efforts to reduce and minimize impacts to the public fuel supply. Due to this broad base of participation on multiple levels, the importance of coastal community resiliency in Louisiana, we feel that there is a high likelihood of success for this strategy. Many coastal communities

in Louisiana have been impacted multiple times by natural disasters and recognize the importance of providing for safer and more resilient communities.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCRM recognizes that they may change somewhat over the course of the five-year strategy unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

Strategy Goal:

The Louisiana Fuel Team will coordinate with coastal parishes in Louisiana in resiliency efforts pre- and post- hurricane or other emergency scenario.

Total Years: 5
Total Budget: $500,000

Year(s): 1
Description of activities: Identify and catalog critical energy infrastructure.
Major Milestone(s):

1. Define criteria for critical infrastructure
2. Define process to verify locations of critical infrastructure
3. Initiate contact with stakeholders
4. Develop database to catalog critical infrastructure

Budget: $90,000

Year(s): 2
Description of activities: Verify the locations and needs for critical energy infrastructure.
Major Milestone(s):

1. Develop GIS platform for critical infrastructure features in database
2. Verify locations of critical infrastructure
3. Identify energy needs to support each critical infrastructure facility (i.e. generator, fuel, electricity, etc.)
4. Continue collaboration with stakeholders

Budget: $90,000

Year(s): 3
Description of activities: Coordinate with LCMP
Major Milestone(s):
1. Continue data validation process
2. Collaborate with LCMP to validate critical infrastructure energy needs
3. Establish process for communication with parish and Fuel Team personnel during times of emergency
4. Collaborate with stakeholders

Budget: $100,000

Year(s): 4
Description of activities: Draft policy and/or memorandum(a) of understanding (MOU)
Major Milestone(s):
1. Develop draft policy or memorandum(a) of understanding with coastal parishes to support critical infrastructure during times of emergency
2. Develop plan for public outreach/educational materials

Budget: $110,000

Year(s): 5
Description of activities: Final Policy and/or MOU
Major Milestone(s):
1. Final policy and/or MOU
2. Conduct public outreach/educational events

Budget: $110,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.

The state anticipates 309 funding will be sufficient to carry out the proposed strategy. If additional resources are needed, the OCM will look to outside partners to provide additional capacity.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief

description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The state does possess staff with the technical knowledge and skills necessary to carry out the proposed strategy assessment.

CUMULATIVE AND SECONDARY IMPACTS

I. Issue Area(s)

The proposed strategy or implementation activities will support the following high-priority enhancement areas *(check all that apply)*:

- ☐ Aquaculture
- ☐ Energy & Government Facility Siting
- ☐ Coastal Hazards
- ☐ Ocean/Great Lakes Resources
- ☐ Special Area Management Planning
- ☒ Cumulative and Secondary Impacts
- ☐ Wetlands
- ☐ Marine Debris
- ☐ Public Access

II. Strategy Description:

1. The proposed strategy will lead to, or implement, the following types of program changes *(check all that apply):*

- ☐ A change to coastal zone boundaries;
- ☐ New or revised authorities, including statutes, regulations, enforceable policies, administrative decisions, executive orders, and memoranda of agreement/understanding;
- ☐ New or revised local coastal management programs and implementing ordinances;
- ☐ New or revised coastal land acquisition, management, and restoration programs;
- ☐ New or revised special area management plans (SAMP) or plans for areas of particular concern (APC) including enforceable policies and other necessary implementation mechanisms or criteria and procedures for designating and managing APCs; and,
- ☒ New or revised guidelines, procedures, and policy documents which are formally adopted by a state or territory and provide specific interpretations of enforceable CZM program policies to applicants, local government, and other agencies that will result in meaningful improvements in coastal resource management.

2. ***Strategy Goal:***

State the goal of the strategy for the five-year assessment period. The goal should be the specific program change to be achieved or be a statement describing the results of the project with the expectation that achieving the goal would eventually lead to a program change. For strategies that implement an existing program change, the goal should be a specific implementation milestone. For example, work with three communities to develop revised draft comprehensive plans that consider future sea level rise or, based on research and policy analysis, present proposed legislation on wetland buffers to state legislature or consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

The strategy goal for the development and adoption of procedures to assess cumulative and secondary impact is to identify the types of impacts that can be assessed in a scientific/quantitative manner, can be regulated using existing rules, and can be implemented within the existing coastal management process.

3. Describe the proposed strategy and how the strategy will lead to and/or implement the program changes selected above. If the strategy will only involve implementation activities, briefly describe the program change that has already been adopted, and how the proposed activities will further that program change. (Note that implementation strategies are not to exceed two years.)

   The proposed strategy has three phases, as follows: first the Office of Coastal Management (OCM) will develop a list of applicable cumulative and secondary impacts currently being observed in the coastal zone, and conduct legal research of existing regulations and laws to identify whether these fall within the purview of OCM; second, OCM will research the cumulative and secondary impacts identified in phase 1 and evaluate if the impacts can be quantified scientifically and/or if metrics need to be developed; and finally OCM will develop guidelines for the implementation of those cumulative and secondary impacts that met the criteria.

III. Needs and Gaps Addressed

Identify what priority needs and gaps the strategy addresses and explain why the proposed program change or implementation activities are the most appropriate means to address the priority needs and gaps. This discussion should reference the key findings of the assessment and explain how the strategy addresses those findings.

This strategy addresses the need to identify and quantify cumulative and secondary impacts, which so far can only be addressed qualitatively and as the issues arise within the coastal use permit review process. This will provide for a systematic and programmatic approach to a difficult set of parameters that are often set aside due to a lack of metrics.

IV. Benefits to Coastal Management

Discuss the anticipated effect of the strategy, including the scope and value of the strategy, in advancing improvements in the CMP and coastal management, in general.

This strategy improves the ability of OCM to address directly the need to begin evaluation and collection of the necessary data to monitor cumulative and secondary impacts in a scientific manner such as runoff resulting from developments. Additional information will also provide an increased understanding of project impacts and increase in permit decision transparency.

V. Likelihood of Success

Discuss the likelihood of attaining the strategy goal and program change (if not part of the strategy goal) during the five-year assessment cycle or at a later date. Address the nature and degree of support for pursuing the strategy and the proposed program change and the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

It is anticipated that this strategy will succeed in achieving its stated goal as well as the program changes of revised policies and procedures. Based on an increased awareness as a result of legislative actions, and intended stakeholder engagement, OCM does not envision any restraints to implementing new procedure to support this effort.

VI. Strategy Work Plan

Using the template below, provide a general work plan that includes the major steps that will lead toward or achieve a program change or implement a previously achieved program change. If the state intends to fund implementation activities for the proposed program change, describe those in the plan as well. The plan should identify a schedule for completing the strategy and include major projected milestones (key products, deliverables, activities, and decisions) and budget estimates. If an activity will span two or more years, it can be combined into one entry (i.e., Years 2-3 rather than Year 2 and then Year 3). While the annual milestones are a useful guide to ensure the strategy remains on track, OCRM recognizes that they may change somewhat over the course of the five-year strategy unforeseen circumstances. The same holds true for the annual budget estimates. Further detailing and adjustment of annual activities, milestones, and budgets will be determined through the annual cooperative agreement negotiation process.

Strategy Goal:

Identification of which cumulative and secondary impacts OCM needs to address from regulated activities.

Total Years: 5
Total Budget: $520,000

Year(s): 1
Description of activities: Develop a list of applicable cumulative and secondary impacts currently being observed in the coastal zone.
Major Milestone(s):

1. Legal research of existing laws, policies, and regulations
2. Create technical work group for cumulative and secondary impacts
3. Develop plan to define cumulative and secondary impacts
4. Identify list of cumulative and secondary impacts within the coastal zone
5. Initiate stakeholder engagement to assist in priority areas

Budget: $110,000

Year(s): 2
Description of activities: Development of variables for evaluating cumulative and secondary impacts.
Major Milestone(s):
1. Select one or more area(s) of focus for cumulative and secondary impact analysis from the list in year 1
2. Perform legal research
3. Identify variables that affect cumulative and secondary impacts for area of focus
4. Continue stakeholder engagement

Budget: $110,000

Year(s): 3
Description of activities: Develop assessment plans.
Major Milestone(s):
1. Develop plan to assess cumulative and secondary impacts for area(s) of focus through the LCRP
2. Develop plan for tracking and monitoring variables that affect cumulative and secondary impacts for area(s) of focus
3. Engage stakeholders in policy development

Budget: $100,000

Year(s): 4
Description of activities: Draft policy or standard operating procedure document.
Major Milestone(s):
1. Draft policy or standard operating procedure(s) to document cumulative and secondary impact assessment for area(s) of focus into permit process
2. Develop framework for tracking and monitoring cumulative impacts for area(s) of focus
3. Publicize draft policy/standard operating procedure(s)

Budget: $100,000

Year(s): 5
Description of activities: Final policy or standard operating procedure.
Major Milestone(s):
1. Integrate draft policy into permitting process
2. Conduct training sessions for staff
3. Public outreach
4. Final policy or standard operating procedure

Budget: $100,000

VII. Fiscal and Technical Needs

A. Fiscal Needs: If 309 funding is not sufficient to carry out the proposed strategy, identify additional funding needs. Provide a brief description of what efforts the CMP has made, if any, to secure additional state funds from the legislature and/or from other sources to support this strategy.

The state anticipates 309 funding will be sufficient to carry out the proposed strategy. If additional resources are needed, the OCM will look to outside partners to provide additional capacity.

B. Technical Needs: If the state does not possess the technical knowledge, skills, or equipment to carry out all or part of the proposed strategy, identify these needs. Provide a brief description of what efforts the CMP has made, if any, to obtain the trained personnel or equipment needed (for example, through agreements with other state agencies).

The state does possess staff with the technical knowledge and skills necessary to carry out the proposed strategy assessment.

CONCLUSION

The overall focus of the 2016-2020 Assessment and Strategy for Louisiana has a heavy focus on the Coastal Hazards Enhancement Area. Included in the Coastal Hazards enhancement area are the strategies for Resilience of Local Coastal Management Programs, Community Resiliency through the Louisiana Fuel Team, and Navigation Safety. Other strategies included are the Wetland Assessment Methodology Evaluation in the Wetlands Enhancement Area, and an Evaluation of Cumulative and Secondary Impacts from activities in the coastal zone in the Cumulative and Secondary Impacts Enhancement Area. While each of the strategies detailed throughout this assessment and strategy document have work plans that span the entire five year period, project lead personnel are distributed throughout the OCM and staff will be dedicated as needed. Additionally, each of the strategies described in this document are discrete and outcomes independent of each other, the final outcomes will be incorporated into the SONRIS online system and data will complement the LCRP in efforts to regulate coastal resources.

5-Year Budget Summary by Strategy

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Cumulative and Secondary Impacts	$110,000.00	$110,000.00	$100,000.00	$100,000.00	$100,000.00	$520,000.00
Wetland Assessment Methodology	$100,000.00	$110,000.00	$120,000.00	$100,000.00	$90,000.00	$520,000.00
Local Coastal Management Program Resilience	$90,000.00	$110,000.00	$110,000.00	$110,000.00	$90,000.00	$510,000.00
Fuel Team	$90,000.00	$90,000.00	$100,000.00	$110,000.00	$110,000.00	$500,000.00
Navigation Safety	$110,000.00	$100,000.00	$100,000.00	$95,000.00	$95,000.00	$500,000.00
309 Five Year Strategy	$0.00	$0.00	$0.00	$0.00	$100,000.00	$100,000.00
Total Funding	$500,000.00	$520,000.00	$530,000.00	$515,000.00	$585,000.00	$2,650,000.00

SUMMARY OF STAKEHOLDER AND PUBLIC COMMENT

Public comment and input was sought throughout the development of the 309 Assessment and Strategy document. During the initial phase of development, a public notice was published in "The Advocate," Louisiana's official state journal, on September 5, 2014. The public notice announcement indicated that OCM was seeking comment on the development of the Assessment and Strategy 2016-2020. Additionally, OCM included requests for public comment in its Coast-it Notes on September 19, 2014 and again on December 2, 2014. Additionally, OCM solicited comments in its electronic Local Coastal Programs Newsletter on September 23, 2014. Both the Coast-it Note and the electronic newsletters are publications of the OCM to inform permit applicants, the public and others of events and items that may impact them or their interaction with OCM, and are not only emailed out to interested parties but are also posted on our website at http://dnr.louisiana.gov/index.cfm?md=pagebuilder&tmp=home&pid=91&pnid=0&nid=143.

In addition, OCM requested comments from each of the ten approved local coastal parish management program representatives during the local coastal management program quarterly meeting on September 10, 2014. OCM also followed up with each local parish program individually to solicit comments as part of the periodic review process which was completed in October and November 2014.

The public comment period closed on December 31, 2014. No comments were received by that date; however, the OCM regularly engages stakeholders to build capacity and crosswalk coastal issues which result in restoring, rebuilding, and conserving our wetlands so that they serve as infrastructure to protect our communities from hazards, which in turn results in more resilient communities and coastal resources, and these interactions have been captured in this document.

Following the development and internal review process, the draft Assessment and Strategy document was published in "The Advocate" on April 28, 2015. Additionally, OCM made the document publicly available on the Louisiana Department of Natural Resources/Office of Coastal Management (LDNR/OCM) webpage at http://data.dnr.la.gov/309 draft document_04232015.pdf.