



**DRAFT**

# Mississippi Coastal Program Coastal Zone Management Act § 309 Assessment and Strategy 2021 – 2025

Prepared by the Mississippi Department of Marine Resources  
For Federal CZMA § 309 Enhancement Program  
Office for Coastal Management  
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## Acronym List

APC	Areas of Particular Concern
BU	Beneficial Use
BUG	Beneficial Use Group
BWP	Bureau of Wetlands Permitting
C-CAP	Coastal Change Analysis Program
CMPs	Coastal Management Programs
CRR	Office of Coastal Restoration and Resiliency
CSI	Cumulative and Secondary Impacts
CZMA	Coastal Zone Management Act
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
GIS	Geographic Information System
GSMFC	Gulf States Marine Fisheries Commission
LNG	Liquefied Natural Gas
MCP	Mississippi Coastal Program
MDEQ	Mississippi Department of Environmental Quality
MDMR	Mississippi Department of Marine Resources
MSGP	Mississippi General Permits
NFIP	National Flood Insurance Program
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSSP	National Shellfish Sanitation Program
OCM	Office for Coastal Management
SAMP	Special Area Management Plan
SCORP	Statewide Comprehensive Outdoor Recreation Plan
USACE	U.S. Army Corps of Engineers
USM-GCRL	University of Southern Mississippi-Gulf Coast Research Laboratory

## I.0 Introduction

The Coastal Zone Enhancement Program, established under Section 309 of the Coastal Zone Management Act (CZMA) of 1972, as amended, encourages state coastal management programs (CMPs) to strengthen and improve their programs in one or more of nine enhancement areas. These enhancement areas include:

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

Every five years, state CMPs are encouraged to conduct self-assessments of their programs to identify challenges and enhancement opportunities within each of the nine enhancement areas. Following this self-assessment, the Office for Coastal Management (OCM) within the National Oceanic and Atmospheric Administration (NOAA) works closely with state CMPs to prioritize and evaluate state program needs and develop strategies to improve its operations to address the program needs identified in the assessment. OCM subsequently provides funds through a voluntary enhancement grants program to address priority issues identified through this self-assessment process that support fulfillment of one or more of the enhancement area objectives.

This document is the Mississippi CMP's Assessment and Strategy for the Enhancement Cycle of Fiscal Year (FY) 2021-2025 and serves as an update to the previous strategy document published in 2015. Preparation of this document began in November 2019 and has involved the efforts of Mississippi Department of Marine Resources (MDMR) management, a team of staff professionals with pertinent expertise, and the OCM. MDMR contracted Cypress Environment and Infrastructure (Cypress) to assist in the development of this document.

Public and stakeholder involvement in the Section 309 Assessment and Strategy process is important to the MDMR and OCM. The Assessment and Strategy is a public document and the MDMR places a strong emphasis on public participation and encourages the participation, coordination, and cooperation with and among appropriate local, state, federal, and regional groups to help carry out the goals of the CZMA.

As part of the public and stakeholder involvement process, the MDMR developed a Stakeholder Survey to capture stakeholder and private citizen input relative to priority enhancement areas and challenges and opportunities to strengthen the Mississippi Coastal Program (MCP). The survey was emailed to 60 stakeholders that the MDMR works with on a regular basis. A total of 18 responses were received. The respondents included six federal/state/local government agency representatives, four private citizens, three non-governmental organization representatives, three consultants, one academic representative, and one "other." The top three priority enhancement areas as identified by the survey respondents were Wetlands, Special Area Management Planning (SAMP) and Cumulative and Secondary Impacts (CSI). The survey results are detailed in 5.0 Public & Stakeholder Engagement with individual survey responses provided in Appendix A: Stakeholder Survey Results.

## 2.0 Summary of Recent Section 309 Achievements

This section provides a summary of the MDMR’s program changes and major achievements during the previous 2016-2020 enhancement cycle. Section 309 grant funds were expended on two projects addressing three high priority enhancement areas. The enhancement areas included Cumulative and Secondary Impacts, Wetlands, and Public Access. These projects are described below.

### 2.1 Enhanced Application Procedures and Decision Support Tools

Mississippi’s FY 2016-2020 Strategy for the CSI and Wetlands enhancement areas was to enhance permit application procedures and develop decision support tools to be incorporated into the MCP rules and regulations for wetland permitting and permit evaluations. Specifically, the strategy focuses on implementing changes to improve the current permit application and produce decision support tools that will allow MDMR to adequately and objectively assess CSI of projects in Mississippi’s coastal zone.

CUMULATIVE & SECONDARY IMPACTS
WETLANDS

In 2018, an inventory of existing relevant Geographic Information System (GIS) data layers was completed and incorporated into the MDMR GIS system. This optimized the utility of existing data. The GIS Bureau of the MDMR Information Technology Office identified over 40 GIS layers for Hancock, Harrison, and Jackson counties. Most of these layers are from external sources. The GIS Bureau obtained these data layers and integrated them into a centralized MDMR server. This will allow permittees to easily access and obtain information pertinent to the development or assessment of potential projects and associated impacts.

In 2019, the MDMR hired a consultant to assess the Coastal Wetlands Permitting application forms and processes. The assessment results in a list of actionable improvements, including updating the permit application, implementing an online application system, and redesigning the program website. These key recommendations would streamline the permit process, eliminate confusion, improve staff efficiency, and reduce permit and consistency processing. In addition, stakeholders, MDMR staff, and staff from other Coastal Zone Management Programs were surveyed to help form the suite of recommendations and strategies. MDMR evaluated the assessment findings and recommendations to fine tune the electronic application process and workflow management systems that are currently under development for the Bureau of Wetlands Permitting (BWP).

In 2020, the CMP anticipates the completion of the online permit application. This project will provide MDMR the tools to make informed decisions on impacts to wetlands based on the best available information and decision making procedures. In addition, CSI decision-making tools will enhance the MDMR’s analyses of CSI for major projects and be integrated into the policy procedures. These practices can also inform CSI tracking and analysis for other coastal zone management programs.

## 2.2 Coastal Preserves Site Vulnerability Assessment and Management of Public Access in Coastal Preserve Areas

Mississippi's FY 2016-2020 Strategy for the Wetlands and Public Access enhancement areas was to complete a comprehensive vulnerability assessment and incorporate findings into land use and management plans for Coastal Preserve sites in the Mississippi Coastal Preserve System. The land management plans will be incorporated into the MCP Coastal Wetlands Land Use Plan.

WETLANDS

PUBLIC ACCESS

In 2017, the MDMR funded a project to inventory existing spatial data to assess the ecological risk across the Coastal Preserve sites. Using multiple existing data sets, parameters were developed and assigned a vulnerability score through conversations with MCP staff and input from an identified stakeholder group.

In 2018, an ecological risk assessment was completed using a GIS-based model. The ultimate output of the model provides a single score for each site that allows for comparison across all Coastal Preserve sites. This decision support tool has the potential to be reimplemented to update the vulnerability assessment at a future date. In addition, data gaps and needs were identified through this process.

In 2019 and 2020, the vulnerability assessment results inform the development of a comprehensive land management plan to include a programmatic management plan with site specific plans. The programmatic management plan highlights issues program-wide and programmatic strategies to address them. The site-specific management plans focus on management practices for each site with the parameters deemed more critical or more imperiled being prioritized over other potential activities.

Recommendations and proposed regulations will be developed to manage the Coastal Preserve sites in accordance with the programmatic objectives and consistent with the priorities identified in the management plans. These recommendations will be presented to the stakeholders and their feedback will be solicited to shape the final recommendations. These recommendations will be incorporated into the final management plans.

In addition, the Mississippi Commission on Marine Resources approved the Title 22 Part 19 Rules and Regulations for the use of State-Owned Coastal Preserve Areas that went into effect September 19, 2019. This establishes regulations for public use compatible with conservation goals in order to maintain the integrity of the Coastal Preserve System.

This project provides MDMR with an ecological risk assessment of 13 Coastal Preserve sites, a replicable GIS-model, land management plan, and data gap/needs. In addition, these decision-support tools will inform the development of rules and regulations for Coastal Preserves that will be incorporated into the MCP.

## 3.0 Assessment

The assessment section responds to the Phase I assessment questions for each of the nine enhancement areas and 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 5). 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.

### 3.1 Phase I: High Level Assessment

The Section 309 Assessment and Strategy must include an assessment of each of the nine enhancement areas and strategies for addressing those highest priority areas. The assessment must:

1. Determine the extent to which problems and opportunities for program enhancement exist within each of the enhancement area objectives
2. Determine the effectiveness of existing management efforts to address identified problems
3. Identify high priority needs for program enhancement

The assessment provides the facts for the CMP and NOAA to determine what program improvements are needed. The assessment process is broken down into two phases to enable CMPs to more easily target their assessments to high priority enhancement areas for the program: Phase I (high-level) and Phase II (in-depth).

This section provides the Phase I (high-level) assessment of the nine enhancement areas completed by MDMR using the Phase I assessment templates provided by NOAA. The objectives of each enhancement area were reviewed, and MDMR assessed and ranked each objective in consultation with the Mississippi OCM specialist. Using responses to the Phase I assessment questions, public and key stakeholder input, and extensive knowledge of the issues, MDMR ranked the enhancement areas as a high, medium, or low priority for the program.

For those enhancement areas ranked as medium or low priority, no further assessment is required. For enhancement areas ranked as a high priority, the MDMR continued its assessment by completing an in-depth Phase II assessment.

The Phase I assessment for the nine enhancement areas are presented in this section of the report and follow in the order listed in the Section 309 guidance document.

## Wetlands

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

*Note: For the purposes of the Wetlands Assessment, wetlands are “those areas that are inundated and saturated at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” [33 CFR 328.3(b)]. See also pg. 17 of the CZMA Performance Measurement Guidance<sup>1</sup> for a more in-depth discussion of what should be considered a wetland.*

### Resource Characterization:

- I. Using provided reports from NOAA’s Land Cover Atlas<sup>2</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.

Current state of wetlands in 2016: [699,745.5 acres \(estimation\)](#)

The above number is a projected acreage of total wetlands calculated using the total 2011 wetland acres factored by the percent change in wetlands between 2006 and 2011, as reported in the Mississippi 309 Assessment and Strategy 2016-2020 document. An estimation was provided in lieu of the 2016 Coastal Change Analysis Program (C-CAP) Land Cover Atlas that was unavailable at the time of this 309 review.

### Coastal Wetlands Status and Trends

Change in Wetlands	Percent Gained or Lost	
	from 1996-2011	from 2006-2011
Percent net change in total wetlands	-2.69%	-0.51%
Percent net change in freshwater (palustrine wetlands)	-2.65%	-0.43%
Percent net change in saltwater (estuarine wetlands)	-0.07%	-0.06%

### How Wetlands Are Changing

Land Cover Type	Area of Wetlands Transformed to Another Type of Land Cover	
	1996-2016 (Sq. Miles)	2011-2016 (Sq. Miles)
Development	-8.92	-3.32
Agriculture*	-1.33	-0.003
Barren Land	-2.67	-1.56
Water	-1.00	-0.36

Development activities are causing both direct and indirect impacts to wetlands. Direct impacts include filling, habitat conversion, and habitat fragmentation. Indirect impacts include alteration of overland flow, reduced habitat quality, and stormwater pollution. While wetlands mitigation and

<sup>1</sup> <https://coast.noaa.gov/czm/media/czmapmsguide2018.pdf>

<sup>2</sup> <https://coast.noaa.gov/digitalcoast/tools/lca.html> Note that the 2016 data was not available at the time of this 309 review.

effective stormwater management controls can help to reduce these impacts, the threat to wetlands resources continues to be a concern.

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

No state data or reports on the status and trends of coastal wetlands is available to augment the national data sets.

**Management Characterization:**

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

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

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

The MDMR BWP continues to focus attention on its project review, project mitigation, and regulatory efforts for those Section 404 actions in the coastal zone that are outside the direct permitting authority of the MDMR but require federal consistency determinations. BWP staff participate in joint inspections, interagency meetings, and pre-application reviews of projects to provide applicants with guidance in the early stages of project development. The BWP staff also participate in the Mitigation Bank Interagency Review Team activities and provides support to the U.S. Army Corps of Engineers (USACE) in their role of permitting and monitoring mitigation banks in the Mississippi Coastal Zone. This effort has produced positive results and assisted in creating a platform for coordination and cooperation with the regulatory agencies and applicants.

The BWP has also worked with the USACE to continue to use and refine Mississippi General Permits (MSGPs). The current MSGPs are approved for use from 2018-2023. While the MSGPs continue to be an effective tool for streamlining the regulatory program for minor structures and activities, the National Marine Fisheries Service (NMFS) has requested that the use of MSGP's be suspended for areas outside the footprints of existing marinas in the Mississippi Sound south of the Highway 90 bridges over the Biloxi Bay and St. Louis Bay.

The state statute requiring any party proposing to dredge more than 2,500 cubic yards of material to participate in the MDMR's program for beneficial use (BU) of dredge material (Mississippi Code § 49-27-61) has been incorporated into the revised MCP, which is being reviewed by NOAA, as well as into new state regulations that mirror the revised MCP (Miss. Admin. Code Title 22, Part 23). Three major BU sites have been developed at Deer Island in Harrison County, one at Greenwood Island,

and one near Round Island in Jackson County. A fourth BU site at Deer Island is currently in the permitting process.

The changes referenced above are largely driven by BWP programmatic CZM initiatives in response to need; however, the Section 309 Assessment process was helpful in identifying the need for a more focused approach to wetlands permitting and federal consistency review.

Substantial funding related to the British Petroleum-Deepwater Horizon Incident has been allocated to acquire lands for inclusion in the Mississippi Coastal Preserves as well as lands outside the preserve boundaries, but still within the coastal zone. This funding has the potential to add several thousand acres for preservation by the Coastal Preserves Program or by other programs. In addition, the Coastal Preserves Program has received substantial funding to restore, enhance, and manage its existing lands.

**Enhancement Area Prioritization:**

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

High	<u>  X  </u>
Medium	<u>      </u>
Low	<u>      </u>

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

MDMR places a high level of priority for the Wetlands enhancement area. Wetlands provide crucial habitat, promote water quality, and provide coastal landscape protection. Continued threats to coastal wetlands in Mississippi include erosion from sea level rise, subsidence, barrier island migration, dredging and filling, discharge of pollutants, sedimentation, bulkheading, and alteration of water exchange patterns between marshes and open water by installation of dikes and weirs.<sup>3</sup> In addition, disturbance events such as oil spills and the opening of the Bonnet Carre spillway have negatively affected coastal habitats. MDMR recognizes the need to monitor and develop effective strategies to reduce environmental and anthropogenic stressors to wetlands.

The protection and restoration of coastal habitats, including wetlands, has always been a major goal for the MDMR. Since the passage of the Mississippi Coastal Wetlands Protection Law in 1973 and the MCP in 1980, the MDMR staff has worked to develop the necessary policies and procedures to regulate activities which have direct and indirect effects on wetlands. In the aftermath of Hurricane Katrina, development pressures shifted from areas below Interstate 10 (I-10) to areas north of I-10 that were at higher elevations in the northern portions of the counties. The new development pressure in historically rural areas has caused an increase in conversion of forested land cover types, including wetlands, to developed lands. Consequently, the land conversions have caused direct impacts to wetlands and other sensitive impacts as well as indirect impacts from increased stormwater runoff and erosion. Many of the original policies and procedures developed in the early stages of the program have been modified, refined, and improved using 309 funds.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified wetlands as the highest priority from the nine enhancement areas. Of the 18 individual responses received, 12 ranked wetlands as the top priority. Overall, 17 respondents ranked it as one of the top three priorities.

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<sup>3</sup> U.S. Fish and Wildlife Service, 1992. Regional wetlands concept plan - Emergency wetlands resources act, Southeast Region: Atlanta, Fa., U.S. Fish and Wildlife Service, 249 p.

## Coastal Hazards

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

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

### Resource Characterization:

I. 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 hazard. 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>4,5</sup> (H, M, L)
Flooding (riverine, stormwater)	H
Coastal storms (including storm surge)	H
Geological hazards (e.g., tsunamis, earthquakes)	L
Shoreline erosion	H
Sea level rise	H
Great Lakes level change	N/A
Land subsidence	H
Saltwater intrusion	L
Other (please specify)	-

The State of Mississippi Hazard Mitigation Plan utilizes risk assessment worksheets to quantitatively measure certain risks within the state of Mississippi. The coastal hazards which have been ranked by risk at the state level in the state plan include Hurricanes (ranking score: 57), Flooding (ranking score: 70), Earthquake (ranking score: 13), and Climate Change/Sea Level Rise (ranking score: 10). Although the climate change/sea level rise hazard was ranked as a low risk at the state level, coastal Mississippi will be more susceptible to sea level rise. More than 99% of people, property, and infrastructure in harm’s way in Mississippi are in the three coastal counties. The State of Mississippi Hazard Mitigation Plan for 2013 was updated in 2018. The plan reported property damage from coastal storms from

<sup>4</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*

<sup>5</sup> Based on the State of Mississippi Hazard Mitigation Plan, 2018

2017 to be \$137,000. Property damage was not reported for 2013-2016. Hurricanes and associated storm surge/flooding represent the most significant natural hazards that have led to tragic loss of life, injury, and property damage in Mississippi. Concerning coastal erosion, “comparing the 12-month forecast from the 2013 Plan to the Hurricane Nate coast change impacts from 2017, there is a noticeable increase in collision (dune erosion), overwash, and inundation along the Gulf Coast.” Researchers from the U.S. Geological Survey Woods Hole Coastal and Marine Science Center conducted a study of the influence of wave action and sediment supply on wetland vulnerability and ecosystems over 6.5 months in the Grand Bay National Estuarine Research Reserve. The results were 1.5 meters of erosion from wave action, which is a rate of more than three meters, or ten feet, per year.<sup>6</sup>

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.

According to the information compiled by the Federal Emergency Management Agency (FEMA)<sup>7</sup> and summarized in the Mississippi State Hazard Mitigation Plan<sup>8</sup>, the three coastal counties were listed as the top 3 out the top 10 counties with losses from flooding during a period of time from January 1978 to February 2018. Harrison County had 15,165 claims that totaled \$1,281,229,535 in losses, Hancock County had 9,646 claims that totaled \$737,684,695 in losses, and Jackson County had 10,650 claims that totaled \$703,296,088 in losses.

Data from NOAA’s State of the Coastal Vulnerability to Sea Level Rise Tool indicates that all the shoreline areas of Mississippi have a very high vulnerability ranking for impacts from sea level rise. Data relative to land subsidence is largely unknown. Regional and local projections of sea level rise that take into consideration land use/land cover, subsidence, local topography, storm surge, erosion rates, and other local/regional variables are sparse. Few studies have been conducted in coastal municipalities to collect parcel level data that could assist with local planning decisions. Although tide gauge stations record trends and seasonal variations in sea level rise, the gauge stations in Mississippi coastal waters do not have the depth of historical data that our neighboring states possess.

### **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.

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<sup>6</sup> U.S.G.S. Rapid Salt-Marsh Erosion in Grand Bay, Mississippi. Retrieved 04.19.18, from <https://www.usgs.gov/media/videos/rapid-salt-marsherosion-grand-bay-mississippi>

<sup>7</sup> Source: [bsa.nfipstats.html](https://www.nfipstats.html) (NFIP Policy and Loss by Community February 2018)

<sup>8</sup> <https://www.msema.org/wp-content/uploads/2019/02/MS-State-Plan-Update-2018-FEB2019.pdf>

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

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)
Elimination of development/ redevelopment in high-hazard areas <sup>9</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	Y	Y	N

**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	Y
Climate change impacts, including sea level rise or Great Lakes level change	N	N	Y

**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	-	-	-
Other hazards	N	N	N

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

High-hazard zones in Mississippi’s coastal zone are defined in a number of ways. Floodways and flood zones are defined by FEMA, and floodplain ordinances are developed and enforced by local governments. Storm surge zones for high energy waves and rising water are defined by FEMA, and activities in storm surge zones are enforced by local governments.

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.

Cities and counties along the Mississippi Gulf Coast have an increased awareness of the potential impacts of flooding from coastal storms and from sea level rise. New building standards have been put into place, and building code enforcement for many coastal communities has been modified to require special attention to stormwater management, building location relative to floodplains, and construction techniques in areas susceptible to high-energy waves and wind.

In 2012, Congress passed the Biggert-Waters Flood Insurance Reform Act which reauthorized the National Flood Insurance Program (NFIP) for five years. The bill brought several substantive changes

<sup>9</sup> Use state’s definition of high-hazard areas.

to the NFIP, including several changes that altered the way premium rates were calculated. Cities that administer the NFIP recognize the importance of the NFIP and the benefits of compliance as it relates to Community Rating Indices, which can lead to reduced insurance premiums in those communities with high ratings.

At least three coastal Mississippi communities have taken steps to include sea level rise in their Hazard Mitigation Planning efforts. For example, the City of Waveland, Mississippi prepared maps of potential sea level rise increases of 1 ft., 3 ft., and 6 ft. and the estimated losses that would occur under those conditions. The maps revealed critical infrastructure that could be affected by increases in sea level rise and showed potential flooding in northern parts of the municipality. This information was then incorporated into their local hazard mitigation planning process.

**Enhancement Area Prioritization:**

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

High	<u>  X  </u>
Medium	<u>          </u>
Low	<u>          </u>

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

Reducing risk from coastal hazards is a primary concern of the MDMR. Given the intensity of recent coastal storms, and the potential impacts for climate change and sea level rise, there is a growing concern that more people and property will be particularly vulnerable to the impacts related to coastal hazards. To address coastal hazards in a meaningful way, the MDMR has established an Office of Coastal Restoration and Resiliency. This office is focusing attention on resiliency of the natural and built environment and working with Mississippi’s coastal communities to explore ways the MDMR can assist in the implementation of coastal hazard mitigation and resiliency planning policies.

The MDMR has chosen a priority level of high for this enhancement area and is currently developing ways to foster future improvements and science-based strategies to educate and engage coastal communities in the implementation of coastal hazard mitigation and resiliency planning processes.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified coastal hazards as the third highest priority from the nine enhancement areas. Of the 18 individual responses received, three ranked coastal hazards as the top priority. Overall, five respondents ranked it as one of the top three priorities.

## Public Access

**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:

- 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	Changes or Trends Since Last Assessment (↑, ↓, -, unkwn)	Cite data source
Beach access sites	More than 11 beach access sites	-	MDMR Public Access Inventory
Shoreline (other than beach) access sites	Over 659 miles of shoreline and approximately 38 miles of beaches	-	MARIS
Recreational boat (power or nonmotorized) access sites	More than 102 boat access sites and more than 72 public boat ramps	unknown	MDMR Public Access Inventory
Number of designated scenic vistas or overlook points	0	-	N/A
Number of fishing access points (i.e. piers, jetties)	67	-	MDMR Public Access Inventory
Coastal trails/ boardwalks (Please indicate number of trails/boardwalks and mileage)	10 Blueways (95 miles)	↑	MS Gulf Coast National Heritage Area <sup>10,11</sup>
	30 Greenways (30+ miles)	↑	
Number of acres parkland/open space	41,770	↑	Coastal Preserves Inventory
Access sites that are ADA compliant	N/A		
Other (please specify)	N/A		

- 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, the National Survey on Fishing, Hunting, and Wildlife Associated Recreation, and your state's tourism office.

The Mississippi Department of Wildlife, Fisheries, and Parks updates the Statewide Comprehensive Outdoor Recreation Plan (SCORP) every five years. From 2014-2017, there was an estimated 1.01% increase in population statewide. According to these population count estimates, without a significant increase in the state's population, there is a shift occurring from rural to urban communities. Most of

<sup>10</sup> <https://msgulfcoastheritage.ms.gov/Blueways>

<sup>11</sup> <https://msgulfcoastheritage.ms.gov/Greenways>

the residents live in counties surrounding Jackson, near the Memphis metro area, or along the coast. The 2019-2024 SCORP reported that the most significant lack of opportunities exists for leisure and family-friendly opportunities. There are strong demands by facility users for direct interactions with nature on trails and at campsites and for activities for children at playgrounds and splash pads. Backpacking, archery, and high ropes courses are also in high demand. Comments on SCORP social media posts included the public voicing the need for:

- Well-staffed facilities;
- Designated wildlife corridors within city limits;
- Pet-friendly accommodations;
- Hiking and backpacking trails, for foot-traffic only;
- Swimming areas or splash pads at state lakes.

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.

There are no new data or reports on the status or trends for coastal public access 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) that could impact the future provision of public access to coastal areas of recreational, historical, aesthetic, ecological, or cultural value.

**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	Y	Y
Operation/maintenance of existing facilities	Y	Y	N
Acquisition/enhancement programs	Y	Y	Y

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

Mississippi Title 22, Part 19 Rules and Regulations for the use of State Coastal Preserve Areas was updated. The updates to Title 22, Part 19 were developed to establish basic guidelines for use of the Coastal Preserve areas. In many circumstances, several user groups may be simultaneously using the same site. The updates allow for safe use of the public access site by all users. It is reasonable to assume that formalized rules and regulations will result in greater use of the existing public access sites.

British Petroleum-Deepwater Horizon related projects have afforded the Coastal Preserves Program with opportunities for acquisition of strategic parcels for the program. Although these projects are not 309 or CZM driven, they will result in more natural areas being managed by the state as part of the Coastal Preserves System.

- Indicate if your state or territory has a publicly available public access guide. How current is the publication and how frequently it is updated?

**Publicly Available Access Guide**

Public Access Guide	Printed	Online	Mobile App
State or territory has? (Y or N)	N	Y	N
Web address (if applicable)	N/A	Gulf Coast Birding Trail/Audubon Coastal Heritage Trail Coastal Preserves Trails Map Mississippi Gulf Coast National Heritage Area Blueways <sup>12</sup>	Y
Date of last update	N/A	2018	2018
Frequency of update	-	-	-

**Enhancement Area Prioritization:**

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

High \_\_\_\_\_  
 Medium   X    
 Low \_\_\_\_\_

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

The Public Access enhancement area is given a medium priority. While local, county, state, and federal agencies continue to develop public access facilities in coastal Mississippi, there is a growing concern that increased public access, particularly access to sensitive coastal preserve sites, may negatively affect the resources. The MDMR Coastal Preserves staff was successful in establishing rules and regulations for the use of state-owned Coastal Preserves areas. Coastal Preserves Risk Assessment and Management Plans are currently being developed.

The state of Mississippi currently holds title to 41,770 acres within the designated Coastal Preserves. These lands are accessible to the public for low-impact recreational activities consistent with preservation of the lands in their natural state. Creating and enhancing public access sites in coastal areas gives visitors better, more enjoyable experiences. These enjoyable experiences can have many positive impacts such as increased tourism, which provides economic benefits, and increased awareness and appreciation of our natural resources. However, as visitor use increases, there are many negative impacts that can also occur such as overcrowding, user conflicts, increased litter/debris, and damage to cultural and natural resources. The major challenge is finding the right balance between public use and protection of our coastal resources.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified public access as the fifth highest priority from the nine enhancement areas. Of the 18 individual responses received, one ranked public access as the top priority. Overall, four respondents ranked it as one of the top three priorities.

<sup>12</sup> <https://msgulfcoastheritage.ms.gov/Blueways>

## Marine Debris

**Section 309 Enhancement Objectives:** 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:

- I. 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, unknwn)	Type of Impact (aesthetic, resource damage, user conflicts, other)	Change Since Last Assessment (↑, ↓, -, unknwn)
Beach/shore litter	H	Aesthetic, Resource Damage, User Conflicts	↑
Land-based dumping	M	Aesthetic, Resource Damage (filling aquatic habitat), User Conflicts	unkwn
Storm drains and runoff	H	Aesthetic, Resource Damage (Water Quality, Sedimentation)	unkwn
Land-based fishing (e.g., fishing line, gear)	H*	Aesthetic, Resource Damage (Entanglement of Fish and Turtles) User Conflicts	unkwn
Ocean/Great Lakes-based fishing (e.g., derelict fishing gear)	H	Aesthetic, Resource Damage (Entanglement of Marine Fish, Mammals, and Turtles) User Conflicts	unkwn
Derelict vessels	M	Aesthetic, Resource Damage (Benthic and Tidal Marsh Habitat), User Conflicts	-
Vessel-based (e.g., cruise ship, cargo ship, general vessel)	M	Aesthetic, Resource Damage (Entanglement and Trauma to Marine Species), User Conflicts	unkwn
Hurricane/Storm	M	Aesthetic, Resource Damage (Habitat Loss), User Conflicts	-
Tsunami	N/A	N/A	N/A
Other (please specify)	-	-	-

\*Reports from MDMR fisheries and enforcement personnel indicate fishing gear related debris from land-based and ocean-based activities continue to be prevalent.

Fishing line, plastics, and paper products released from fishermen using jetties and fishing piers have increased and have the potential to become a significant source of marine debris. Marine debris related to derelict fishing gear such as gill nets, trawls, and derelict crab traps also appears to be increasing even though management efforts such as fishing line recycling stations, derelict crab trap recovery efforts, and the use of biodegradable materials for nets are being employed. Best available information indicates that this upward trend appears to be related to increased fishing pressure at public access facilities and accidental loss of commercial fishing gear such as crab traps, fishing trawls, and gill nets.

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.

Mississippi has participated in the annual fall Coastal Cleanup event for over 30 years. The 2018 Mississippi Coastal Cleanup resulted in 20,756 (10.4 tons) pounds of trash and debris being removed

from 50 miles of South Mississippi’s coastal region. The Mississippi State University Extension summarized the data collected for the Coastal Cleanup<sup>13</sup>. Single-use plastic items were the most common materials collected. Some of the commonly found trash items included cigarette butts, food wrappers, plastic beverage bottles, and plastic bottle caps.

In 2019, the Mississippi Coastal Cleanup resulted in 22,128 pounds (11.1 tons) of trash and debris being removed. The Mississippi State University Extension compiled data from a single-day cleanup event on November 16, 2019. The type and quantity of debris is provided below. According to MDMR personnel who compiled data for the most recent cleanup, the types of marine debris remain similar to previous cleanups.

2019 Mississippi Coastal Cleanup Results	
Item	Count
Cigarette butts	53492
Food wrappers	15450
Food out/away containers (plastic)	4326
Food out/away containers (foam)	3502
Bottle caps (plastic)	8243
Bottle caps (metal)	3862
Lids (plastics)	4235
Straws/stirrers	4171
Forks/knives/spoons:	2969
Plastic beverage bottle	14843
Glass beverage bottle	6576
Beverage can	8692
Grocery bags (plastic)	5272
Other plastic bags	4611
Paper bags	2688
Cup & plates (paper)	1985
Cup & plates (plastic)	2356
Cup & plates (foam)	3727
Fishing buoys, pots, traps	326
Fishing nets & pieces	693
Fishing line (1 yd/meter = 1 piece)	1344
Rope	730
Appliances (refrigerators, washers, etc.)	188
Balloons	317
Cigar tips	3140
Cigarette lighters	503
Construction materials	3200
Fireworks	401
Tires	699
Foam pieces	11022
Glass pieces	9699
Plastic pieces	24824
6-pack holder	619
Other plastic/foam packaging	4280
Other plastic bottles	845

<sup>13</sup> <http://extension.msstate.edu/sites/default/files/publications/publications/P3312.pdf>

Strapping bands	525
Tobacco packaging/wrap	2342
Condoms	343
Diapers	121
Syringes	221
Tampons/tampon applicator	144

Since the Derelict Vessel Program was implemented, the MDMR has successfully removed 306 derelict vessels from coastal waters. The number of vessels removed per calendar year varied with the highest number of vessels removed (44) in 2005 following Hurricane Katrina. The lowest number of vessels removed in one calendar year was 3 in 2016. Given the number of variables involved in the removal of derelict vessels, it is difficult to establish trends that would lead to a need for a more robust level of action to address derelict vessels in coastal waters.

The MDMR is an active partner in collection and recycling of monofilament fishing line from recreational fishermen through the use of approximately 50 recycling stations located at most harbors, boat launches, and local bait shops. Other partnering agencies include Pure Fishing America, University of Southern Mississippi Gulf Coast Research Laboratory (USM-GCRL), NOAA, Mississippi Wildlife Federation, and Gulf States Marine Fisheries Commission (GSMFC).

MDMR Fisheries personnel have been actively involved in the Derelict Crab Trap Removal Program since 1999. As of December 2019, the program has resulted in the removal of 21,923 traps from coastal Mississippi’s waterways. Since the previous 309 Assessment cycle, the MDMR, working in conjunction with USM-GCRL and others, have collected a total of 2,999 crab traps that were either recycled or properly disposed.

**Management Characterization:**

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

The Marine Litter Law enacted by the Mississippi Legislature and administered by the MDMR continues to be an effective tool in reducing the amount of marine debris from boaters and recreational fishermen along the Mississippi Gulf Coast. MDMR continues to distribute public educational materials and requires trash receptacles for boats of all sizes. The MDMR is actively involved in enforcing the Marine Litter Law, removal of derelict vessels and crab traps, recycling of monofilament fishing line, and directing and sponsoring annual coastal cleanup events.

Although it is not an enforceable policy or statutory regulation, the MDMR encourages participation in the Clean and Resilient Marinas Program. MDMR provides assistance through grant programs (Boater Infrastructure Grant, Coastal Impact Assistance Program, Tidelands Grant Program, etc.) and recognition to facilities that design and implement Clean Marina standards.

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

Mississippi's Derelict Vessel Law (§ 49-27-71) was revised in 2016 to better define what constitutes a derelict vessel, who has jurisdiction, the removal process, and the court process to recoup costs associated with the removal. This revised law has significantly shortened the timeframe for removal of derelict vessels. CMP staff participated in the drafting of this legislation.

**Enhancement Area Prioritization:**

- I. 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.

The analysis of the Marine Debris enhancement area did not identify any high priority gaps or needs that require the development of enhancement strategies for this 309 Assessment cycle. Although not identified as a high priority gap or need, the MDMR Marine Debris Program is of great importance. The data from the annual Coastal Cleanup event is used for targeted public education and outreach programs. MDMR enforcement personnel administer an effective marine litter law and continue to implement effective programs of public awareness and education relating to the impacts of marine debris in the coastal environment. MDMR personnel administer derelict vessel regulations, participate in and support coastal cleanup activities, and encourage and fund Clean Marina activities. Existing programs are effective in managing marine debris. As a result, no specific strategies will be developed relative to Marine Debris for this 309 Assessment cycle.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified marine debris as the seventh highest priority from the nine enhancement areas. Of the 18 individual responses received, zero ranked marine debris as the top priority. Overall, five respondents ranked it as one of the top three priorities.

## Cumulative and Secondary Impacts

**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:

- Using National Ocean Economics Program Data on population and housing,<sup>14</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	378,721	394,322	+4.12%
Number of housing units	171,758	180,562	+5.13%

Population growth drives residential and commercial development and subsequently may cause an increase in CSI in coastal Mississippi. Examples of secondary impacts from this growth and development include habitat fragmentation, water quality degradation, and increased stormwater runoff. Historically, coastal Mississippi has experienced an average 1% annual increase in population.

- Using provided reports from NOAA’s Land Cover Atlas,<sup>15</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.

**Distribution of Land Cover Types in Coastal Counties**

Land Cover Type	Land Area Coverage in 2011 (Acres)	Gain/Loss 2006-2011 (Acres)
Developed, High Intensity	27,216.9	+3,099.5
Developed, Low Intensity	84,881.0	+2,740.8
Developed, Open Space	35,462.4	+2,948.5
Grassland	78,321.0	-9,080.2
Scrub/Shrub	331,996.6	+20,088.3
Barren Land	20,535.5	+4,817.1
Open Water	517,263.2	+814.9
Agriculture	152,103.6	-6,451.5
Forested	505,598.3	-15,557.2
Wetland	699,777.3	-3,585.7

<sup>14</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>15</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.

The 2016 C-CAP data was not available at the time of the current 309 review. The data provided in the above table is based on the C-CAP data covering the 2006-2011 time period. There are no other data sets that are available currently. Based on staff knowledge, the overall trends would be similar to the land cover type changes provided in the above table for the 2011-2016 time period. Residential and commercial development trends are increasing. However, staff does not believe these increases are major or significant changes since the last assessment cycle.

- Using provided reports from NOAA’s Land Cover Atlas,<sup>16</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**

	1996	2016	Percent Net Change
Percent land area developed	6.39%	6.55%	+ 0.16%
Percent impervious surface area	8.73%	9.51%	+ 0.78%

The above table is based on the available 1996 and 2016 National Land Cover Database impervious surface datasets.

**How Land Use Is Changing in Coastal Counties**

Land Cover Type	Areas Lost to Development Between 2006-2011 (Acres)
Barren Land	786.8
Wetland	2,144.6
Open Water	204.4
Agriculture	1,498.9
Scrub/Shrub	1,680.6
Grassland	1,050.4
Forested	2,370.7

- 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.

The BWP generally issues an average of 700-1,000 permits per year. The overwhelming majority of these permits involve bulkheads, docks, and piers. Development pressure along the shoreline has not significantly increased since the last assessment, but neither has it decreased. As development continues along waterfronts, more and more of the shoreline becomes hardened. Along with development and population growth, we see an increase in coastal erosion from recreational boating, maritime navigation, and poorly designed shoreline protection systems. To alleviate some of the pressure on shorelines, MDMR is focused on developing a living shoreline program, which will provide benefits to both the environment and the waterfront owners. The program aims to educate marine

<sup>16</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.

contractors on the benefits of and construction techniques for living shorelines and to help them access any available design assistance.

- 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.

The Mississippi Department of Environmental Quality (MDEQ) describes the quality of water resources on the coast and across the state in the Mississippi 2018 §305(b) Water Quality Assessment Report. Monitoring data are routinely collected by MDEQ statewide through several different monitoring activities. Results from the National Shellfish Sanitation Program (NSSP) and the Mississippi Beach Monitoring Task Force are described below.

The NSSP, administered by MDMR, opens and closes shellfish harvesting areas according to a classification system for the coastal waters of Mississippi. Most of the major shellfish harvesting areas in Mississippi waters are routinely classified as either “conditionally approved” or “restricted”. The restrictions are due primarily to the effects of nonpoint source pollution from urban runoff and unsewered communities. Studies by MDMR of fecal coliform data, the indicator utilized by the NSSP, have historically shown wide fluctuations in fecal counts due to rainfall and/or high river stages. This continues despite significant improvements in wastewater treatment and collection systems in the coastal area. These fluctuations are likely a result of private septic systems and other nonpoint pollution sources located in watersheds that drain into these waters.

Sampling for enterococci bacteria and chemical water quality parameters occurs weekly to monthly along the entire length of Mississippi’s Gulf Coast public beaches at a total of 22 stations. Results from the sampling and information on the program are readily available to the public on a website developed for the program. For the period 2012 – 2016, the Mississippi Beach Monitoring Task Force issued 268 advisories or closures resulting from high bacteria levels, hurricane debris, or renourishment projects. The cause of most of these advisories was urban runoff following storm events; however, several were caused by sewer leaks, spills or breaks.

**Management Characterization:**

- 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	Y – one of the decision factors	Y	Y
Guidance documents	Y (MCP)	Y	N
Management plans (including SAMPs)	Have the opportunity but there are not currently any active SAMPs or other management plans	Y	N – last one expired in 2005

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

The MCP has been revised and submitted to NOAA for final adoption. The revision has been adopted as new state regulations in Miss. Admin. Code Title 22, Part 23.

**Enhancement Area Prioritization:**

- I. 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.

Cumulative impacts of increased impervious surfaces and increased stormwater runoff in developed areas are far-reaching. In addition to the direct impacts associated with expanded drainage conveyances on natural areas, CSI associated with increased sedimentation and degradation of water quality are a concern. For example, impacts such as sedimentation and degradation to water quality from poorly operating septic tanks can cause beach closures, fish and shellfish consumption advisories, and the potential for additional implementation of Total Maximum Daily Limits. These potential impacts have direct effects on the quality of life and economy in the coastal region. As highlighted in the previous 309 Enhancement cycle, loss of wetlands and shoreline stability related to human activities in the coastal zone is a concern and continued assessment of these CSI is important.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified CSI as the third highest priority from the nine enhancement areas. Of the 18 individual responses received, zero ranked CSI as the top priority. Overall, eight respondents ranked it as one of the top three priorities.

## Special Area Management Planning

**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:

- I. 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
Harrison County Beach	Potentially emerging conflicts between waterfront development interests and preservation of the beach area as a public recreation amenity have the potential to create management concerns. Potential conflicts are primarily related to impacts to public use areas, viewsheds, and other public amenities as lands are redeveloped for commercial and/or private use.
Ports and Harbors	The permitted expansion of the Mississippi State Port at Gulfport and expansion of the federal navigation channel could increase the potential for conflicts over navigation with recreational boaters utilizing the Bert Jones Yacht Basin in Gulfport. The proposed expansion of the existing Liquefied Natural Gas (LNG) facility and the addition of other industries in Pascagoula could also increase the potential for navigation conflicts. The Port Bienville Industrial Park in Hancock County participated in an SMA planning process in the early 1980’s but never completed the process. Port Bienville now has several major tenants, and SAMP efforts could identify ways to maximize waterfront space.
Urban Waterfronts	The Ports and Harbors in Gulfport and Pascagoula are located adjacent to their respective urban waterfronts. User conflicts can be anticipated because of increased boat traffic.

Mississippi has very little undeveloped coastal shoreline that isn’t fronted by large expanses of coastal marsh and coastal wetlands. Hence, any development and expansion of major water-dependent industries frequently come with significant coastal habitat impacts. Accommodating these coastal dependent uses while protecting and minimizing negative impacts is a significant challenge.

The MCP recognizes beaches as important public access areas and lists public beaches and urban waterfront areas that could benefit from SAMPs. The MCP also described ports and harbors as important waterfront areas that could use SAMPs as a way to actively manage and plan for future needs.

- 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.

During the period since the last assessment, the Mississippi CMP has not started, continued, or completed any SAMPs.

**Management Characterization:**

- 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	N	-	N
SAMP plans	N	-	N

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

There are no management categories with significant changes in SAMP.

**Enhancement Area Prioritization:**

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

High \_\_\_\_\_  
 Medium \_\_\_\_\_  
 Low  X

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

Based on current level of interest as expressed by port directors, city administrators, and the sand beach authorities, MDMR considers SAMP a low priority for this 309 assessment cycle. While the SAMP enhancement area is considered low for this 309 assessment cycle, the MDMR recognized the potential of this process and will continue to evaluate this enhancement area and explore opportunities to update existing plans and/or establish new SAM plans for ports and harbors, beaches, and urban waterfronts. As a result, no specific strategies will be developed relative to SAMP.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified SAMP as the second highest priority from the nine enhancement areas. Of the 18 individual responses received, one ranked SAMP as the top priority. Overall, eight respondents ranked it as one of the top three priorities.

## Ocean and Great Lakes Resources

**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>17</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)	30,217	1,195	167	395	408	17	15,206
Establishments (# of Establishments)	964	23	20	14	29	0	831
Wages (Millions of Dollars)	\$1,108.4	\$16.2	\$6.3	\$34.7	\$11.7	No data	\$227.2
GDP (Millions of Dollars)	\$1,781.5	\$42.4	\$12.4	\$49.3	\$20.7	No data	\$469.1

**Change in Ocean and Great Lakes Economy for Coastal Counties (2005-2015)<sup>18</sup>**

	All Ocean Sectors	Living Resources	Marine Construction	Ship & Boat Building	Marine Transportation	Offshore Mineral Extraction	Tourism & Recreation
Employment (# of Jobs)	+4,845	+95	-74	+174	-338	-13	+5,449
Establishments (# of Establishments)	+153	-9	+5	0	-17	-4	+151
Wages (Millions of Dollars)	+\$343.2	+\$8.154	-\$1.1	+\$19.0	+\$5.8	-\$0.141	+\$111.7
GDP (Millions of Dollars)	+\$599.7	+\$29.139	-\$5.1	+\$29.5	+\$11.9	-\$0.212	+\$185.6

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>19</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.

<sup>17</sup>[www.coast.noaa.gov/digitalcoast/tools/enow.html](http://www.coast.noaa.gov/digitalcoast/tools/enow.html).

<sup>18</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>19</sup> [www.coast.noaa.gov/digitalcoast/tools/ort.html](http://www.coast.noaa.gov/digitalcoast/tools/ort.html).

Note: The Ocean Reports tool does not include data for the Great Lakes states. Great Lakes states should fill in the table as best they can use other data sources.

**Uses within Ocean or Great Lakes Waters**

Type of Use	Number of Sites
Federal sand and gravel leases ( <i>Completed</i> )	0
Federal sand and gravel leases ( <i>Active</i> )	1
Federal sand and gravel leases ( <i>Expired</i> )	0
Federal sand and gravel leases ( <i>Proposed</i> )	0
Beach Nourishment Projects	8
Ocean Disposal Sites	79
Principle Ports ( <i>Number and Total Tonnage</i> )	Gulfport (1,930,348), Biloxi (854,927)
Coastal Maintained Channels	37
Designated Anchorage Areas	3
Danger Zones and Restricted Areas	-
Other (please specify)	-

- 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 (↑, ↓, -, unkwn)
Benthic habitat (including coral reefs)	-
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	↑
Sand/gravel	-
Cultural/historic	-
Other (please specify)	Submerged Aquatic Vegetation: ↑
Transportation/navigation	↑
Offshore development <sup>20</sup>	-
Energy production	↑
Fishing (commercial and recreational)	↑
Recreation/tourism	↑
Sand/gravel extraction	-
Dredge disposal	-
Aquaculture	↑
Other (please specify)	N/A

Growing demand for seafood and increased fishing pressure on threatened fisheries is a concern. Recent debate on catch and season limits for Red Snapper, loss of historic oyster reefs, and impacts of fishing activities on threatened and endangered species (i.e. hook-n-line capture of sea turtles, gear entanglement for those same species), and bycatch issues confirm that the concern over these resources is growing. In addition to the historic threats to marine resources referenced above, the impacts from the British Petroleum-Deepwater Horizon oil spill and the Bonnet Carre Spillway are being assessed and analyzed in order to address ways to restore damaged resources.

<sup>20</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 Resources**

	Land-based development	Offshore development	Polluted runoff	Invasive species	Fishing (Comm and Rec)	Aquaculture	Recreation	Marine Transportation	Dredging	Sand/Mineral Extraction	Ocean Acidification	Other (Specify)
Living marine resources (fish, shellfish, marine mammals, birds, etc.)	X		X		X	X			X			
Other (submerged aquatic vegetation)	X		X						X			
Transportation/navigation									X			
Energy production												
Aquaculture			X									

The number of threats to living marine resources and the potential for conflicts over management and use of the resources is increasing. The MDMR has reported the loss of historic oyster reefs due to unpredictable climatic events such as Hurricane Katrina and the release of freshwater from the Bonnet Carre Spillway. Fishing activities on local piers represents a potential threat to threatened and endangered species that are subject to the increased risk of hook-n-line capture and gear entanglement. Commercial shrimping bycatch issues confirm that the concern over these resources is growing. There is also a concern about habitat loss in coastal Mississippi. Loss of wetlands and shallow habitat due to coastal erosion reduces the quality of the estuarine nursery habitat and increases turbidity which impacts submerged aquatic vegetation. In addition to the historic threats to marine resources referenced above, the impacts from the British Petroleum-Deepwater Horizon oil spill continue to be assessed and analyzed in order to address ways to restore resources damaged by the spill. The extended opening of the Bonnet Carre Spillway in 2019 had significant impacts on living marine resources and coastal tourism/recreation.

- 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.

Since the last 309 assessment to date, there are no specific data or reports available on the status and trends of ocean resources or threats to those resources. However, there are a number of studies currently being conducted by universities and state and federal agencies to evaluate the environmental and economic impacts of the Bonnet Carre Spillway openings in 2019. These studies are anticipated to provide information in the future.

**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	N	N	N
Regional comprehensive ocean/Great Lakes management plans	N	N	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;
  - b. Specify if they were 309 or other CZM-driven changes; and
  - c. Characterize the outcomes or likely future outcomes of the changes.

No management categories were identified to have significant change.

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

Comprehensive Ocean/Great Lakes Management Plan	State Plan	Regional Plan
Completed plan (Y/N) (If yes, specify year completed)	N	N
Under development (Y/N)	N	N
Web address (if available)	-	-
Area covered by plan	-	-

**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.

Mississippi’s coastal resources are of great importance to the MDMR and their overall health and sustainability add direct social and economic benefits to its citizens. While the MDMR has concerns relating to current threats to the coastal resources, existing programs and policies are in place to address most of these issues. The state of Mississippi is currently working with USACE and the Mississippi River Commission to address Mississippi’s concerns on the operation of the Bonnet Carre and Morganza spillways. The Ocean and Great Lakes Resources enhancement area is considered a low priority for this 309 Assessment cycle. There is no need for new or altered policies at the present time nor are there gaps in data or specific needs that are not otherwise being addressed by other agencies and organizations that cooperate with the MDMR. As a result, no specific strategies will be developed relative to Ocean and Great Lakes Resources for this 309 Assessment cycle.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified ocean and Great Lakes resources as the sixth highest priority from the nine enhancement areas. Of the 18 individual responses received, zero ranked ocean and Great Lakes resources as the top priority. Overall, five respondents ranked it as one of the top three priorities.

## Energy and Government Facility Siting

**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)

### Resource Characterization:

- I. In the table below, characterize the status and trends of different types of energy facilities and activities in the state's or territory's coastal zone based on best-available data. If available, identify the approximate number of facilities by type. For ocean-facing states and territories (not Great Lakes states), Ocean Reports 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 (↑, ↓, -, unkwn)	Proposed in Coastal Zone (# or Y/N)	Change in Proposed Facilities/Activities Since Last Assessment (↑, ↓, -, unkwn)
Pipelines <sup>21</sup>	Y	-	N	-
Electrical grid (transmission cables)	Y	-	N	-
Ports	Y	↑	Y	↑
Liquid natural gas <sup>22</sup>	Y	↑	Y	↑
Oil and gas	Y	-	N	-
Coal	Y	-	N	-
Nuclear <sup>23</sup>	N	-	N	-
Wind	N			
Wave <sup>24</sup>	N	-	N	-
Tidal	N	-	N	-
Current (ocean, lake, river)	N	-	N	-
Hydropower	N	-	N	-
Ocean thermal energy conversion	N	-	N	-
Solar	N	-	N	-
Biomass	N	-	N	-
Other (please specify)	N	-	N	-
Pipelines <sup>25</sup>	Y	-	N	-

No known significant changes have occurred in the number of energy facilities in the Mississippi coastal area since the previous 309 assessment and the MDMR is not aware of any plans to site additional energy facilities in the near term. However, the Gulf LNG Terminal in Pascagoula has proposed expanding their existing facility to allow for both import and export of liquified natural gas.

<sup>21</sup> <https://www.ferc.gov/industries/gas/indus-act/pipelines/approved-projects.asp>

<sup>22</sup> <https://www.ferc.gov/industries/gas/indus-act/lng.asp>

<sup>23</sup> <https://www.nrc.gov/reactors/operating/map-power-reactors.html>

<sup>24</sup> <https://www.ferc.gov/industries/hydropower/gen-info/licensing/hydrokinetics.asp>

<sup>25</sup> <https://www.ferc.gov/industries/gas/indus-act/pipelines/approved-projects.asp>

The Port of Gulfport Expansion Project is still ongoing. The Port’s next significant work will include a 282-acre dredge and fill program for further expansion of the west pier, north harbor, east pier, and the construction of a 4,000-linear foot breakwater system.

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.

No additional data regarding the status and trends for energy facilities and activities of greater than local significance in the coastal zone have been identified.

3. Briefly characterize the existing status and trends for federal government facilities and activities of greater than local significance<sup>26</sup> in the state’s coastal zone since the last assessment.

There have been no changes in the types or number of government facilities sited in the coastal zone since the last assessment. The John C. Stennis Space Center in Hancock County, and military facilities such as Keesler Air Force Base in Biloxi, the Naval Construction Battalion Center and the U.S. Coast Guard facility in Gulfport are all considered facilities of “greater local significance” and actively pursuing the respective missions and they all coordinate with the MDMR on matters that require review and coordination under the provision of the MCP.

**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.

**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	Y	N
State comprehensive siting plans or procedures	Y	Y	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;
  - b. Specify if they were 309 or other CZM-driven changes; and
  - c. Characterize the outcomes or likely future outcomes of the changes.

There were no significant changes to the management categories listed in the table above during the assessment timeframe. In 2014, the Mississippi Development Authority promulgated “Rules and Regulations Governing Leasing for Production or Extraction of Oil, Gas and Other Minerals from State Owned Marine Waters” and “Seismic Exploration on State Owned Marine Waters.” The new rules and regulations governing leasing, production, or extraction from state-owned marine waters

<sup>26</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).

were evaluated by the MDMR and determined to be “not inconsistent”; however, the MDMR emphasized that the consistency decision did not obviate the need for project-specific coordination on potential leases or the requirement to comply with the policies of the MCP.

**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.

The MDMR has determined that the current regulations implemented by state agencies provide sufficient opportunities for the MDMR to engage in the decision-making process for energy facilities in the Mississippi coastal area. Furthermore, the MDMR has direct regulatory authority for oil and gas activities in coastal waters and have guidelines in the MCP that relate to oil and gas exploration and production, and for the installation of cables, pipelines and transmission lines. The MDMR is not proposing specific strategies at this time but may reevaluate this decision during this assessment cycle if offshore oil and gas development becomes more active in Mississippi coastal waters.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified energy and government facility siting as the lowest priority from the nine enhancement areas. Of the 18 individual responses received, zero ranked energy and government facility siting as the top priority. Overall, one respondent ranked it as one of the top three priorities.

## Aquaculture

**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:

- I. 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>27</sup>

**Status and Trends of Aquaculture Facilities and Activities**

Type of Facility/Activity	Number of Facilities	Approximate Economic Value	Change Since Last Assessment (↑, ↓, -, unkwn)
University - Research	1	Unknown	-
State Research/ Stocking	3	Unknown	↑
Private Oyster facility for harvesting & selling	13	Unknown	↑

Historically, the MDMR has been involved in aquaculture activities and has worked closely with people who propose aquaculture ventures in coastal waters. The commercial aquaculture ventures in coastal Mississippi have ranged from net-pen culture of finfish, to pond culture of finfish, to off-bottom culture of oysters. Unlike the freshwater aquaculture activities in the state, aquaculture ventures for coastal and marine species have not experience the same large scale success as the catfish farms in the Mississippi Delta Region.

Natural oyster production across the Gulf Coast has experienced extreme variability throughout time and the impacts are nowhere more evident than coastal Mississippi. During the past decade, Mississippi has suffered the triple effects of Katrina, the British Petroleum-Deepwater Horizon oil spill and the release of freshwater from the Bonnet Carre spillway. In 2019, the spillway remained opened for a record 123 days in one year, redirecting nearly 6 trillion gallons of freshwater into the Lake Pontchartrain and eventually into Mississippi Sound and the Gulf of Mexico<sup>28</sup>. These impacts have taken a toll on oyster production and oyster harvest in Mississippi and the MDMR is currently assessing ways to revitalize this important fishery.

To supplement natural oyster production some commercial fishermen are exploring various types of oyster aquaculture. For example, oystermen are investigating the possibility of supplementing natural production by adding spat on shell and/or cultch material to natural oyster reefs in order to increase oysters on reefs and material to grow reefs. Researchers are also looking at ways to diversify harvest by off bottom aquaculture and other grow out techniques. Other trends in the region include Alabama and Louisiana investing in a shellfish hatchery and providing spat on shell or clutch material for farming (off-bottom and on-bottom).

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.

In 2011, NOAA established the National Shellfish Initiative. The goal of the initiative is to increase populations of bivalve shellfish such as oysters in our nation’s coastal waters. The Gulf states formed

<sup>27</sup> [https://www.nass.usda.gov/Publications/AgCensus/2012/Online\\_Resources/Aquaculture/](https://www.nass.usda.gov/Publications/AgCensus/2012/Online_Resources/Aquaculture/)

<sup>28</sup> <http://extension.msstate.edu/news/extension-outdoors/2019/bonnet-carr%C3%A9-openings-stir-trouble-for-gulf-coast>

the Gulf of Mexico Shellfish Initiative, which was funded in part through the GSMFC working under a NOAA grant. In 2017, the planning team sought input from stakeholders from across the Gulf of Mexico to identify common goals among the Gulf states, and some that are unique to each state<sup>29</sup>.

**Management Characterization:**

1. Indicate if the approach is employed by the state or territory and if there has 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	N	N	N
Other aquaculture statutes, regulations, policies, or case law interpreting these	Y	N	Y

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

At the present time, Mississippi Aquaculture Act of 1988 (Section 79, Chapter 22) provides the overarching regulatory authority for aquaculture in Mississippi. The act designates the Mississippi Department of Agriculture and Commerce as the lead state agency responsible for permitting aquaculture activities in fresh and marine waters; however, it also identifies the MDMR, the Secretary of State, and the MDEQ as agencies which have regulatory responsibilities in coastal waters. No changes have occurred in the Mississippi Aquaculture Act of 1988 since the previous 309 Assessment.

The MDMR fisheries regulations include regulations for aquaculture in the coastal area. The aquaculture regulations are found in the MDMR fishing regulations at Title 22-Part 13 and were revised in November of 2016. The revision included a prohibition of off-bottom aquaculture operations in the marine waters of St. Louis Bay north of the CSX bridge.

In 2017, MDMR was awarded a Restore Act Grant for the development of an off-bottom oyster aquaculture training program. The Off-Bottom Oyster Aquaculture Program aims to teach potential and current commercial oyster farmers all aspects of off-bottom oyster farming appropriate to the local area. Participants will be positioned to operate and maintain economically and environmentally sustainable off-bottom oyster farms in the state of Mississippi, which will increase the quantity and value of Mississippi’s annual oyster harvest. This two-phase program takes place south of Deer Island in Biloxi at the Deer Island Aquaculture Park. Phase One includes classroom and field education on aquaculture, business operations and demonstrations of off-bottom aquaculture techniques. During the first phase, participants attended training meetings, workshops, received assistance with development of a business plan, deployed grow-out systems at training site(s) and stocked those systems with seed. Phase Two incorporates hands-on training by allowing participants to select an oyster-growing technique from the range of permitted methods using information gained from phase

<sup>29</sup> <http://masgc.org/gulf-of-mexico-shellfish-initiative>

one. Participants will maintain their assigned gear and oyster seed, including all aspects of fouling control, grading, splitting and site maintenance following best management practices. Instructors and participants will periodically evaluate oyster survival, growth and quality, as well as comparing individual success among program participants to facilitate collaborative learning. If all requirements are completed the participants will be eligible to sublease two acres from the MDMR to begin their own off-bottom oyster aquaculture business. In 2019, the first off-bottom oysters were harvested for commercial sale in Mississippi from the Deer Island Oyster Park. There are 13 currently private farms operating on 25 acres using off-bottom cultivation techniques. The state has also invested in an oyster seed/spat production facility and a remote setting facility for the oyster seed/spat to attach to shell.

MDMR operates the Lyman Aquaculture Hatchery; a facility in Lyman that focuses on aquaculture restoration and commercial aquaculture opportunities. Operations at the facility are critical to the sustainability of marine fisheries, as well as important to Mississippi's economy. The hatchery helps create marketable products by developing techniques that can be transferred to the private sector for commercial aquaculture. It aids recreational fisheries by restoring and enhancing fish populations through the release of cultured organisms to enhance, restore and conserve these populations. Aquaculture for stock enhancement can provide a means to rebuild spawning stock biomass for species recovery.

**Enhancement Area Prioritization:**

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

High	<input type="checkbox"/>
Medium	<input checked="" type="checkbox"/>
Low	<input type="checkbox"/>

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

Given the current status of aquaculture and the growing trend to look to aquaculture as a way of supplementing natural fisheries production, the MDMR considers Aquaculture as an emerging issue area of medium priority. Future information needs or regulatory requirements outside of what is currently being developed by the MDMR are uncertain. While it is anticipated that aquaculture activities in coastal Mississippi will increase in the near future no strategy for the aquaculture enhancement area is proposed at this time.

MDMR distributed an online survey to 60 external stakeholders and the general public. Stakeholder responses identified aquaculture as the eighth highest priority from the nine enhancement areas. Of the 18 individual responses received, one ranked aquaculture as the top priority. Overall, one respondent ranked it as one of the top three priorities.

## 3.2 Phase II: In-Depth Assessment

For any enhancement areas ranked as a high priority after the Phase I Assessment, the MDMR conducted a Phase II (in-depth) Assessment using the appropriate Phase II Assessment templates provided by NOAA to further explore potential problems, opportunities for improvement, and specific needs.

After completing the Phase II Assessment questions, the MDMR identified, in consultation with OCM, which enhancement areas it will develop a strategy for. There is no requirement to develop a strategy for every enhancement area that was designated as a high priority.

## Coastal Hazards

### 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 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 (throughout coastal zone or specific areas most threatened)
Hazard 1	Coastal Flooding	Throughout the coastal zone and major shoreline areas
Hazard 2	Hurricanes and Storm Surge	Throughout the coastal zone and major shoreline areas
Hazard 3	Climate Change-Sea Level Rise	Throughout the coastal zone and major shoreline areas

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.

Coastal flooding, hurricanes and storm surge, and climate change related sea level rise are three of Mississippi's top hazards within the coastal zone. These hazards are interdependent and associated with other hazards (e.g., shoreline erosion, land subsidence, and saltwater intrusion, etc.).

These coastal hazards are the most significant predominantly due to the topography and landscape position of the Mississippi Gulf Coast. The low and flat topography increases the vulnerability of the coastal zone to flooding and sea level rise. The landscape position along the northern Gulf of Mexico increases its exposure to high-intensity storms and associated storm surge. These coastal resources are further stressed as storm events become more intense and frequent. Hurricanes are a pervasive threat throughout the coastal zone as well, and the potential for large scale destruction by a single storm warrants a significant hazard rating. Please see Coastal Hazards Phase I Assessment for detailed discussion of these hazards.

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
Sea Level Rise	Rate of sea level rise for coastal Mississippi and its potential impacts on coastal communities.
Resiliency	Information is needed regarding strengthening coastal development to improve resiliency.

Regional and local projections of sea level rise that take into consideration land use/land cover, subsidence, local topography, storm surge, erosion rates, and other local/regional variables are sparse. Few studies have been conducted in coastal municipalities to collect parcel level data that could assist with local planning decisions. Tide gauge stations record trends and seasonal variations in sea level rise. However, the gauge stations in Mississippi coastal waters do not have the spatial extent or depth of historical data that neighboring states possess. Dauphin Island, Alabama or Pensacola, Florida are typically used as proxy reference stations for Mississippi coastal counties. A need for local data is paramount to more accurately quantify the impacts of these emerging issues and formulate effective strategies.

**In-Depth Management Characterization:**

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

- I. 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
Hard shoreline protection structure restrictions	Y	Y	N
Promotion of alternative shoreline stabilization methodologies (i.e., living shorelines/green infrastructure)	Y	Y	Y
Repair/replacement of shore protection structure restrictions	Y	Y	N
Inlet management	N	N	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	N
Repetitive flood loss policies (e.g., relocation, buyouts)	Y	N	N
Freeboard requirements	N	N	N
Real estate sales disclosure requirements	Y	N	N
Restrictions on publicly funded infrastructure	N	N	N
Infrastructure protection (e.g., considering hazards in siting and design)	N	N	N
Other (please specify)	N/A	N/A	N/A

**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	Y
Sea level rise/Great Lake level change or climate change adaptation plans	Y	N	N
Statewide requirement for local post-disaster recovery planning	Y	N	N
Sediment management plans	Y	Y	N
Beach nourishment plans	Y	N	N
Special Area Management Plans (that address hazards issues)	Y	Y	N
Managed retreat plans	N	N	N
Other (please specify)	N/A	N/A	N/A

To address coastal hazards in a meaningful way, the MDMR has established an Office of Coastal Restoration and Resiliency (CRR). This office will focus attention on the resiliency of the natural and the built environment, helping communities prepare for short- and long-term impacts of coastal hazards, and helping communities consider hazard risks in land-use planning, architecture development, and management of natural habitats. In 2011, CRR produced the “Smart Growth & Sustainability for the Mississippi Gulf Coast” publication, which is part of the Coastal Resilience, Sustainable Development and Smart Growth Initiative for the six coastal counties of Mississippi and is widely utilized as a “toolbox” to assist government leaders, policy-makers, developers, planners, engineers, and other stakeholders in making informed decisions regarding both public and private projects. This document is a collection of resources and tools provided to guide decisions in creating vibrant communities and planning for the future of Mississippi’s coastal towns and cities. CRR continues to work with local communities to develop and update hazard mitigation plans.

Staff from the Office of Coastal Resources Management currently participate along with CRR staff in the development of coastal restoration projects aimed at ameliorating the effects of coastal hazards. The two offices anticipate working together on future local-level planning efforts. Between 2020 and 2025, we anticipate completing or updating both state and local hazard plans. CRR is currently working on a CZM-funded project that entails development of a community disaster recovery plan that would look at case studies of lessons learned (e.g. the Community Ratings System and insurance carriers that recognize Fortified benchmarks) and those policies that support stronger building (e.g. enabling legislation, building codes, and code supplementals). This information will be used to develop a community disaster recovery plan. The created disaster recovery plan/template could be used by communities for both pre- and post-disaster implementation (e.g., a housing recovery plan that would provide housing decisions for local communities and educate people on the short- and long-term costs of building stronger).

### 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	N	N
Sea level rise mapping or modeling	N/A	N/A	N/A
Hazards monitoring (e.g., erosion rate, shoreline change, high-water marks)	Y	N	N
Hazards education and outreach	Y	N	N
Other (please specify)	N/A	N/A	N/A

- 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 MDMR is not aware of any studies that have evaluated the effectiveness of the state’s management efforts in addressing coastal hazards. While previous assessment activities have been limited, one of the main areas of focus for CRR during the 2021-2025 cycle will be to work with Mississippi’s coastal communities to explore ways the MDMR can assist in the implementation of coastal hazard mitigation and resiliency planning and policies.

#### Identification of Priorities:

- 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: Assist Communities in Determining Vulnerabilities for Community Infrastructure and At-Risk Residents

*Description:* Assist communities in assessing vulnerability to coastal hazards that build on existing efforts in coastal Mississippi.

#### Management Priority 2: Assist Communities in Planning and Implementing Resiliency Strategies

*Description:* Assist communities involved in the development of resiliency strategies by providing technical support and funding for planning and implementation of resiliency features in coastal communities.

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

Priority Needs	Need? (Y or N)	Brief Explanation of Need/Gap
Research	N	-
Mapping/GIS/modeling	Y	There is a need to develop community level mapping and modeling information to assist in planning for more resilient communities.
Data and information management	Y	There is a lack of parcel level data that communities need to make more informed management decisions relative to coastal hazard issues.
Training/Capacity building	Y	There is a need to provide additional support to communities who have identified vulnerabilities and need funding to implement strategies to improve resilience.
Decision-support tools	N	-
Communication and outreach	Y	There is a need for risk communication materials that are translated into appropriate languages.
Other (specify)	N	-

**Enhancement Area Strategy Development:**

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

Yes   
 No

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

The Coastal Hazards Enhancement Area is an emerging issue that is gaining much attention and support within the various departments of the MDMR as evidenced by the establishment of an Office of Coastal Restoration and Resiliency. Developing strategies for this enhancement area is considered vital to establishing stronger and more resilient coastal communities. However, MDMR will not be developing a strategy for Coastal Hazards to focus its resources and efforts on the Wetlands strategy this cycle.

## 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.

	Stressor/Threat	Coastal Resource(s)/Use(s) Most Threatened	Geographic Scope (throughout coastal zone or specific areas most threatened)
Stressor 1	Coastal development (increased impervious surfaces)	Water quality and habitat	Coast-wide
Stressor 2	Stormwater runoff (sedimentation)	Water quality and habitat	Urban areas/ coast-wide
Stressor 3	Shoreline modification	Habitat and fisheries	Developed areas/ coast-wide

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.

Development throughout the coastal area increases the area of impervious surfaces and increases stormwater runoff which discharges into coastal streams, bayous, and bays. The increased stormwater flow exacerbates the problems of sluggish drainage systems which in turn require channel improvements with the associated impacts to natural areas adjacent to the channels. Shoreline modifications along waterways and industrial channels cause CSI such as loss of habitat, reduced primary productivity, and degraded water quality.

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
Reservoirs and Diversions	This emerging issue relates to proposals by developers in Jackson, Mississippi and St. Tammany Parish, Louisiana proposing to construct large reservoir structures for flood control and water supply. Information regarding project impacts on freshwater inflow and reduction of freshwater discharging to the Mississippi Sound is needed. The Mid-Breton Sediment Diversion Project proposed by Louisiana has raised concerns about the potential impacts of increased freshwater flows into the Mississippi Sound.

### 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.*

1. For each additional cumulative and secondary impact management category below that is not already discussed as part of the Phase I assessment, indicate if the approach is employed by the state or

territory and if significant state- or territory-level changes (positive or negative) have occurred since the last assessment.

**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	N	N	N
CSI research, assessment, monitoring	N	N	N
CSI GIS mapping/database	N	N	N
CSI technical assistance, education and outreach	N	N	N
Other (please specify)	N/A	N/A	N/A

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

There have been no significant changes to CSI assessment methodologies, monitoring, mapping, database management, or technical assistance during the past 309 assessment. However, improvements to the Coastal Wetlands Permitting application and process are being implemented that will provide a systematic approach to collecting quantitative data on CSI. CMP anticipates the completion of an online permit application in 2020 that will provide a database for tracking CSI and enhance MDMR’s analyses of CSI for major projects. These changes will be integrated into policy procedures.

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

No specific studies that identify or describe the effectiveness of the MCP in addressing CSI of development have been completed since the last assessment. The MDMR tracks project impacts through its permitting database, however, database information relative to CSI is limited. The MDMR has recognized this limitation and is currently exploring ways to improve collection of quantitative data on CSI. An assessment of the Coastal Wetlands Permitting application and processes was completed in 2019 to address issues and provide a list of actionable improvements. This included ways to systematically collect data on proposed and approved impacts within a new system that will help to track and report on CSI. However, this assessment did not focus on the effectiveness of the state’s management efforts in addressing CSI of development.

**Identification of Priorities:**

- I. Considering changes in cumulative and secondary impact threats and management since the last assessment and stakeholder input, identify and briefly describe the top one to three management priorities where there is the greatest opportunity for the CMP to improve the effectiveness of its management effort to better assess, consider, and control the most significant threats from cumulative

and secondary impacts of coastal growth and development. (Approximately 1-3 sentences per management priority.)

**Management Priority 1: Develop Cumulative and Secondary Impact Analysis Procedures for Coastal Use Permits.**

*Description:* CSI analysis is part of the MDMR review criteria for coastal permits, but there currently are no established procedures for conducting this analysis. Development of a set of standardized procedures will aid in tracking CSI.

**Management Priority 2: Implementation of revised MDMR Permit Application**

*Description:* Revise the permit application package to incorporate CSI information regarding status and trends, spatial and temporal scope of the project, and future projects dependent on a proposed action. Using the standardized CSI procedures and incorporating CSI impacts information in the permit application process will greatly improve MDMR’s ability to manage coastal uses.

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	Research regarding CSI assessment methodologies is needed to provide guidance to staff in conducting CSI assessments.
Mapping/GIS	N	
Data and information management	Y	CSI metrics need to be incorporated into the permitting database.
Training/Capacity building	Y	The MDMR needs the necessary resources to train coastal managers and community decision makers on the types of data available and its importance to all levels of coastal resources management.
Decision-support tools	Y	There is also a need to build upon and refine the decision support tools developed by the USACE for large-scale development projects in Mississippi’s coastal zone.
Communication and outreach	Y	There is a need to work loosely with federal, state, and local agencies to provide a forum for discussion on the products and programs that can be used to make informed CSI decisions.
Other (specify)		

**Enhancement Area Strategy Development:**

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

Yes   
 No

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

The evaluation of CSI is critical to the management of wetlands and coastal resources. The CSI enhancement area was determined to be a high priority area for the previous 309 assessment cycle. A previous 309 project focused on habitat loss from hardened shorelines and identified ways to reduce CSIs using living shoreline techniques. MDMR is currently developing an Alternative to Bulkheads Program that will encourage the use of living shorelines.

CSI of development can be both difficult to identify and evaluate. These impacts may be insignificant by themselves but when combined with other development activities may become a significant

problem over time. The development of CSI assessment tools would assist MDMR staff in a comprehensive evaluation of large-scale projects in coastal Mississippi. One of the critical tools necessary for this effort would be an updated GIS system that is robust and comprehensive. A 309 project from the previous cycle focused on making improvements to the wetlands permit application and procedures. The improvements being implemented should provide a better method for collecting data on CSI. CMP anticipates the completion of an online permit application in 2020. Once the online permit application is completed, the other phases of these 309 projects can begin. The MDMR believes that the two projects mentioned above will significantly enhance our abilities to minimize damage to wetlands and other coastal resources. With two ongoing projects related to CSI, MDMR will not be developing an additional strategy for this cycle.

## Wetlands

### 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.

	Stressor/Threat	Geographic Scope (throughout coastal zone or specific areas most threatened)
Stressor 1	Erosion/ wetland loss	Coast-wide (unprotected shorelines)
Stressor 2	Hydrologic alterations	Coast-wide (urban areas and areas previously developed in wetlands)
Stressor 3	Invasive species	Coast-wide

Erosion/wetland loss, hydrologic alterations, and invasive species are the three most significant existing physical stressors to wetlands within the Mississippi coastal zone.

Waterfront development activities in the coastal zone are associated with impacts and changes to shorelines and coastal wetlands that include installation of sea walls, riprap, groins, and other artificial stabilization methods. Shoreline erosion is a natural process. However, shoreline hardening techniques interrupt shoreline processes and lead to increased erosion down drift from the structure. In addition, rising sea levels are likely to have significant impacts on the type and rate of coastal erosion. High-energy waves that reach further inland beyond the historical mean high-water levels will exacerbate shoreline erosion and wetland loss. Sea level rise may alter salinity regimes, which in turn will impact freshwater wetlands and cause a die-back of less salt-tolerant species. Coastal habitat loss will also be impacted by sea level rise in areas where development near the shoreline limits the ability of coastal marshes and wetlands to migrate inland. Coastal development has additional negative impacts on wetlands; see Cumulative and Secondary Impacts Phase II Assessment for additional detail.

Hydrologic alterations largely due to development are a significant stressor to wetlands and stream and bayou systems that contribute to habitat loss. After Hurricane Katrina, there was an increased interest to improve drainage and reduce flooding in urban areas. This resulted in an increased number of permit actions requesting authorization to modify natural drainageways. Development projects within the coastal watersheds result in the direct filling of wetlands and altering the natural overland flow and drainage patterns. Climate change may exacerbate the impacts of these hydrological alterations within the coastal watersheds.

Invasive species are currently impacting coastal areas and causing changes in the abundance and distribution of certain native species. Invasive species of concern include giant Salvinia (*Salvinia molesta*), channeled apple-snail (*Pomacea canaliculata*), Chinese tallow tree (*Triadica sebifera*), cogongrass (*Imperata cylindrica*), and feral hog (*Sus scrofa*). Climate change could exacerbate this problem by creating conditions more suitable for non-native species and less suitable for native species. Population growth also increases the probability of new invasions.

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.

Coastal erosion and wetlands loss are well documented in the Mississippi coastal zone. While most of the erosion is related to high-energy wave action in the Mississippi Sound, there is also evidence to indicate wetlands loss in areas with heavy recreational and commercial boat traffic.

There have been a number of projects to widen, deepen, and harden existing drainage channels in urban areas since Hurricane Katrina. These alterations increase the rate of stormwater discharge into Mississippi’s coastal waters. This higher rate of stormwater discharge leads to higher fecal coliform counts that exceed water quality standards and necessitate beach closures.

The MDMR is concerned about proposed reservoir projects in Jackson, Mississippi and St. Tammany Parish, Louisiana. Both projects have the potential to reduce freshwater inputs into coastal waters and impact salinity regimes. In addition, there are serious concerns about the operation of the Bonnet Carre Spillway and a proposed freshwater diversion project that would result in increased freshwater inputs into coastal waters.

The introduction and proliferation of invasive species causes significant impacts to coastal wetlands. Invasive plant and animal species out-compete native species for space and food, reduce biodiversity, and cause loss and/or conversion of important natural habitat. The populations of the most problematic invasive species are continuing to increase and spread despite the state’s existing efforts and resources dedicated to combat this issue.

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
Large-scale freshwater diversion & reservoir projects	Impacts to salinity regimes in coastal wetlands
Invasive species	Impacts to native fauna and flora of coastal wetlands

**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	Y	Y	N
Wetland technical assistance, education, and outreach	Y	Y	N
Other (please specify) Coastal Preserve Management Plans	Y	N	Y

Wetland loss and changes in wetland areas have historically been mapped by the Coastal Geology Section of the MDEQ. However, these data and maps have not been updated in nearly 20 years. MDMR has been working diligently to increase its own GIS capabilities, which would allow the agency to maintain up-to-date information on the status and trends of coastal wetlands within the state.

MDEQ has developed and updated its basin management plans for the coastal watersheds. MDMR staff is to assist the MDEQ in that program.

At the present time, the BWP staff provides technical assistance to applicants and provides public outreach information (brochures) and staff for educational seminars and workshops. The BWP staff also participate in pre-application meetings and hosted a MSGP educational seminar when the new general permits were issued.

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.

Coastal Preserve management plans are currently being developed under a 2016-2020 309 project. These plans will provide standard guidance on planning and implementing habitat restoration and other management strategies. These plans will provide a comprehensive approach to manage the Coastal Preserve lands in their natural state and provide greater ecological services than currently.

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?

Other than the information provided to NOAA as part of the MDMR's reporting responsibilities, there are no specific studies that are available that illustrate the effectiveness of Mississippi's management efforts in protecting, restoring, and enhancing coastal wetlands since the last assessment.

Since the last assessment 2,425 acres of wetlands have been acquired by the state and incorporated into the Coastal Preserves for long-term protection and management. Additionally, 280 acres of wetlands have been created or restored through MDMR's Beneficial Use of Dredged Materials Program. The success of this management technique is illustrated through simple gain in wetland acreage and the results of a long-term monitoring program developed for each of these sites. Areas planted with marsh grasses are colonizing well, and an abundance of shellfish, fish, invertebrates, and bird species are using these newly restored areas for foraging and reproduction.

As noted in annual MDMR reports to NOAA, an aggressive invasive species removal program is underway on Coastal Preserve lands. Within the tidal marshes, the Coastal Preserves Program has been successful in limiting the spread of giant Salvinia and the channeled apple-snails. The program has also continued its partnership with USDA to control feral hogs in the marsh. Anecdotal evidence suggest that the hog removal effort is already showing positive effects, i.e., native grasses recolonizing and a decline in feral hog activity, in general.

#### **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: Enhance Policies and Procedures to Encourage the Beneficial Use of Dredged Material**

*Description:* A frequent delay in permitting a beneficial use project is a lack of expertise among the regulatory authorities on assessing the potential ecological and health effects of contaminants. MDMR's Beneficial Use Program, along with the relevant regulatory authorities, need to develop and agree upon acceptable standards for testing the suitability of dredged material proposed for beneficial use. These standards would enhance coordination between the agencies without sacrificing oversight on human health and environmental concerns.

**Management Priority 2: Educate the Public about the Impacts of Invasive Species in Coastal Mississippi**

*Description:* New invasions of non-native species are primarily the result of human activities such as boating, fishing, pet trade, and nursery trade. The public is largely unaware of the serious impacts that invasive species can have on native environments. When the public does recognize an invasive problem, they are often concerned about the management techniques used to combat these invasions. The Invasive Species Program needs to strengthen its public outreach to foster support for its activities and to recruit public assistance to prevent new invasions and fight existing ones.

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	Research regarding CSI to wetlands and watersheds is needed.
Mapping/GIS	Y	Data layers at the watershed level and lower is needed to supplement the much broader information that is available from sites such as NOAA's Land Cover Atlas. A GIS-based interactive map that contains data/information such as wetland use districts, National Pollutant Discharge Elimination System (NPDES) permits, USCG spill reports, MDEQ 303(d) list, locations of significant natural and cultural resources, etc. is needed to support best professional judgement regarding the testing and placement of dredged material.
Data and information management	Y	Data and information gaps exist with respect to CSI to wetlands and pertaining to determining the suitability of dredged material for use in habitat creation/restoration projects.
Training/capacity building	Y	Capacity building – need more staff in Coastal Preserves and GIS
Decision-support tools	Y	Decision support tools are needed to provide regulators and the public with the best available science/research in regard to the potential positive and negative impacts of beneficial use projects. Decision support tools that rely on the information, data management, and GIS analyses are needed to effectively analyze and evaluate CSI.
Communication and outreach	Y	Outreach and education play a major role in the public's willingness to support the CMP's efforts to protect and conserve wetlands.
Other (specify)	N	-

**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.

MDMR’s Beneficial Use Program and Invasive Species Program have the potential to have significant positive impacts on two of the identified stressors listed above. These two programs have already generated significant accomplishments in the past several years; however, there are still impediments to achieving their full potential.

For the Invasive Species Program, the lack of public awareness of the seriousness of this problem and public concerns about the management techniques used have become stumbling blocks to having a rapid and effective response.

For the Beneficial Use Program, the lack of standardized procedures, particularly regarding sediment testing procedures, and the public perception of dredged material as “spoil” or “garbage” often causes extensive delays in permitting resulting in lost opportunities to restore or create coastal wetlands through the beneficial use of dredged material. MDMR believes that the CMP could be enhanced by developing strategies that help the regulatory agencies and the public to feel more comfortable with and supportive of these efforts.

## 4.0 Strategy

This section establishes a clear strategy (or strategies) the CMP plans to pursue during the five-year strategy period based on the management needs identified in the assessment for one or more of its high priority enhancement areas. The CMPs must use the “Strategy Template” provided in Appendix C. Enhancement area strategies should include enough information for OCM to determine whether (1) the proposed program change or implementation activity adequately addresses the needs identified in the assessment, and (2) the program’s work plan to achieve the program change is appropriate and cost-effective.

## 4.1 Creating and Enhancing Policies and Procedures for the Beneficial Use of Dredged Material Program

### 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 checked="" type="checkbox"/> Cumulative and Secondary Impacts |
| <input type="checkbox"/> Energy and Government Facility Siting | <input checked="" type="checkbox"/> Wetlands                         |
| <input 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.

**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 goal of the strategy is to develop a MDMR Beneficial Use Guidance Document, complete with policies and procedures for making more informed administrative and programmatic decisions concerning the implementation of the BU program. The guidance document will be developed in partnership with the MDEQ, EPA, USACE, NMFS, U.S. Fish and Wildlife Service, and other appropriate stakeholders and regulatory agencies. MDMR BU staff have had numerous, favorable discussions with state and federal regulatory staff in support of a BU guidance document that addresses the major issues of concern. Additionally, an interactive map will be created to be used as a decision support tool for using best professional judgement on testing the suitability of sediment to be used for BU projects.

**B.** 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 perception of dredged material has changed from a byproduct (or waste) of the dredging process to that of a valuable resource. The Planning and Environmental Division of the USACE Mobile District encouraged the creation and supports the mission of the multi-agency Mississippi Beneficial Use Group (BUG). The BUG realizes the value and understands beneficial use of dredged sediment is one of the most valuable and effective methods of combating coastal erosion through the implementation of coastal restoration, creation, and enhancement projects. In 2010, Mississippi passed a state statute (§ 49-27-61) requiring beneficial use of dredged material for any projects involving removal of more than 2500 cubic yards of sediment, if the material is suitable and an approved site is available. However, the lack of well-defined and mutually agreeable standards is hampering the program's ability to develop, permit, and implement coastal habitat restoration projects using dredged sediments. In particular, the program's ability to effectively determine sediment suitability is a program need. A mutually agreeable and consistent interpretation of the term "suitable" cited in the state statute will be a major outcome of this project. This guidance document will outline policies and procedures for collecting, handling, testing, and analyzing sediment and will be distributed to everyone involved in the life cycle of sediment management. It will also include the best available science on sediment toxicity and the environmental impacts (positive and negative) of past BU projects. Education of regulatory staff and the public on these two issues will lead to a program change to increase consistent standards and general support of future BU projects. The interactive map will provide decision makers (i.e. regulatory agencies) and planners with an information management tool that will inform them of site-specific sediment history and details. Examples of inputs into the interactive map could include: MCP use districts, historical sediment data, National Pollutant Discharge Elimination System (NPDES) permits, U.S. Coast Guard spill reports, 303(d) lists, etc. The guidance document and the interactive map will provide the regulatory agencies, planners, stakeholders, and the general public with the tools needed to effectively evaluate, assess, and implement BU projects. Ultimately, the goal is to have a MOU recognizing the BU guidance document as a set of mutually agreeable standards for designing, permitting and implementing BU projects. Having these standards in place will be a major step forward in our efforts to restore coastal habitats in Mississippi.

### **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.

Both the public and some regulatory staff view proposed BU projects as nothing more than the disposal of "contaminated spoils" rather than habitat restoration. This current lack of "comfort" with BU is leading to exceedingly long permit times and, sometimes, significant public opposition. The delays and public opposition likely result from a lack of data and information, identified in the assessment, as well as a lack of knowledge on how to use the data, which will be nullified with the development of this guidance document and decision support tool. The BU program staff believes that this guidance document and decision support tool will help all stakeholders understand the extensive and comprehensive process that goes into developing and ensuring BU projects will have positive impacts on the coastal environment. Increasing the comfort level of these stakeholders should speed up the process of permitting as well as garnering more public support for these projects.

### **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.

Beneficial use of dredged material is the intentional placement of dredged sediment to provide environmental, economic, and societal benefits. The state's long-term outlook for coastal restoration is dependent on the beneficial use of dredged material to restore coastal habitat. The BU program has already had some major successes in that regard; however, the current public and regulatory skepticism is resulting in many lost opportunities, i.e., where clean dredged sediments are winding up in an upland landfill rather than being used to restore coastal habitat. BU projects are extremely important to Mississippi's coastal zone, and this strategy will increase the rate at which the BU program can implement restoration and creation projects.

## 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 strategy has a high likelihood of success. BU is an important part of Mississippi's coastal management plans. In fact, Mississippi has a Beneficial Use Law requiring that all sediment from dredging projects greater than 2,500 cubic yards must be used beneficially. The BUG is a great forum for outreach and communication, that meets as needed to discuss projects and programmatic issues. The BUG consists of federal, state, and local entities as well as private stakeholders. These stakeholders have been meeting for several years and are dedicated to seeing this program reach its full potential.

## 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).

### **Strategy Goal: Creating and Enhancing Policies and Procedures for the Beneficial Use of Dredged Material Program**

**Total Years: 5**

**Total Budget: 420,000**

<b>Year(s):</b>	1-2
<b>Description of activities:</b>	Begin stakeholder engagement with federal (USACE, EPA), state, and local agencies to collect important information and recommendations of information that needs to be included in the interactive map and the

	guidance document. Review existing sediment data from past dredging projects. Review existing ambient water quality monitoring data and NPDES permits from MDEQ. Review historical industrial data pertaining to areas of concern on the Mississippi's coast. Review relevant literature and federal guidance on contaminants of concern. Begin compiling information into the Beneficial Use Guidance Document.
<b>Major Milestone(s):</b>	Development of an interactive map to be used as a decision support tool for sediment testing and permitting purposes.
<b>Budget:</b>	\$168,000
<b>Year(s):</b>	3-4
<b>Description of activities:</b>	Work with MDEQ and other regulatory agencies to compile a comprehensive analyte list with preferred analytical methods, develop sample collection and handling procedures, develop tiered sampling protocol specific to the relevant MCP Use District, and the decision support tool. Continue input of information into the Beneficial Use Guidance Document.
<b>Major Milestone(s):</b>	Complete target analyte list specific to each use district in the MCP. Formalization of all quality assurance measures that ensure sample integrity in the field and the lab.
<b>Budget:</b>	\$168,000
<b>Year(s):</b>	5
<b>Description of activities:</b>	Continue updating map and relevant data. Submit draft Beneficial Use Guidance Document to stakeholders for comment and review, make any necessary edits, and produce the final draft. Disseminate the completed guidance document to all consultants, contractors, labs, and any other entities involved in dredged material management life cycle.
<b>Major Milestone(s):</b>	Creation of a complete Beneficial Use Guidance Document
<b>Budget:</b>	\$54,000

**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.

We do not anticipate any additional funding; however, there are additional program funds from the BU program that can be used to supplement the project if needed.

**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).

All technical aspects will be contracted out to those with the knowledge and skills to carry out the proposed strategy.

The MDEQ is the state agency responsible for regulating and conserving the natural resources of Mississippi. As required by the Clean Water Act, Mississippi must issue 401 Water Quality Certification prior to a federal permit or license that may cause a discharge to the waters of the state. For projects subject to the BU law, the 401 Water Quality Certification review includes determining whether the proposed beneficial use of dredged material will be protective of water quality. As such, MDEQ will be relied upon to provide guidance concerning the issuance of the dredged sediment suitability determinations. Input and review of the BU guidance will be requested from the relevant federal regulatory agencies such as EPA and USACE.

**VIII. Projects of Special Merit (Optional)**

If desired, briefly state what projects of special merit the CMP may wish to pursue to augment this strategy. (Any activities that are necessary to achieve the program change or that the state intends to support with baseline funding should be included in the strategy above.) Project descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning).

None.

**4.2 Five-Year Budget Strategy**

The table below summarizes the budgetary expenses for the strategies included in the 2021-2025 Section 309 Assessment and Strategy cycle.

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Creating and Enhancing Policies and Procedures for the Beneficial Use of Dredged Material Program	\$84,000	\$84,000	\$84,000	\$84,000	\$54,000	\$390,000
2026-2030 Section 309 Assessment and Strategy Development	-	-	-	-	\$30,000	\$30,000
<b>Total Funding</b>	<b>\$84,000</b>	<b>\$84,000</b>	<b>\$84,000</b>	<b>\$84,000</b>	<b>\$84,000</b>	<b>\$420,000</b>

## 5.0 Public & Stakeholder Engagement

The CZMA and MDMR place a strong emphasis on public participation and encourages the participation, coordination, and cooperation with and among appropriate local, state, federal, and regional groups to help carry out the goals of the CZMA. In keeping with the intent of the CZMA, the assessment and strategy is a public document. The MDMR provided multiple opportunities for key stakeholders and the public to be engaged in and help inform the development of the assessment and strategy, including review of this document.

Stakeholder and public engagement for the Section 309 Assessment and Strategy 2021-2025 included administering an online survey and will include publishing the draft 309 Assessment document online at the MDMR agency website for public comment.

### 5.1 Stakeholder Involvement

As part of the public and stakeholder engagement process, a Stakeholder Survey was administered to capture stakeholder and private citizen input relative to the priority ranking of the nine enhancement areas, challenges facing Mississippi's coastal resources, and opportunities for enhancing the MCP to more effectively address those challenges.

The survey consisted of six questions and was sent to 60 select stakeholders on December 3, 2019. The survey closed on December 13, 2019, with 18 responses. Of the 18 responses, 17 were complete and one was partially complete. Results are summarized below, and individual survey questions and responses are provided in Appendix A.

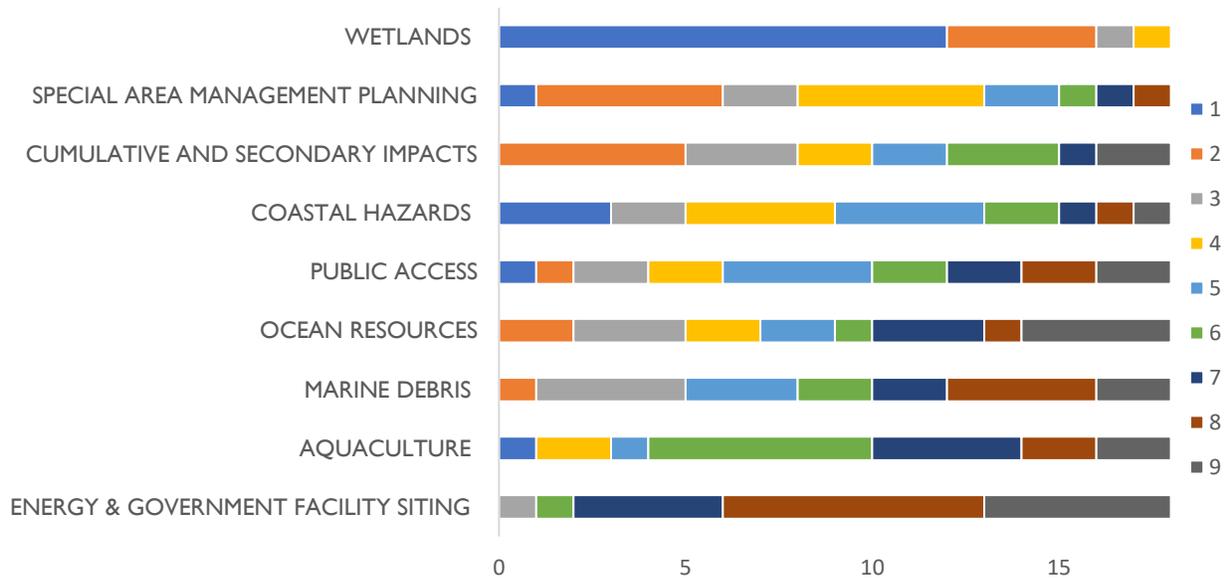
The MDMR found that the stakeholder survey responses closely aligned with the assessments and internal stakeholder process results and program expectations. This input was considered in the identification and development, and referenced in, the Phase II Assessments. Collectively, stakeholder responses highlighted the inherent connectivity of the nine enhancement areas, and priorities for program changes. As a result, the chosen strategy promotes program changes under at least two predominant enhancement areas to reflect this connectivity.

**Question 1: The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next five years. Please rank the following enhancement areas in order of priority (1 = highest priority to 9 = lowest priority):**

18 out of 18 respondents answered this question. The individual ranking scores from all respondents were averaged for an overall priority ranking score. A low ranking score indicates a higher priority, whereas a high ranking score indicates a lower priority. The following is the priority ranking of the nine enhancement areas:

Rank	Enhancement Area	Ranking Score
1	Wetlands	1.5
2	Special Area Management Planning	3.8
3	Cumulative and Secondary Impacts	4.4
4	Coastal Hazards	4.5
5	Public Access	5.4
6	Ocean Resources	5.7
7	Marine Debris	5.8
8	Aquaculture	6.2
9	Energy & Government Facility Siting	7.7

The chart below provides a breakdown of responses by rank on a scale from 1 to 9 (1 being highest priority) for each enhancement areas. Each color represents the ranking scale and the bar shows the number of respondents. For example, 12 respondents ranked the Wetlands enhancement area as highest priority.



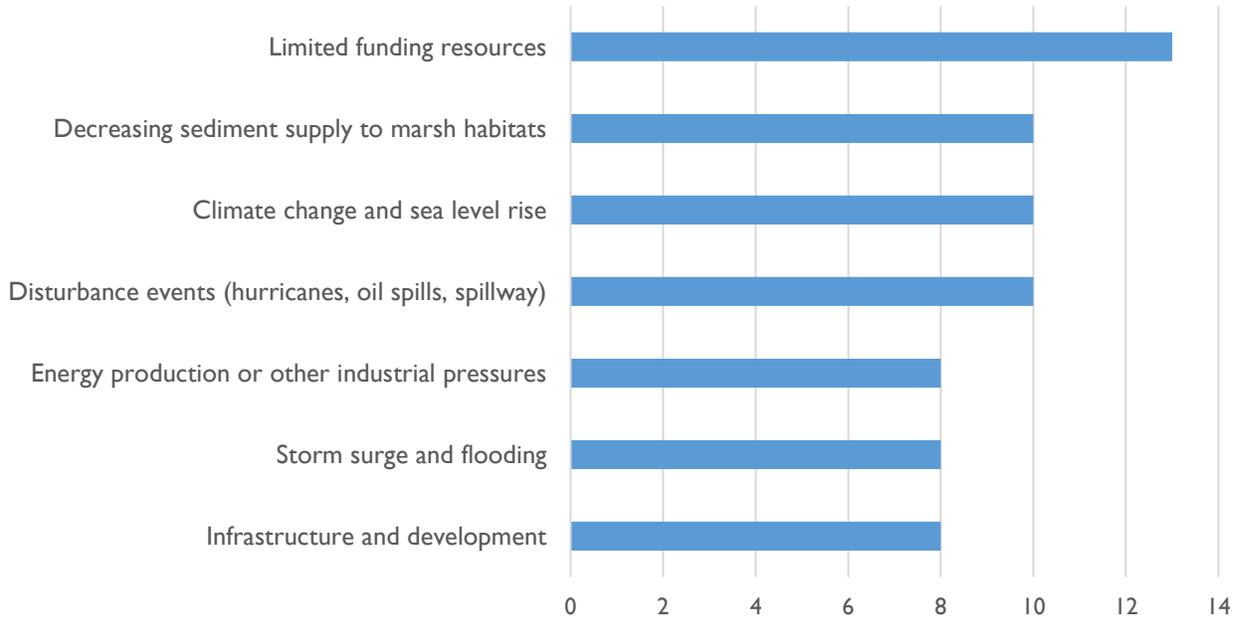
**Question 2: Please provide a brief explanation for your highest priority selection.**

17 out of 18 respondents answered this question. The general themes are summarized below.

- Wetlands are an invaluable resource that provides a variety of ecosystem services and need to be protected. Wetland protection should inform management practices that address other enhancement areas.
- Climate change impacts (e.g. sea level rise, extreme weather events, etc.) need to be addressed via assessment and management practices that encourage green infrastructure, buffer areas, and marsh migration.
- Natural resources should be available for public use with necessary limitations for environmental protection.

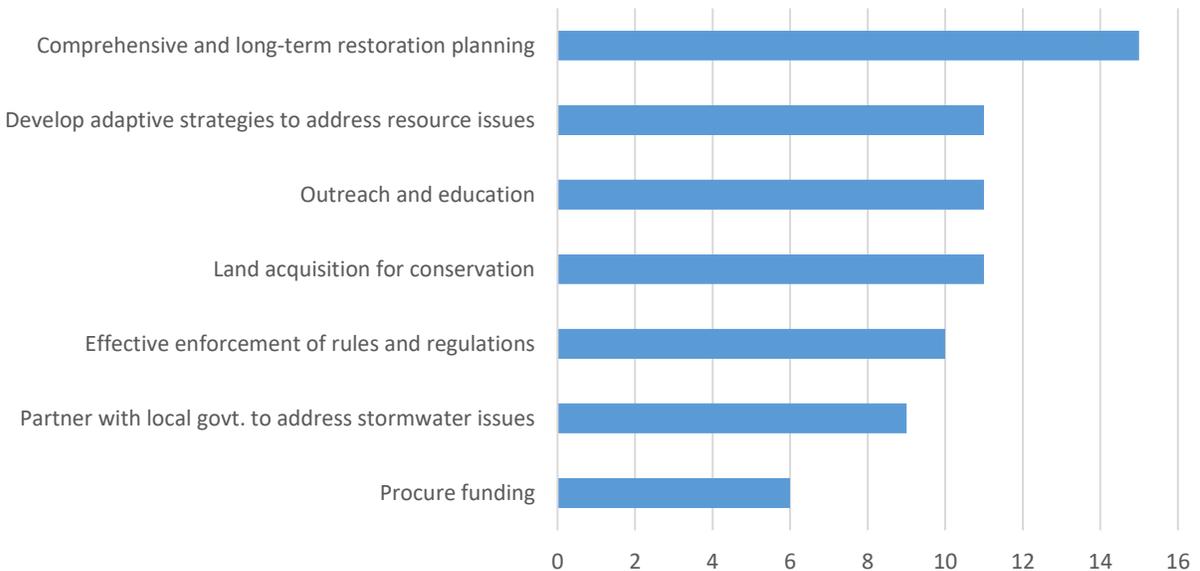
**Question 3: A similar survey was conducted in 2015 and public responses identified the following as the greatest challenges to Mississippi’s coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.**

18 out of 18 respondents answered this question and 3 respondents provided additional comments. The chart below summarizes the respondents’ feedback on the greatest challenges to Mississippi’s coastal resources. 16 respondents ranked limited funding resources are the greatest challenge.



**Question 4: A similar survey was conducted in 2015 and public responses identified the following as greatest opportunities for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.**

18 out of 18 respondents answered this question and 4 respondents provided additional comments. The chart below summarizes the respondents' feedback on the greatest opportunities for enhancement Mississippi's coastal management program. 15 respondents ranked comprehensive and long-term restoration planning as the greatest opportunity.



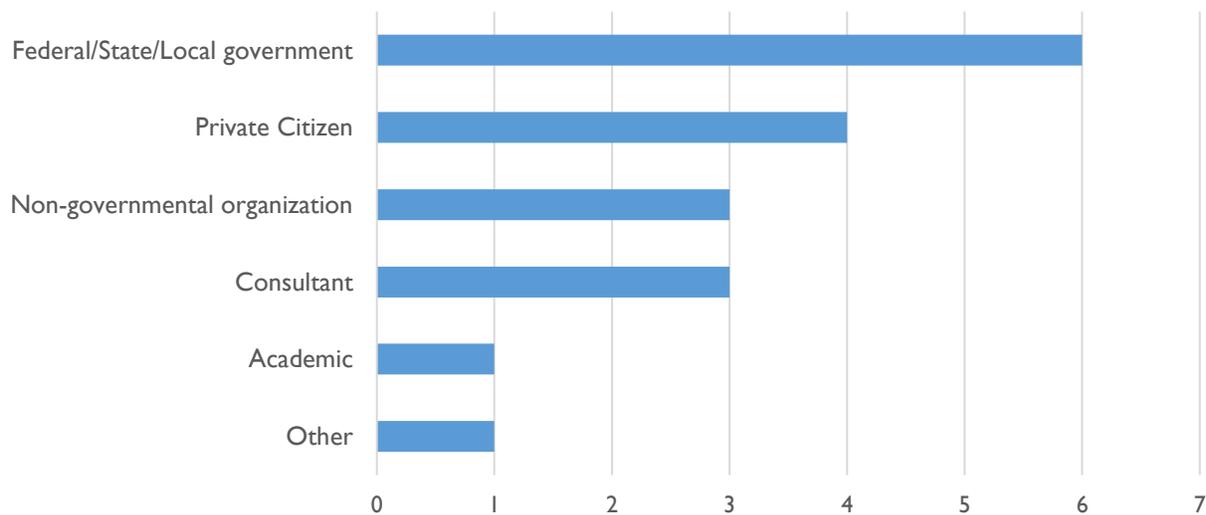
**Question 5: Please provide any additional comments or suggestions for the MDMR Coastal Management Program.**

5 out of 18 respondents answered this question. The general themes are summarized below.

- Living shorelines or better alternatives to hardened erosion control structures (i.e. bulkheads)
- Improved enforcement of permitting requirements or regulations
- Best management of existing conservation lands
- Eliminate menhaden fishery
- Implement inland/upstream programs to protect watershed and filtration system for the Gulf

**Question 6: Which of the following best describes your affiliation?**

18 out of 18 respondents answered this question. The respondents were asked to identify their affiliation to provide context to the survey response. The greatest number of respondents (6) identified as an individual from the Federal/State/Local government. There were three respondents from each category of non-government organization, private citizen, and consultant. There was one respondent from an academic organization and one that selected “other” and identified themselves as an active environmentalist.



# Appendix A: Stakeholder Survey Results



**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/12/2019 9:20 PM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	PUBLIC ACCESS(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)
3	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
4	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
5	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
6	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
7	OCEAN RESOURCES (Planning for the use of ocean resources)
8	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
9	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)

2 Please provide a brief explanation for your highest priority selection.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

Answer
<input type="checkbox"/> Infrastructure and development
<input type="checkbox"/> Climate change and sea level rise
<input checked="" type="checkbox"/> Decreasing sediment supply to marsh habitats
<input checked="" type="checkbox"/> Watershed and water quality impacts
<input checked="" type="checkbox"/> Storm surge and flooding
<input type="checkbox"/> Disturbance events (hurricanes, oil spills, spillway)
<input checked="" type="checkbox"/> Energy production or other industrial pressures
<input checked="" type="checkbox"/> Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

Answer
<input checked="" type="checkbox"/> Outreach and education
<input checked="" type="checkbox"/> Comprehensive and long-term restoration planning
<input type="checkbox"/> Develop adaptive strategies to address resource issues
<input type="checkbox"/> Procure funding
<input type="checkbox"/> Partnership with local governments to address stormwater issues
<input type="checkbox"/> Land acquisition for conservation
<input checked="" type="checkbox"/> Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
<input checked="" type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/12/2019 11:15 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
2	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
3	PUBLIC ACCESS(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)
4	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
5	OCEAN RESOURCES (Planning for the use of ocean resources)
6	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
7	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)
8	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
9	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)

2 Please provide a brief explanation for your highest priority selection.

Humans are part of the biosphere and protection of human life and mitigation of hazards should be our most important priority.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

Answer
<input type="checkbox"/> Infrastructure and development
<input type="checkbox"/> Climate change and sea level rise
<input type="checkbox"/> Decreasing sediment supply to marsh habitats
<input checked="" type="checkbox"/> Watershed and water quality impacts
<input type="checkbox"/> Storm surge and flooding
<input type="checkbox"/> Disturbance events (hurricanes, oil spills, spillway)
<input type="checkbox"/> Energy production or other industrial pressures
<input type="checkbox"/> Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

Answer
<input checked="" type="checkbox"/> Outreach and education
<input type="checkbox"/> Comprehensive and long-term restoration planning
<input checked="" type="checkbox"/> Develop adaptive strategies to address resource issues
<input type="checkbox"/> Procure funding
<input type="checkbox"/> Partnership with local governments to address stormwater issues
<input type="checkbox"/> Land acquisition for conservation
<input type="checkbox"/> Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

Focus more programs INLAND for forest landowners. Their property is the watershed and filtration system for the Gulf, yet they are excluded from consideration in most clean water and Gulf health equations.

6 Which of the following best describes your affiliation?

Answer	
<input type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input checked="" type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/12/2019 10:24 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
3	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
4	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
5	PUBLIC ACCESS(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)
6	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
7	OCEAN RESOURCES (Planning for the use of ocean resources)
8	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)
9	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)

2 Please provide a brief explanation for your highest priority selection.

My perception is that preservation and restoration of wetlands both effectively protects coastal environments from worst effects of storm hazards, and strengthens Gulf health by reducing introduction of pollutants. Thus it is foundational to all aims of the objectives listed.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

- Infrastructure and development
- Climate change and sea level rise
- Decreasing sediment supply to marsh habitats
- Watershed and water quality impacts
- Storm surge and flooding
- Disturbance events (hurricanes, oil spills, spillway)
- Energy production or other industrial pressures
- Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

**Answer**

- Outreach and education
- Comprehensive and long-term restoration planning
- Develop adaptive strategies to address resource issues
- Procure funding
- Partnership with local governments to address stormwater issues
- Land acquisition for conservation
- Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
<input checked="" type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/10/2019 8:51 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
3	OCEAN RESOURCES (Planning for the use of ocean resources)
4	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
5	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
6	PUBLIC ACCESS(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)
7	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)
8	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
9	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)

2 Please provide a brief explanation for your highest priority selection.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

- Infrastructure and development
- Climate change and sea level rise
  - Decreasing sediment supply to marsh habitats
- Watershed and water quality impacts
  - Storm surge and flooding
- Disturbance events (hurricanes, oil spills, spillway)
- Energy production or other industrial pressures
- Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

**Answer**

- Outreach and education
- Comprehensive and long-term restoration planning
- Develop adaptive strategies to address resource issues
- Procure funding
- Partnership with local governments to address stormwater issues
  - Land acquisition for conservation
- Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
<input type="checkbox"/>	Private citizen
<input checked="" type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/10/2019 6:57 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
3	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)
4	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
5	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
6	OCEAN RESOURCES (Planning for the use of ocean resources)
7	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
8	PUBLIC ACCESS(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)
9	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)

2 Please provide a brief explanation for your highest priority selection.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

<input type="checkbox"/>	Infrastructure and development
<input checked="" type="checkbox"/>	Climate change and sea level rise
<input type="checkbox"/>	Decreasing sediment supply to marsh habitats
<input checked="" type="checkbox"/>	Watershed and water quality impacts
<input type="checkbox"/>	Storm surge and flooding
<input checked="" type="checkbox"/>	Disturbance events (hurricanes, oil spills, spillway)
<input type="checkbox"/>	Energy production or other industrial pressures
<input checked="" type="checkbox"/>	Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

**Answer**

<input type="checkbox"/>	Outreach and education
<input checked="" type="checkbox"/>	Comprehensive and long-term restoration planning
<input checked="" type="checkbox"/>	Develop adaptive strategies to address resource issues
<input type="checkbox"/>	Procure funding
<input type="checkbox"/>	Partnership with local governments to address stormwater issues
<input type="checkbox"/>	Land acquisition for conservation
<input checked="" type="checkbox"/>	Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
<input checked="" type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/9/2019 1:52 PM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
3	OCEAN RESOURCES (Planning for the use of ocean resources)
4	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
5	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
6	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
7	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)
8	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
9	PUBLIC ACCESS(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)

2 Please provide a brief explanation for your highest priority selection.

Wetlands are the base nursery for our coastal fisheries and coastal landscape protection.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

<input type="checkbox"/>	Infrastructure and development
<input type="checkbox"/>	Climate change and sea level rise
<input type="checkbox"/>	Decreasing sediment supply to marsh habitats
<input checked="" type="checkbox"/>	Watershed and water quality impacts
<input type="checkbox"/>	Storm surge and flooding
<input checked="" type="checkbox"/>	Disturbance events (hurricanes, oil spills, spillway)
<input type="checkbox"/>	Energy production or other industrial pressures
<input checked="" type="checkbox"/>	Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

**Answer**

<input type="checkbox"/>	Outreach and education
<input checked="" type="checkbox"/>	Comprehensive and long-term restoration planning
<input checked="" type="checkbox"/>	Develop adaptive strategies to address resource issues
<input type="checkbox"/>	Procure funding
<input type="checkbox"/>	Partnership with local governments to address stormwater issues
<input checked="" type="checkbox"/>	Land acquisition for conservation
<input type="checkbox"/>	Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
<input type="checkbox"/>	Private citizen
<input checked="" type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/9/2019 8:06 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
3	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
4	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
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6	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
7	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
8	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)
9	OCEAN RESOURCES (Planning for the use of ocean resources)

2 Please provide a brief explanation for your highest priority selection.

--	--

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

<input type="checkbox"/>	Infrastructure and development
<input type="checkbox"/>	Climate change and sea level rise
<input checked="" type="checkbox"/>	Decreasing sediment supply to marsh habitats
<input type="checkbox"/>	Watershed and water quality impacts
<input type="checkbox"/>	Storm surge and flooding
<input type="checkbox"/>	Disturbance events (hurricanes, oil spills, spillway)
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**Answer**

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<input checked="" type="checkbox"/>	Comprehensive and long-term restoration planning
<input type="checkbox"/>	Develop adaptive strategies to address resource issues
<input type="checkbox"/>	Procure funding
<input type="checkbox"/>	Partnership with local governments to address stormwater issues
<input type="checkbox"/>	Land acquisition for conservation
<input type="checkbox"/>	Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

--	--

6 Which of the following best describes your affiliation?

Answer	
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<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input checked="" type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/5/2019 6:49 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	OCEAN RESOURCES (Planning for the use of ocean resources)
3	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
4	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
5	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
6	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
7	PUBLIC ACCESS(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)
8	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
9	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)

2 Please provide a brief explanation for your highest priority selection.

With sea level rise, coastal areas are going to have salt water incursion and fresh water will be at a premium. Wetlands are constantly being threatened by developers.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

- Infrastructure and development
- Climate change and sea level rise
- Decreasing sediment supply to marsh habitats
- Watershed and water quality impacts
- Storm surge and flooding
- Disturbance events (hurricanes, oil spills, spillway)
- Energy production or other industrial pressures
- Limited funding resources

**Comment:** Funds are not limited, they are just being used for stupid stuff like ball parks and aquariums. We have a chance to do some good, but it's not happening.

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

**Answer**

- Outreach and education
- Comprehensive and long-term restoration planning
- Develop adaptive strategies to address resource issues
- Procure funding
- Partnership with local governments to address stormwater issues
- Land acquisition for conservation
- Effective enforcement of rules and regulations

**Comment:** Again, the money is there but the politicians are applying it to businesses run by their cronies.

Stormwater is particularly weird. Philbilly's ridiculous "new" beach outflow tubes are no different than the old ones--they don't even have screens to keep out the flip-flops.

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

<input type="checkbox"/>	Get rid of the menhaden fishery. Let the bigger fish, mammals and birds have a fighting chance. And menhaden filter the water. Why MS allows taking menhaden when the entire East Coast (except for Chesapeake) has stopped it is a mystery. That company is not employing a lot of people and it's not terribly profitable.
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6 Which of the following best describes your affiliation?

Answer	
<input type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input checked="" type="checkbox"/>	Other: active environmentalist

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/4/2019 10:47 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
3	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
4	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
5	OCEAN RESOURCES (Planning for the use of ocean resources)
6	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
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8	PUBLIC ACCESS(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)
9	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)

2 Please provide a brief explanation for your highest priority selection.

Wetlands, particularly marshes, provide nursery habitat for many species that our economy relies upon. They also filter water before it gets into our waterways, aid in storm protection and sea level rise.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

- Infrastructure and development
- Climate change and sea level rise
- Decreasing sediment supply to marsh habitats
- Watershed and water quality impacts
- Storm surge and flooding
- Disturbance events (hurricanes, oil spills, spillway)
- Energy production or other industrial pressures
- Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

**Answer**

- Outreach and education
- Comprehensive and long-term restoration planning
- Develop adaptive strategies to address resource issues
- Procure funding
- Partnership with local governments to address stormwater issues
- Land acquisition for conservation
- Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
<input type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input checked="" type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 3:58 PM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
2	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
3	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
4	OCEAN RESOURCES (Planning for the use of ocean resources)
5	PUBLIC ACCESS(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)
6	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
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9	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)

2 Please provide a brief explanation for your highest priority selection.

habitat degradation and loss are areas i believe we need to be most focused on. we need to improve what few areas of forested maritime habitat and wetlands we have left

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

<input type="checkbox"/>	Infrastructure and development
<input type="checkbox"/>	Climate change and sea level rise
<input checked="" type="checkbox"/>	Decreasing sediment supply to marsh habitats
<input checked="" type="checkbox"/>	Watershed and water quality impacts
<input type="checkbox"/>	Storm surge and flooding
<input type="checkbox"/>	Disturbance events (hurricanes, oil spills, spillway)
<input type="checkbox"/>	Energy production or other industrial pressures
<input checked="" type="checkbox"/>	Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

**Answer**

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<input type="checkbox"/>	Develop adaptive strategies to address resource issues
<input type="checkbox"/>	Procure funding
<input type="checkbox"/>	Partnership with local governments to address stormwater issues
<input checked="" type="checkbox"/>	Land acquisition for conservation
<input type="checkbox"/>	Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

burn and manage more. you guys are falling behind in your managed lands

6 Which of the following best describes your affiliation?

**Answer**

Private citizen

Non-government organization

Academic

Consultant

Federal/ State/ Local government

Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 1:58 PM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
2	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
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4	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
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6	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
7	OCEAN RESOURCES (Planning for the use of ocean resources)
8	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
9	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)

2 Please provide a brief explanation for your highest priority selection.

Restoring and active management of coastal resources and natural infrastructure (e.g. dunes, beaches, shorelines, buffer zones, wildlife habitats).

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

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<input checked="" type="checkbox"/>	Climate change and sea level rise
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<input checked="" type="checkbox"/>	Watershed and water quality impacts
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<input checked="" type="checkbox"/>	Disturbance events (hurricanes, oil spills, spillway)
<input type="checkbox"/>	Energy production or other industrial pressures
<input checked="" type="checkbox"/>	Limited funding resources

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<input checked="" type="checkbox"/>	Comprehensive and long-term restoration planning
<input type="checkbox"/>	Develop adaptive strategies to address resource issues
<input checked="" type="checkbox"/>	Procure funding
<input checked="" type="checkbox"/>	Partnership with local governments to address stormwater issues
<input type="checkbox"/>	Land acquisition for conservation
<input type="checkbox"/>	Effective enforcement of rules and regulations

**Comment:** Shovel ready projects, where planning transitions into actual on the ground projects in 2020.

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
<input type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input checked="" type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 9:38 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
2	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
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7	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
8	OCEAN RESOURCES (Planning for the use of ocean resources)
9	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)

2 Please provide a brief explanation for your highest priority selection.

The Mississippi Coast is second only to Bangladesh for vulnerability to hurricane storm surge. In the world. We need to adhere to Mississippi Coastal Program provisions that prohibit non-water dependent activities in waterfront areas. We need to use our authority under CZMA Federal Consistency to prevent hazards created from Bonnet Carre and oil

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

- Infrastructure and development
- Climate change and sea level rise
- Decreasing sediment supply to marsh habitats
- Watershed and water quality impacts
- Storm surge and flooding
- Disturbance events (hurricanes, oil spills, spillway)
- Energy production or other industrial pressures
- Limited funding resources

**Comment:** Need physical markers/reminders of storm surge -- so much greater than sea level rise for the MS coast. Need to continue with investment in municipal water treatment throughout all coastal watersheds to help water quality. Need to fund the Coastal Preserves program's management activities. Why permit LNG export terminals now when just a few years ago they were building LNG import facilities - area needs policy work.

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

**Answer**

- Outreach and education
- Comprehensive and long-term restoration planning
- Develop adaptive strategies to address resource issues
- Procure funding
- Partnership with local governments to address stormwater issues
- Land acquisition for conservation
- Effective enforcement of rules and regulations

**Comment:** MPC requires riprap before vertical bulkhead - but politically difficult to implement. Incentives to build living shorelines and reduce the miles of vertical

bulkheads - teach virtues of alternatives and the vertical bulkheads become archaic.  
Definitely need to fix municipal sewage lines and keep separate from stormwater.  
Don't like the "artful" drains south of Hwy 90 - why not make natural marsh drains to filter runoff - will require more litter prevention education.

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5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

Staff needs all of our support in enforcing the MPC terms re: riprap vs. vertical bulkheads. More focus on limiting waterfronts to water dependent activities.
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6 Which of the following best describes your affiliation?

Answer	
<input type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input checked="" type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 9:05 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

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8	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
9	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)

2 Please provide a brief explanation for your highest priority selection.

Wetland protection, restoration, and enhancement is important for the continuation of having coastal preserves in face of a number of the challenges and other priorities listed above.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

<b>Answer</b>	
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4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

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<input type="checkbox"/>	Develop adaptive strategies to address resource issues
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5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
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<input checked="" type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 9:04 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
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8	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)
9	OCEAN RESOURCES (Planning for the use of ocean resources)

2 Please provide a brief explanation for your highest priority selection.

There is a need to address the impacts of climate change, particularly sea level rise and extreme weather events. Focus needs to shift from just coastal erosion (ie living shorelines, etc) to a broader scope of assessment and management that encourages use of green infrastructure, buffer areas, and marsh migration.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

Answer
<input checked="" type="checkbox"/> Infrastructure and development
<input checked="" type="checkbox"/> Climate change and sea level rise
<input type="checkbox"/> Decreasing sediment supply to marsh habitats
<input checked="" type="checkbox"/> Watershed and water quality impacts
<input type="checkbox"/> Storm surge and flooding
<input type="checkbox"/> Disturbance events (hurricanes, oil spills, spillway)
<input type="checkbox"/> Energy production or other industrial pressures
<input type="checkbox"/> Limited funding resources

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

Answer
<input type="checkbox"/> Outreach and education
<input type="checkbox"/> Comprehensive and long-term restoration planning
<input checked="" type="checkbox"/> Develop adaptive strategies to address resource issues
<input type="checkbox"/> Procure funding
<input checked="" type="checkbox"/> Partnership with local governments to address stormwater issues
<input checked="" type="checkbox"/> Land acquisition for conservation
<input type="checkbox"/> Effective enforcement of rules and regulations

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

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6 Which of the following best describes your affiliation?

Answer	
<input type="checkbox"/>	Private citizen
<input type="checkbox"/>	Non-government organization
<input type="checkbox"/>	Academic
<input checked="" type="checkbox"/>	Consultant
<input type="checkbox"/>	Federal/ State/ Local government
<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 9:03 AM CST

1 The Mississippi's Coastal Management Program is seeking your opinion on program priorities for the next 5 years. Please rank the following enhancement areas in order of priority:

**Ranking(1 =HIGHEST PRIORITY)**

1	PUBLIC ACCESS(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)
2	WETLANDS (Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands)
3	SPECIAL AREA MANAGEMENT PLANNING (Preparing and implementing special area management plans for important coastal areas)
4	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
5	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
6	CUMULATIVE AND SECONDARY IMPACTS (Development and adoption of procedures to assess, consider, and control cumulative and secondary impacts of coastal growth and development)
7	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)
8	ENERGY & GOVERNMENT FACILITY SITING (Adoption of procedures and enforceable policies to help facilitate the siting of energy facilities and Government facilities)
9	OCEAN RESOURCES (Planning for the use of ocean resources)

2 Please provide a brief explanation for your highest priority selection.

With necessary limits for environmental protection, the natural resources of the State should be available for use by the citizens.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

Answer
<input type="checkbox"/> Infrastructure and development
<input type="checkbox"/> Climate change and sea level rise
<input checked="" type="checkbox"/> Decreasing sediment supply to marsh habitats
<input checked="" type="checkbox"/> Watershed and water quality impacts
<input type="checkbox"/> Storm surge and flooding
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**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 9:03 AM CST

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2	OCEAN RESOURCES (Planning for the use of ocean resources)
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7	COASTAL HAZARDS (Prevent or reduce threats to life and property by eliminating development and redevelopment in high-hazard areas, managing development in other hazard areas, and managing the effects of sea level rise)
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9	PUBLIC ACCESS(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)

2 Please provide a brief explanation for your highest priority selection.

Most of the other "priorities" (development, energy siting, public access, aquaculture, in addition to sea level rise) threaten ecologically valuable wetlands. If we put wetland first, that will help shape how we approach other problems.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

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<input type="checkbox"/>	Other

**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 9:00 AM CST

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8	AQUACULTURE (Evaluate and facilitate the siting of public and private aquaculture facilities and implement strategic plans for marine aquaculture)
9	OCEAN RESOURCES (Planning for the use of ocean resources)

2 Please provide a brief explanation for your highest priority selection.

Wetlands are our key recreational and commercial asset. We've already lost or compromised a significant portion of our wetlands and we need to strongly protect what's left. We have to stop the incremental destruction or degradation of wetlands by questionable construction and development. Every little bit counts.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

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- Decreasing sediment supply to marsh habitats
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- Storm surge and flooding
- Disturbance events (hurricanes, oil spills, spillway)
- Energy production or other industrial pressures
- Limited funding resources

**Comment:** Storm water runoff and discharges from sewage treatment facilities during rain events must be addressed. We continue to ignore the fact that raw sewage is discharged into our waters with every heavy rain.

4 A similar survey was conducted in 2015 and public responses identified the following as greatest OPPORTUNITIES for enhancing Mississippi's coastal management program to more effectively address those challenges. From the list below, please select the areas that continue to be an opportunity in your opinion. Specify in the comment box any opportunity not captured below.

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- Outreach and education
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- Develop adaptive strategies to address resource issues
- Procure funding
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- Land acquisition for conservation
- Effective enforcement of rules and regulations

**Comment:** Simply enforcing existing regulations on development would be a major step. We should aggressively continue purchasing wetlands and wild areas to protect them. I'm disappointed that so much of the RESTORE funding is being used for things like airport construction.

5 Please provide any additional comments or suggestions for the MDMR Coastal Management Program below:

<p>Reduce the use of hardened shoreline measures such as bulkheads. Recognize the value of natural shorelines and act to protect them. Crack down on people who ignore permitting requirements and compromise coastal resources. Too often, people knowingly violate regulations and get just a slap on the wrist.</p>
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<input type="checkbox"/>	Consultant
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**MDMR Section 309 Assessment and Strategy**

Response for: Anonymous

Completed: 12/3/2019 8:52 AM CST

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9	MARINE DEBRIS (Reducing marine debris entering the nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris)

2 Please provide a brief explanation for your highest priority selection.

Environments are changing and aquaculture is one method by which resources can be generated.

3 A similar survey was conducted in 2015 and public responses identified the following as the greatest CHALLENGES to Mississippi's coastal resources. From the list below, please select the areas that continue to be a challenge in your opinion. Specify in the comment box any challenges not captured below.

**Answer**

<input type="checkbox"/>	Infrastructure and development
<input type="checkbox"/>	Climate change and sea level rise
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<input checked="" type="checkbox"/>	Watershed and water quality impacts
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