

# **LOUISIANA COASTAL MANAGEMENT PROGRAM**

## **Coastal Zone Management Act**

### **Section 309**

#### **Assessment and Strategy for 2021 – 2025 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. 3<sup>rd</sup> Street, Suite 1048

Baton Rouge, LA 70802



## Contents

<b><u>INTRODUCTION .....</u></b>	<b><u>3</u></b>
<b><u>SUMMARY OF RECENT SECTION 309 ACHIEVEMENTS .....</u></b>	<b><u>6</u></b>
STRATEGY TITLE: <b><u>WETLAND ASSESSMENT METHODOLOGY EVALUATION.....</u></b>	<b><u>6</u></b>
STRATEGY TITLE: <b><u>RESILIENCE FOR LOCAL COASTAL MANAGEMENT PROGRAMS.....</u></b>	<b><u>7</u></b>
STRATEGY TITLE: <b><u>NAVIGATION SAFETY.....</u></b>	<b><u>7</u></b>
STRATEGY TITLE: <b><u>COMMUNITY RESILIENCY LOUISIANA FUEL TEAM.....</u></b>	<b><u>8</u></b>
STRATEGY TITLE: <b><u>CUMULATIVE AND SECONDARY IMPACTS .....</u></b>	<b><u>8</u></b>
<b><u>PHASE I (HIGH-LEVEL) ASSESSMENTS.....</u></b>	<b><u>9</u></b>
<b><u>Wetlands Phase I (High-Level) Assessment:.....</u></b>	<b><u>10</u></b>
<b><u>Coastal Hazards Phase I (High-Level) Assessment:.....</u></b>	<b><u>13</u></b>
<b><u>Public Access Phase I (High-Level) Assessment:.....</u></b>	<b><u>17</u></b>
<b><u>Marine Debris Phase I (High-Level) Assessment: .....</u></b>	<b><u>23</u></b>
<b><u>Cumulative and Secondary Impacts Assessment Phase I (High-Level) Assessment:.....</u></b>	<b><u>26</u></b>
<b><u>Special Area Management Planning Assessment Phase I (High-Level) Assessment:.....</u></b>	<b><u>33</u></b>
<b><u>Ocean/Great Lakes Resources Assessment Phase I (High-Level) Assessment:.....</u></b>	<b><u>36</u></b>
<b><u>Energy &amp; Government Facility Siting Assessment Phase I (High-Level) Assessment:.....</u></b>	<b><u>42</u></b>
<b><u>Aquaculture Phase I (High-Level) Assessment:.....</u></b>	<b><u>46</u></b>
<b><u>PHASE II ASSESSMENTS .....</u></b>	<b><u>49</u></b>
<b><u>Wetlands Phase II Assessment .....</u></b>	<b><u>50</u></b>
<b><u>Coastal Hazards Phase II Assessment .....</u></b>	<b><u>55</u></b>
<b><u>Cumulative and Secondary Impacts Phase II Assessment.....</u></b>	<b><u>65</u></b>
<b><u>STRATEGY SUMMARIES .....</u></b>	<b><u>68</u></b>
<b><u>Wetland.....</u></b>	<b><u>70</u></b>
<b><u>Coastal Hazards.....</u></b>	<b><u>77</u></b>

## 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) 2021-2025. 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 2021-2025. 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 November 11, 2019. Additionally, OCM included requests for public comment in its Coast-it Notes on November 4, 2019. Both the Coast-it Note and the notice in “The Advocate”, are publications that OCM utilizes 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://data.dnr.la.gov/lcp/309\\_A\\_S\\_comments.pdf](http://data.dnr.la.gov/lcp/309_A_S_comments.pdf)

The public comment period closed on December 31, 2019. 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 will be published in “The Advocate” on February 10, 2020. 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/lcp/309\\_20212025\\_A\\_S\\_Draft.pdf](http://data.dnr.la.gov/lcp/309_20212025_A_S_Draft.pdf) (See Public Comment/Response Section).

The FY 2021-2025 assessment resulted in the following changes (highlighted) to the priority level from the FY 2016-2020 reporting period:

<b>Enhancement Area</b>	<b>2016-2020 Priority Level</b>	<b>2021-2025 Priority Level</b>
<b>Wetlands</b>	High	High
<b>Coastal Hazards</b>	High	High
<b>Public Access</b>	Low	Low
<b>Marine Debris</b>	Medium	Medium
<b>Cumulative and Secondary Impacts</b>	High	Medium
<b>Special Area Management Planning</b>	Low	Low
<b>Ocean and Great Lakes Resources</b>	Low	Low
<b>Energy and Government Facility Siting</b>	Medium	Medium
<b>Aquaculture</b>	Low	Low

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

[Top of the Document](#)

## **SUMMARY OF RECENT SECTION 309 ACHIEVEMENTS**

### **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 OCM in accordance with the program change regulations at 15 CFR part 923, subpart H, note the date that the change was approved by OCM. If the program intends to submit a formal program change for OCM's review and approval, identify the expected submission date.

### ***Strategy Title: Wetland Assessment Methodology Evaluation***

The current state wetland mitigation program achieves “no net loss” of wetlands due to permitted activities related to development within the coastal zone through OCM's processes. Additionally, through regulatory requirements, a coastal use permit shall not be granted 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. State and federal agencies work together through the mitigation process to improve transparency in the process and to avoid potential requirement differences (double mitigation) in compensatory mitigation for applicants.

Through an analysis of mitigation assessments, the OCM recognized that state and federal agencies utilize different habitat assessment tools and/or different iterations of the same tool to assess coastal habitat values for impacts to coastal wetlands. OCM uses the 1994 Wetland Value Assessment (WVA) to quantify the loss or gain of average annual habitat units; the Corps of Engineers New Orleans District uses the Louisiana Wetlands Rapid Assessment Method (LRAM) to evaluate potential project impacts. Additionally, other State and Federal agencies also use the WVA to evaluate the impacts and benefits, but they may use a different model from the 1994 model in use by OCM. The strategy allowed OCM the independently evaluate current practices as well as research the applicability of other possible evaluation methods.

Through this strategy OCM has analyzed multiple different wetland assessment methodologies. The methodologies have been reviewed for applicability to the multiple habitats in coastal Louisiana. OCM also completed a comparative analysis of the multiple strategies to compare the results from the different methodologies. At this time, OCM staff continue the evaluation of wetland assessment models including the WVA, and OCM will continue to use the WVA as the state-regulated community accepted assessment methodology. It is OCM's current belief that the WVA provides a commonality amongst variations of

projects and habitat types, it is well-suited for evaluating small projects, and the model has flexibility to adapt to new information and/or data as it is developed.

### ***Strategy Title: Resilience for Local Coastal Management Programs***

Coastal Louisiana residents face numerous hazards from tropical storms, relative sea level rise and ground water flooding. This strategy was targeted at improving construction methods and site planning practices to lead to more resilient communities. The specific procedure identified was the incorporation of applicable National Flood Insurance Program Community Rating System (NFIP-CRS) measures into the LCMP permit review process for Calcasieu Parish. OCM and parish personnel worked together to develop a procedure to incorporate the credit earning activities from the CRS manual into the Local Coastal Management Program (LCMP) permit process. The adopted process included the development of a voluntary checklist and specific resiliency advisement protocols of appropriate NFIP-CRS flood protection or compensatory mitigation methods. These measures will serve to both strengthen the resiliency of the individual permit applicants' projects and assist Calcasieu Parish with their own floodplain management efforts and overall improvement of the NFIP-CRS class score. The OCM worked with Calcasieu Parish LCMP, with the intent of this research serving as a pilot program that could be extended to other LCMPs in Louisiana and other states.

### ***Strategy Title: Navigation Safety***

Louisiana has recognized that an aging infrastructure poses a hazard, especially in the coastal areas. 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 located in open water where recreational and commercial maritime navigation activities occur. It should be also be noted that some of these pipelines were installed prior to state and/or federal "wetlands" permit programs. The 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. The purpose of this strategy was to develop a new or revised policy and standard operating procedures for the LCRP to deal with an extensive system of existing pipelines that may have become exposed. As part of the strategy OCM staff reviewed existing rules, policies, and guidelines regarding existing pipelines. OCM collaborated with regulatory and industry representatives to gauge awareness of the issue and outline solutions. OCM found ways to integrate existing policies to gather information into one repository and map these utilizing a geographic information system (GIS). OCM has established a policy of communicating navigation hazards amongst multiple groups including the Louisiana Office of Conservation pipeline regulatory group, the oil spill section, and fisherman's gear claims section. OCM updated existing policies and procedures to reflect these relationships, and began implementation of the updated policies to report and remediate navigation hazards.

## ***Strategy Title: Community Resiliency Louisiana Fuel Team***

Coastal communities have been affected coast wide throughout Louisiana's extensive history in dealing with natural disasters. Louisiana is not only a user of fuel at 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 country. As one of the lessons learned from previous storm events, LDNR/OCM established the Louisiana Fuel Team. The Louisiana Fuel Team is made up of government and industry representatives that facilitates needs for the fueling community in Louisiana, and assists with the delivery of critical supplies to affected areas to expedite evacuation and recovery efforts. Through this strategy OCM coordinated efforts with local, state, and federal entities to identify and catalog critical energy infrastructure within the coastal Louisiana. Contact and location information of critical infrastructure was catalogued and continues to be maintained in the event of an emergency. Key partnerships with the local communities through the LCMP program have allowed OCM to work local communities to verify and update this information to improve community resilience and providing life-saving resources.

## ***Strategy Title: Cumulative and Secondary Impacts***

The goal of this strategy was to address the need to identify and quantify cumulative and secondary impacts to coastal habitats. Previously, potential cumulative and secondary impacts to Louisiana coastal habitats had only been addressed qualitatively, as issues would arise during the Coastal Use Permit review process. This strategy was developed to perform an evaluation of what, if any, types of cumulative and secondary impacts to coastal habitats can be assessed in a scientific/quantitative manner, can be regulated using existing rules, and can be implemented within the existing coastal management process. OCM developed a technical workgroup to review existing laws, policies, and regulations in these regards. The strategy included developing a plan for historically quantifiable impacts, and trying to identify types of assessments that could be performed from the information extracted. Through the review of this information, OCM determined that secondary impacts could neither be practically defined, nor were there usable/defendable/rational metrics that could be used to establish thresholds that would not be considered to be arbitrary. However, efforts continue towards defining direct and cumulative impacts and metrics. The effort has continued to evaluate historically-quantifiable impacts, and seeks to identify types of procedural changes that could be made, using the information extracted to improve the current permitting process. The focus of the analysis has been to evaluate the direct and cumulative impact of all permitted activities to coastal habitats. Based on the available information OCM has yet to make a direct correlation between direct and cumulative impacts and the quantification of those impacts. OCM continues to review available data in efforts to compare the natural changes in habitats within the coastal zone, compared to the anthropogenic changes.

[Top of the Document](#)

## **PHASE I (HIGH-LEVEL) ASSESSMENTS**

The assessment section responds to the Phase I and Phase II assessment questions for each of the nine enhancement. 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,<sup>1</sup> 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 currently only has data for one time point so will not be able to report trend data. Instead, Puerto Rico should just report current land use cover for all wetlands and each wetlands type.

OCM staff analyzed the publicly available National Land Cover GIS for 2001, 2011, and 2016 to obtain the following information.

Current state of wetlands in 2016 (acres): 4,284,319.1

### Coastal Wetlands Status and Trends

Change in Wetlands	from 2001-2016	from 2011-2016
Percent net change in total wetlands (% gained or lost)*	0.54% gained	0.65% gained
Percent net change in freshwater (palustrine wetlands) (% gained or lost)*	10.16% gained	2.03% gained
Percent net change in saltwater (estuarine) wetlands (% gained or lost)*	3.75% lost	0.04% lost

<sup>1</sup> <https://coast.noaa.gov/digitalcoast/tools/lca.html>. Note that the 2016 data will not be available for all states until later Summer 2019. NOAA OCM will be providing summary reports compiling each state’s coastal county data. The reports will be available after all of the 2016 data is available.

OCM staff analyzed the publicly available Coastal Change Analysis Program (CCAP) Land Cover Atlas to obtain the following information.

### How Wetlands Are Changing\*

Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover between 1996-2010 (Sq. Miles)	Area of Wetlands Transformed to Another Type of Land Cover between 2006-2010 (Sq. Miles)
Development	27.56 Sq. Miles	27.97 Sq. Miles
Agriculture	17.4 Sq. Miles	17.4 Sq. Miles
Barren Land	12.7 Sq. Miles	12.7 Sq. Miles
Water	282.99 Sq. Miles	283 Sq. Miles

\* 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 data are available. Puerto Rico does not report.

- 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
1,900 of square miles of land lost since 1930's.	<ul style="list-style-type: none"> <li>Projected 4,120 square miles land lost over next 50 years (without action).</li> <li>Anticipated 800-1,200 square miles of land building benefits compared to no action.</li> </ul>	2017 <i>Louisiana's Comprehensive Master Plan for a Sustainable Coast</i>  <a href="http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan_Web-Book_CFinal-with-Effective-Date-06092017.pdf">http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan_Web-Book_CFinal-with-Effective-Date-06092017.pdf</a>
1,866 square miles of land lost from 1932 to 2016.	The slowing of the rate of wetland change since its peak in the mid-1970s due to the lack of major storms in the past 8 years, slowing subsidence rates, reduction in and relocation of oil and gas extraction , and restoration activities.	2017  USGS NWRC  <a href="https://pubs.er.usgs.gov/publication/sim3381">https://pubs.er.usgs.gov/publication/sim3381</a>

**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.

**Significant Changes in Wetland Management**

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

**Enhancement Area Prioritization:**

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

**High**        X  

**Medium**          

**Low**              

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

Coastal wetland loss is a dire problem for Louisiana. Coastal Louisiana exhibits some of the highest erosion rates in the world. It is predicted that approximately 4,120 square miles land will be lost over 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.

\*\*\*\*\*

[Top of the Document](#)

## 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)

### Resource Characterization:

1. In the table below, indicate the general level of risk in the coastal zone for each of the coastal hazards. The following resources may help assess the level of risk for each hazards. Your state may also have other state-specific resources and tools to consult. Additional information and links to these resources can be found in the “Resources” section at the end of the Coastal Hazards Phase I Assessment Template:

- The state’s multi-hazard mitigation plan.
- Coastal County Snapshots: Flood Exposure
- Coastal Flood Exposure Mapper
- Sea Level Rise Viewer/Great Lakes Lake Level Change Viewer
- National Climate Assessment

### General Level of Hazard Risk in the Coastal Zone

Type of Hazard	General Level of Risk <sup>2</sup> (H, M, L)
Flooding (riverine, stormwater)	High
Coastal storms (including storm surge)	High
Geological hazards (e.g., tsunamis, earthquakes)	Low
Shoreline erosion	High
Sea level rise	High
Great Lakes level change	N/A
Land subsidence	High
Saltwater intrusion	High

<sup>2</sup> 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*

2. 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 the Federal Emergency Management Agency (FEMA) on March 27, 2019 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>.

Louisiana remains extremely vulnerable to flooding from tropical events as well as inland flooding. In May 2018 the state established the Louisiana Watershed Initiative to develop and implement a floodplain management program to mitigate future risks associated with frequent flooding and severe weather events. This effort partners federal, state, and local governmental organizations with universities and non-profit organizations to increase resilience and reduce risks associated with flooding.

**Management Characterization:**

1. In the tables below, 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.

**Significant Changes in Hazards Statutes, Regulations, Policies, or Case Law**

<b>Topic Addressed</b>	<b>Employed by State or Territory</b> (Y or N)	<b>CMP Provides Assistance to Locals that Employ</b> (Y or N)	<b>Significant Changes Since Last Assessment</b> (Y or N)
Elimination of development/redevelopment in high-hazard areas <sup>3</sup>	N	N	N
Management of development/redevelopment in other hazard areas	Y	Y	N
Climate change impacts, including sea level rise or Great Lakes level change	N	N	N

---

<sup>3</sup> Use state’s definition of high-hazard areas.

### Significant Changes in Hazards Planning Programs or Initiatives

Topic Addressed	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)
Hazard mitigation	Y	Y	N
Climate change impacts, including sea level rise or Great Lakes level change	Y	Y	N

### Significant Changes in Hazards Mapping or Modeling Programs or Initiatives

Topic Addressed	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)
Sea level rise or Great Lakes level change	Y	Y	N
Other hazards:	N/A	N/A	N/A

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

Coastal Louisiana is particularly vulnerable to hazards due to its relatively flat topography, subtropical latitude, and a warm and humid climate. Louisiana has defined high-hazard areas within the Louisiana Hazard Mitigation Plan. These include areas threatened by, temperature hazards, wind hazards, flood hazards (including coastal hazards), and geologic hazards. Risks specific to coastal Louisiana include subsidence, land loss, coastal erosion, saltwater intrusion, sea level rise, and storm surge, as well as tropical cyclones... In addition, coastal Louisiana has a large amount of manmade infrastructure which is vulnerable to repetitive loss due to storms and changing environmental conditions, and the loss of our protective wetland and barrier headland/island systems has greatly exposed these risks.

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 as a result of continued significant storm events. Louisiana has continued the implementation of programs and policies that were developed or enhanced as a

consequence of previous major hazard events, inland flooding, riverine flooding, and significant storm events.

**Enhancement Area Prioritization:**

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

**High**        X  

**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 a high-risk area due to environmental and manmade stressors. With the potential effects of subsidence and relative sea level rise, much of coastal Louisiana may be inundated in less than 50 years if there is no action taken.

The loss of Louisiana’s protective wetland habitat has reached critical proportions. Our geographic location on the Gulf of Mexico, our sub-tropical humid climate and low, flat topography make coastal hazards a significant area of concern. The experiences of significant storm events have taught Louisiana residents and state and local officials valuable lessons and have actually advanced our hazard planning and preparation practices today. Louisiana takes hazard preparation seriously. There are multiple Federal, State, Parish, and Local planning efforts addressing hazard mitigation in Louisiana. This presents an opportunity to coordinate these efforts to reach a common goal. 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 through our web based public notices and in our state journal. OCM will report on responses received in our Phase 2 Assessment.

\*\*\*\*\*

[Top of the Document](#)

## 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 <sup>4</sup>	Changes or Trends Since Last Assessment <sup>5</sup> (↑, ↓, -, unknown)	Cite data source
Beach access sites	3  (in coastal zone)	-	<a href="https://www.crt.state.la.us/louisiana-state-parks/">https://www.crt.state.la.us/louisiana-state-parks/</a>
Shoreline (other than beach) access sites	7,721	↓	<a href="https://coast.noaa.gov/data/docs/states/shorelines.pdf">https://coast.noaa.gov/data/docs/states/shorelines.pdf</a>
Recreational boat (power or non-motorized) access sites	Unknown	Unknown	Not available
Number of designated scenic vistas or overlook points	Unknown	Unknown	Not available
Number of fishing access points (i.e. piers, jetties)	Unknown	Unknown	Not available

<sup>4</sup> 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.

<sup>5</sup> 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 “unknown”

Type of Access	Current number <sup>4</sup>	Changes or Trends Since Last Assessment <sup>5</sup> (↑, ↓, -, unknown)	Cite data source
Coastal trails/ boardwalks  <i>(Please indicate number of trails/boardwalks and mileage)</i>	Unknown	Unknown	Not available
Number of acres parkland/open space	40,000 acres	↑	<a href="https://www.crt.state.la.us/louisiana-state-parks/history/index">https://www.crt.state.la.us/louisiana-state-parks/history/index</a>
Access sites that are Americans with Disabilities Act (ADA) compliant <sup>6</sup>	16	↑	<a href="https://crt.state.la.us/Assets/Parks/facilitiesandactivities/Louisiana_State_Parks_and_Historic%20Sites_-_Trails.pdf">https://crt.state.la.us/Assets/Parks/facilitiesandactivities/Louisiana_State_Parks_and_Historic%20Sites_-_Trails.pdf</a>
Other (please specify)	-	-	-

Louisiana’s varying landscapes provide the opportunity for outdoor activities such as hiking, biking, swimming, fishing, kayaking, boating, camping, hunting, and birding. Coastal Louisiana is home to 17 State 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).

---

<sup>6</sup> For more information on ADA see [www.ada.gov](http://www.ada.gov).

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. There are several additional sources of statewide information that may help inform this response, such as the Statewide Comprehensive Outdoor Recreation Plan,<sup>7</sup> the National Survey on Fishing, Hunting, and Wildlife Associated Recreation,<sup>8</sup> and your state’s tourism office.

According to the 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.

Not only home to its citizens Louisiana offers a unique variety of recreational opportunities to residents and tourists. With over 1.7 million registered anglers and hunters and during 2017 alone, there is an obvious demand for public access and public resources (<http://www.wlf.louisiana.gov/licenses/statistics>).

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.

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. 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.

---

<sup>7</sup> 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, SCROPs could be useful to get some sense of public outdoor recreation preferences and demand. Download state SCROPs at [www.recro.org/scorp-library](http://www.recro.org/scorp-library).

<sup>8</sup> 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 2016 data to 2011, 2006 and 2001 information to understand how usage has changed. See [www.wsfprprograms.fws.gov/subpages/nationalsurvey/national\\_survey.htm](http://www.wsfprprograms.fws.gov/subpages/nationalsurvey/national_survey.htm)

### Significant Changes in Public Access Management

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?<sup>9</sup>

**Publically Available Access Guide**

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/>.

**Enhancement Area Prioritization:**

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

**High**      \_\_\_\_\_

**Medium**    \_\_\_\_\_

**Low**          X  

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.

---

<sup>9</sup> 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. You may choose to note that the local guides do exist and may provide additional information that expands upon the state guides.

OCM requested input into our 309 Assessment and Strategy process through our web based public notices, and also at our coastal parish coastal management meetings.

\*\*\*\*\*

[Top of the Document](#)

## 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.

### Existing Status and Trends of Marine Debris in Coastal Zone

Source of Marine Debris	Significance of Source (H, M, L, unknown)	Type of Impact <sup>10</sup> (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, -, unknown)
Beach/shore litter	M	Aesthetic, resource damage	↑
Land-based dumping	M	Aesthetic, resource damage	-
Storm drains and runoff	M	Aesthetic, resource damage	-
Land-based fishing (e.g., fishing line, gear)	M	Aesthetic, resource damage	-
Ocean/Great Lakes-based fishing (e.g., derelict fishing gear)	M	Aesthetic, resource damage	-
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)	-	-	-

<sup>10</sup> 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.

**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.

**Significant Changes in Marine Debris Management**

Management Category	Employed State/Territory  (Y or N)	by  CMP Assistance to Locals that Employ  (Y or N)	Provides  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**      X  

**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 governmental entities. OCM 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.

\*\*\*\*\*

[Top of the Document](#)

## Cumulative and Secondary Impacts 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,<sup>11</sup> please indicate the change in population and housing units in the state’s coastal counties between 2012 and 2017. 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 data is available (2012-2017) to approximate current assessment period.

### Trends in Coastal Population and Housing Units

	2012	2017	Percent Change (2012-2017)
Number of people	1,883,693	1,940,254	+3.00%
Number of housing units	819,820	842,696	+2.79%

2. Using provided reports from NOAA’s Land Cover Atlas,<sup>12</sup> please indicate the status and trends for various land uses in the state’s coastal counties between 1996 and 2016. 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 that the data represent. Also note that Puerto Rico currently only has data for one time point so will not be able to report trend data. Instead, Puerto Rico should just report current land use cover for developed areas and impervious surfaces.

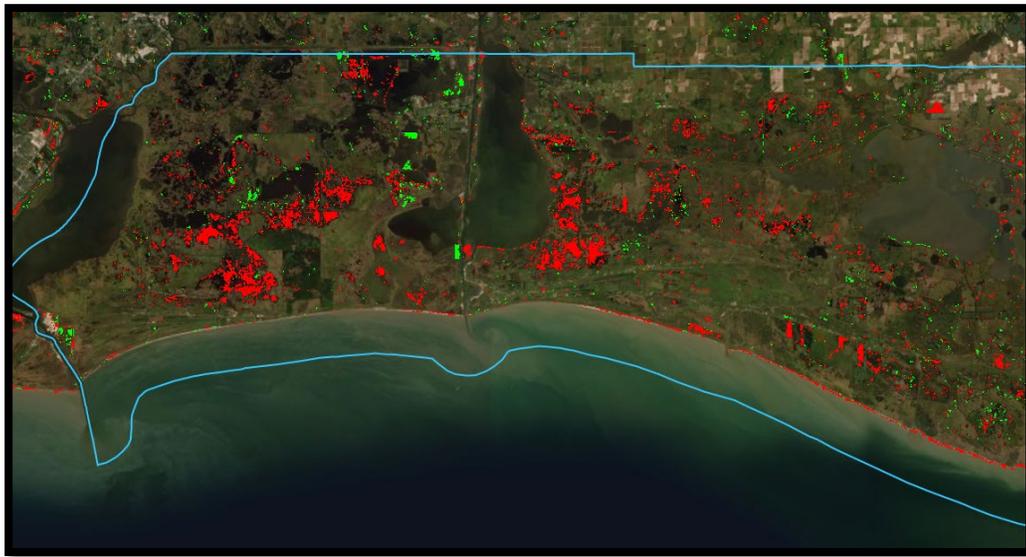
<sup>11</sup>[www.oceaneconomics.org/Demographics/PHresults.aspx](http://www.oceaneconomics.org/Demographics/PHresults.aspx). Enter “Population and Housing” section and select “Data Search” (near the top of the left sidebar). From the drop-down boxes, select your state, and “all counties.” Select the year (2012) and the year to compare it to (2017). Then select “coastal zone counties.”

<sup>12</sup>[www.coast.noaa.gov/digitalcoast/tools/lca.html](http://www.coast.noaa.gov/digitalcoast/tools/lca.html). Note that the 2016 data will not be available for all states until later Summer 2019. NOAA OCM will be providing summary reports compiling each state’s coastal county data. The reports will be available after all of the 2016 data is available.

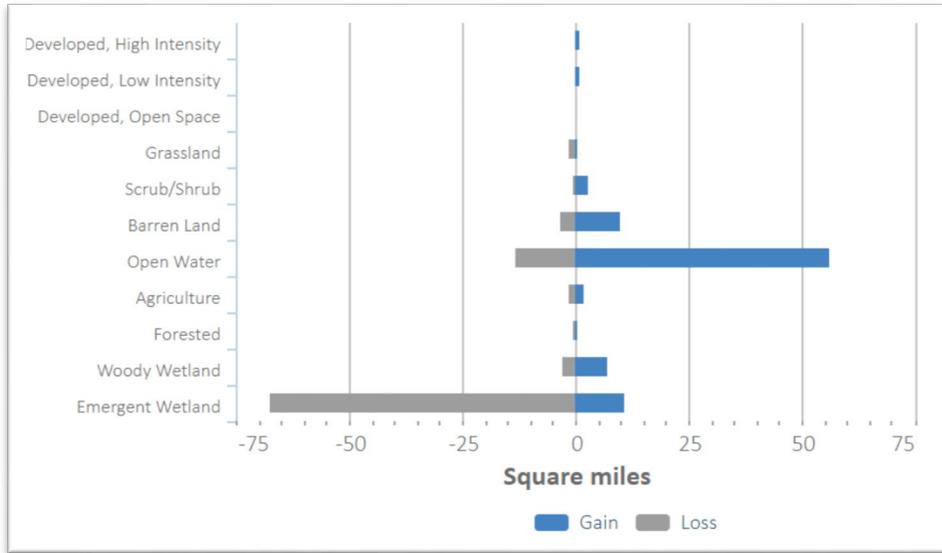
## Distribution of Land Cover Types in Coastal Counties

Land Cover Type	Land Area Coverage in 2010* (Acres)	Gain/Loss Since 2006 (Acres)
Developed, High 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.



Cameron Parish 1996-2010<sup>12</sup>



Cameron Parish - Area Gained / Area Lost 1996 to 2010<sup>12</sup>

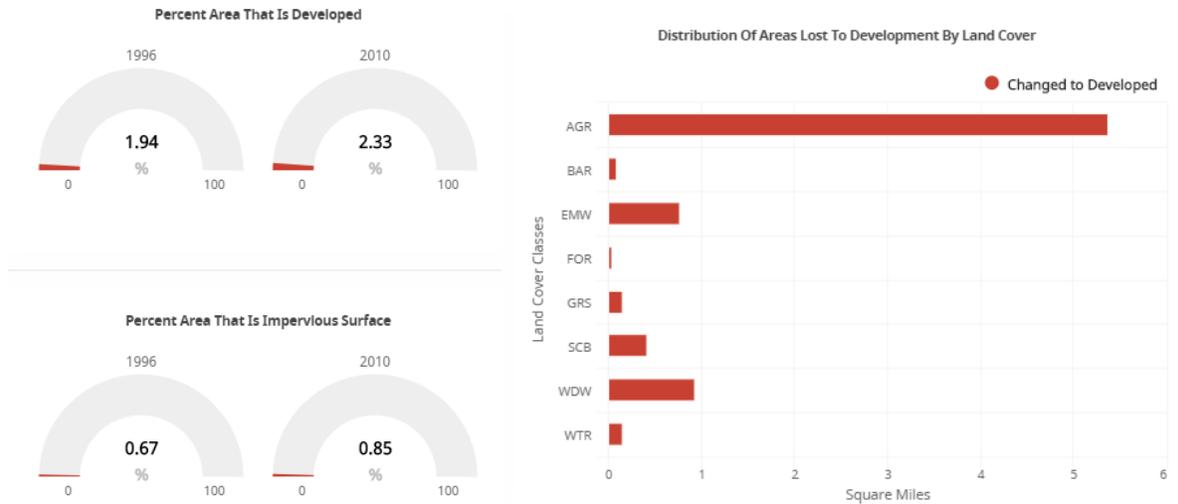
- Using provided reports from NOAA’s Land Cover Atlas,<sup>13</sup> please indicate the status and trends for developed areas in the state’s coastal counties between 1996 and 2016 in the two tables below. You may use other information and include graphs and figures, as appropriate, to help illustrate 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 currently only has data for one time point so will not be able to report trend data. Unless Puerto Rico has similar trend data to report on changes in land use type, it 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 data are available. Puerto Rico does not need to report trend data.

<sup>13</sup>[www.coast.noaa.gov/digitalcoast/tools/lca.html](http://www.coast.noaa.gov/digitalcoast/tools/lca.html). Note that the 2016 data will not be available for all states until later Summer 2019. NOAA OCM will be providing summary reports compiling each state’s coastal county data. The reports will be available after all of the 2016 data is available.



Terrebonne Parish, Changes in Development, 1996-2010<sup>12</sup>

### 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 the Northern Mariana Islands do not report.

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

4. Briefly characterize how the coastal shoreline has changed in the past five years due to development, including potential changes to shoreline structures such as groins, bulkheads and other shoreline stabilization structures, and docks and piers. If available, include quantitative data that may be available from permitting databases or other resources about changes in shoreline structures.

Louisiana's coastal shoreline has shown an increase in industrial development, residential development and recreational development. Louisiana's OCM will continue to manage cumulative and secondary impacts from shoreline structures through our Coastal Use Permit program.

5. Briefly 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, shoreline hardening, and habitat fragmentation, since the last assessment.

Cumulative and secondary impacts were investigated in the previous enhancement period and the strategy goal was to research, develop, and adopt procedures to assess cumulative and secondary impacts and 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.

An exhaustive search of OCM's data for relevance, usefulness, and applicability as a decision-making tool has been conducted, and after a review of existing internal data captured by our permitting process, it was determined that very little would be gained by further analysis and/or expansion of the existing database toward this effort. OCM already maintains an expansive database for permitting, wetland impacts and mitigation. The conclusion of this project analysis is that in order to avert the Cumulative and Secondary Impacts this agency would have to select and implement thresholds for some or all the activities regulated. After further reflections on the development of thresholds, it was determined that these could not be set based on good science, and would be considered as arbitrary under the review of stakeholders. It was decided that the assessment plan would be limited internally to the agency, and would not engage external stakeholders, because no policy changes are anticipated.

#### **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.

**Significant Changes in Management of Cumulative and Secondary Impacts of Development**

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;

The Previous enhancement cycle prioritized “Cumulative and Secondary Impacts” enhancement area as a “high” priority. The OCM researched procedures to assess cumulative and secondary impacts and to identify the types of impacts that can be assessed in a scientific/quantitative manner. Through extensive research, analysis and review of historical data, it was determined that the secondary impacts would no longer be pursued since these metrics are neither readily quantifiable, nor are they documented under the current permitting system. The OCM remains focused on making improvements to internal procedures, by evaluating how to minimize the direct (and therefore cumulative) impacts of future permitted activities on coastal zone habitats through the Coastal Use Permitting process.

- 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.

The OCM will continue to analyze the available data, as discovered, to identify potential metrics currently not captured by the permit database, to be used to evaluate and improve the permitting process.

**Enhancement Area Prioritization:**

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

**High**        X  

**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 identified as a high priority in our previous 309 Assessment and Strategy. The state undertook efforts to to quantify secondary impacts; however, the results were unsuccessful. It was identified that current methodologies available do not provide scientific quantification of impacts. As this remains an important issue for the coastal program, OCM considers this to be a high priority and will continue to explore and review new data as it becomes available.

\*\*\*\*\*

[Top of the Document](#)

## Special Area Management Planning 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 Diversion	Landowner, resource management, state and local opposition.
National Estuarine Research Reserve (NERR) development	Preliminary status, location, management.

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.

Since the last assessment, there have been no additional state or territory specific reports or trends of SAMPs.

**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.

**Significant Changes in Special Area Management Planning**

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**      X  

**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 and anticipates working with stakeholders to address coastal issues as they arise, and will engage federal partners on SAMP development as the need arises.

\*\*\*\*\*

[Top of the Document](#)

## Ocean and Great Lakes Resources 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),<sup>14</sup> indicate the status of the ocean and Great Lakes economy as of 2015 (the most recent data) 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 (2015)

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	120,789	8,646	5,010	8,110	24,453	23,406	51,162
Establishments (# of Establishments)	4,131	301	117	139	553	686	2,335
Wages(Millions of Dollars)	6,100	126.7	352.9	475.8	1,800	2,400	1,000
GDP(Millions of Dollars)	15,400	431.7	533	923.1	3,600	7,500	2,400

<sup>14</sup>[www.coast.noaa.gov/digitalcoast/tools/enow.html](http://www.coast.noaa.gov/digitalcoast/tools/enow.html). If you select any coastal county for your state, you are directed to various data displays for that county. In the upper left of the screen, click the "State" box, to the left of the county box so that the state name will be highlighted. Now the data will reflect statewide data for all of the state's coastal counties. Make sure "2015" is selected for the year (top right corner). You can then click through the sector types by selecting the icons along the top and the type of economic data (employment, wages, GDP, etc), by clicking through the icons on the left.

## Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2015)<sup>15</sup>

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	+5,748	-360	-319	-6,507	+4,616	+1,422	+6,896
Establishments(# of Establishments)	-17	-19	-39	-12	-52	-25	+130
Wages(Millions of Dollars)	+2,240	+63.9	+165	-116.5	+831.4	+921	+375
GDP(Millions of Dollars)	-1,113	+229.3	+190	-483.2	+1,883	-3,691.4	+814.2

- Understanding existing uses within ocean and Great Lakes waters can help reduce use conflicts and minimize threats when planning for ocean and Great Lakes resources. Using Ocean Reports<sup>16</sup>, indicate the number of uses within ocean or Great Lakes waters off of your state. For energy uses (including pipelines and cables, see the “Energy and Government Facility Siting” template following). Add additional lines, as needed, to include additional uses that are important to highlight for your state.

### Uses within Ocean or Great Lakes Waters

Type of Use	Number of Sites
Federal sand and gravel leases ( <i>Completed</i> )	4
Federal sand and gravel leases ( <i>Active</i> )	1
Federal sand and gravel leases ( <i>Expired</i> )	1
Federal sand and gravel leases ( <i>Proposed</i> )	1
Beach Nourishment Projects	26
Ocean Disposal Sites	139
Principle Ports ( <i>Number and Total Tonnage</i> )	5 @ 537,993,969 tons
Coastal Maintained Channels	173
Designated Anchorage Areas	39
Danger Zones and Restricted Areas	No data available
Other (please specify)	-

<sup>15</sup> The trend data is available at the bottom of the page for each sector and type of economic data. Mouse over the data points for 2005 and 2015 to obtain the actual values and determine the change by subtracting 2005 data from 2015.

<sup>16</sup> [www.coast.noaa.gov/digitalcoast/tools/ort.html](http://www.coast.noaa.gov/digitalcoast/tools/ort.html). Go to “Quick Reports” and select the “state waters” option for your state or territory. Some larger states may have the “Quick Reports” for their state waters broken into several different reports. Use the icons on the left hand side to select different categories: general information, energy and minerals, natural resources and conservation, oceanographic and biophysical, transportation and infrastructure, and economics and commerce. Then scroll through each category to find the data to complete the table.

3. 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)
Benthic habitat (including coral reefs)	-
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	Unknown
Sand/gravel	↑ Conflict between increased demand of the resource and new and expanding infrastructure on the Outer Continental Shelf (OCS)
Cultural/historic	-
Other (Coastal Resiliency)	↑ Hurricane severity, relative sea level rise
Transportation/navigation	↑ Land loss threatens navigational channels  ↑ Conflict between navigation and freshwater diversions
Offshore development <sup>17</sup>	-
Energy production	↑ Land loss exposes old infrastructure
Fishing (commercial and recreational)	-
Recreation/tourism	Unknown
Sand/gravel extraction	↑ Conflict between increased demand of the resource and new and expanding infrastructure on the Outer Continental Shelf (OCS)
Dredge disposal	↑ Convenient disposal sites nearing capacity. Federal funding decreasing
Aquaculture	-
Other (Coastal Resiliency)	↓ Hurricane protection Levee system around New Orleans nearing completion

<sup>17</sup> Offshore development includes underwater cables and pipelines, although any infrastructure specifically associated with the energy industry should be captured under the “energy production” category.

- For the ocean and Great Lakes resources and uses in the table 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. Place an “X” in the column if the use or phenomenon is a major contributor to the increase.

**Major Contributors to an Increase in Threat or Use Conflict to**

**Ocean and Great Lakes Resources**

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Comm and Rec)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Coastal Land Loss
Sand/gravel		X										X
Transportation/navigation												X
Sand/gravel extraction		X										X
Energy production												X
Dredge disposal								X				X

- 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.

OCM utilized the data resources provided in the 309 Assessment and Strategy Guidance as well as staff experience to assess economic impacts and determine potential resource conflicts.

**Management Characterization:**

- 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?

## Significant Changes to Management of Ocean and Great Lakes Resources

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.

<b>Comprehensive Ocean/Great Lakes Management Plan</b>	<b>State Plan</b>	<b>Regional Plan</b>
Completed plan (Y/N) (If yes, specify year completed)	Y 2017	Y (effective 2016-2021)
Under development (Y/N)	Y 2023	N
Web address (if available)	<a href="http://coastal.la.gov/our-plan/2017-coastal-master-plan/">http://coastal.la.gov/our-plan/2017-coastal-master-plan/</a>	<a href="https://gulfofmexicoalliance.org/documents/APIII.pdf">https://gulfofmexicoalliance.org/documents/APIII.pdf</a>
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**        X  

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.

\*\*\*\*\*

[Top of the Document](#)

## Energy and Government Facility Siting 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)18

### 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 territories coastal zone based on best-available data. If available, identify the approximate number of facilities by type. For ocean-facing states and territories (not Great Lakes states), Ocean Reports<sup>19</sup> includes existing data for many of these energy facilities and activities.

### Status and Trends in Energy Facilities and Activities in the Coastal Zone

Type of Energy Facility/Activity	Exists in Coastal Zone (# or Y/N)	Change in Existing Facilities/Activities Since Last Assessment (↑, ↓, -, unknown)	Proposed in Coastal Zone (# or Y/N)	Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, -, unknown)
Pipelines*	>70,000 miles	↑	Y	↑
Electrical grid (transmission cables)	Y	↑	Y	↑
Ports	12	-	1	↑
Liquid natural gas (LNG)	2	-	5	↑
Other (please specify)	-	-	-	-
Oil and gas	Y	↑	Y	↑
Coal	0	-	0	-
Nuclear*	1	-	0	-
Wind	0	-	1	↑
Wave	0	-	-	-
Tidal	0	-	-	-
Current (ocean, lake, river)	0	-	-	-
Hydropower*	0	-	0	-
Ocean thermal energy conversion	0	-	0	-
Solar*	1	↑	Y	↑
Biomass*	0	-	0	-

<sup>18</sup> CZMA § 309(a)(8) is derived from program approval requirements in CZMA § 306(d)(8), which states:

“The management program provides for adequate consideration of the national interest involved in planning for, and managing the coastal zone, including the siting of facilities such as energy facilities which are of greater than local significance. In the case of energy facilities, the Secretary shall find that the State has given consideration to any applicable national or interstate energy plan or program.”

NOAA regulations at 15 C.F.R. § 923.52 further describe what states need to do regarding national interest and consideration of interests that are greater than local interests.

<sup>19</sup>[www.coast.noaa.gov/digitalcoast/tools/ort.html](http://www.coast.noaa.gov/digitalcoast/tools/ort.html). Select “Quick Reports” and then enter your state. Select the Quick Reports for “coastal waters” off of your state. Depending on the size of the state, there may be more than one “coastal waters”. If so, you will need to add the data from all reports to complete the table. Click on the wind turbine icon on the left (“Energy and Minerals”) for information on energy facilities. While outside your coastal zone, you may also want to consider facilities/activities in “Federal Waters” that may have effects on your coastal zone.

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.

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 facility has been proposed in western Louisiana, and offshore deep-water ports have also been proposed.

3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance<sup>20</sup> in the state's coastal zone since the last assessment.

No significant federal government facilities and activities have occurred in the coastal zone since the last assessment.

#### **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.

---

<sup>20</sup> 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).

\* <https://ferc.gov/industries/gas/indus-act/pipelines/approved-projects.asp>

\* <https://www.nrc.gov/reactors/operating/list-power-reactor-units.html>

\* <https://www.eia.gov/state/?sid=LA#tabs-4>

## Significant Changes in Energy and Government Facility Management

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	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;

Following an Executive Order issued by the Governor in 2016, all regulatory authority exercised by OCM must comply with the Coastal Protection and Restoration Authority (CPRA) Master Plan. The Master Plan was updated in 2017, and OCM ensures compliance with this overall plan for Louisiana’s coast. A copy of the plan can be found at [http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan\\_Web-Book\\_Final-with-Effective-Date-06092017.pdf](http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan_Web-Book_Final-with-Effective-Date-06092017.pdf)

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

These changes were not CZM-driven.

- 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 2023.

### Enhancement Area Prioritization:

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

High \_\_\_\_\_

Medium   X  

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 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 remain informed of trends and developments.

\*\*\*\*\*

[Top of the Document](#)

## 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.<sup>21</sup>

### Status and Trends of Aquaculture Facilities and Activities

Type of Facility/Activity	Number of Facilities <sup>22</sup> (2018)	Approximate Economic Value (2018)	Change Since Last Assessment (↑, ↓, -, unknown)
Food Fish	9	\$1,360,000	Unknown
Sport Fish	2	Undisclosed	Unknown
Baitfish	3	\$241,000	Unknown
Ornamental Fish	4	Undisclosed	Unknown
Crustaceans	450	\$50,322,000	↑
Mollusks	28	\$29,008,000	↓ (Facilities) - ↑ (Sales)
Misc. Aquaculture	36	\$54,600,000	↓ (Facilities) - ↑ (Sales)

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.

<sup>21</sup> While focused on statewide aquaculture data rather than just within the coastal zone, the *Census of Aquaculture* ([www.agcensus.usda.gov/Publications/Census\\_of\\_Aquaculture/](http://www.agcensus.usda.gov/Publications/Census_of_Aquaculture/)) may help in developing your aquaculture assessment. The census is conducted every 10 years and the last report was released in 2013. The report provides a variety of state-specific aquaculture data to understand current status and recent trends. .

<sup>22</sup> 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 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.

**Significant Changes in Aquaculture Management**

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	Y	N	N
Other aquaculture statutes, regulations, policies, or case law interpreting these	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 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**          X  

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.

\*\*\*\*\*

[Top of the Document](#)

## 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

[Top of the Document](#)

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

	<b>Stressor/Threat</b>	<b>Geographic Scope</b> (throughout coastal zone or specific areas most threatened)
Stressor 1	Erosion / Subsidence	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 your 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. Between 1932 and 2010, Louisiana's coast lost more than 1,800 square miles of land. From 2004 through 2008 alone, more than 300 square miles of marshland were lost to Hurricanes Katrina, Rita, Gustav, and Ike. The major causes of this land loss include the effects of climate change, relative sea level rise, subsidence, hurricanes, storm surges, disconnection of the Mississippi River from coastal marshes, and human impacts. Louisiana's coast is a precious natural, economic, and cultural resource. It is an area rich in ecological abundance that supports world-class commercial and recreational fisheries and is home to an array of waterfowl, migratory birds, reptiles, and amphibians. Above all, the Louisiana coast is home to more than 2 million people – nearly half of the state's population (2017 Louisiana's Comprehensive Master Plan for a Sustainable Coast)<sup>23</sup>.

<sup>23</sup> [http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan\\_Web-Book\\_CFinal-with-Effective-Date-06092017.pdf](http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan_Web-Book_CFinal-with-Effective-Date-06092017.pdf)

Models indicate that coast wide rates of wetland change have varied from -83.5 +/- 11.8 square kilometers per year to -28.01 +/- 16.37 square kilometers per year. To put these numbers into perspective, this equates to long-term average loss rates of approximately an American football field's worth of coastal wetlands within 34 minutes when losses are rapid to within 100 minutes at more recent, slower rates (2017 USGS)<sup>24</sup>

Although Louisiana's coast is a natural coast, it is also a working coast that is important to both our state and our nation. It is an area that maintains five of the top twelve ports (by cargo volume) in the United States and is a major energy supplier of our nation's oil and natural gas. Louisiana is one of the top five natural gas-producing states as it accounts for 7% of U.S. total gas production and has about 8% of the nation's gas reserves. Additionally Louisiana's 17 oil refineries account for nearly one-fifth of the nation's refining capacity and are capable of processing 3.3 million barrels of crude oil per day.<sup>25</sup> 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 (2017 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
Lack of awareness of Coastal Use Permitting program.	Review current permitting processes, policies, and tools to improve ease of use and efficiency, and investigate new opportunities for streamlining regulatory processes, to encourage participation into program.

<sup>24</sup> <https://pubs.er.usgs.gov/publication/sim3381>

<sup>25</sup> <https://www.eia.gov/state/?sid=LA>



**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.

**Significant Changes in Wetland Management**

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 (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.

SEE WETLANDS PHASE 1 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 has 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 for activities permitted within the Louisiana Coastal Zone. Each quarter OCM is required to provide Legislative Indicator Reports to document these metrics. Habitat restoration falls under the umbrella of the Coastal Protection and Restoration Authority (CPRA); however, OCM has assisted in the re-establishment of approximately thirty seven acres of intermediate marsh. The efforts to re-establish marsh in coastal Louisiana were accomplished through the Beneficial Use and In-Lieu Fee programs. The In-Lieu Fee instrument provides an additional option for applicants to meet compensatory mitigation requirements as well as provide effective compensatory mitigation by funding the construction of projects. The Beneficial Use program focuses on a requirement where dredging greater than 25,000 cubic yards results in either using the material beneficially or contribution to the Beneficial Use Trust Fund.

#### **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.*)

##### Management Priority 1: Improving Permitting and Government Coordination

*Description:* As recommended in NOAA's 312 review, OCM seeks to identify and assess policies, processes, documents, and internal systems, to increase efficiencies and reduce inaccuracies during the permitting process. 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.

##### *Management Priority 2: Advance State Master Plan*

*Description:* OCM will further advance our assistance, procedures, and priorities to increase focus on the development and implementation efforts in the State's Coastal Protection and Restoration Master Plan. We will assess current internal strategies, such as no net loss, and offsetting impacts, for improvement, which may result in new or updated policies. These policy and tool improvements shall assist in the achievement of comprehensive coastal protection for Louisiana.

- 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 tools and methodologies would be required.
Mapping/GIS	Y	Mapping efforts for permitting throughout the state would help review of potential assessment tools. Comprehensive assessment layers could be developed through this process.
Data and information management	Y	Improvement of database management would assist in the review impact to habitats, reduce inaccuracies, 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:**

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

Yes        X  

No              

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

A strategy will be developed for this enhancement area in order to help OCM in its mission to maintain, protect, develop, and restore or enhance the invaluable coastal region and to mitigate impacts to wetlands.

[Top of the Document](#)



## COASTAL HAZARDS II ASSESSMENT

### 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.*

1. Based on the characterization of coastal hazard risk, what are the three most significant coastal hazards<sup>26</sup> within your coastal zone? Also indicate the geographic scope of the hazard, i.e., is it prevalent throughout the coastal zone, or are there specific areas most at risk?

	Type of Hazard	Geographic Scope <small>(throughout coastal zone or specific areas most threatened)</small>
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

2. 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.

“In Louisiana, five specific types of floods are of main concern: riverine, flash, ponding, backwater, and urban” (2019 State of Louisiana Hazard Mitigation Plan). A complicated geography in the coastal zone comprised of remnants from natural levee ridges surrounded by 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 transitions from freshwater wetland systems to brackish water 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 and significant rain/flooding events. Effects from tropical systems such as Hurricanes Harvey (2017) and Barry (2019), and the historic Louisiana flooding events of 2016 continue to change the hazard preparation and mitigation landscape in Louisiana. In May 2018 the state established the Louisiana Watershed Initiative to develop and implement a floodplain management program to mitigate future risks associated with frequent flooding and severe weather events. This effort partners federal, state, and local governmental organizations as well as universities and non-profit organizations to increase resilience and reduce risks associated with flooding. This group aims to

<sup>26</sup> See list of coastal hazards on pg. 24 of this assessment template.

leverage the state’s past and current flood-risk reduction and resilience efforts, while identifying the data, projects and policies needed for improved programs and opportunities.

As evidenced in our high level assessment prepared in this 309 Assessment and Strategy period; all of Louisiana’s coast has a very high susceptibility to relative sea level rise and more than half of its coastal area is subject to very high rates of erosion<sup>27</sup>. 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.

- 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
Dated guidance on Best Management Practices (BMP) to reduce hazards and increase resiliency.	Information on new and improved methods or technologies to implement into guidance.
Lack of awareness of local and state hazard efforts	Local community awareness efforts to participate in State hazard planning
Growth of establishments in the coastal zone and expansion of existing ports, harbors, and marinas.	Methods to identify and coordinate favorability and acceptance of clean and resilient state programs
Visibility of best management practices, and lack of integration into the OCM process	Relevant BMPs that may be implemented into 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.*

- 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.

**Significant Changes in Coastal Hazards Statutes, Regulations, and Policies**

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)
Shorefront setbacks/no build areas	N	N	N
Rolling easements	N	N	N
Repair/rebuilding restrictions	Y	N	N

<sup>27</sup> NOAA’s, State of the Coast Vulnerability to Sea Level Rise and the Erosion Tool

<b>Management Category</b>	<b>Employed by State/Territory</b> (Y or N)	<b>CMP Provides Assistance to Locals that Employ</b> (Y or N)	<b>Significant Change Since the Last Assessment</b> (Y or 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)	-	-	-

*\*not part of OCM's activities*

### Significant Changes to Coastal Hazard Management Planning Programs or Initiatives

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)
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 Louisiana Watershed Initiative	Y	N	Y

### Significant Changes to Coastal Hazard Research, Mapping, and Education Programs or Initiatives

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)
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)	-	-	-

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 2019 State of Louisiana Hazard Mitigation Plan, 53 of Louisiana's 64 parishes had approved Hazard Mitigation Plans – that equates to approximately 83% of the state. The State of Louisiana prioritized funding for them, and provided technical assistance to all local jurisdictions, ensuring that all localities had them approved.

#### **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 of the Clean and Resilient program with Local Louisiana Communities, State and Local Coastal Management Programs, and assisting Local Communities and Businesses in their Efforts to become more resilient and prepared for natural impacts to coastal Louisiana.

*Description:* Businesses and industries in Louisiana vary widely in their capacity for planning and regulation relevant to hazard reduction and resiliency efforts. OCM intends to increase awareness for resiliency planning and integrate best management practices and the Clean and Resilient Marina program through our Local Coastal Management Program (LCMP), and to explore additional methods to expand the program to larger industrial areas.

This 309 period OCM seeks to reevaluate and modernize our guidance and program, and increase participating establishments to certify preparation and hazard avoidance in Louisiana’s coastal zone.

*Management Priority 2: Integration of best management practices into the Coastal Use Permitting process to increase resiliency and to reduce hazards.*

*Description:* New or expanding establishments in the coastal zone are vital in providing economic and recreational value to the state. Through integrating BMPs into the LCRP permitting process, the OCM will increase awareness and acceptance of new and improved methods to better prepare for the increase intensity of coastal storms and a critical coastal erosion emergency in 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.

<b>Priority Needs</b>	<b>Need? (Y or N)</b>	<b>Brief Explanation of Need/Gap</b>
Research	Y	Additional research on new and revised methods, and coordination with local level policies, plans and tools that can improve resiliency reduce coastal hazards.
Data and information management	Y	Integration and analysis of new and revised guidance into LCRP permitting policies and resources, management of new or expanded activities, and data collection and analysis on effectiveness and impacts to coastal resources as needed.
Training/Capacity building	Y	Regulatory analysts and local coastal parish representatives will need instruction on new guidance development; formal and informal agreements with local authorities and establishments would be productive.
Decision-support tools	Y	Coastal Clean and Resilience BMPs, guides, handbooks, and instructional materials for applicants and local businesses.
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          X  

No                   

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

The 2019 State of Louisiana Hazard Mitigation Plan states: “A successful hazard mitigation plan increases the knowledge of hazards, builds partnerships across communities and stakeholders to reduce risk, creates long term risk reduction strategies that coincide with other planning objectives, creates strategies that combat the greatest threats to communities, and identifies sources of funding to implement these strategies.”

The goal of this period’s 309 assessment and strategy, will formulate and provide guidance to new or existing harbors, marinas, and recreational facilities, through coordination and implementation of policies and procedures on the state and local level, to assist and improve resilience and reduce hazards.

OCM would like to explore and implement additional guidance and assistance to larger industrial and economic establishments (ports) by formalizing that assistance through additional analysis, policy or program development activities this 309 strategy period.

OCM will research and review improved methods and technologies, policy and guidance improvements that can improve resiliency and reduce hazards in an effort to strengthen Louisiana’s working water fronts and develop plans, tools and resources for use to better identify resiliency improvements, avoid hazards and enhance recovery.

New or improved polices, tools, and/or permitting procedures could improve resiliency and alleviate the potential for serious accidents and hazards and better prepare Louisiana for any future uncertainties.

[Top of the Document](#)

## Cumulative and Secondary Impacts

### In-Depth Resource Characterization:

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

1. What are the three most significant existing or emerging cumulative and secondary stressors or threats within your 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.

	<b>Stressor/Threat</b>	<b>Coastal Resource(s)/Use(s) Most Threatened</b>	<b>Geographic Scope</b> (throughout coastal zone or specific areas most threatened)
Stressor 1	Coastal Development and Impervious Surfaces	Wetland, Shoreline & Water Quality	Whole Coastal Zone
Stressor 2	Energy Production	Wetland & Water Quality	Whole Coastal Zone
Stressor 3	Maritime traffic	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. Ongoing infrastructure development as well as energy exploration and shipping are known to have direct impacts to our coastal zone stressing coastal resources. Additionally, 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, <https://www.doa.la.gov/osr/lac/43v09/43v09.pdf>). However, the OCM has identified a need to continually investigate the topic of cumulative and secondary impacts to assess the indirect or cumulative effects of coastal activities. The OCM researched procedures to assess cumulative and secondary impacts and to identify the types of impacts that can be assessed in a scientific/quantitative manner. Through extensive research, analysis and review of historical data, it was determined that the secondary impacts would no longer be pursued since these metrics are neither readily quantifiable, nor are they documented under the current permitting system. The OCM remains focused on making improvements to internal procedures, by evaluating how to minimize the direct (and therefore cumulative) impacts of future permitted activities on coastal zone habitats through the Coastal Use Permitting process.

- 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
Scientific and quantitative methods of secondary impacts.	Documented quantifiable metrics.
Accurate habitat maps	Updated GIS information
Hydrologic data/Water level information	Increased measurement density
High resolution updated LIDAR imagery	

**In-Depth Management Characterization:**

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

- 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.

**Significant Changes to Management of Cumulative and Secondary Impacts of Development**

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)	-	-	-

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

There were no changes since the last assessment; Cumulative and Secondary Impacts Priority remain a “high” level priority.

There were no 309 or other CZM-driven changes.

OCM remains focused on making improvements to internal procedures, by evaluating how to minimize the direct (and therefore cumulative) impacts of future permitted activities on coastal zone habitats through the Coastal Use Permitting process. And will continue to analyze the available data, as discovered, to identify potential metrics currently not captured by the permit database, to be used to evaluate and improve the permitting process.

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?

The OCM researched procedures to assess cumulative and secondary impacts and to identify the types of impacts that can be assessed in a scientific/quantitative manner. Through extensive research, analysis and review of historical data, it was determined that the secondary impacts metrics are neither readily quantifiable, nor are they documented under the current permitting system. The OCM remains focused on making improvements to internal procedures, by evaluating how to minimize the direct (and therefore cumulative) impacts of future permitted activities on coastal zone habitats through the Coastal Use Permitting process.

#### **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:* Research procedures and assess cumulative and secondary impacts for the development and implementation into the LCRP

*Description:* OCM will continue 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), and the Hydrologic Modification Impact Analysis ([http://www.dnr.louisiana.gov/assets/OCM/permits/NAJ/HMIA\\_guide\\_r1\\_02\\_27\\_15.pdf](http://www.dnr.louisiana.gov/assets/OCM/permits/NAJ/HMIA_guide_r1_02_27_15.pdf)). OCM has identified a need to research additional cumulative and secondary impact metrics that quantifiable, and investigate additional methods of impact documentation under the current permitting system.

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, secondary impact calculation metrics
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
Decision-support tools	Y	Legal assistance and coastal user guidance documents and tools
Communication and outreach	Y	Outreach to user groups, and local coastal management programs
Other (specify)	-	-

**Enhancement Area Strategy Development:**

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

Yes \_\_\_\_\_  
 No   X  

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

OCM has identified this area as a priority and potential information gap that the state can continue to research. This may result in a strategy being developed for those activities that can be regulated; upon the conclusion that methods or tools that accurately and scientifically quantify cumulative and/or secondary impacts have been designed or identified.

[Top of the Document](#)

**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 2 strategies for the 2021-2025 Program Enhancement Cycle. One strategy has been developed for Wetlands, and one strategy has been developed for Coastal Hazards.*

[Top of the Document](#)

## Strategy: Program Sequencing Improvements (improving government transparency)

### I. Issue Area(s)

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

- |  |   |
|--|---|
| <input type="checkbox"/> Aquaculture                           | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input checked="" type="checkbox"/> Wetlands              |
| <input checked="" type="checkbox"/> Coastal Hazards            | <input type="checkbox"/> Marine Debris                    |
| <input type="checkbox"/> Ocean/Great Lakes Resources           | <input type="checkbox"/> Public Access                    |
| <input type="checkbox"/> Special Area Management Planning      |   |

### 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 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 for consideration. Rather than a lofty statement, the goal should be achievable within the time frame of the strategy.

The strategy goal for the Coastal Hazards and Wetlands Enhancement Areas is to assess various types of tools, resources, and sequencing methodologies, in an effort to utilize the most efficient and accurate approach when reviewing activities that could impact Louisiana coastal resources, and to develop new and revised standard operating procedures and policy documents.

- 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 investigate areas of improvement regarding: increasing accuracy in siting projects, and increasing permit processing efficiencies, to provide the most efficient and accurate evaluation of activities in the coastal zone of Louisiana. This may include state, local, and federal consistency projects; improving and/or updating the state online self-determination tool, GIS siting improvements, and public assistance tools. The OCM will incorporate the most appropriate findings into the Standard Operating Procedures, and maintain online resource tools through SONRIS, and LDNRs website.

### **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 the State utilizes a number of different proven tools, methods, and policies to assist in the review and authorization of activities in the Louisiana coastal zone. This strategy will address the priority needs and gaps by assisting OCM in identifying which tools to improve to increase ease of use, efficiency, and accuracy.

### **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 tools available for viewing activities, siting projects, ensuring consistent review, and increasing ease of use for coastal users and other interest groups. Additionally the process will assist OCM in meeting the mission of ensuring no net loss in the amount of impacted wetland acres.

## **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, as well as 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 tools available to assess coastal uses, data collection and implementation within our current program.

## **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. For example, even if the final adoption of the program change is outside of the CMP's control, what steps will be included in the work plan so the CMP ensures the program change is considered, reviewed, and hopefully adopted by the outside entity? Who are the other stakeholders or elected officials that need to be engaged, and how and when during the strategy development process? What is the decision-making or voting process that is involved in the adoption of the program change, and how will the CMP interact with this process to ensure that the proposed program change is considered? 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, OCM recognizes that they may change somewhat over the course of the five-year strategy due to 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 strategy goal for the Wetlands enhancement area is to assess various types of approved tools and methods used in an effort to produce the most efficient, accurate, and easy-to-use tool when reviewing activities in the Louisiana coastal zone.

**Total Years: 5**

**Total Budget: \$2,000,000**

**Years: 1-3**

**Description of activities:** OCM will evaluate existing documents/applications, policies, and procedures to identify data gaps and areas for improvement. These topics may include but may not be limited to the joint permit application, the federal consistency application process, government coordination, the self-determination tool, work products, as well as potential areas to increase efficiency within existing day-to-day operations. The OCM will utilize an internal workgroup as well as external stakeholders. Once identified the OCM workgroup will identify needs and priority to make improvements.

**Major Milestone(s):**

**1. OCM programmatic improvements**

- a. OCM will identify stakeholders to engage and consult regarding use of available resources and tools for the public regarding the program. OCM will consult the stakeholder group to identify potential areas of improvement regarding state and local policies, required documentation, and user experience. OCM will develop an internal workgroup to review existing documents, applications, policies, and procedures to identify areas for improvement. The workgroup will create a list of priorities and identify needs to make improvements to the documents, applications, policies and/or procedures based on the internal review and stakeholder input.
- b. OCM will assign a staff to a development team to address specific updates to items/areas of improvement. OCM may enlist assistance of information technology specialists as well as local coastal management program (LCMP) personnel depending on the needs to complete the tasks. As the development team makes improvements, they will consult with the workgroup prior to implementation. Prior to implementation of the updates OCM will create and/or update standard operating procedures and policies, applications, documents, etc.
- c. OCM staff will provide technical assistance to LCMP personnel to develop and/or update policies, procedures, and work products to align the state and local coastal permitting programs.

**2. Development of OCM tools and resources**

- a. The OCM workgroup will review tools/resources available to the public online to identify if there are areas for improvement or identify gaps in resources. OCM will also consult with stakeholders to improve and/or develop tools to improve accessibility and improve efficiencies with the public regarding the permitting process.

- b. OCM will develop tools and training suites, and provide access to the public through postings on the website, outreach materials, or training session(s) as needed.
- c. OCM will develop an outreach plan to work with individual coastal parishes to facilitate permitting coordination among internal parish departments and all coastal users for awareness of coastal programs.

**Year 1-3 Budget: \$400,000/year**

**Year: 4**

**Description of activities:** OCM will continue to update and implement changes to existing documents/applications, policies, and procedures. OCM will continue a public outreach effort to educate, train, and inform the LCMP and the public.

**Major Milestone(s):**

**1. OCM updates and improvements**

- a. OCM development team will continue to address specific updates to items on the priority list. OCM may enlist assistance of information technology specialists as well as local coastal management program (LCMP) personnel depending on the needs to complete the tasks. As tasks are completed and moved to implementation, standard operating procedures and policies will be created/updated and applications, documents, tools will be made available online.
- b. OCM staff will continue to provide technical assistance to LCMP personnel to implement updated policies, procedures, and work products to align the state and local coastal permitting programs.

**2. Development of OCM tools and resources**

- a. The OCM workgroup will continue to update and/or develop tools and resources available to the public to improve accessibility and efficiencies with the public regarding the permitting process.
- b. OCM will continue to develop tools and training suites, and provide access to the public through postings on the website, outreach materials, or training session(s) as needed.
- c. OCM will implement the outreach plan to work with individual LCMP to coordinate permitting coordination among internal parish departments.

**Budget: \$400,000**

**Year: 5**

**Description of activities:** Finalization on improvements, tools and resources, and the distribution of new materials available.

**Major Milestone(s):**

**1. OCM updates and improvements**

- a. OCM development team to continue to address specific updates to items on the priority list. OCM may enlist assistance of information technology specialists depending on the needs to finalize the tasks. The workgroup will be consulted prior to implementation. As tasks are finalized and implemented, standard operating procedures and policies will be created/updated and applications, documents, tools will be made available online.

**2. Development of OCM tools and resources**

- a. The OCM workgroup will finalize updates to tools and resources available to the public to improve accessibility and efficiencies with public regarding the permitting process. As tools/resources are finalized, OCM will make them available to the public through the website, outreach materials, or provide training(s) as needed.

**Budget: \$400,000**

**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.

**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. Additionally, OCM may partner with state IT professionals, coordinate with additional state agencies and staff, and collaborate with local parish officials, to ensure adequate needs are addressed, and successful strategy implementation.

[Top of the Document](#)



# Strategy: Increasing Resiliency on Louisiana Working Water Fronts

## I. Issue Area(s)

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

- |  |   |
|--|---|
| <input type="checkbox"/> Aquaculture                           | <input type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input type="checkbox"/> Wetlands                         |
| <input checked="" type="checkbox"/> Coastal Hazards            | <input type="checkbox"/> Marine Debris                    |
| <input type="checkbox"/> Ocean/Great Lakes Resources           | <input type="checkbox"/> Public Access                    |
| <input type="checkbox"/> Special Area Management Planning      |   |

## 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 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 for 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 Clean and Resilient Marina standard operating procedures and policy documents to be adopted by the state. This project will increase coastal working waterfront resiliency and mitigate hazards by improving construction and other development practices in high hazard areas in the Louisiana coastal zone.

- 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 research to improve and expand programs, which increase resiliency and reduce hazards in the Louisiana Coastal Zone. Through the research and development of new procedures for reviewing and approving establishments such as: marinas, harbors, boat launches and industrial ports. This will have the dual benefit of improving resiliency aspects of these establishments, and reducing coastal hazards. OCM will educate and provide guidance on the most up-to-date best management practices, to provide a safer, and cleaner working environment; through the creation of new and revised best management practices guidance documents and clean and resilient policy updates.

### **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.

Coastal Louisiana residents and businesses face numerous hazards from tropical storms, relative sea level rise and seasonal flooding. Improved construction methods, site planning practices, and best management practices, will lead to more resilient establishments that are better able to weather storm and flood events, and increase the safety of Louisiana working waterfronts. This project will assist OCM in reducing guidance redundancy, and provide policy documents and best management practices for current and future businesses, 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 improving the evaluation process and policy documents for coastal establishments, and reducing risk from coastal storms. This project also helps utilize OCM regulatory aspects in a more beneficial manner with the inclusion of best management practices in CUP permit authorizations.

## **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, as well as 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 resiliency, hazard mitigation and the high levels of devastating natural disasters in coastal Louisiana, we feel that there is a high likelihood of success. OCM anticipates strong statewide, local parish, local business and community support of this endeavor. In addition, OCM has a proven track record of success with evaluating and approving clean and resilient marinas, and will continue to expand that guidance to all Louisiana working waterfront establishments.

## **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. For example, even if the final adoption of the program change is outside of the CMP's control, what steps will be included in the work plan so the CMP ensures the program change is considered, reviewed, and hopefully adopted by the outside entity? Who are the other stakeholders or elected officials that need to be engaged, and how and when during the strategy development process? What is the decision-making or voting process that is involved in the adoption of the program change, and how will the CMP interact with this process to ensure that the proposed program change is considered? 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, OCM recognizes that they may change somewhat over the course of the five-year strategy due to 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 clean and resilient waterfront establishment policy document and incorporate best management practices in the permit review process for Coastal Use Permits.

**Total Years: 4**

**Total Budget: \$440,000**

**Year: 1**

**Description of activities:** Reviewing existing Clean and Resilient Marina guidance and documents.

**Major Milestone(s):**

**1. Reviewing existing guidance**

- a. OCM will identify stakeholders to consult regarding use of available resources and tools for the public regarding the Clean and Resilient Marina program. OCM will consult the stakeholder group to identify potential areas of improvement regarding guidelines and best management practices.
- b. OCM will research other similar regional and national programs and compare for areas of improvement or program expansion to other waterfront establishments.

**Budget: \$110,000**

**Year: 2**

**Description of activities:** Updating guidance documents for existing program, develop of guidance for expansion of program.

**Major Milestone(s):**

1. Updating guidance documents for program and program expansion. OCM will continue collaboration with stakeholder group through the program updates and expansion. Develop draft documents.
2. Research opportunities to integrate BMPs into Coastal Use Permit (CUP) process. Review existing BMPs currently integrated into the CUP process, coordinate interoffice procedures to develop a plan for revised BMPs.
3. Develop public outreach strategy. OCM will gather information and strategies for public outreach through stakeholder communication and coordination. Review resources and outreach strategies for implementation.

**Budget: \$110,000**

**Year: 3**

**Description of activities:** Program guidance finalization

**Major Milestone(s):**

1. Completion of final standard program procedure. New procedures and guidelines will be developed and documented.
2. Integrating program into the CUP permitting process
  - a. Finalization of permit procedures and officially incorporate them into the CUP process.
  - b. OCM staff will be educated on the integration of BMPs into the CUP process.
3. Begin program outreach effort and online tools/resources. Finalize and publish information for the public on new and revised program guidance.

**Budget: \$110,000**

**Year: 4**

**Description of activities:** Implementation

**Major Milestone(s):**

1. Implementation
  - a. Revised/Updated procedures and guidelines will go into effect.
  - b. Fully train OCM and LCP staff to identify, evaluate, and award Clean and Resilient certifications.
2. Review and monitor program effectiveness.
  - a. OCM staff will oversee and direct the progression of the program, monitor effectiveness and document future improvements as discovered.
3. Public outreach
  - a. OCM will continue its public outreach and education activities.
  - b. Newly adopted policies and guidelines will be published on OCMs website.
  - c. OCM will continue working with other LCP parishes to incorporate the Clean and Resilient program into their standard operating procedures.

**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.

- 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.

[Top of the Document](#)

## 5-Year Budget Summary by Strategy

At the end of the strategy section, please include the following budget table summarizing your anticipated Section 309 expenses by strategy for each year. Generally, CMPs should only develop strategies for activities that the state intends to fund and work on given their anticipated level of Section 309 funding. However, in some circumstances, CMPs may wish to use the assessment and strategy development process as a broader strategic planning effort for the CMP. In that case, the CMP may elect to include additional strategies that exceed the state’s anticipated Section 309 funding over the five-year period. If the CMP chooses this approach, it should still clearly indicate which strategies it anticipates supporting with Section 309 funding and which strategies it anticipates supporting through other funding sources.

Strategy Title	Anticipated Funding Source (309 or Other)	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Program Sequencing Improvements	309	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$2,000,000
Increasing Resiliency on Louisiana Working Water Fronts	309	\$110,000	\$110,000	\$110,000	\$110,000	-	\$440,000
Assessment and Strategy Development	309	-	-	-	-	\$110,000	\$110,000
<b>Total Funding</b>	-	\$510,000	\$510,000	\$510,000	\$510,000	\$510,000	\$2,550,000

[Top of the Document](#)

## CONCLUSION

The overall focus of the 2021-2025 Assessment and Strategy for Louisiana has a heavy focus on the Wetlands and Coastal Hazards Enhancement Areas. Included in the Wetlands enhancement area is the strategy for Program Sequencing Improvements. The other strategy is more focused on the Coastal Hazards Enhancement Area. Through the strategy, OCM intends to Increase Resiliency on Louisiana Working Water Fronts. While each of the strategies detailed throughout this assessment and strategy document have work plans that span the four and 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 of this effort will be incorporated into the SONRIS online system, through publically available data and tools on OCMs website. In addition, the data will complement the State and LCRP in efforts to regulate coastal resources.

[Top of the Document](#)