

South Carolina Coastal Zone Management Program Section 309 Assessment and Strategy 2011-2015

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Office of Ocean and Coastal Resource Management



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Introduction

The South Carolina Coastal Management Program

The South Carolina Department of Health and Environmental Control Office of Ocean and Coastal Resource Management (DHEC-OCRM) is responsible for implementing the approved South Carolina Coastal Zone Management Program (SC CZMP) through the authorities specified in the Coastal Tidelands and Wetlands Act (SC Code ann. §48-39-110 *et. seq.*), the DHEC Coastal Division Regulations and the enforceable policies of the South Carolina Coastal Program Document. DHEC-OCRM has direct permitting authority for proposed activities within the critical areas of the coast, which are defined as coastal waters, tidelands, beach/dune systems and beaches (R. 30-1.D). DHEC-OCRM also has broader management authority over activities within the eight-county Coastal Zone through consistency certification of both federal and state permits, federal licenses, and requests for funding assistance.

In order to effectively implement the SC CZMP, DHEC-OCRM develops strategies and annual workplans under Section 309 of the Coastal Zone Management Act that will address priority issues within the coastal zone and result in changes to relevant program policies. As described below, DHEC-OCRM is currently implementing initiatives under the Coastal Hazards and Ocean Resources enhancement areas and will continue these efforts under the upcoming strategy.

Public Input for Assessment and Strategy Development

DHEC-OCRM sought input from both internal staff and external stakeholders for the assessment of each enhancement area and for strategy development for the upcoming five year period. DHEC-OCRM developed an online survey through Survey Monkey that was disseminated to staff and to key stakeholders from other state and federal agencies, academia, non-governmental organizations and the development and real estate community. DHEC-OCRM received approximately thirty responses to the online survey, a copy of which is attached as Appendix A to this report. Based on the feedback from the survey and technical information gathered from federal, state, and local governments and non-governmental partners, DHEC-OCRM developed a draft assessment and five-year strategy, which was provided to NOAA OCRM for comments on June 30, 2010. DHEC-OCRM received comments from NOAA on September 3, 2010 and incorporated recommended changes into a final draft document. The final draft was placed on public notice for a 30-day period. DHEC-OCRM did not receive any public comments during the public notice period, and the final draft was provided to NOAA OCRM for approval on November 3, 2010.

Summary of Past Section 309 Efforts

As described below, SC CZMP efforts under the 2006-2010 Section 309 Strategy resulted in the following key accomplishments:

- The Shoreline Change Advisory Committee (SCAC) evaluated existing policies related to beachfront and estuarine shoreline management and made recommendations for future policy changes in a final report entitled “Adapting to Shoreline Change: A Foundation for Improved Management and Planning in South Carolina.” These recommendations were presented to the DHEC Board in July 2010, and the Board voted to proceed with the formation of a Blue Ribbon Committee on Shoreline Management to evaluate the SCAC findings and provide specific recommendations for statutory and regulatory changes.
- The Ocean Planning Work Group (OPWG), comprised of representatives from SC DNR, NOAA Coastal Services Center, the South Carolina Sea Grant Consortium, the South Carolina Energy Office, the University of South Carolina, the College of Charleston and Coastal Carolina University, is finalizing an Ocean Management Report that will focus on ocean governance, ocean mapping and monitoring, energy issues, sand issues, and offshore aquaculture issues in South Carolina.
- DHEC-OCRM developed new state guidelines for the development, review, and approval of local comprehensive beach management plans, and improved technical assistance to beachfront communities. During this period, DHEC-OCRM coordinated with the City of Isle of Palms on the development of the City’s first local comprehensive beach management plan, and worked with the Town of Hilton Head Island to update their existing plan. Three other communities-the Town of Edisto Beach, the City of North Myrtle Beach and the City of Myrtle Beach-are in the process of updating their beach plans under these new guidelines.

Coastal Hazards: Building Coastal Communities’ Resiliency to Shoreline Change

Over the past two decades, the Beachfront Management Act and associated regulations have significantly influenced shoreline development and limited hard stabilization of the beachfront in South Carolina. However, complex regulatory, economic, environmental and legal issues, together with environmental and socioeconomic data limitations, often result in differing perspectives on future shoreline changes and the state’s ability to adapt to those changes. DHEC-OCRM utilized Section 309 funding to re-evaluate these issues in light of twenty years of experience and an improved understanding of shoreline dynamics in our state.

In 2007, DHEC-OCRM formed an external “Shoreline Change Advisory Committee” to: 1) identify continuing information and research needs; and 2) evaluate existing policies and policy alternatives. The Committee was made up of 23 experts from academia, government, and the private sector, and was charged with examining science and policy issues related to both beachfront and estuarine shoreline management in South Carolina to help the state address future

social, economic, and natural resource impacts of shoreline changes that may result from continued (or accelerated) rise in sea level, development encroachment into the beach/dune system, shoreline alterations, and coastal storms.

Identifying information and research needs

In order to supplement the Shoreline Change Initiative and support the work of the Committee, DHEC-OCRM supported the following activities:

- Tidewater Environmental Services was contracted to develop a “State of Knowledge” report on shoreline changes in South Carolina, past and future, to supplement the Shoreline Change Initiative. The report provided an organized literature review of over 650 studies of shoreline geomorphology, models, and vulnerabilities in South Carolina’s coastal zone, and serves as an excellent resource for DHEC-OCRM, other researchers, and academics interested in shoreline changes along our coast. Tidewater also provided an Access database/bibliography for all cited literature, which aided DHEC-OCRM staff in searching for specific studies. This database is available to any interested agencies or stakeholders.
- The Strom Thurmond Institute of Government and Public Affairs at Clemson University conducted a shoreline retreat policy analysis to examine social and economic issues related to the South Carolina Beachfront Management Act’s 40-year “shoreline retreat” policy across undeveloped, residential, and commercial shorelines. The researchers conducted extensive literature reviews, investigated shoreline retreat policies and programs in other states, and conducted interviews with key stakeholders and state and local officials to assess varying perspectives, challenges, and opportunities for implementing a shoreline retreat policy in South Carolina.
- DHEC-OCRM expanded its technical capabilities by compiling data layers relevant to shoreline change studies. Data layers included a coastal island and marsh upland delineation, estuarine marsh delineation, tidal creek delineation, beachfront feature delineation, dock and bridge delineation, high resolution aerial imagery, and baseline and setback line delineations.
- DHEC-OCRM partnered with the South Carolina Department of Natural Resources (SC DNR) to conduct a meta-analysis of beach renourishment monitoring reports and studies. This project addressed three primary goals: 1) to create a library of beach nourishment reports and publications, digitized in pdf format when not limited by copyright restrictions, and an accompanying online annotated bibliography; 2) to create a digital database of all data collected as part of past beach nourishment projects and associated environmental impact assessments in South Carolina; and 3) to conduct a meta-analysis of data within the database as a basis for recommendations to improve monitoring and management strategies associated with beach nourishment projects in South Carolina. The final report includes recommendations on standardizing monitoring, data analysis, and reporting for future renourishment projects, and on future research needs.

Evaluating existing policies and policy alternatives

The Advisory Committee reaffirmed the overarching policies of the SC Beachfront Management Act and encouraged the state to renew its commitment to the challenging but important principles advanced by the Legislature over twenty years ago. The state's retreat policy does not provide for the immediate, active relocation of structures from the beach/dune system; however, by gradually eliminating erosion control structures, it ensures abandonment of property to allow the natural, inland migration of a healthy beach/dune system, if or when renourishment becomes unsustainable for a specific area or community. In the meantime, the Committee urged state and local governments to enact policies to ensure that sufficient space is provided for the natural migration of the beach/dune system and to minimize the related risks to private and public resources.

The Committee identified four broad goals for improved shoreline management in South Carolina. The first three goals are focused on beachfront management. Goal 1, "Minimize Future Risks to Beachfront Communities," proposes solutions to limit future exposure to losses of infrastructure, properties, and economic and natural resources that rely on a healthy beach/dune system; and to reduce the need for erosion control solutions. Goal 2, "Improve the Planning of Beach Renourishment Projects," presents opportunities for improved coordination and decision-making with regard to renourishment projects and other "soft" solutions to beach erosion. Goal 3, "Limit the Use of Hard Stabilization Structures," reinforces existing prohibitions on seawalls and revetments, and recommends improved guidance for the siting, design, and use of groins, breakwaters, and temporary structures. Goal 4, "Enhance the Management of Sheltered Coastlines" presents parallel issues facing estuarine and sheltered coastlines of South Carolina, and policy and management recommendations for addressing those issues.

For each goal, several policy and management recommendations were developed to suggest potential improvements to current practices. For each general recommendation, the Committee was asked to clearly articulate the rationale (problems being addressed), existing policies and programs that are relevant to the issue, new specific policy recommendations, new planning and management actions, general costs and benefits, uncertainties, and examples from other coastal states. The 13 recommendations described in the final report call for actions by a number of state agencies and local governments, as well as potential actions by the SC General Assembly.

Public Input and Outreach

DHEC-OCRM conducted three regional "Community Leaders Discussion Forums" to both inform community leaders of the Committee's work and to solicit input for the development of policy options and recommendations. Mayors, council members, municipal staff, property owners associations, NGOs, and business organizations participated in and/or co-sponsored each event. The Shoreline Change Advisory Committee convened for a two-day workshop to review public comments and outcomes from the discussion forums and to review draft policy recommendations. A draft of the Committee's report, entitled "Adapting to Shoreline Change: A Foundation for Improved Management and Planning in South Carolina," was released for public comments on November 6, 2009. The report was disseminated broadly, and to date has been downloaded from DHEC servers approximately 36,000 times. Several news stories from major SC media outlets accompanied the release of the draft report. DHEC-OCRM received

approximately 30 formal comment letters that were incorporated into the final report. The Shoreline Change Advisory Committee was convened for a final meeting in Charleston on December 11, 2009 to evaluate initial public comments and approve a process and format for Committee responses to comments in the final report. DHEC-OCRM also developed a detailed outreach plan and is currently conducting a series of internal staff workshops to formulate DHEC-OCRM's official response to each of the recommendations from the Committee.

DHEC Board Approval and Blue Ribbon Committee

DHEC-OCRM presented the findings of the Shoreline Change Advisory Committee to the DHEC Board in July 2010. At the direction of the Board, DHEC-OCRM issued a call for nominations for a Blue Ribbon Committee on Shoreline Management in late July 2010 with nominations received in August. The DHEC Board appointed the Blue Ribbon Committee members at the Board meeting held on October 14, 2010. Currently, the Board is considering the Committee's charge and meeting schedule, and formal meetings of the Committee are expected to begin in spring 2011. The Blue Ribbon Committee will consider the policy and management recommendations from the report and will provide recommended actions to the DHEC Board for DHEC-related policy and/or regulatory changes. Any statutory or regulatory changes that affect the enforceable policies of the SC CZMP will be submitted to NOAA as a program change following adoption at the state level per the Administrative Procedures Act (APA) process.

Ocean Resource Planning

DHEC-OCRM established an Ocean Planning Work Group (OPWG) to develop a non-regulatory Ocean Report for South Carolina that is intended for use by various agencies and organizations for planning guidance and to prioritize future ocean research efforts. The OPWG includes representatives from SC DNR, NOAA Coastal Services Center, the South Carolina Sea Grant Consortium, the South Carolina Energy Office, the University of South Carolina, the College of Charleston and Coastal Carolina University. To address an initial information need identified by the OPWG, DHEC-OCRM generated a survey to assess public perceptions of ocean resources (full survey results can be found at the following link):

http://www.scdhec.gov/environment/ocrm/science/docs/OPWG/reports/Ocean_Survey_2008.pdf

In summary, this random telephone survey of over 800 South Carolina residents found that:

“The state's residents believe there are a number of specific important uses of the ocean, including fishing, recreation, transportation, marine life, energy, the environment, and business or commerce. South Carolinians also identify a large number of important ocean resources... Food or seafood was the most frequently identified ocean resource. A large number of issues or conflicts related to ocean resources were identified by the public, including pollution, overfishing, conservation, preservation of the shoreline, erosion, energy, water quality, and marine life. Respondents think that there is some urgency in addressing the issues they identify, with 40.1% believing it was extremely urgent and another 31.5% feeling it was very urgent to address the issue.”

DHEC-OCRM also hosted a series of public workshops to inform the OPWG on specific ocean issues. The first, an Ocean Mapping Workshop, resulted in the identification of the three highest priority mapping needs for South Carolina's ocean waters: 1) high resolution seafloor mapping to include bathymetric data, substrate point-sampling, and sub-seafloor geology (priority regions include nearshore areas out to 5 miles, dredge disposal areas, Marine Protected Areas, and inlets); 2) marine habitat classification, mapping and modeling; and 3) inventory and characterization of sand resources. Subsequent meetings of the OPWG focused on regional sediment management, which resulted in a public workshop co-hosted by the U.S. Army Corps of Engineers to discuss sand resource management as it relates to future ocean policy and planning development.

Ocean energy issues were an ongoing focus of the Work Group. To follow on the work and findings of two state legislative committees (Offshore Natural Gas and Offshore Wind Energy Development committees), as well as the ongoing work of the SC Offshore Wind Regulatory Task Force, DHEC-OCRM facilitated a workshop to discuss the potential *onshore* implications of ocean energy development in South Carolina. Panel discussions focused on four key topics: facilities needed for construction or transport of energy infrastructure, onshore uses and potential conflicts, methods to engage citizens and stakeholders, and recommendations to the OPWG on coastal and marine spatial planning.

The Draft Ocean Management Report is in development and will focus on ocean governance, ocean mapping and monitoring, energy issues, sand issues, and aquaculture issues. Outcomes and recommendations from each of the topic-oriented OPWG public workshops will conclude each chapter in the report. Once the final Ocean Management Report is complete, DHEC-OCRM will develop a response strategy to address the specific recommendations in the Report. The response strategy will include immediate and long-term approaches for program improvements under each recommendation. In addition, staff will present the Plan to the DHEC Board and will continue to meet with partner agencies and stakeholders to expand outreach of the ocean report.

Local Government Assistance with Beachfront Management Plans

Under this initiative, DHEC-OCRM focused efforts on improving the process by which the state reviews and approves local comprehensive beach management plans, and ways to improve technical assistance to beachfront communities. Staff developed new standard operating procedures for the state review and approval of local plans in three phases: Initial Coordination, Preliminary Review, and State Review and Approval. Each phase includes a series of individual steps designed to ensure that the minimum requirements established by the State Beachfront Management Act in section 48-39-350 have been met.

DHEC-OCRM also developed new guidelines to assist local governments with developing and updating their local beachfront plans. The previous guidelines dated back to 1989. DHEC-OCRM uses the local beach management plans as part of administrative and program management decisions and as guidance for disaster response. For this reason, DHEC-OCRM prepared a suggested format for all local comprehensive beach management plans that ensures consistency and uniformity in their layout. However, each local plan may be unique in the beach

management issues and enforceable policies. The new guidelines are typically distributed to local government contacts during the initial coordination meeting. DHEC-OCRM also produced a supplemental FAQ sheet that provides beachfront leaders with quick access to information regarding local plans.

During this period, DHEC-OCRM coordinated with the City of Isle of Palms on the development of the City's first local comprehensive beach management plan. A copy of the official state approved plan and its appendices can be found at the following link:

http://www.iop.net/client_resources/state%20approved%20lcbmp%20iop%20040708.pdf

DHEC-OCRM also coordinated with the Town of Hilton Head Island to update their existing local comprehensive beach management plan. Staff determined that the locally adopted plan would have to be modified in order to qualify for state approval. The local version of the plan included areas of the town in their total count of "full and complete" public beach access that were outside of the beachfront jurisdictional area. DHEC-OCRM staff held meetings with town staff to discuss this discrepancy and, as a result, modified the document to note that these areas were outside of the state defined jurisdictional beachfront. Final state approval of the town's plan was given in June with the official implementation date of July 1, 2009.

Staff completed the initial coordination meeting and preliminary review of the local beach plan for the Town of Pawley's Island. Staff provided extensive technical assistance to the Town, providing shoreline change information, structural inventories and beach access information. DHEC-OCRM is awaiting submission of a final draft for state review and approval to complete the revision process. DHEC-OCRM continues to work with the Town of Edisto Beach, the City of North Myrtle Beach and the City of Myrtle Beach to update their respective plans. The Town of Edisto Beach is on course to be completed by June 2011, and the City of North Myrtle Beach and the City of Myrtle Beach by December 2011.

Enhancement Area Assessment

(CM) State-reported Contextual Measure from the CZMA Performance Measurement System.
For more detailed guidance on these measures see the CZMAPMS Guidance Document.

Wetlands

Section 309 Enhancement Objective

Protection, restoration, or enhancement of the existing coastal wetlands base, or creation of new coastal wetlands

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Please indicate the extent, status, and trends of wetlands in the coastal zone using the following table:

Wetlands type	Estimated historic extent (acres)	Current extent (acres)	Trends in acres lost since 2006 (Net acres gained & lost)	Acres gained through voluntary mechanisms since 2006*	Acres gained through mitigation since 2006	Year and source(s) of Data**
Tidal (Great Lakes) vegetated	371,309 (includes all estuarine wetlands)	372,615 (includes all estuarine wetlands)	Gain of 1,306	40,284 (includes estuarine emergent and scrub/shrub wetlands protected through conservation easements not associated with permitting actions)	13,159 acres onsite; 696 acres offsite***	Historic Extent: C-CAP (1996); Current Extent: C-CAP (2006); Mitigation EFIS (2009); Voluntary acreage: SC Protected Lands Network
Tidal (Great Lakes) non-vegetated	26,211 (unconsolidated shore)	21,174 (unconsolidated shore)	Loss of 5,037	146 (unconsolidated shore)		Historic Extent: C-CAP (1996); Current Extent: C-CAP (2006); Voluntary acreage: SC Protected Lands Network
Non-tidal/freshwater	3,935,167 (includes all palustrine wetlands)	3,836,529 (includes all palustrine wetlands)	Loss of 98,638	129,816 (includes all palustrine wetlands protected through conservation easements not associated with permitting actions)		Historic Extent: C-CAP (1996); Current Extent: C-CAP (2006); Voluntary acreage: SC Protected Lands Network

*Acreage includes all properties under voluntary, private protection within the Coastal Zone based on data made available by the SC Protected Lands Network. This data is compiled by several non-governmental organizations engaged in land protection efforts; however, protected date information is not complete for the entire dataset, so these figures reflect all protected acres for each wetland type.

**The Environmental Facility Information System (EFIS) is the permitting database currently utilized by DHEC-OCRM to track all Critical Area, Stormwater Certification and Consistency activities occurring in the eight county Coastal Zone.

***Mitigation acreage totals are the result of permitted impacts to both jurisdictional and non-jurisdictional wetlands.

2. If information is not available to fill in the above table, provide a qualitative description of information requested, including wetlands status and trends, based on the best available information.

DHEC-OCRM calculated the wetland acreage gained through voluntary mechanisms by extracting 2006 C-CAP data using 2009 private protected property data as the clip feature. Non-governmental organizations provide DHEC-OCRM with updated shapefiles containing properties protected through easements or other voluntary mechanisms, such as deed restrictions. 2006 C-CAP data is the most current land cover data available to perform this analysis; however, C-CAP provides a regional analysis of land cover types and changes and may not provide sufficient detail to capture wetland features at the parcel level. For that reason, the acreage totals listed above are estimates.

3. Provide a brief explanation for trends.

A comparison of the 1996 and 2006 C-CAP data shows a significant loss in palustrine wetlands, most notably freshwater forested wetlands. This trend has continued since the last assessment, as suitable upland sites become scarcer for residential and commercial development. Developed property, varying from low to high intensity, has increased by 67,366 acres over the same ten year period. Estuarine wetlands have shown an increase during the same time period, although it is not known if this apparent increase is a product of the methodology used to assess wetland extent and change over time.

4. Identify ongoing or planned efforts to develop monitoring programs or quantitative measures for this enhancement area.

DHEC-OCRM continues to utilize and improve EFIS for internal tracking of permit-related impacts to jurisdictional and non-jurisdictional wetlands, as well as associated mitigation activities. DHEC currently monitors wetland restoration activities that are part of required mitigation. For example, if a permit requires the restoration of wetland hydrology or native plant species, then the applicant would be required to monitor the success of these activities. Currently, the state does not require water quality monitoring for indications of wetland health,

nor does the state engage in ecosystem level monitoring. Through partnering agencies and non-governmental organizations, DHEC-OCRM is able to routinely update GIS data layers of wetlands protected through voluntary mechanisms, such as easements and deed restrictions.

5. Use the following table to characterize direct and indirect threats to coastal wetlands, both natural and man-made. If necessary, additional narrative can be provided below to describe threats.

Type of threat	Severity of impacts (H,M,L)	Geographic scope of impacts (extensive or limited)	Irreversibility (H,M,L)
Development/Fill	H	Extensive	H
Alteration of hydrology	H	Extensive	H
Erosion	M	Extensive	H
Pollution	M	Limited	L
Channelization	M	Limited	M
Nuisance or exotic species	L	Limited	M
Freshwater input	L	Limited	H
Sea level rise/Great Lake level change	M	Extensive	H
Other (please specify)			

6. **(CM)** Indicate whether the Coastal Management Program (CMP) has a mapped inventory of the following habitat types in the coastal zone and the approximate time since it was developed or significantly updated

Habitat type	CMP has mapped inventory (Y or N)	Date completed or substantially updated
Tidal (Great Lakes) Wetlands	Yes	C-CAP (2006); Tidal Creek Inventory (2006-2008)
Beach and Dune	Yes	C-CAP (2006); Tidal Creek Inventory (2006-2008); Structural Inventory
Nearshore	Yes	C-CAP (2006); Tidal Creek Inventory (2006-2008); Coastal Erosion Study
Other (please specify)		

7. **(CM)** Use the table below to report information related coastal habitat restoration and protection. The purpose of this contextual measure is to describe trends in the restoration and protection of coastal habitat conducted by the State using non-CZM funds or non Coastal and Estuarine Land Conservation Program (CELCP) funds. If data is not available to report for

this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

Contextual measure	Cumulative acres for 2004-2010
Number of acres of coastal habitat restored using non-CZM or non-Coastal and Estuarine Land Conservation Program (CELCP) funds	2,670 acres of beachfront restored using state-appropriated renourishment funding; 39 sites restored through SC Oyster Restoration and Enhancement Program (SCORE) totaling 0.65 acres; 2 wetland restoration projects conducted at ACE Basin and Santee National Wildlife Refuges through ARRA funding
Number of acres of coastal habitat protected through acquisition or easement using non-CZM or non-CELCP funds	112,640.43 acres (Source: SC Protected Lands Network; SC Conservation Bank)

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the wetland management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Wetland regulatory program implementation, policies, and standards	Y-Certification of permits; Critical Area Permitting	N
Wetland protection policies and standards	Y-Policies within the SC Coastal Program Document	N
Wetland assessment methodologies (health, function, extent)	Y-Tidal Creek Inventory (extent), SCECAP(tidal creek health)	N
Wetland restoration or enhancement programs	Y-CELCP; Activities required as part of mitigation	N
Wetland policies related to public infrastructure funding	Y-Consistency determinations	N
Wetland mitigation programs and policies	Y-Permitting and Certifications	N
Wetland creation programs and policies	N	N
Wetland acquisition programs	Y-CELCP; DNR Managed Lands; SC Protected Lands	N

	Network (Private)	
Wetland mapping, GIS, and tracking systems	Y-EFIS; GIS digital submittal of project boundaries, as-built surveys for docks; C-CAP	N
Special Area Management Plans	Y	N
Wetland research and monitoring	Y-Monitoring of wetland restoration activities as part of required mitigation	N
Wetland education and outreach	Y	N
Other (please specify)		

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
- Characterize significant changes since the last assessment;
 - Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - Characterize the outcomes and effectiveness of the changes.
3. **(CM)** Indicate whether the CMP has a habitat restoration plan for the following coastal habitats and the approximate time since the plan was developed or significantly updated.

Habitat type	CMP has a restoration plan (Y or N)	Date completed or substantially updated
Tidal (Great Lake) Wetlands	N	
Beach and Dune	N	
Nearshore	N	
Other (please specify)		

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the Coastal Management Program and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Select type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H, M, L)
Marsh elevations, topography, geographic coverage, sediment deposition	Data	H

rates, shoreline alterations		
Education and outreach for regulated community regarding wetland management	Communication and Outreach	H
Wetland delineation training for staff to improve evaluation of individual projects and their potential impacts to larger systems	Training and staff capacity	H

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High X

Medium

Low

Briefly explain the level of priority given for this enhancement area.

Based upon feedback from both DHEC-OCRM staff and external stakeholders, wetlands protection and enhancement is a priority for the Coastal Program. Concerns persist given the lack of strong regulatory authority over isolated, freshwater wetlands and the continued requests to impact both jurisdictional and non-jurisdictional wetlands for development and related infrastructure.

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

Yes

No X

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

DHEC-OCRM utilizes the policies of the SC Coastal Management Program when evaluating proposed impacts to isolated wetlands; however, attempts to establish broader regulatory authority at the state level have been unsuccessful. DHEC-OCRM will continue to protect isolated wetlands through permit certifications and non-regulatory mechanisms, including increased public awareness, improved staff training and continued monitoring and compliance efforts. Several of the data needs identified above either are or will be met through ongoing partnerships. For example, DHEC-OCRM is partnering with the University of South Carolina to assess marsh elevations as part of an ongoing NOAA Climate Program Office, Sectoral Applications Research Program grant. DHEC-OCRM is also currently partnering with the SC Department of Natural Resources Geological Survey to inventory and analyze changes along estuarine shorelines. Policy development for estuarine shoreline alterations will be addressed as part of the Coastal Hazards strategy. Improved education and outreach on wetland management will be accomplished by leveraging existing extension

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efforts, such as the SC Coastal Information Network and DHEC-OCRM's web-based information. Finally, training for wetland permitting and certification staff will be allocated under Section 306 of the CZMA cooperative agreements to improve staff capacity.

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

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Characterize the level of risk in the coastal zone from the following coastal hazards:

(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*)

Type of hazard	General level of risk (H,M,L)	Geographic Scope of Risk (Coast-wide, Sub-region)
Flooding	H	Coast-wide
Coastal storms, including associated storm surge	H	Coast-wide
Geological hazards (e.g., tsunamis, earthquakes)	M	Coast-wide
Shoreline erosion (including bluff and dune erosion)	H	Coast-wide
Sea level rise and other climate change impacts	H	Coast-wide
Great Lake level change and other climate change impacts	L	Coast-wide
Land subsidence	M	Coast-wide
Other (please specify)		

2. For hazards identified as a high level of risk, please explain why it is considered a high level risk. For example, has a risk assessment been conducted, either through the State or Territory Hazard Mitigation Plan or elsewhere?

The South Carolina Emergency Management Division has developed a State Hazard Mitigation Plan that includes a hazard analysis and vulnerability assessment (http://www.scemd.org/Plans/miti_plan.html), including analysis and estimated losses associated with flooding, hurricanes and coastal storms, coastal erosion and other hazards. The State Plan also integrates local hazard mitigation plans as listed in Question 5.

3. If the level of risk or state of knowledge of risk for any of these hazards has changed since the last assessment, please explain.

Several studies of the potential impacts of sea level rise have been undertaken during this 5-year period by outside organizations and researchers, but none have provided a comprehensive analysis of the implications for the South Carolina coast. The SC Emergency Management Division recently partnered with the University of South Carolina to generate basic sea level rise scenario maps, but these maps were not produced using high resolution topography data and have not yet been used within HAZUS (c) software to quantify risks to properties and critical infrastructure. DHEC-OCRM is currently partnering with these institutions to take the “next steps” in conducting a baseline analysis of sea level rise implications for the coastal counties, as described below (and under a separate grant award from the NOAA Climate Program Office).

4. Identify any ongoing or planned efforts to develop quantitative measures of risk for these hazards.

DHEC-OCRM has historically partnered with Coastal Carolina University to monitor shoreline erosion rates on an annual basis and more recently funded a study to develop long-term erosion rates for beachfront areas using historical shoreline positions dating back to 1850. These erosion rates were used by DHEC-OCRM staff for the 10-year revision of beachfront baseline and setback line positions, in accordance with §48-39-280(C) of the South Carolina Beachfront Management Act (S.C. Code Ann. §48-39-250 et seq.). The statute requires the average erosion rate to be based on the best available scientific and historical data. Relatively recent shoreline alterations such as renourishment projects and erosion control structures have temporarily reduced the perceived threats of chronic erosion and storm damage, but these threats still exist. DHEC-OCRM considers longer-term datasets to be the most scientifically valid method of calculating erosion rates and representative of long-term, underlying erosion rates and hazards. DHEC-OCRM is also currently partnering with the South Carolina Department of Natural Resources to complete an estuarine shorelines study, which will result in the compilation and analysis of historical estuarine shoreline positions.

5. **(CM)** Use the table below to identify the number of communities in the coastal zone that have a mapped inventory of areas affected by the following coastal hazards. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

Type of hazard	Number of communities that have a mapped inventory	Date completed or substantially updated
Flooding	8 Coastal Zone Counties- Beaufort, Berkeley, Charleston, Colleton, Dorchester, Georgetown, Horry and Jasper/48 Local Governments within these 8 counties	2004-2006

Storm surge	8 Counties/48 Local Governments (Same as above)	2004-2006
Geological hazards (including Earthquakes, tsunamis)	8 Counties/48 Local Governments (Same as above)	2004-2006
Shoreline erosion (including bluff and dune erosion)	24 Beachfront Communities within the 8 Coastal Zone Counties listed above	2008-2009
Sea level rise	5 Counties/1 Local Government- Jasper, Colleton, Beaufort, Georgetown, and Horry Counties and the City of Charleston, respectively	2006; ongoing
Great lake level fluctuation	N/A	
Land subsidence	0	
Other (please specify)		

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Building setbacks/ restrictions	Y	N
Methodologies for determining setbacks	Y	N
Repair/rebuilding restrictions	Y	N
Restriction of hard shoreline protection structures	Y	N
Promotion of alternative shoreline stabilization methodologies	Y	Y-SCAC-Recommendation 12
Renovation of shoreline protection structures	Y	N
Beach/dune protection (other than setbacks)	Y	N
Permit compliance	Y	N
Sediment management plans	N	N
Repetitive flood loss policies, (e.g., relocation, buyouts)	N	N
Local hazards mitigation planning	Y	N

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Local post-disaster redevelopment plans	N	N
Real estate sales disclosure requirements	Y	N
Restrictions on publicly funded infrastructure	Y	Y-SCAC-Recommendation 3
Climate change planning and adaptation strategies	Y	Y-Under development through NOAA SARP Grant(newsletter)
Special Area Management Plans	Y	N
Hazards research and monitoring	Y	N
Hazards education and outreach	Y	N
Other (please specify)		

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
- Characterize significant changes since the last assessment;
 - Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - Characterize the outcomes and effectiveness of the changes.

Promotion of alternative shoreline stabilization methodologies:

- The Shoreline Change Advisory Committee (SCAC) determined that current regulations and permitting procedures for estuarine shorelines were not adequate to protect the state's salt marsh-tidal creek ecosystems. The Committee recommended strengthened regulations related to estuarine bulkheads and investments in developing guidance and criteria for alternative erosion control structures. Alternatives to traditional bulkheads and rip-rap include such techniques as marsh plantings, intertidal oyster reef restoration, and offshore sills. The Committee recommended a series of pilot projects to assess the use of alternative methodologies across different ecological conditions. Based upon the results of these on-the-ground projects, DHEC-OCRM would then consider modifications to shoreline regulations and permitting guidelines to incorporate alternative shoreline methodologies into state policy and management.
- The Shoreline Change Initiative is a Section 309-funded effort under the current Strategy.
- DHEC-OCRM staff are currently conducting a thorough review of policies and regulations related to the SCAC recommendations.

Restrictions on publicly funded infrastructure:

- The SCAC recommended that public subsidies along coastal shorelines be reevaluated to reduce or eliminate those that may promote further development in vulnerable areas

and/or those that may be inconsistent with the policies of the South Carolina Beachfront Management Act. Specifically, the Committee recommended legislation to clarify state policies regarding public subsidies in high-hazard areas. These areas could incorporate existing CBRS units or other types of designations. Subsidies may include transportation funds, water/sewer extensions, Community Development Block Grants, tax incentives, and the state wind insurance pool.

- b) The Shoreline Change Initiative is a Section 309-funded effort under the current Strategy.
- c) DHEC-OCRM staff are currently conducting a thorough review of policies and regulations related to the SCAC recommendations.

Climate change planning and adaptation strategies:

- a) DHEC-OCRM is currently serving as the lead investigator on a multi-institution project funded by the NOAA Climate Program Office to explore climate adaptation guidance for coastal communities in South Carolina. Project investigators from Clemson University, the University of South Carolina, Coastal Carolina University, and the South Carolina Sea Grant Consortium will research the potential physical, social, and economic impacts of sea-level rise, coastal inundation, and storm surges on coastal communities. The partners have assembled a southeastern regional advisory panel of experts on climate change adaptation to help inform the study, which will culminate in an adaptation guidebook designed for local and state governments in early 2011.
 - b) The Guidance for South Carolina on Near-Term Coastal Adaptation Priorities grant was funded through NOAA's Climate Program Office under the FY2009 Sector Applications and Research Program (SARP).
 - c) DHEC-OCRM, Clemson, and USC co-PIs are collaborating with the South Carolina Emergency Management Division (SCEMD) to improve social and economic data inputs for use in vulnerability assessments through FEMA's HAZUS software. The co-PIs are also working closely with various county and state officials to obtain the most recent LiDAR and parcel data for this analysis. In addition, DHEC-OCRM has initiated work on a coastal adaptation guidebook for South Carolina.
3. **(CM)** Use the appropriate table below to report the number of communities in the coastal zone that use setbacks, buffers, or land use policies to direct development away from areas vulnerable to coastal hazards. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

For CMPs that use numerically based setback or buffers to direct development away from hazardous areas report the following:

Contextual measure	Number of communities
Number of communities in the coastal zone required by state law or policy to implement setbacks, buffers, or other land use policies to direct develop away from	18 beachfront communities (13 incorporated municipalities; 5 coastal counties with

hazardous areas.	unincorporated beachfront) located in Horry, Georgetown, Charleston, Colleton and Beaufort Counties
Number of communities in the coastal zone that have setback, buffer, or other land use policies to direct develop away from hazardous areas that are more stringent than state mandated standards or that have policies where no state standards exist.	8 Local Governments-City of Beaufort, City of Charleston, Town of Bluffton, Town of Mount Pleasant, Edisto, Pawleys Island, City of Folly Beach and the Town of Hilton Head Island 4 County Governments with estuarine buffers-Beaufort, Charleston, Dorchester, and Georgetown Counties

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Stronger regulatory authorities and an update to the State Beachfront Management Plan are needed to implement existing beachfront policies and recommendations of Shoreline Change Advisory Committee.	Regulatory, Policy	H
Improved communication and outreach to municipalities, property owners and stakeholders about shoreline changes, management efforts, authorities and regulations	Communication and Outreach	H
Improved, more frequent data for shorelines (aerial imagery, LIDAR, and beach profile surveys)	Data	H

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High **X**
Medium
Low

Briefly explain the level of priority given for this enhancement area.

Based upon survey results from internal and external stakeholders, coastal hazards continue to be a high priority for the Coastal Program. The prioritization of this enhancement area is also supported by the recommendations and action items identified by the Shoreline Change Advisory Committee. Specifically, the Committee identified the need for stronger regulatory authorities and an update to the State Beachfront Management Plan to effectively implement existing beachfront policies.

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

Yes **X**
No

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

Based upon the recommendations of the Shoreline Change Advisory Committee and potential recommendations of the “Blue Ribbon Committee,” DHEC-OCRM staff will develop new and/or revised regulations and policies for shoreline management under the upcoming 5-year strategy for coastal hazards. DHEC-OCRM will also update the State Beachfront Management Plan and local comprehensive beach management plans in coordination with this effort.

The SC CZMP, with the support of the DHEC Board, encourages further evaluation of the recommendations from the Shoreline Change Advisory Committee through a Board-appointed Blue Ribbon Committee on Shoreline Management. Due to the potential for legislative changes to existing regulatory authorities, DHEC-OCRM developed a five-year strategy to allocate resources for the finalization of the Blue Ribbon Committee recommendations, the development of policy and/or regulatory changes, and the successful completion of the requirements of the APA process followed by program change requests to NOAA, if necessary.

Pending the final recommendations of the Blue Ribbon Committee, DHEC-OCRM staff may establish and facilitate a technical committee to examine nearshore beachfront alterations, including dredging, sandbags, groins, and breakwaters. The SCAC recommended establishing a technical committee to propose new criteria, guidelines, and recommendations for decision-making related to nearshore project proposals. The technical committee will not be a decision-making entity, but outcomes, guidelines, or recommendations will be considered as part of individual permit reviews. This effort would be part of the ongoing SC CMP implementation under Section 306 of the CZMA.

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

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Characterize threats and conflicts to creating and maintaining public access in the coastal zone:

Type of threat or conflict causing loss of access	Degree of threat (H,M,L)	Describe trends or provide other statistics to characterize the threat and impact on access	Type(s) of access affected
Private residential development (including conversion of public facilities to private)	M	Conversion of public trust areas to private facilities, for example public marinas converted to private docks serving condominiums	Public marinas; Boat ramps and other access sites for motorized and non-motorized vessels
Non-water dependent commercial/industrial uses of the waterfront (existing or conversion)	H	Conversion of working waterfronts to private, non-water dependent use. For example, conversion of commercial shrimping areas and ports to restaurants, storefronts and condominiums	Working waterfronts, sweetgrass harvesting
Erosion	M	Estuarine shoreline armoring	Access to shellfish harvesting areas and recreational fishing
Sea level rise/ Great Lake level change	M	Potential loss of public portion of beach and loss of estuarine shorelines	Federal and state beach parks; public trust lands
Natural disasters	M	Indications that private pier owners would not rebuild post-storm due to insurance issues	Privately operated piers on the beachfront
National security	L	Increased port security may restrict access to boat traffic	Navigable waters in proximity to port facilities
Encroachment on public land	M	Conflicts involving private property owners and off-street parking for day visitors to local beaches	Off-street parking access near public beach access sites
Other	N/A		

2. Are there new issues emerging in your state that are starting to affect public access or seem to have the potential to do so in the future?

Due to the ongoing state budget climate, funding is inconsistent for the Coastal Access Improvement Program, which provides funding to local governments to maintain and enhance public access sites. Similarly, consistent funding of the South Carolina Beach Restoration and Improvement Trust Fund (S.C. Code Ann. §48-40-10 et seq.) is necessary to ensure reliable funding for renourishment activities at priority beaches along South Carolina's coast in order to maintain public beach access. In the most recent Section 312 Evaluation in March 2008, NOAA suggested that the SC Coastal Program should assume a leadership role in working with the Governor's Office, coastal local governments, members of the General Assembly, chambers of commerce, and others to capitalize and fund the South Carolina Beach Restoration and Improvement Trust Fund.

The conversion of public trust areas for private facilities will continue to be an issue affecting public access and traditional working waterfronts. In recent years, publicly-accessible marinas have been converted for private slip ownership, resulting in anchorages and illegal moorings as well as increased strain on public boat landings and docks. Often, marinas are initially permitted to serve access needs associated with an upland waterfront property, meeting Critical Area permitting regulations and Section 10 /404 requirements for the Army Corps of Engineers. However, the upland property can become disassociated from the marina ownership and slips are then sold for private ownership serving condominium complexes or other development. Owners pay property taxes on the slips and often request modifications as though the slip was an individual, single family dock. DHEC-OCRM cannot permit these types of modifications, but must instead modify the original marina permit. In addition, private slip ownership is prohibitively expensive for the general public.

3. **(CM)** Use the table below to report the percent of the public that feels they have adequate access to the coast for recreation purposes, including the following. If data is not available to report for this contextual measure, please describe below actions the CMP is taking to develop a mechanism to collect the requested data.

Contextual measure	Survey data
Number of people that responded to a survey on recreational access	200 Non-residents 682 Residents (95% permanent residents, 5% seasonal residents)
Number of people surveyed that responded that public access to the coast for recreation is adequate or better.	Accessibility of beach: 93% Non-resident (189 Respondents) 86% Residents (561 Respondents)
What type of survey was conducted (i.e. phone, mail, personal interview, etc.)?	Mailed questionnaire
What was the geographic coverage of the survey?	Beaufort, Charleston and Horry Counties
In what year was the survey conducted?	2006 Non-resident; 2007 Resident

4. Briefly characterize the demand for coastal public access within the coastal zone, and the process for periodically assessing public demand.

DHEC-OCRM partnered with Clemson University during this assessment period to conduct a visitor (2006) and coastal resident (2008) needs assessment and economic analysis of South Carolina's beaches. The researchers determined: (1) the economic value placed on additional access sites; (2) the subsequent economic benefit from additional beach access; and (3) preferences for management options in light of the growing demand for public beach access. The results of the economic valuation indicate that residents and visitors are willing to pay for additional beach access points and parking and would receive an estimated \$125 million in economic benefits as a result (Oh, 2008). The assessment of beach access preferences found that "[v]isitors and residents were willing to support certain management actions such as the introduction of some management rules and regulations on beach use. However, residents were likely to be more interested in use restrictions than visitors and be more sensitive to crowding and noise level and high commercial development" (Oh, 2008).

5. Please use the table below to provide data on public access availability. If information is not available, provide a qualitative description based on the best available information. If data is not available to report on the contextual measures, please also describe actions the CMP is taking to develop a mechanism to collect the requested data.

SC CZMP Section 309 Assessment and Strategy

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
(CM) Number of acres in the coastal zone that are available for public (report both the total number of acres in the coastal zone and acres available for public access)	5,252,031-total acres in coastal zone 527,157-acres available for public use	+	Data derived in part from C-Cap, NOAA CSC satellite imagery and Landsat Thematic Mapper. ArcGIS data layers of property owned by the federal and state governments within the coastal zone.
(CM) Miles of shoreline available for public access (report both the total miles of shoreline and miles available for public access)	3063 miles of shoreline (2876 tidal, 187 Atlantic coastline); 114 beach shoreline miles	No Change	County GIS data layers
Number of State/County/Local parks and number of acres	9 State Parks-11,353 acres; 169 County/Local Parks-*4,959 acres	+	South Carolina State Parks; County/Local Governments
Number of public beach/shoreline access sites	650 beach access sites; 4 State Parks with total access	+	Local Comprehensive Beach Management Plans
Number of recreational boat (power or non-power) access sites	163 State/County Boat Landings	+	SC DNR; County/Local Governments
Number of designated scenic vistas or overlook points	0	0	
Number of State or locally designated perpendicular rights-of-way (i.e. street ends, easements)	411	+	Local Comprehensive Beach Management Plans
Number of fishing access points (i.e. piers, jetties)	36**	No Change	SC DNR; County/Local Governments
Number and miles of coastal trails/boardwalks	103 trails/865.26 miles	+	SC State Trails Program (www.sctrails.net)
Number of dune walkovers	396	+	Local Comprehensive Beach Management Plans

Types of public access	Current number(s)	Changes since last assessment (+/-)	Cite data source
Percent of access sites that are ADA compliant access	120 sites-18%	+	Local Comprehensive Beach Management Plans
Percent and total miles of public beaches with water quality monitoring and public closure notice programs	100% (114 miles of public beach)	No Change	SCDHEC Environmental Quality Control-Ocean Water Monitoring and Notification Program
Average number of beach mile days closed due to water quality concerns	0.05% of total beach days	Percentage of beach mile days unavailable for last assessment	2009 Semi-annual BEACH Report to EPA

*Acreage total is based on available data for county and local parks. Actual acreage is higher than reported. The total for county/local parks does not include tennis courts, municipal golf courses, community centers, and similar recreation complexes.

**Numerous small bridges are used as access sites for fishing; however, these are unpermitted access sites and, therefore, are not included in this total.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Statutory, regulatory, or legal system changes that affect public access	Y	N
Acquisition programs or policies	Y	N
Comprehensive access management planning (including GIS data or database)	Y	N
Operation and maintenance programs	Y	N

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Alternative funding sources or techniques	Y	N
Beach water quality monitoring and pollution source identification and remediation	Y	N
Public access within waterfront redevelopment programs	N	N
Public access education and outreach	Y	N
Other (please specify)		

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
 - a) Characterize significant changes since the last assessment;
 - b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - c) Characterize the outcomes and effectiveness of the changes.

3. Indicate if your state or territory has a printed public access guide or website. How current is the publication and/or how frequently is the website updated? Please list any regional or statewide public access guides or websites.
 - SCDHEC-OCRM published a South Carolina Public Beach Access Guide that is available on the SCDHEC website at http://www.scdhec.gov/environment/ocrm/pubs/docs/beach_access.pdf. This publication was published in October 2000.
 - The South Carolina Department of Natural Resources (SC DNR) Saltwater Recreational Fishing License Program provides a list of coastal boat ramps and coastal piers, docks and bridges for each coastal county (<http://saltwaterfishing.sc.gov>).
 - The SC DNR Managed Lands Division lists all Wildlife Management Areas and Heritage Trust Preserve locations by county with specific information on public access and permissible activities (<https://www.dnr.sc.gov/mlands/lookup/>).
 - The South Carolina Department of Parks, Recreation and Tourism website provides detailed information on all State Parks (<http://www.southcarolinaparks.com/>). Within this Department, the South Carolina Trails Program website specifically provides information on trails by county, type and usage (<http://www.sctrails.net/trails/>).

- The eight coastal counties and following local government websites also provide public access information for county and local parks, boat landings and beach access sites: the City of North Myrtle Beach, the City of Myrtle Beach, the Town of Surfside Beach, the City of Charleston, the City of Isle of Palms, the Town of Sullivan's Island, the Town of Mt. Pleasant, and the City of Folly Beach

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Updated public access guide and web-based ArcIMS interactive map of access sites	Communication and Outreach	H
Staff training on Public Trust Doctrine and property rights in South Carolina	Training and Staff Capacity	M
Policy analysis and planning for continued loss of nonbeachfront access, conversion of public trust areas for private facilities and loss of traditional waterfront uses	Policy and Regulatory	M

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High

Medium ☒

Low

Briefly explain the level of priority given for this enhancement area.

Internal staff and external stakeholders identified public access as a moderate priority for the Coastal Program given the ability to address access issues through existing local comprehensive beach management plans and future SAMPs, and recommended actions focusing on improved dissemination of public access information and improved staff capacity to handle public trust issues.

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

Yes

No **X**

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

DHEC-OCRM will continue to address any beachfront public access issues through coordination with local governments as part of the local comprehensive beach management plan updates, which is a component of the strategy for coastal hazards. DHEC-OCRM will provide competitive funding through the Coastal Access Improvement Program as state funds are available.

DHEC-OCRM will update the public access guide and web-based public access information as a specific outcome under the CZMA Section 306 Policy and Planning task. DHEC-OCRM will also seek opportunities for staff training on public trust doctrine and property rights and will utilize existing legal and policy and planning staff under Section 306 for policy analysis and planning efforts on public trust issues.

Marine Debris

Section 309 Enhancement Objective

Reducing marine debris entering the Nation's coastal and ocean environment by managing uses and activities that contribute to the entry of such debris

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below, characterize the significance of marine/Great Lakes debris and its impact on the coastal zone.

Source of marine debris	Extent of source (H,M,L)	Type of impact (aesthetic, resource damage, user conflicts, other)	Significant changes since last assessment (Y or N)
Land Based – Beach/Shore Litter	H	Aesthetic, Resource Damage	N
Land Based – Dumping	M	Aesthetic, Resource Damage	N
Land Based – Storm Drains and Runoff	H	Resource Damage	N
Land Based – Fishing Related (e.g. fishing line, gear)	M	Aesthetic, Resource Damage	N
Ocean Based – Fishing (Derelict Fishing Gear)	M	Aesthetic, Resource Damage	N
Ocean Based – Derelict Vessels	H	Aesthetic, Resource Damage, User Conflicts	N
Ocean Based – Vessel Based (cruise ship, cargo ship, general vessel)	L	Resource Damage	N
Hurricane/Storm	M	Aesthetic, Resource Damage	N
Other (please specify)			
Other (please specify)			

2. If information is not available to fill in the above table, provide a qualitative description of information requested, based on the best available information.
3. Provide a brief description of any significant changes in the above sources or emerging issues.

The South Carolina Coastal Program recognizes illegal moorings (and risky anchoring) as an emerging issue in coastal South Carolina. Illegal moorings are becoming more prevalent as boaters are being priced out of marinas and boat yards. Once a vessel is on a mooring or is anchored, it is typically maintained less often, which then leads to abandonment.

In addition, consistent, adequate funding for large debris removal efforts continues to be an issue for South Carolina. With more robust monitoring of abandoned vessels and other marine debris sources, the demand for removal efforts far exceeds available funding through current state and federal sources.

4. Do you use beach clean-up data? If so, how do you use this information?

DHEC-OCRM administers the Adopt-A-Beach program, which enlists volunteer organizations and businesses to remove land-based litter and debris from beachfront shorelines. Volunteer groups submit Beach Cleanup Reporting Forms to DHEC-OCRM to report the types and estimated amounts of debris removed, as well as any accounts of animals entangled in debris, for the adopted beach area. Data gathered from the Adopt-A-Beach program allows for better response and targeted placement of volunteer groups.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Employed by local governments (Y, N, Uncertain)	Significant changes since last assessment (Y or N)
Recycling requirements	Y	Y	N
Littering reduction programs	Y	Y	N
Wasteful packaging reduction programs	Y	Y	N
Fishing gear management programs	Y	N	Y
Marine debris concerns in harbor, port, marine, & waste management plans	Y	Y	Y

Management categories	Employed by state/territory (Y or N)	Employed by local governments (Y, N, Uncertain)	Significant changes since last assessment (Y or N)
Post-storm related debris programs or policies	Y	Y	N
Derelict vessel removal programs or policies	Y	Y	Y
Research and monitoring	Y	Y	N
Marine debris education & outreach	Y	Y	Y
Other (please specify)			

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
- Characterize significant changes since the last assessment;
 - Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - Characterize the outcomes and effectiveness of the changes.

Fishing gear management programs:

- During this assessment period, DHEC-OCRM received a grant award from the National Fish and Wildlife Foundation (NFWF) for a South Carolina Marine Debris Awareness Initiative. DHEC-OCRM partnered with the South Carolina Aquarium to develop a sea turtle excluder device program and partnered with SC DNR to expand the monofilament recycling program.
DHEC-OCRM is currently serving as a Co-PI with South Carolina Sea Grant Consortium on a NOAA National Marine Fisheries Service grant to address marine debris and abandoned vessels through community-based education and action. Part of the project scope includes identification of the extent of fishing gear debris and its impact on resources in coastal South Carolina.
- This is an extension of a multi-year marine debris and abandoned vessel removal effort by DHEC-OCRM, which has been funded by NOAA's Office of Response and Restoration.
- During the course of the NFWF award, the SC Aquarium installed over 1500 excluder devices on recreational crab traps and the monofilament recycling program was expanded to include additional recycling bins for recreational fishermen.

Marine debris concerns in harbor, port, marine, & waste management plans:

- During this assessment period, DHEC-OCRM finalized the Clean Marina Program Guidebook and accompanying self-assessment checklist and marina pledge. The

program is currently being implemented cooperatively between DHEC-OCRM, the South Carolina Marine Association, and the S.C. Department of Natural Resources.

- b) The Clean Marina Program is a CZM-funded effort under Section 310. Currently, CZM funds are utilized to support staff serving on the Clean Marina Team that is responsible for marina certification.
- c) Recently, Port Royal Marina in Port Royal, Lighthouse Marina in Chapin, the City Marina in Charleston, Osprey Marina and River Hills Marina on Lake Wylie all received recertification. Long Cove Marina in Hilton Head and the Charleston Boatyard in Cainhoy were awarded Clean Marina status for the first time. The Charleston Boatyard is the first boatyard in the state to receive the Clean Marina designation.

Derelict vessel removal programs or policies:

- a) During this assessment period, DHEC-OCRM completed Phases II and III of the Abandoned Vessel and Marine Debris Removal Project.
- b) DHEC-OCRM received funding from NOAA's Office of Response and Restoration to conduct vessel removal activities.
- c) Phase II resulted in the removal of twelve abandoned vessels in the Beaufort and Charleston areas. Phase III funding resulted in partnerships with four local governments: the Town of Hilton Head Island, the City of Georgetown, the City of Folly Beach and the Town of Mount Pleasant. These partnerships resulted in the following:
 - The Town of Hilton Head Island successfully removed nine shrimp trawlers from an old seafood dock on Skull Creek;
 - The City of Georgetown removed nine vessels in the vicinity of Goat Island;
 - The City of Folly Beach removed ten vessels from the Folly River area;
 - The Town of Mount Pleasant removed seven vessels from Shem Creek and Hobcaw Creek, resulting in 20.25 tons of debris.

Removal efforts also resulted in clarification of the authorities and roles of various resource agencies regarding abandoned vessel and marine debris removal. Agency jurisdiction is as follows:

- DHEC-OCRM has jurisdiction if the vessel or other marine debris is abandoned and the owner is known, only within the Critical Area
- SC DNR has jurisdiction if the vessel is illegally moored, does not have nighttime running lights or is not registered
- The US Coast Guard is involved when hazardous materials are present on the vessel
- The US Army Corps of Engineers is involved if the vessel is within a federally-maintained navigational channel
- FEMA would have jurisdiction only in the event of a federally-declared disaster shown to be the direct cause of the marine debris

Marine debris education and outreach:

- a) DHEC-OCRM supported a "Newspapers in Education" initiative in partnership with SC Sea Grant, The Centers for Ocean Sciences Education Excellence (COSEE) Southeast

(administered by SC Sea Grant), the Charleston Post and Courier and the College of Charleston. This initiative resulted in a special education section for the Charleston Post and Courier newspaper that focused on marine debris and its impacts on the environment. As part of this initiative, DHEC-OCRM also supported the development of an Educator's Guide to Marine Debris that was disseminated to educators within the southeastern coastal states (Texas to North Carolina).

Under the NFWF grant award referenced above, DHEC-OCRM partnered with the SC Aquarium to create permanent educational signs on marine debris impacts on native species. DHEC-OCRM also worked with vacation rental programs to develop and disseminate educational literature as part of a barrier islands grassroots outreach effort. Through the NFWF award, DHEC-OCRM developed and aired a public service announcement on marine debris over the Memorial Day and 4th of July holidays.

- b) Newspapers in Education initiative and the Educator's Guide were both CZM-funded projects under Section 306. The educational signs and public service announcement were non-CZM efforts funded by NFWF.
- c) The newspaper insert was disseminated to over 2000 teachers and 40,000 students in grades 6 through 8. In addition to the southeast regional states, the Educator's Guide was later translated and adapted for use in Thailand. The SC Aquarium has approximately 35,000 annual visitors and the educational signs are on permanent display. The public service announcement was estimated to have reached 92,000 listeners in Charleston, Myrtle Beach and Hilton Head Island over the Memorial Day and 4th of July holidays.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Evaluation of debris generated by port and harbor-related activities in state waters	Data	H
Evaluation of regulations and policies regarding moorings; address illegal moorings to avoid future abandoned vessel impacts	Regulatory and Policy	H – illegal moorings not addressed
Improved inventory of abandoned vessel locations and ownership; development of web-based reporting system for derelict vessels	Data, Communication and Outreach	H – ongoing as part of awarded grant

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High

Medium **X**

Low

Briefly explain the level of priority given for this enhancement area.

DHEC-OCRM classified marine debris as a medium priority for the upcoming 5-year strategy considering ongoing efforts to improve inventories and develop a web-based reporting system for abandoned vessels and other marine debris. DHEC-OCRM is an active participant in the Clean Marina Team and is working closely with SC DNR and SC Sea Grant Consortium on this issue.

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

Yes

No **X**

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

DHEC-OCRM will continue to seek funding assistance through NOAA's Restoration Center for marine debris removal project grants. DHEC-OCRM will utilize existing staff resources to continue marine debris education and outreach initiatives described above.

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.

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Identify areas in the coastal zone where rapid growth or changes in land use require improved management of cumulative and secondary impacts (CSI) since the last assessment. Provide the following information for each area:

Geographic area	Type of growth or change in land use	Rate of growth or change in land use (% change, average acres converted, H,M,L)	Types of CSI
Areas within the urban/rural interface, particularly along Highway 17 North between Mt. Pleasant and Georgetown	Conversion of forested habitats for residential and commercial development	Approximately 230 critical area permits and 179 stormwater permits processed for this area from 2006-2010; Rate of growth-High	Loss of priority habitats as identified in SC CELCP Plan; Non point source pollution; dock build out on tidal creeks
Beaufort County, particularly Bluffton and the May River	Residential development	*Beaufort County has experienced a 28% population increase from 2000 to 2009; From 2006-2010, DHEC-OCRM processed 1484 critical area permits, 932 certifications of state and federal permits, and 592 stormwater permits in Beaufort County	Non point source pollution; dock proliferation; shoreline armoring; habitat loss resulting from land conversion
Horry County	Residential and commercial development	*Horry County has experienced a 34% population increase from 2000 to 2009; From 2006-2010, DHEC-OCRM processed 325 critical area permits, 1748 certifications of state and federal permits, and 903 stormwater	Non point source pollution; shoreline armoring; habitat loss resulting from land conversion

		permits in Horry County	
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*Source: U.S. Census Bureau

- Identify sensitive resources in the coastal zone (e.g., wetlands, waterbodies, fish and wildlife habitats, critical habitat for threatened and endangered species) that require a greater degree of protection from the cumulative or secondary impacts of growth and development. If necessary, additional narrative can be provided below to describe threats.

Sensitive resources	CSI threats description	Level of threat (H,M,L)
Wetlands-both isolated and jurisdictional	Development-related threats such as excavation and fill; non-point source pollution; alterations to natural hydrology	H
Beach dune system	Current setback area restrictions do not apply to some sensitive beach/dune habitats; structures are still threatened in high erosion areas	H
Threatened and Endangered species habitat	Loss of critical habitat resulting from land use changes-wetland impacts, conversion of forested habitat (land clearing)	H
Estuarine shorelines	Armoring of non-beachfront shorelines; dock-build out; non-point source pollution	H

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

- For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management Categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Regulations	Y	N
Policies	Y	N
Guidance	Y	N

Management Plans	Y	N
Research, assessment, monitoring	Y	N
Mapping	Y	N
Education and Outreach	Y	N
Other (please specify)		

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
- Characterize significant changes since the last assessment;
 - Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - Characterize the outcomes and effectiveness of the changes.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Re-evaluation and clarification of policies relating to CSI and their application to consistency determinations	Policy	H
Refined policies, and complimentary regulatory changes if necessary, to assist with the implementation of regional plans	Policy and Regulatory	H
Quantify CSI with reliable data and analysis	Data and Training	H
Evaluate the cumulative impacts of estuarine erosion control structures to determine potential policy/regulatory changes	Policy and Regulatory	H
Specific design criteria for best management practices in the coastal zone to encourage use of alternatives to traditional pipe and pond systems	Policy and Regulatory	H

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High X
Medium
Low

Briefly explain the level of priority given for this enhancement area.

With continued coastal growth and development, issues related to cumulative impacts continue to be of high priority. In many cases, regional research, data, and/or plans are limited to support permit decisions based on cumulative impact assessments.

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

Yes
No X

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

Cumulative and secondary impacts will be addressed primarily through CZM-funded efforts under Section 306 as part of ongoing planning and technical assistance to local and regional governments.

A key policy need, as identified above, is the evaluation and clarification of policies relating to CSI as they apply to consistency determinations. Currently, Critical Area permitting regulations direct the Department to make permitting decisions in consideration of the extent to which long-range, cumulative effects of the project may result within the context of other possible development and the general character of the area (R.30-11, S.C. Code of Regulations). However, evaluation of cumulative effects is often difficult without a sub-regional scale assessment for the potential of CSI. For example, evaluation of the cumulative impacts from estuarine shoreline armoring is not easily accomplished without knowing the current extent of shoreline alterations in the area. Sub-regional scale assessments would help quantify CSI.

DHEC-OCRM will utilize existing resources, including the waterbody prioritization and dock build-out tools, to identify and generate assessments for targeted priority areas. These assessments would include inventories of existing docks and erosion control structures, potential dock build out scenarios, current water quality monitoring results and trends, and anticipated non-point source impacts. DHEC-OCRM will provide this information to local governments to help tailor policies and help set targets for cumulative and secondary impacts.

DHEC-OCRM is also currently partnering with the ACE Basin NERR on the development of a LID manual for coastal South Carolina. As part of this effort, DHEC-OCRM is focusing on

the need for technical guidelines and specific design criteria for best management practices utilized in the coastal zone. Development plans typically incorporate traditional stormwater pond systems to manage runoff, rather than low impact designs. Without specific design standards for LID, applicants are concerned that these alternatives will result in increased scrutiny and delays in permitting times. DHEC-OCRM will allocate resources for the Stormwater Permitting and Certification section under Section 306 to develop these LID technical guidelines and incorporate them into the current stormwater BMP manual.

Special Area Management Planning

Section 309 Enhancement Objective

Preparing and implementing special area management plans for important coastal areas

The Coastal Zone Management Act (CZMA) 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

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Identify geographic areas in the coastal zone subject to use conflicts that can be addressed through special area management plans (SAMP). Also include areas where SAMP have already been developed, but new issues or conflicts have developed that are not addressed through the current plan. If necessary, additional narrative can be provided below.

Geographic Area	Major conflicts	Is this an emerging or a long-standing conflict?
Working waterfronts under pressure of conversion	Traditional uses, such as shrimping, are in conflict with commercial/residential developments with water access (Shem Creek in Mt. Pleasant)	Long-standing
Withers Swash in Myrtle Beach	Effects from industrial discharge, bacterial contamination and loss of buffers conflict with efforts to develop a Withers Swash District Plan	Emerging
Areas at the suburban/rural interface, particularly the Mt. Pleasant/Awendaw	Land conversion has the potential to impact coastal habitats and water quality	Emerging (recent expansion of the Town of Mt. Pleasant)
Accreted Lands	Conflicts over ownership and	Emerging

	management authority, habitat conservation, storm mitigation and development	
Priority coastal watersheds	A number of SAMPs previously developed by the SC Coastal Program are no longer current, and many subregions of the coastal zone would benefit from tailored coastal policies and coordination with local governments.	Long-standing

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. Identify below any special management areas in the coastal zone for which a SAMP is under development or a SAMP has been completed or revised since the last Assessment:

SAMP title	Status (new, revised, or in progress)	Date approved or revised
No SAMPs were developed or underway during this Assessment period.		
May River Waterbody Management Plan(Similar to a SAMP in purpose, framework and implementation)	New	2008

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
 - a) Characterize significant changes since the last assessment (area covered, issues addressed and major partners);
 - b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - c) Characterize the outcomes and effectiveness of the changes.

May River Waterbody Management Plan

- a) In May 2007, DHEC-OCRM began coordinating with the Town of Bluffton on the development a Waterbody Management Plan for the May River. This collaborative pilot project was designed to aid the local government in determining the best ways to identify

and address the impact of competition on the waterbody. Using a rational planning model, the project team prepared an inventory of existing conditions, performed and documented an analysis based on goals and objectives, and prepared an Implementation Strategy recommending the best options to advance the goals and objectives. The Town appointed a Project Advisory Committee to oversee the work of the project team and to review and approve draft sections of the document prior to public release. The Project Advisory Committee also represented various interests and stakeholder groups in the plan development.

- b) DHEC-OCRM provided staff support through Section 306 funding as part of Coastal Planning efforts.
- c) Topics identified in the plan include boating management, water quality protection, public access, public outreach, and natural resource use and conservation. The Project Advisory Committee met six times between January and May 2008 to discuss the planning work prepared by the Project Team. A Public Information Meeting was held on February 20, 2008 to summarize the results of the analysis phase. A draft of the document was prepared and approved by the Project Advisory Committee and submitted to the Town in late May 2008 completing the agreement between the Town and DHEC-OCRM. The Town Planning Commission and the Town Council subsequently approved the plan for incorporation into the Town's Comprehensive Plan.

Analysis of Past SAMP Efforts

- a) Although DHEC-OCRM did not develop or conduct SAMPs during this Assessment period, staff researched and summarized all previous SAMP efforts to determine the most appropriate approach for revitalizing this important coastal management tool. Staff concluded that for future SAMP projects, DHEC-OCRM staff must use simple, standard protocols, methods and processes if SAMPs are to be properly utilized as a viable and effective regional coastal planning mechanism. For this to occur, SAMPs must be limited to a brief timeframe (2 to 5 years) and possess very specific objectives for discreet watersheds or defined areas:
 - that lack broad protections and recognition (similar to the Ashley River SAMP),
 - that have the potential for significant land use changes,
 - where streamlining of permitting processes for internal and external factors would improve predictability of state and local decisions,
 - that have potential for low impact development planning, or
 - that are experiencing significant use conflicts involving coastal resources.
- b) DHEC-OCRM staff funded under Section 306 of the CZMA performed the analysis of past SAMP efforts as part of the Policy and Planning task.
- c) DHEC-OCRM staff determined that future SAMPs should result in clear policy driven responses, allowing for complete and concise implementation of a future plan through the existing regulatory permitting schemes. The following basic policies will continue to govern the conduct and use of SAMPs:

- SAMPs may be requested by state, local, or federal entities, in addition to the Department's inherent authority to develop such plans;
- SAMPs are initiated upon approval by the Board;
- DHEC-OCRM may request cost-sharing from the requesting entity for the development of the SAMP;
- SAMPs should reflect a coordinated effort by all involved entities, particularly local governments, and recommended resolutions should reflect an effort by all involved entities;
- SAMPs must be developed with public notice and comment;
- For implementation, the Board must vote to approve the SAMP;
- If the implementation of the SAMP by DHEC-OCRM involves additional authorities, such authorities must be approved through the State Administrative Procedures Act process or through CZMP amendment or refinement, as appropriate.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy).

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Data and expertise to conduct SAMP related research; staff capacity to effectively conduct the SAMP process that results in enforceable policies utilized by DHEC-OCRM	Capacity, Data, Training	H
Streamline the SAMP process by developing simple, standard protocols, methods and processes, building on waterbody management planning efforts	Capacity, Policy	H

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High X
Medium
Low

Briefly explain the level of priority given for this enhancement area.

DHEC-OCRM staff believe that SAMPs could become a core program area for improved assessments of cumulative impacts, tailored policies, and improved interactions with local governments in the coastal zone. DHEC-OCRM has experienced strong success with several past SAMPs, such as the Ashley River SAMP, where resulting enforceable policies are applied to permitting decisions and have been re-affirmed by the courts when challenged. In light of the increasing complexity of permitting applications, especially when trying to assess CSI, DHEC-OCRM believes that SAMPs may be a key tool for developing targeted goals and specific policies for areas of the coastal zone in coordination with local governments.

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

Yes

No X

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

DHEC-OCRM has a strong interest in pursuing the development of Special Area Management Plans during this and future 5-year Strategy periods. However, given a number of other ongoing, high profile, and staff-intensive efforts that are currently underway, DHEC-OCRM has decided not to submit a SAMP strategy at this time. DHEC-OCRM staff will continue to meet with Beaufort County staff to discuss the potential for a new SAMP in that region, and will utilize existing resources available to the SC CMP (waterbody prioritization tool, dock build-out tool, and improved permit tracking) and tools offered by the NOAA Coastal Services Center (Impervious Surface Analysis Tool and the Habitat Priority Planner) to target and assess other priority areas.

Ocean/Great Lakes Resources

Section 309 Enhancement Objective

Planning for the use of ocean resources

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below characterize ocean and/or Great Lakes resources and uses of state concern, and specify existing and future threats or use conflicts.

Resource or use	Threat or use conflict	Degree of threat (H,M,L)	Anticipated threat or use conflict
Sand Mining	Sustainability of borrow sites and loss of biological integrity; use conflicts	M	Potential depletion of nearshore sand sources in some areas; potential for conflicts with fishing grounds and energy facility siting; downdrift erosion impacts
OCS Lease Blocks	Potential for oil spills; onshore land use changes for related facilities; siting nearshore and onshore infrastructure.	M	East Coast, including South Carolina, recently opened to 2012-2017 MMS lease plan
Alternate Energy Development	Siting of wind farms and onshore infrastructure; potential use conflicts	M – H likelihood, but M - L threats	Environmental impacts onshore (e.g. wetlands) and offshore (e.g. migratory birds); aesthetic impacts; potential conflicts with sand resources
Spoil Disposal	Need for beneficial reuse; lack of disposal locations	M	Need for beneficial reuse; lack of disposal locations
Vessel Discharge	Invasive species; impacts to water quality	M	Expansion of cruise ship industry and port facilities
Invasive Species	Giant acorn	M	Impacts to indigenous

	barnacle; Asian green mussel		species, as well as impacts to docks, piers and aids to navigation
Nutrient runoff/HAB	Hypoxic/anoxic events in the Long Bay region; impaired waters	M	Continuing development, especially in watersheds of tidal creek headwaters

2. Describe any changes in the resources or relative threat to the resources since the last assessment.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Comprehensive ocean/Great Lakes management plan or system of Marine Protected Areas	Y	N
Regional comprehensive ocean/Great Lakes management program	Y – but not “comprehensive”	Y-Ongoing involvement with emerging Governor’s South Atlantic Alliance
Regional sediment or dredge material management plan	N	N-Current recommendation of Shoreline Change Advisory Committee and being considered by SC Ocean Planning Work Group
Intra-governmental coordination mechanisms for Ocean/Great Lakes management	Y	Y-Ocean Planning Work Group; MMS Offshore Energy Task Force; SC State Regulatory Task Force
Single-purpose statutes related to ocean/Great Lakes resources	Y	N
Comprehensive ocean/Great Lakes management statute	N	N

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Ocean/Great Lakes resource mapping or information system	Y	N
Ocean habitat research, assessment, or monitoring programs	Y	Y-Long Bay Working Group Monitoring and Research
Public education and outreach efforts	Y	Y-State Public Survey to gauge public perceptions about ocean resources and issues.

2. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
 - a) Characterize significant changes since the last assessment;
 - b) Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - c) Characterize the outcomes and effectiveness of the changes.

Governors' South Atlantic Alliance

- a) In late 2009, the Governors' South Atlantic Alliance was established to increase regional collaboration among South Atlantic states, along with federal agency partners and other stakeholders, to sustain and enhance the coastal resources, economic opportunities, quality of life, and national defense missions of the respective states in the South Atlantic region. Over the past several decades, changes in economics, culture, environmental quality, resource use and growth have occurred in the Southeast at an accelerated pace, and the complexity of multiple and interdependent resource issues creates new challenges and a need for new strategies. The growing understanding of the relationship between humans and the marine environment is leading the Alliance to explore new ecosystem-based approaches to coastal management, marine resources planning, and coastal hazards. Additional information is available online: <http://www.southatlanticalliance.org/>
- b) The Governors' South Atlantic Alliance was formed in response to recommendations from the US Commission on Ocean Policy and the President's Ocean Action Plan.
- c) The Draft Action Plan of the Governors' South Atlantic Alliance has been completed, and focuses on a number of potential actions to promote healthy ecosystems, disaster resilient communities, clean coastal and ocean waters, and working waterfronts in the region.

SC Ocean Planning Work Group

- a) Under the current 309 Strategy, DHEC-OCRM organized an interagency Ocean Planning Work Group (OPWG) to explore emerging and expanding ocean activities and identify

related research and management issues. Over the past two years, the ten-member work group has hosted public workshops focused on ocean monitoring, ocean mapping, and opportunities for Regional Sediment Management in South Carolina. In the coming year, the OPWG will sponsor workshops exploring onshore implications of ocean energy development and ocean aquaculture. Outcomes and recommendations resulting from meetings of the OPWG and each workshop are being incorporated into the South Carolina Ocean Plan. Additional information on the Ocean Planning Work Group is available online: http://www.scdhec.gov/environment/ocrm/ocean_planning.htm

- b) The development of an Ocean Plan for South Carolina was identified as a strategy under the Ocean Resources enhancement area of the current 309 Strategy for the SC CZMP.
- c) The OPWG is finalizing draft chapters of the Ocean Plan, which will be completed under the FY2010 CZM award. DHEC-OCRM will develop a response strategy based on the specific recommendations of the final Plan. Based on recent meeting outcomes, the Ocean Plan is expected to recommend the future development of a Marine Spatial Plan for South Carolina's ocean waters and for improved intergovernmental coordination on various ocean management issues.

SC State Regulatory Task Force (as described under Energy and Facility Siting)

Long Bay Working Group

- a) The Long Bay Working Group, facilitated by the S.C. Sea Grant Consortium, includes members from DHEC-OCRM, SC DNR, the University of South Carolina, Coastal Carolina University and NOAA's Center for Coastal Monitoring and Assessment. The LBWG was formed to coordinate research and management activities in the Long Bay (Myrtle Beach Grand Strand) region in light of several hypoxic events that occurred during the summer months in 2004, 2006, 2008 and 2009. DHEC-OCRM has contributed both staff resources and financial assistance for the LBWG effort, including funding for datasondes to monitor dissolved oxygen levels, funding for two research studies to evaluate the impacts of stormwater on hypoxia events in Long Bay, and funding for an ongoing research effort to provide an improved understanding of water quality dynamics in the nearshore ocean waters of Long Bay.
- b) DHEC-OCRM's ongoing participation on the LBWG is a CZM-funded effort through the Policy and Planning task under Section 306. Funding assistance for the datasondes and research on stormwater impacts on hypoxia was provided under Section 306 of the CZMA. The current research effort to evaluate water quality dynamics is being funded through a state supplemental appropriation allocated to DHEC-OCRM.
- c) Information from the various research efforts is being synthesized to provide a complete analysis of the underlying factors contributing to hypoxic events in Long Bay. Current and future stormwater management will be a key component of this analysis, especially given stormwater outfall relocation efforts underway in the region.

Public Education and Outreach Efforts

- a) In Spring 2008, DHEC-OCRM participated in the South Carolina State Survey to gauge public perceptions concerning ocean resources. The survey included questions

concerning the frequency and individual uses of the ocean, identification of important ocean resources, and issues or conflicts associated with ocean resources.

- b) The South Carolina State Survey on ocean resources was funded through Section 309 of the CZMA as part of the Ocean Planning task.
- c) Survey results indicated that a large portion of respondents (28%) could not identify an ocean resource, indicating that many individuals do not consider the ocean in terms of resources. Ocean resources varied widely and ranged from seafood to marine life to commerce and trade. Over 40% of the respondents could not identify a specific issue or conflict related to ocean resources; however, of those indicated, pollution, overfishing, oil and gas, and erosion/shore protection were the most noted issues or concerns among respondents. A copy of the survey summary can be found on DHEC-OCRM's Ocean Management and Planning webpage:

http://www.scdhec.gov/environment/ocrm/ocean_management.htm

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need Description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H, M, L)
A spatially-explicit "Marine Spatial Plan" for South Carolina ocean waters to reduce use conflicts, improve environmental assessments and standards, improve and expedite decisionmaking, and expand intergovernmental coordination.	Data, staff capacity, planning and public engagement	H
Clarify existing policies, regulations and authorities regarding alternative energy siting	Regulatory, Policy	H

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High X
Medium
Low

Briefly explain the level of priority given for this enhancement area.

The Ocean Resources enhancement area remains a high priority for the SC CZMP given the ongoing work of the Ocean Planning Work Group, and recommendations of the Shoreline Change Advisory Committee, a SC Legislative Study Committee on Wind Energy Production Farms Feasibility, the Governors' South Atlantic Alliance regional partnership, and the new National Ocean Policy and federal focus on coastal and marine spatial planning. Although Alternative Energy Development and OCS Lease Blocks are currently considered a moderate "threat," a high likelihood exists that these activities will result in potential use conflicts within the next few years. Therefore, the SC CZMP believes that the development of a marine spatial plan will be critical in proactively managing ocean resources and activities.

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

Yes X
No

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

The SC CZMP will develop a strategy for Ocean Resources to implement the final recommendations of the OPWG and address key needs identified under both the Ocean Resources and Energy Facility Siting enhancement areas, particularly the need for a marine spatial planning effort to engage the public and to prepare for alternative energy development, siting preferences, and use or project standards.

Energy & Government Facility Siting

Section 309 Enhancement Objectives

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

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. In the table below, characterize the types of energy facilities in your coastal zone (e.g., oil and gas, Liquefied Natural Gas (LNG), wind, wave, Ocean Thermal Energy Conversion (OTEC), etc.) based on best available data. If available, identify the approximate number of facilities by type.

Type of Energy Facility	Exists in CZ (# or Y/N)	Proposed in CZ (# or Y/N)	Interest in CZ (# or Y/N)	Significant changes since last assessment (Y or N)
Oil and gas facilities	N	N	Y	Y-Legislative Study Committee
Pipelines	Y	N	Y	N
Electric transmission cables	N	N	Y	Y-Clemson Transmission Study
LNG	Y	N	Y	N
Wind	N	N	Y	Y- Legislative Study Committee
Wave	N	N	N	N
Tidal	N	N	Y	N
Current (ocean, lake, river)	N	N	N	N
OTEC	N	N	N	N
Solar	Y	N	Y	N
Other (please specify)				

2. Please describe any significant changes in the types or number of energy facilities sited, or proposed to be sited, in the coastal zone since the previous assessment.

As described below under the Management Characterization section, significant interest in wind energy production prompted the formation of a Regulatory Task Force for Coastal Clean Energy and a Wind Energy Production Farms Feasibility Study Committee, as well as the ongoing Palmetto Wind Research Project and the recently-funded wind turbine testing facility at the Clemson University Restoration Institute.

3. Does the state have estimates of existing in-state capacity and demand for natural gas and electric generation? Does the state have projections of future capacity? Please discuss.

Yes. At a recent workshop hosted by DHEC-OCRM and supported under the current 309 Strategy, representatives from electrical utilities, Clemson University, and a natural gas utility discussed existing capacities for both natural gas and electricity generated by offshore wind power. In both cases, existing infrastructure can support significant new levels of energy development and fluctuations that may be experienced in wind power outputs.

4. Does the state have any specific programs for alternative energy development? If yes, please describe including any numerical objectives for the development of alternative energy sources. Please also specify any offshore or coastal components of these programs.

The State of South Carolina currently does not have a Renewable Portfolio Standard or policy.

5. If there have been any significant changes in the types or number of government facilities sited in the coastal zone since the previous assessment, please describe.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. Does the state have enforceable policies specifically related to energy facilities? If yes, please provide a brief summary, including a summary of any energy policies that are applicable to only a certain type of energy facility.

Section 48-39-80(B)(6) of the Coastal Tidelands and Wetlands Act states that the SC CZMP shall:

Provide for adequate consideration of the local, regional, state and national interest involved in the siting of facilities for the development, generation, transmission and distribution of energy, adequate transportation facilities and other public services necessary to meet requirements which are other than local in nature.

The SC CZMP must ensure that the siting of energy facilities in the coastal zone is balanced with other uses of coastal resources and must also consider the national interest during the decision making process. The South Carolina Coastal Program Document identifies specific energy resource policies used to evaluate proposed energy and energy-related facilities for consistency with the SC CZMP. The specific policies can be found in Chapter 4, pages 46 through 49, of the Program Document (<http://www.scdhec.gov/environment/ocrm/regs/>).

The Coastal Program Document also contains policies recommending the use of renewable energy sources, such as solar, wind, tidal power, geothermal and biomass, within the coastal zone provided that the facilities are consistent with the other policies of the Coastal Program (Chapter IV, p.49, SC Coastal Program Document).

2. Please indicate if the following management categories are employed by the State or Territory and if there have been significant changes since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Statutes or regulations	Y	N
Policies	Y	N
Program guidance	Y	Y – Ocean Report
Comprehensive siting plan (including SAMPs)	N	N
Mapping or GIS	Y	N
Research, assessment or monitoring	Y	Y
Education and outreach	Y	N
Other (please specify)		

3. For management categories with significant changes since the last assessment provide the information below. If this information is provided under another enhancement area or section of the document, please provide a reference rather than duplicate the information.
- Characterize significant changes since the last assessment;
 - Specify if it was a 309 or other CZM-driven change (specify funding source) or if it was driven by non-CZM efforts; and
 - Characterize the outcomes and effectiveness of the changes.

Research, Assessment and Monitoring:

a) *Palmetto Wind Research Project*

Santee Cooper, Coastal Carolina University, and the S.C. Energy Office have undertaken a project called the Palmetto Wind Research Project (<https://bcmw.coastal.edu/palmetto-wind-research-project>) to deploy buoys to document offshore winds along the northern stretch of the South Carolina coast. This area comprises a large portion of Santee Cooper's service area and has the state's strongest winds close to shore. Weather buoys and land-based stations are measuring wind speed, direction, and frequency at stations up to six miles out into the ocean. One string of buoys is installed off Winyah Bay and another begins at Waites Island, near Little River (SC Sea Grant Consortium,2010).

Clemson University Department of Energy Grant

The Clemson University Restoration Institute and its partners received a \$45 million grant from the U.S. Department of Energy, combined with \$53 million of matching funds, to build and operate a large-scale wind turbine drive train testing facility at the institute's research campus on the former Navy base in Charleston.

Wind Energy Production Farms Feasibility Study Committee

The Study Committee was created to “review, study, and make recommendations regarding the feasibility of wind farms in the state including, but not limited to, whether South Carolina is a suitable site for wind production on land or in offshore areas, the economic and environmental impact to the state, and the cost of wind farm installation and operation in the state.” Of the 18 recommendations formulated by the Committee, 2 specifically referred to action items for DHEC. The Committee recommended that DHEC and the SC Energy Office coordinate a permit facilitation office to improve the efficiency of permitting and/or leasing offshore wind energy projects. The Committee also recommended that DHEC initiate and oversee a marine spatial planning effort for the state, including seafloor mapping, data integration, extension activities and community-based planning efforts. The final report can be found in its entirety on the SC Energy Office website:

<http://www.energy.sc.gov/index.aspx?m=6&t=123>

Regulatory Task Force for Coastal Clean Energy

The mission of the regulatory task force was to create a regulatory environment conducive to wind, wave and tidal energy development in state waters. The Task Force was comprised of a Regulatory Working Group and a Scientific/Technical Advisory Group. The Task Force recommended the following:

- **Need state policy on renewable energy**
The Task Force recommended strengthening and updating the former MOA between the SC Coastal Council and PSC adopted in 1978. The Task Force also recommended marine spatial planning efforts to gather geospatial information about ocean resources, uses and conditions for comprehensive planning.
 - **Need leasing framework to provide a comprehensive process**
The Task Force found that the existing permitting process is complicated and may not be comprehensive enough to address all emerging issues. The Task Force recommended an offshore leasing program in state waters for wind energy.
 - **Establish a one-stop-shop to coordinate permitting/leasing process (non-regulatory, one application). Use the Permit Assistance Office within SC Dept. of Agriculture as model.**
- b) The Feasibility Study Committee was created in response to Act 318 (2008 SC Legislative Session), which was a joint resolution requiring recommendations from the Wind Energy Production Farms Feasibility Study Committee. The Regulatory Task Force was created as part of a Department of Energy Wind Grant that also funded the Palmetto Wind Research Project in conjunction with Santee Cooper.
- c) Research efforts have resulted in extensive studies of offshore wind potential in South Carolina, which will direct future siting of offshore wind energy facilities. The feasibility study and regulatory task force formulated recommendations that further ocean planning efforts and will improve permitting coordination and efficiency for offshore wind projects or leases.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
Development of a Marine Spatial Plan- for siting and prioritizing uses within state ocean waters and to provide specific guidance and standards for projects with potential environmental and/or human use conflicts	Regulatory, Policy, Data, Communication and Outreach	H
Permit coordination for offshore wind projects and/or leases	Regulatory/Policy	H

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High X
Medium
Low

Briefly explain the level of priority given for this enhancement area.

Energy facility siting is a high priority for the SC CZMP given the strong interest in offshore wind energy and the recommendations from legislative study committees for the development of a marine spatial plan, as well as coordinated permitting of offshore projects and/or leases. Legislative and regulatory study committees at both the state and federal level (State Regulatory Task Force for Coastal Clean Energy and a new federal (BOEMRE)/state ocean energy task force, respectively) have indicated the need for planning efforts given anticipated requests for offshore wind energy facilities in South Carolina.

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

Yes X
No

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

Efforts to address energy siting issues will be included under the Ocean Resources Strategy section. This strategy directly addresses recommendations of the South Carolina Ocean Planning Work Group (ongoing), SC Regulatory Task Force for Clean Energy, and SC Legislative Study Committee on Wind Energy Production Farms Feasibility, as well as recommendations developed during a public workshop on offshore energy siting that was hosted by DHEC-OCRM and other partners in April, 2010. This strategy also addresses the key needs identified above related to the clarification of existing policies, procedures, regulations and authorities related to offshore energy development and siting.

Aquaculture

1. 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

Resource Characterization

Purpose: To determine the extent to which problems and opportunities exist with regard to the enhancement objective.

1. Generally characterize the private and public aquaculture facilities currently operating in your state or territory.

Type of existing aquaculture facility	Describe recent trends	Describe associated impacts or use conflicts
Past clam and shrimp propagation facilities	Commercial clam and shrimp industry has diminished, but the infrastructure remains in coastal waters	Residual clam containment structures are marine debris; however, debate exists over potential adverse impacts from removal activities
Waddell Mariculture Center	Fisheries enhancement to rebuild declining populations; research on fish and shrimp to develop commercially viable technologies for the private sector	Research and development must be done in consideration of state's natural resources (water quality, invasive species control)
Shellfish Programs	DHEC Environmental Quality Control's Shellfish Sanitation Program currently monitors 450 stations across 25 shellfish management areas to ensure sanitary conditions of shellfish and shellfish growing waters	General stability within classification categories (Approved, Conditionally Approved, Restricted, Conditionally Restricted and Prohibited) with an overall increase in approved acreage for 2009.*

*The 2009 Shellfish Growing Area Status Report can be found online at <http://www.scdhec.gov/environment/water/docs/sftrend.pdf>.

Management Characterization

Purpose: To determine the effectiveness of management efforts to address those problems described in the above section for the enhancement objective.

1. For each of the management categories below, indicate if the approach is employed by the state or territory and if significant changes have occurred since the last assessment:

Management categories	Employed by state/territory (Y or N)	Significant changes since last assessment (Y or N)
Aquaculture regulations	Y	N
Aquaculture policies	Y	N
Aquaculture program guidance	Y	N
Research, assessment, monitoring	Y	N
Mapping	Y	N
Aquaculture education & outreach	Y	N
Other (please specify)		

No significant changes in regulations, policy change, research and/or education initiatives related to coastal aquaculture have occurred over the past 5 years.

Clam production remains the state's largest and highest-valued mariculture product. Considerable interest exists in the Waddell Mariculture Center's closed bio-floc shrimp production system. At least two facilities have proposed to build commercial sized systems, with construction of these facilities beginning this year. Smaller operations are producing oysters, shrimp, and bait, and growing marine fish to stock private saltwater ponds.

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

- Characterize significant changes since the last assessment;
- Specify if it was a 309 or other CZM driven change (specify funding source) or if it was driven by non-CZM efforts; and
- Characterize the outcomes and effectiveness of the changes.

Priority Needs and Information Gaps

Using the table below, identify major gaps or needs (regulatory, policy, data, training, capacity, communication and outreach) in addressing each of the enhancement area objectives that could be addressed through the CMP and partners (not limited to those items to be addressed through the Section 309 Strategy). If necessary, additional narrative can be provided below to describe major gaps or needs.

Gap or need description	Type of gap or need (regulatory, policy, data, training, capacity, communication & outreach)	Level of priority (H,M,L)
If deemed necessary, removal of derelict clam pens from tidal creek habitats	Regulatory	L

Enhancement Area Prioritization

1. What level of priority is the enhancement area for the coastal zone (including, but not limited to, CZMA funding)?

High

Medium **X**

Low

Briefly explain the level of priority given for this enhancement area.

Some interest exists in offshore aquaculture, but there is debate regarding the economic viability of new operations. Regardless, any newly proposed facility would set an important precedent in ocean management authorities and planning.

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

Yes **X**

No

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

DHEC-OCRM currently has a project application in house for an aquaculture facility in state waters. Aquaculture issues will be addressed under the marine spatial planning effort in the Ocean Resources strategy to provide the Department with better information on potential environmental impacts and use conflicts associated with these types of facilities.

Strategy Section

Coastal Hazards Strategy

I. Issue Area(s)

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

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

II. Program Change Description

A. *The proposed strategy will result in, or implement, the following type(s) of program changes (check all that apply):*

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

B. *Describe the proposed program change(s) or activities to implement a previously achieved program change. 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.)*

Develop New/Revised Shoreline Management Regulations and Policies – Based upon the recommendations of the Shoreline Change Advisory Committee (SCAC) and anticipated “Blue Ribbon Committee on Shoreline Management,” DHEC-OCRM staff will propose new and/or revised regulations and policies for consideration by the DHEC Board and General Assembly in accordance with the state’s Administrative Procedures Act. For example, staff are currently evaluating the need for new regulations related to shoreline management along estuarine or “sheltered” coastlines. Any new regulations or policies will be intended to

enhance shoreline management in the state's coastal zone.

Update the State Beachfront Management Plan – As identified in the Section 309 Assessment, an update to the State Beachfront Management Plan is needed to implement the state's beachfront retreat policy and may incorporate recommendations of the SCAC. The State Beachfront Management Plan was approved by the SC Legislature in 1992 and adopted as a chapter within the Department's Coastal Division Regulations (SC Code of Regulations R.30-21). The plan's status as a regulation requires that any revisions follow the process outlined in the state's Administrative Procedures Act, including review and approval by the General Assembly. Although the State Beachfront Management Plan calls for review with possible revisions every five years, the coastal program has not initiated promulgation of amendments to this regulation to date. Therefore, much of the information is outdated and many of the guidelines provided in the plan are in need of updating or modification.

III. Need(s) and Gap(s) Addressed

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

For the next five years, DHEC-OCRM will focus much of its 309 resources on developing new shoreline management guidelines, regulations, and/or policies; updating the State Beachfront Management Plan; improving coastal hazards communication and outreach; and acquiring additional data to support shoreline change analysis. Many of the activities described below directly address recommendations of the SCAC, public input obtained through that Committee, and input gained from recent regional discussion forums with community leaders along the coast. This strategy addresses the key needs identified in the Assessment related to the State Beachfront Management Plan, gaps in regulations related to beachfront and estuarine shoreline management, and the need to leverage increased shoreline management capabilities at the local level. This strategy also addresses needs identified in the CSI assessment as they relate to estuarine shoreline alterations and the evaluation of permit applications per the cumulative impacts criteria in current coastal regulations.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

The SCAC identified a number of areas of confusion, conflicts, and/or potential improvements to shoreline management policies that will be considered for regulatory and (possibly) statutory remedies. While the outcomes are difficult to predict, our effort to improve and clarify policies through this Strategy will be beneficial in promoting public discussion and policy debate over longstanding and future shoreline management issues in

South Carolina.

The State Beachfront Management Plan calls for review with possible revisions every 5 years, but it has not been updated since it was originally approved in 1992. Updating the plan will promote better shoreline management by utilizing the most current and accurate data to modify guidelines and to inform decision-making. The updated state plan will also incorporate many recommendations from the Shoreline Change Advisory Committee and provide the framework for updating and strengthening future Local Comprehensive Beach Management Plans.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

The likelihood of achieving new shoreline regulations or policies will depend on the recommendations and support of the “Blue Ribbon Committee on Shoreline Management.” Several new management approaches that were advanced by the SCAC can be implemented through updates to the State Beachfront Management Plan, which must also have legislative approval through the APA process since portions of the Plan are in regulation (R.30-21, DHEC Coastal Division Regulations). Public forums and other outreach activities will occur at the beginning of the plan update process to gain essential public input and support for these initiatives.

VI. Strategy Work Plan

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

Total Years: 5

Total Budget: \$468,906

Final Outcomes and Products: Updated State Beach Management Plan

Year: 1

Description of activities:

- Conclude Blue Ribbon Committee (initiated during current 309 Strategy period) and release final recommendations
- Begin initial updates to the non-regulatory sections of the State Beachfront Management Plan. DHEC-OCRM will use the previously developed project management plan as a guide to begin updates to sections of the plan pertaining to long-term erosion rates and shoreline risk analysis, beach monitoring protocols, and guidance for developing Local Comprehensive Beach Management Plans.

Outcomes:

- Final recommendations from the Blue Ribbon Committee completed

Budget:

Budget Category	Estimated Budget
Personnel	\$140,357
Fringe (31.77%)	\$44,591
Travel	\$2000
Equipment	
Supplies	\$2000
Contractual	\$11,250
Construction	
Other	\$19,750
Indirect (15%)	\$21,054
Total	\$241,002

Year: 2

Description of activities:

- Issue a Notice of Drafting for any proposed regulation changes
- Conduct internal DHEC-OCRM policy and regulation development and review process
- Continue updating the State Beachfront Management Plan in accordance with the project management plan

Outcomes:

- Notice of Drafting published in State Register alerting the public of potential changes to regulations
- Finalized draft policies and regulations through internal review process
- Sections of State Beachfront Management Plan updated

Budget:

Budget Category	Estimated Budget
Personnel	\$140,357
Fringe (31.7962%)	\$44,591
Travel	\$2000
Equipment	
Supplies	\$2000
Contractual	\$11,250
Construction	
Other	\$19,750
Indirect (15%)	\$21,054
Total	\$241,002

Year: 3**Description of activities:**

- Present proposed regulations to DHEC Board for Initial Approval
- Publish Notice of Proposed Regulations in State Register
- Conduct informational public hearings on proposed policy and regulation changes, including public input on revisions to the State Beachfront Management Plan

Outcome(s):

- Continue the APA process by completing required steps for Board approval, public notice and public hearings. DHEC-OCRM will provide NOAA with a copy of the DHEC Board meeting minutes, the Notice of Proposed Regulations, and a summary of the informational public hearings

Budget:

Budget Category	Estimated Budget
Personnel	\$140,357
Fringe (31.7962%)	\$44,591
Travel	\$2000
Equipment	
Supplies	\$2000
Contractual	\$11,250
Construction	
Other	\$19,750
Indirect (15%)	\$21,054
Total	\$241,002

Year: 4

Description of activities:

- Obtain final Board approval of regulations
- Present Draft Revised State Beachfront Management Plan
- Publish Notice of Final Regulations in State Register
- Obtain General Assembly approval of proposed regulations

Outcomes:

- Conclude the APA process by completing required steps for final Board and General Assembly approval of proposed regulations. DHEC-OCRM will provide NOAA with a copy of the DHEC Board meeting minutes, the Notice of Final Regulations and a summary of General Assembly approval process.

Budget:

Budget Category	Estimated Budget
Personnel	\$140,357
Fringe (31.7962%)	\$44,591
Travel	\$2000
Equipment	
Supplies	\$2000
Contractual	\$11,250
Construction	
Other	\$19,750
Indirect (15%)	\$21,054
Total	\$241,002

Year: 5

Description of activities:

- Outreach and implementation of policy and regulation changes
- Submit program change request to NOAA/OCRM

Outcomes:

- Completion of the outreach plan and implementation strategies for policy and regulatory changes.
- Submission of formal program change request to NOAA.

Budget:

Budget Category	Estimated Budget
Personnel	\$140,357
Fringe (31.7962%)	\$44,591
Travel	\$2000
Equipment	
Supplies	\$2000

Contractual	\$11,250
Construction	
Other	\$19,750
Indirect (15%)	\$21,054
Total	\$241,002

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 applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.*

Section 309 funding will be sufficient to carry out the proposed strategy for Coastal Hazards. DHEC-OCRM will potentially apply for two projects of special merit as described below; however, the core efforts under this strategy are not dependent on this funding for completion.

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

VIII. Projects of Special Merit (Optional)

If desired, briefly indicate what PSMs 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. The information in this section will not be used to evaluate or rank PSMs and is simply meant to provide the CMPs the option to provide additional information if they choose. PSM descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not provide detailed project descriptions that would be needed for the PSM competition.

DHEC-OCRM may pursue Projects of Special Merit to develop Estuarine Shoreline Reports, evaluate beach erosion monitoring methodologies, or address regional shoreline management issues in cooperation with other partners.

Ocean Resources Strategy

I. Issue Area(s)

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

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

II. Program Change Description

A. *The proposed strategy will result in, or implement, the following type(s) of program changes (check all that apply):*

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

B. *Describe the proposed program change(s) or activities to implement a previously achieved program change. 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.)*

Development of Ocean Use / Ocean Resource Maps for Planning and Decision-making

Following on an initial data inventory exercise now underway by the SC Department of Natural Resources, DHEC-OCRM will lead an ocean mapping partnership made up of agency, academic, and private sector partners engaged in the development and/or integration of spatial datasets for South Carolina's ocean resources and uses. The partners will develop a collaborative approach to data archival, integration, quality assurance, analysis, and dissemination, and will support the SC CZMP in developing a strong internet presence for ocean planning information, as well as links to each partner institution.

Foundation for a Marine Spatial Plan (MSP) for South Carolina's Ocean Waters –

DHEC-OCRM staff will work with regional and state partners and stakeholders to lay a strong foundation for the development of a marine spatial plan for South Carolina waters. With significant public input and engagement, staff will produce a detailed Memorandum of Agreement (MOA) that provides clear planning and regulatory procedures for siting, managing and leasing fixed facilities in South Carolina waters. The MOA will be presented to the DHEC Board, and DHEC Office of General Counsel, for approval.

DHEC-OCRM will also develop a Guidance Document for Marine Spatial Planning. The Guidance Document will include a clear timeline and process for stakeholder engagement through a series of facilitated "charrette" planning meetings, proposed project boundaries, comprehensive approval procedures, and additional opportunities for public input. The Guidance Document will also provide an inventory of potential standards that will be evaluated for use in siting various fixed facilities in state ocean waters. Finally, the Guidance Document will describe the relationship of state planning efforts with ongoing regional efforts related to coastal and marine spatial planning.

Following on this 5-year Strategy, the intent is to develop a spatially-explicit plan for siting and prioritizing uses within state ocean waters, as well as providing area-specific guidance and standards for projects that may have environmental or human use conflicts. Since this plan could recommend fixed, quantitative standards for regulatory decisions, spatial allocations of ocean uses, or other new authorities or regulations, it will eventually require promulgation in accordance with the SC Administrative Procedures Act for approval by the DHEC Board, the General Assembly, and the Governor. It would also be intended for future amendment or refinement to the SC CZMP through submission to NOAA for approval as an official program change. These steps would ensure that the plan could be used for state and federal consistency determinations. It is possible that this process could be accelerated given rapidly evolving capacities, funding opportunities, and political activities at the state and regional levels; however, this is a significant undertaking that requires careful planning over the course of the coming years. For this reason, this 5-year Ocean Resources Strategy cannot promise to achieve a final, enforceable marine spatial plan at this time.

III. Need(s) and Gap(s) Addressed

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

This strategy directly addresses recommendations for a state-scale marine spatial plan that have emerged during South Carolina Ocean Planning Work Group meetings, and that have been formally made by the SC Regulatory Task Force for Clean Energy and the SC Legislative Study Committee on Wind Energy Production Farms Feasibility. This strategy also addresses the key needs identified in the Assessment related to the clarification of existing policies, procedures, regulations and authorities related to offshore energy

development.

IV. Benefit(s) to Coastal Management

Discuss the anticipated effect of the program change or implementation activities including a clear articulation of the scope and value in improved coastal management and resource protection.

A South Carolina marine spatial plan would be intended to:

- expedite offshore permitting based on the proactive identification and consideration of resource and use conflicts;
- improved understanding of the extent of ocean resources, such as beach compatible sand, for coastal and ocean managers;
- improved decision-making based on that information and robust public input; and
- improved predictability of decision-making for applicants considering projects in state and federal waters.

This project will lay a strong foundation for the development of a marine spatial plan for South Carolina waters and will bring together several independent efforts that are currently underway in the state. Most importantly, this project will improve the understanding of public perspectives and access to marine spatial datasets for use in future decision-making – even in the absence of a detailed marine spatial plan.

V. Likelihood of Success

Discuss the likelihood of attaining the proposed program change and implementation activities. The state or territory should address: 1) the nature and degree of support for pursuing the strategy and the proposed change; and, 2) the specific actions the state or territory will undertake to maintain or build future support for achieving and implementing the program change, including education and outreach activities.

The likelihood of achieving a strong marine spatial plan for South Carolina will depend on the contributions of key state agency, nonprofit, and private sector partners, including the SC Sea Grant Consortium, SC Department of Natural Resources, and the Governors South Atlantic Alliance (GSAA) partners; future financial and technical assistance from federal agency partners; and the level of political support attained from elected officials and coastal stakeholders. As described above, several interagency and legislative study committees have identified a marine spatial plan as high priority; however, it is unclear whether this will be the general sentiment of elected officials and coastal stakeholders. Public discussion forums and other outreach activities will be at the core of this effort to determine potential obstacles to implementation and the feasibility of overcoming those obstacles.

VI. Strategy Work Plan

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

Total Years: 5

Total Budget: \$192,795

Final Outcomes and Products: Marine Spatial Planning MOA & Guidance Document

Year 1

Description of activities:

- Identify and discuss key issues to be addressed in MOA
- Identify and assemble ocean mapping partners
 - Develop guidance for ocean spatial data archival, integration, quality assurance, analysis, and dissemination
 - Identify key spatial data gaps and priorities
 - Identify potential members of a Stakeholder Advisory Committee (for Year 2)
- Ongoing collaborations with federal, state, and regional (GSAA) partners on evolving Coastal and Marine Spatial Planning efforts

Outcomes:

- List of key issues to be addressed in MOA
- Results of partner meetings
 - List of data gaps, mapping guidance and Stakeholder Advisory Committee members

Budget:

Budget Category	Estimated Budget
Personnel	\$50,155
Fringe (31.77%)	\$15,934
Travel	\$2,000
Equipment	
Supplies	\$1000
Contractual	\$6,750
Construction	

Other	\$6,750
Indirect (15%)	\$7,523
Total	\$90,112

Year 2**Description of activities:**

- Organize and integrate existing spatial datasets; development of thematic maps (pdfs) for use in future planning and stakeholder engagement
- Establish internet webpage dedicated to marine spatial planning
- Assemble and convene the Stakeholder Advisory Committee to provide guidance on mapping and planning priorities and to help organize and host regional discussion forums (to be held in Year 3)

Outcomes:

- Series of thematic ocean maps for internet-based dissemination
- Results/minutes from Stakeholder Advisory Committee meetings

Budget:

Budget Category	Estimated Budget
Personnel	\$50,155
Fringe (31.77%)	\$15,934
Travel	\$2,000
Equipment	
Supplies	\$1000
Contractual	\$31,750
Construction	
Other	\$6,750
Indirect (15%)	\$7,523
Total	\$115,112

Year: 3**Description of activities:**

- Continue organizing and integrating existing spatial datasets; development of thematic maps (pdfs) for use in future planning and stakeholder engagement
- Stakeholder Advisory Committee (staffed by DHEC-OCRM) hosts three regional discussion forums based on the results of Years 1 and 2
 - Focus on evaluating support for the proposed process and priorities for marine spatial planning in South Carolina

Outcome(s):

- Results of Regional Community Discussion Forums

Budget:

Budget Category	Estimated Budget
Personnel	\$50,155
Fringe (31.77%)	\$15,934
Travel	\$2,000
Equipment	
Supplies	\$1000
Contractual	\$31,750
Construction	
Other	\$6,750
Indirect (15%)	\$7,523
Total	\$115,112

Year: 4

Description of activities:

- Develop Draft MOA and Draft Guidance Document for Marine Spatial Planning based on results of efforts in Years 1-3.
- Review and approval of Draft MOA and Draft Guidance Document by partner organizations

Outcomes:

- Draft MOA and Draft Guidance Document for MSP

Budget:

Budget Category	Estimated Budget
Personnel	\$50,155
Fringe (31.77%)	\$15,934
Travel	\$2,000
Equipment	
Supplies	\$1000
Contractual	\$6,750
Construction	
Other	\$6,750
Indirect (15%)	\$7,523
Total	\$90,112

Year: 5

Description of activities:

- Present MOA and Guidance Document to DHEC Board for approval of related action items

Outcomes:

- Final approved MOA and Guidance Document

Budget:

Budget Category	Estimated Budget
Personnel	\$50,155
Fringe (31.77%)	\$15,934
Travel	\$2,000
Equipment	
Supplies	\$1000
Contractual	\$6,750
Construction	
Other	\$6,750
Indirect (15%)	\$7,523
Total	\$90,112

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 applying agency has made, if any, to secure additional state funds from the legislature and/or other sources to support this strategy.*

Section 309 funding will be sufficient to carry out the proposed strategy for Ocean Resources. DHEC-OCRM staff will serve as lead planners for this effort but will rely heavily on federal, state, and regional agency, academic, and private sector partners for mapping and planning assistance. Some education and outreach activities may also be contingent on support from state and federal partners. Initial discussions with state partners have confirmed support and initial commitment to work with our agency on this 5-year strategy.

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

DHEC-OCRM does not presently have the in-house technical capacity to integrate and analyze spatial maps of ocean resources and uses. Over the next two to three years, DHEC-OCRM anticipates collaborating with partners on various data integration efforts to build on initial data inventory efforts. Outside organizations are increasing their capacity in this area – in particular, the NOAA Coastal Services Center, The Nature Conservancy, state universities, and some private sector companies who specialize in applied ocean and coastal research. Partnerships and close coordination with these entities will be critical to the success of this effort. Again, initial discussions with these partners have confirmed support

and initial commitment to work with our agency on this 5-year strategy.

VIII. Projects of Special Merit (Optional)

If desired, briefly indicate what PSMs 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. The information in this section will not be used to evaluate or rank PSMs and is simply meant to provide the CMPs the option to provide additional information if they choose. PSM descriptions should be kept very brief (e.g., undertake benthic mapping to provide additional data for ocean management planning). Do not do provide detailed project descriptions that would be needed for the PSM competition.

DHEC-OCRM may pursue a Project of Special Merit proposal to develop an updated Offshore Environmental Sensitivity Index for use in marine spatial planning, or other projects in collaboration with regional partners.

5-Year Budget Summary by Strategy

Strategy Title	Year 1 Funding	Year 2 Funding	Year 3 Funding	Year 4 Funding	Year 5 Funding	Total Funding
Coastal Hazards	\$241,002	\$241,002	\$241,002	\$241,002	\$241,002	\$1,205,010
Ocean Planning	\$90,112	\$115,112	\$115,112	\$90,112	\$90,112	\$500,560
Total Funding	\$331,114	\$356,114	\$356,114	\$331,114	\$331,114	\$1,705,570