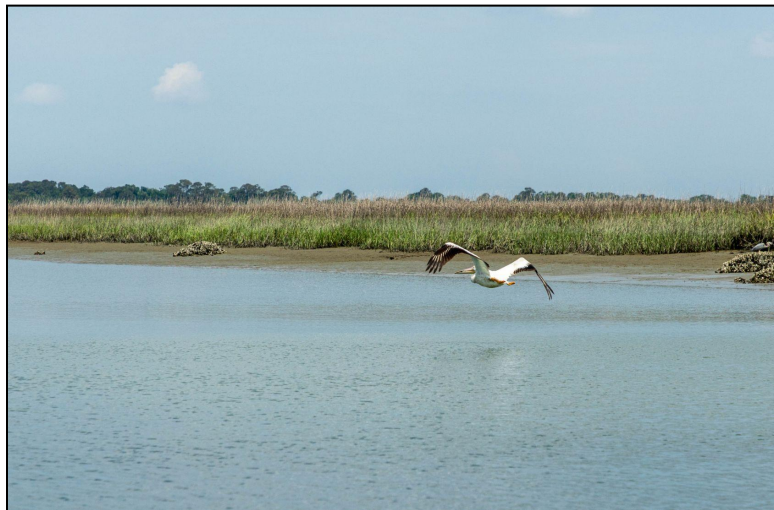


Coastal Habitat Restoration with Dredged Material: A Guide for Southern States

Understanding permitting and regulatory review
in the SERPPAS region

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About this Guide

The [Defense Community Resilience Program](#) at the UGA Carl Vinson Institute of Government and the [University of Georgia Marine Extension – Georgia Sea Grant program](#) are active partners in the Southeast Regional Partnership for Planning and Sustainability (SERPPAS). The SERPPAS Steering Committee requested an analysis of the permitting and regulatory requirements related to restoration projects using dredged material on or near military installations.

This guide focuses on the beneficial use of existing or non-navigationally related dredged material for strategic sediment placement, namely coastal marsh enhancement projects and bird island creation, in five of the SERPPAS states: North Carolina, South Carolina, Georgia, Florida, and Mississippi. This guide is designed for planning teams working in these scenarios, with a goal of providing a basic overview of the regulatory landscape. It provides a summary of procedures and analytical requirements that apply nationwide and then detailed information about state-level requirements for each state.



About the Defense Community Resilience Program

The UGA Defense Community Resilience Program (DCRP) engages directly with Georgia's military installations and their surrounding communities to ensure military readiness while addressing local economic, environmental, and community resilience goals. Housed in the Carl Vinson Institute of Government, DCRP serves as a part of UGA's Public Service and Outreach mission. It primarily works through public service faculty and staff located in defense communities to enhance community resilience and military readiness by providing technical assistance and expanding partner capacity to execute priority projects and access resources to meet local needs.

About UGA Marine Extension - Georgia Sea Grant

Marine Extension and Georgia Sea Grant provides integrated research, education and extension programs that foster the responsible use of Georgia's coastal resources by individuals, decision-makers and management agencies. Our program is managed through a federal-state partnership between the University of Georgia (UGA) and the National Oceanic Atmospheric Administration's (NOAA) National Sea Grant College Program, a national network of 34 Sea Grant programs located in coastal and Great Lakes states and territories.

About the Southeast Regional Partnership for Planning and Sustainability

The [Southeast Regional Partnership for Planning and Sustainability](#) (SERPPAS), established in 2005, is a unique six-state partnership among Alabama, Florida, Georgia, Mississippi, North Carolina and South Carolina that promotes collaborative decision-making to support the conservation and resilience of national defense, natural resources, working lands and communities in the Southeast US.

Executive Summary

Coastal marshes and riverine or barrier islands play a critical role in the ecological, economic, and social systems of the southeast. They protect land from erosion and reduce risks from storms, generate revenue for local commercial and recreational fishing, tourism, and recreational economies, and provide habitat for a variety of species. In military communities, coastal marshes take on added importance, protecting critical infrastructure and helping maintain buffers around installations.

In light of these benefits, the Department of Defense, other federal and state agencies, and various stakeholder groups have shown a growing interest in restoring or enhancing coastal marshes and riverine or barrier islands on or around military installations. And they are beginning to explore the possibility of using suitable dredged material for those projects. These projects could provide a way to beneficially use some of the millions of cubic yards of dredged material that are generated each year, in lieu of costly offshore disposal or limited upland containment facilities.

To date, the vast majority of sediment placement projects have been related to beach nourishment, which is a well-established approach and not the focus of this guide. Neither does this guide cover issues related to dredging activities themselves. Instead it focuses on how best to use dredged material to protect coastal military installations and beyond and to generate environmental and ecosystem benefits.

Each of the five states covered in this guide – North Carolina, South Carolina, Georgia, Florida, and Mississippi – has adopted a federally approved Coastal Zone Management Plan (CZMP) pursuant to the federal Coastal Zone Management Act (CZMA). A state's CZMP lays out the state laws, permitting requirements, and regulations and policies for development activities in coastal areas. Federal laws, permitting requirements, and regulations also apply. These federal requirements include complying with the Clean Water Act, the Rivers and Harbor Act, and the National Environmental Policy Act, and related consultations required by the Endangered Species Act, Magnuson-Stevens Fisheries Act, and the National Historic Preservation Act.

Despite the environmental and hazard-reduction benefits, a marsh enhancement or bird-island project is subject to layered permitting and regulatory review requirements. A combination of federal, state, and local law defines which government agencies are responsible for project review, the standards of review, and the timelines for navigating the process. Each project is unique, thus the analysis under these laws will necessarily involve different questions about impacts on protected resources and different degrees of analysis by many stakeholders.

Table 1 (below) summarizes the key agencies, permits and laws, and consistency process required in each of the five states. Two messages are clear:

First, projects should be developed primarily for an environmental or community benefit. A marsh enhancement or bird island project using dredged material that primarily benefits the marsh ecosystem, nearby communities, and public interest and secondarily serves as a means of utilizing dredged material can navigate a much easier regulatory course than the inverse. That is, a project developed primarily for dredged material disposal and secondarily for ecosystem or community benefits will involve additional regulatory considerations and likely a much longer permitting timeline.

Second, early and frequent communication with the relevant state agencies can smooth and even shorten the permitting process by identifying potential issues with a project proposal, understanding what permits are required, and making adjustments to meet those requirements along the way. Designing projects that keep in mind consistency with the state coastal zone management program is also helpful.

Table 1: Summary of Key Agencies, Permits, and Other Requirements in SERPPAS States

	North Carolina	South Carolina	Georgia	Florida	Mississippi
Key State Agencies with Coastal Zone Jurisdiction	Division of Coastal Management, Department of Environmental Quality	Bureau of Coastal Management, Department of Environmental Services	Coastal Resource Division, Department of Natural Resources	Environmental Resources Permitting Program, Department of Environmental Protection	Department of Marine Resources
USACE District for Coastal Areas	USACE Wilmington District	USACE Charleston District	USACE Savannah District	USACE Jacksonville District	USACE Mobile and Vicksburg Districts
State Permits	Coastal Area Management Act (CAMA) permit	Critical Area Permit (CAP), Coastal Tidelands and Wetlands Act Not necessary for projects on land wholly owned by the federal government	Coastal Marshlands Protection Act (CMPA) or Shore Protection Act (SPA) permits	Environmental Resource Permitting (ERP) program	Coastal Wetlands Protection Act permit
Public Trust Lands	Public Trust Areas Part of CAMA permit review	“Public trust lands” or “tidelands” Incorporated into coastal zone consistency review	“King’s grant” “Revocable License” to use state-owned lands, typically granted along with CMPA permit	“Sovereign submerged lands” Included in FDEP “proprietary review”	“State tidelands” Lease for activities on state tidelands, exception for public projects by public entity



Federal Consistency Procedure	Separate submission	Separate submission	Separate submission	Embedded in ERP approval	Embedded in CWPA permit approval
Applicable General Permitting	Potential for NWP 27 with regional conditions Potential for RGP 291	Potential for NWP 27, with regional conditions Potential for Regional General Permit 36, if SCDNR involved	Potential for NWP 27 with regional conditions	Potential for NWP 27 with regional conditions	Potential for NWP 27, required to contact MDMR for individual project review and concurrence determination in coastal counties
Examples	Freeman Creek and Mile Hammock Bay ¹ , Marine Corps Base Camp Lejeune		Camden County Bird Island		Deer Island

¹ Project description on file with authors. See also [2015-2020 Integrated Natural Resources Management Plan, Marine Corps Base Camp Lejeune](#) (July 2015).

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Introduction: Habitat Restoration and Military Resilience along the Coast

Military installations along the southeastern Atlantic coastline face a number of challenges that can be addressed through the strategic and beneficial use of dredged material (BUDM) from nearby waterways. Shoreline erosion, land subsidence or loss of elevation relative to sea level rise, and changing coastal habitats threaten utilities, transportation infrastructure, buildings, and other important military assets that are often found near water's edge. Erosion is a result of storms, boat wakes, and typical wind-driven waves. In some areas, land subsidence or loss of elevation relative to sea level may amplify erosion hazards. Changing coastal habitats can also affect military installations by increasing regulatory burdens when threatened and endangered species to migrate into areas that affect training and readiness activities, or loss of coastal habitats cause additional species to be listed. These same environmental changes may also impact operations by altering residential and commercial development patterns around an installation, making it difficult to maintain compatible-use buffers.

Coastal habitat restoration – specifically, marshes and bird islands – is one use of dredged material that can enhance coastlines and bolster protection for nearby military assets.³ Marshes with healthy vegetation attenuate wave energy because the above-ground biomass (stems and leaves) act as a semipermeable barrier that reduces wave height. The reduced energy levels can also cause suspended sediment to drop out of suspension and accrete on the marsh surface, resulting in a marsh platform that is resilient to rising sea levels. Coastal marshes also provide a number of other co-benefits: They enhance fisheries production, improve water quality, support migrating birds and myriad species of flora and fauna, and provide opportunities for recreation and ecotourism.⁴

The SERPPAS region is home to approximately one million acres of salt marsh, but NOAA estimates 14% to 34% could be lost to sea level rise by 2060.²

² South Atlantic Salt Marsh Initiative, [Marsh Forward: A Regional Plan for the Future of the South Atlantic Coast's Million-Acre Salt Marsh Ecosystem](#) (May 2023).

³ See USACE, "Chapter 5: Beneficial Uses of Dredged Material," in [Dredging and Dredged Material Management](#), EM 1110-2-5025 (July 31, 2015).

⁴ Bridges, T.S., J.K. King, J.D. Simm, M.W. Beck, & G. Collins, eds. [Overview: International Guidelines on Natural and Nature-Based Features for Flood Risk Management](#), USACE Research and Development Center, ERDR-SR-21-5 (2021).

To date, dredged material has been largely disposed of in offshore sites or contained inland sites, and coastal BUDM projects have mostly involved beach renourishment. This guide focuses on two other types of use:

- **Marsh restoration** occurs when sediment is placed strategically to increase the elevation of the wetlands and thus provide deeper beds for vegetation growth and establishment. This process is often described as “thin-layer placement”. Other times, the sediment is placed in open water at a location near the shoreline where hydrodynamic modeling indicates that predictable littoral processes will draw sediment onto the marsh platform, increasing the overall elevation.
- **Island restoration or creation** has been accomplished in the southeastern United States using dredged material. Examples include barrier islands built along the Gulf Coast and bay islands [restored in the Charleston Harbor](#). The primary goal is to create new and protected habitat for species of conservation concern. Secondary goals include providing erosion protection and managing flood risk and hazards for the coast of the adjacent mainland.

In the vicinity of a military installation, these islands could provide new habitat for protected species, drawing them away from lands that are important for military training or other operational activities. Another benefit is that these BUDM islands use significantly more dredged material than other marsh restoration BUDM projects, which is an appealing option when linked to large-scale dredging projects.

Coastal marsh restoration and island creation BUDM projects are subject to similar permit and review requirements from a legal and regulatory standpoint, regardless of the state where the project is located. Most fundamentally, these projects fall under the ambit of the Coastal Zone Management Act (CZMA), triggering a review for consistency with the state’s coastal zone management program (CZMP). A state’s CZMP includes state-level permitting requirements for development in the coastal zone and public trust duties for the submerged lands where these projects are likely to occur, as well as general coastal development policies and goals. At the federal level, coastal marsh enhancement or bird island BUDM projects involve placing “fill” in “waters of the United States,” triggering review under the federal Clean Water Act (CWA). Because BUDM projects invariably involve some action by a federal agency, reviews under the National Environmental Policy Act (NEPA) and other associated consultations for federally listed threatened and endangered species, essential fish habitat, and historic and cultural resources are required as well.



The goal of this guide is to provide a basic overview of the laws, stakeholder agencies, and policies that are likely to apply to a BUDM project that enhances coastal marsh or creates new island habitat, using an existing source of dredged material. The guide begins with a summary of the regulatory landscape, then includes specific discussions for North Carolina, South Carolina, Georgia, Florida, and Mississippi.

Regulatory Landscape for Habitat Restoration

Across the SERPPAS region, states are working to improve internal coordination so that BUDM projects get implemented as efficiently as possible. Federal, state, and local laws specify which government agencies are responsible for reviewing a project, the standards of review, and the timelines for navigating the process. Even though BUDM projects are designed and intended to have environmental benefits, they are still subject to the same layered review process as all projects. A fundamental reality is that when many different experts review a project – each from their unique and valuable perspective – some degree of inconsistency or delay is almost inevitable. For a project proponent, the keys to success are early engagement with regulatory staff, clear communication, and flexibility.

This section briefly summarizes the overall legal landscape common to BUDM projects and highlights critical factors for getting a project approved.

Coastal Zone Management Act & Federal Consistency

Enhancing tidal marshes or constructing islands with dredged material will likely involve work in areas protected by the federal Coastal Zone Management Act (CZMA). This federal statute creates financial incentives for states to adopt laws and policies that protect natural resources, manage development, and provide public access for recreation, among other goals, along their coastlines. The geographic extent of CZMA coverage varies by state; in the SERPPAS region generally includes counties bordering the Atlantic Ocean or Gulf of Mexico.

All states in the SERPPAS region have adopted an individual, federally approved coastal zone management program (CZMP). Each incorporates state-level laws that require a permit from the state coastal resource management agency for projects in the coastal zone. Thus, BUDM project proponents will have to obtain the relevant state-level permits in addition to the Department of the Army (DA) permits described below. State agencies and local USACE district offices have made various efforts to align the state and federal permitting requirements. Details are provided in the state-specific sections of this guide.

For BUDM projects, three types of federal action require consistency determinations:

1. *Direct federal activities*, including activities and development projects performed by a federal agency, or a contractor for the benefit of a federal agency;

2. *Federal license or permit activities*, which are activities not performed by a federal agency but require federal permits or licenses or other forms of federal approval; and
3. *Federal financial assistance* to state agencies and local governments.⁵

Under the CZMA, a project proponent must obtain a “determination” (for a private party) or “concurrence” (for a federal entity) from the relevant state agency that the proposed project is consistent with state environmental laws and enforceable policies in the state’s CZMP. The consistency determination generally occurs in two stages:

First, the federal agency or applicant must evaluate the relevant enforceable policies of the state’s program and submit to the state agency a “consistency determination” that describes the project’s effects on coastal uses and resources. Along with the consistency determination, the federal agency must also submit applications for any required state authorizations. A state may also require a federal project proponent to submit any federal permit applications or notifications that have been submitted to the USACE. Federal authorization cannot be issued until after state authorizations have been obtained, so concurrent federal and state reviews can expedite permitting.⁶

Second, after state authorizations are issued, the designated state agency will determine if it concurs, or gives conditional concurrence, with the federal agency’s consistency determination. This step indicates that all required state authorizations have been issued and ensures that the project is compliant with all aspects of the state’s CZMP. Planning a project with consistency in mind will facilitate project approval throughout the process.

State Public Trust Duties

States hold the submerged lands under navigable waters in a trust for the use and benefit of the public, often referred to as a “public trust.” Generally, states have a duty to manage the use of those submerged lands in a way that ensures the public will have sustained use of the waters for boating, commerce, fishing and swimming, and environmental protection. The specifics of each state’s public trust doctrine and how it is managed in practice are addressed in more detail in the sections that follow.

Marsh restoration and island creation BUDM projects typically involve construction activities on submerged lands held in public trust. These projects will often require a

⁵ A fourth type of federal activity that requires consistency review is a plan for exploring, developing, or producing from any area leased under the Outer Continental Shelf Lands Act. 15 CFR Part 930.

⁶ 15 CFR Part 930, subparts C and D.

license, permit, lease, or grant from the state to use those lands, sometimes with associated fees. In addition, applying a state's public trust doctrine can lead to conditions on project design or implementation. For the states covered in this guide, the state agency responsible for administering the public trust doctrine either works in conjunction with or is the same as that responsible for managing coastal zone resources, so the reviews are typically run at the same time as permit reviews.

The Clean Water Act and the Rivers and Harbors Act

The United States Army Corps of Engineers (USACE) has primary responsibility for reviewing projects that involve “fill” to ensure compliance with the CWA and the Rivers and Harbors Act. Together, these statutes protect water quality and navigability of “waters of the United States” (see textbox). A single permit, referred to as a Department of the Army (DA) permit, is authorized by section 10 of the Rivers and Harbors Act of 1899, Section 404 of the Clean Water Act, and Section 103 of the Marine Protection, Research, and Sanctuaries Act of 1972. These sections create a requirement for and authorize USACE to issue permits for work in or affecting any navigable waters of the United States, discharging dredged material into the waters of the United States, or transporting dredged material for offshore disposal in the ocean.

Beneficial Use of Dredged Material in “Waters of the United States”

For decades, legal experts have debated the jurisdictional boundaries of the federal Clean Water Act, especially regarding its coverage of wetlands, intermittent streams, and other aquatic features of the US landscape. The statute requires a federal permit for activities that involve dredging or filling “waters of the United States” (WOTUS), as well as wetlands “adjacent” to those waters. The nuances of these terms engender substantial debate because of the potential permitting requirements for projects that fall within the definition. For the BUDM projects at the center of this guide, however, the restoration work will be done in areas that are most likely jurisdictional waters. Questions surrounding the Supreme Court's recent *Sackett* decision and federal agencies' implementation of that decision should not affect these projects.

Under the CWA, project proponents can either seek an individual permit or a determination that the project aligns with the provisions of a general permit. General permits are intended to be a tool that simplifies federal permitting for categories of activities that are similar in nature, will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment.⁷ One of the main advantages of the general permits is that USACE has undertaken a variety of environmental reviews for the permits on a programmatic basis, reducing or eliminating the project-specific reviews that would otherwise be

⁷ 33 USC § 1344(e)(1).

necessary for individually permitted projects under the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), Magnuson-Stevens Fishery Conservation and Management Act (MSA), and other federal laws.

Clean Water Act general permits come in several forms, including Nationwide Permits (NWP), Regional General Permits (RGPs), and Programmatic General Permits (PGPs). Examples of each will be discussed in the state-specific sections of this document that follow.

USACE has developed a NWP that could be applied to beneficial use projects covered by this guide: NWP 27, “Aquatic Habitat Restoration, Establishment, and Enhancement Activities.”⁸ Project proponents might obtain a verification from the USACE local district office that their project fits within the requirements of NWP 27 in order to satisfy their CWA compliance obligations. USACE district office staff will also review the project for compliance with any “regional conditions” that the District Engineer has appended to the nationwide permit. These conditions are typically introduced to ensure compliance with state law or policy or to address unique aspects of the local or regional environment.

The current version of NWP 27, which expires in March 2026, does not authorize “relocation of tidal waters or the conversion of tidal waters ... to other aquatic uses,” which may limit its viability as a path for CWA compliance. USACE has published a proposal for updates to NWP 27 that specifically endorse its use for “thin layer placement” projects, but the proposal must undergo public and further interagency review before being finalized. All of this underscores the importance of pre-application meetings with district office staff to discuss a coastal restoration project with BUDM from the outset.

⁸ USACE, [Decision Document Nationwide Permit 27](#) (2021).

Marsh Enhancement through Nationwide Permit 27

One notable example of a marsh enhancement project using dredged material and permitted under NWP 27 comes from Seal Beach National Wildlife Refuge in Orange County, California. The refuge is part of Naval Weapons Station Seal Beach, and the State of California retains a property interest in the submerged lands. Combining analyses of marsh subsidence with sea-level rise, researchers determined that the refuge is experiencing relative sea level rise of more than 6mm/year, which is triple the rate of similar southern California marshes not experiencing subsidence.⁹ To better understand the potential to preserve the marsh using dredged sediment, the project team devised a plan to beneficially use 10,000 to 13,500 cubic yards of material dredged by Orange County Parks as part of their Sunset/Huntington Harbour Maintenance Dredging Project and apply it over 10 acres of the marsh (approximately 8-10 inches deep). ([Final project IS/EA](#)) The US Army Corps of Engineers Los Angeles District office allowed the project to move forward under NWP 27. For more information, [click here](#).

In addition to site selection considerations, the Corps will need documentation on the material's physical and chemical characteristics, including grain size, organic content, and potential contaminants. Sediment testing may be necessary to ensure that the material is suitable for beneficial use and does not pose a risk to aquatic organisms or water quality. The engineering design of the project must also be well-developed. This includes providing detailed site plans, cross sections, and descriptions of placement techniques. The Corps and other agencies will be particularly interested in how the material will be contained or spread, how erosion will be controlled, and how the created marsh will develop and be maintained over time. Consideration should also be given to hydrologic and ecological impacts, including changes to water flow, salinity gradients, and habitat connectivity. The Corps will conduct a public interest review, evaluating the benefits and potential detriments of the project in terms of navigation, floodplain hazards and values, recreation, shoreline erosion and accretion, aesthetics, fish and wildlife values, conservation, and the needs and welfare of the public.

The general timeline for USACE permitting can be summarized as follows:

Project proponents should request a pre-application meeting with their local USACE district office early in the design process, typically at the 30% design phase. That

⁹ Takekawa, J. Y., K. M. Thorne, K. J. Buffington, C. M. Freeman, and G. Block. *Evaluation of subterranean subsidence at Seal Beach National Wildlife Refuge*. Unpubl. Data Summary Report. U. S. Geological Survey, Western Ecological Research Center, Vallejo, CA (2013).

meeting is an opportunity to gain clarity on whether the project is likely to move forward under a nationwide, regional, programmatic, or individual permit.

The projects covered in this guide may advance through a general permit, but to do so will require submitting Preconstruction Notification (PCN) to the district office after the pre-app meeting.¹⁰ USACE district staff have 30 days to determine whether the PCN submission is complete. If not, they will notify the applicant, request additional information, and the review process will not formally begin until all necessary information has been submitted. Once the district office determines that the PCN is complete, USACE should verify in writing the applicability of a nationwide permit within 45 days, along with any special conditions necessary to ensure compliance. Note that the 45-day deadline does not apply if Endangered Species Act or National Historic Preservation Act consultations are necessary.

If no general permit is applicable and an Individual Permit is necessary, the process can be significantly longer. Following the pre-app meeting, the project proponent will submit a full permit application (USACE Form ENG 4345 or a state-specific Joint Application, along with related supporting documents).¹¹ USACE district staff will assign a project manager who will determine within 15 days whether the application is complete. If not, the project manager will notify the applicant, request additional information, and the review process will not formally begin until all necessary information has been submitted. When the application is complete, the USACE review process begins, which will include:

- A public review period of 15–30 days;
- A NEPA analysis;
- Coordinating with state agencies on Clean Water Act Section 401 Water Quality Certification, Coastal Zone Management Act consistency determination, and state-level fish and wildlife protections;
- Consulting with US Fish and Wildlife Service and NOAA Fisheries on protected species and essential fish habitat; and
- Consulting with relevant agencies on historic and cultural resources.

USACE anticipates the total review time to be 60–120 days for non-controversial projects.

¹⁰ See USACE, [2021 Nationwide Permits](#) (2021), at 19.

¹¹ See [this resource page from USACE](#), and drill down under “Additional Resources > Forms and Appendices (Generated or used in the RRS) > Application for Department of the Army (DA) Permit (ENG 4345).”

Other projects will take longer, especially if a public hearing or expanded NEPA analysis (i.e., an EIS) is required.

National Environmental Policy Act

Early in the process of developing a marsh enhancement or bird island project using dredged material, project proponents must begin compliance efforts related to the National Environmental Policy Act (NEPA). NEPA requires a federal agency to analyze foreseeable impacts on the environment of its proposed project; the required depth of analysis and public engagement increases as the potential impacts become more significant.

There are four levels of analysis:

1. No analysis required;
2. Minimal analysis required for “categorically excluded” actions – projects that are of a type that are unlikely to cause significant impact either individually or cumulatively;
3. Screening-level analysis required for all other actions, which might end with an “environmental assessment” and “finding of no significant impact” (EA/FONSI); or, if a significant impact is possible, rise to the next level of analysis;
4. Full analysis of impacts, documented in an Environmental Impact Statement (EIS).

This guide is intended to address state-level variation in permitting requirements, and NEPA compliance requirements do not vary by state. Thus this guide does not delve deeply into the issues related to compliance with this statute. However, four overarching NEPA compliance issues are worth noting:

Different agencies have different NEPA compliance requirements. BUDM projects are complex and typically involve multiple federal agencies. A project proponent must be aware of the differences in agencies’ NEPA compliance requirements. At the time of

writing, all federal agencies are under a mandate from President Trump to rewrite their NEPA regulations,¹² and the implications of these changes are yet to be determined.

Different agencies have different regulations and policies for defining actions that are categorically excluded from higher levels of NEPA analysis. Most agencies have adopted “CatExs” for routine administrative matters, minor real estate transactions, landscaping, and other similar actions. These activities generally exempt the agency from developing an EA/FONSI or EIS. However, there is considerable variation in how different agencies address more significant natural resource management activities, including the marsh enhancement BUDM projects discussed here. For instance, the Department of Defense has a CatEx available for projects that are consistent with the overall goals of an approved Installation Natural Resource Management Plan (INRMP).¹³ Another CatEx is available for new construction projects that are consistent with existing and designated land uses, which has been used for environmental restoration projects on undeveloped land at NWS Yorktown.¹⁴

A federal agency may “adopt” a categorical exclusion from another federal agency. In 2023, Congress amended NEPA to allow agencies to “adopt” categorical exclusions from other agencies in an effort to streamline NEPA administrative procedures.¹⁵ In brief, the law requires that the agencies consult on the planned uses of the adopted CatEx and notify the public of the proposed adoption. As federal agencies write new NEPA regulations, agency-specific CatExs and opportunities for cross-agency adoption will evolve.

In a project where multiple federal agencies are involved, one agency is often designated the lead agency. This designation is an effort to streamline the process and avoid multiple reviews by different agencies with slightly different procedures and policies. For instance, a National Fish and Wildlife Fund (NFWF)-funded, Navy-sponsored project to enhance salt marsh on a Navy base might trigger NEPA compliance in three different ways: on account of the federal funding, the Navy sponsorship, and the necessary Clean Water Act permit (funding, sponsoring, and permitting being separate “agency actions”). Federal law governing the establishment of a lead agency requires the various agencies that might have NEPA compliance duties to determine, by letter or memorandum, which will be the lead agency. That agency will then coordinate NEPA

¹² Executive Order 14154, “[Unleashing American Energy](#)” (Jan. 20, 2025).

¹³ [Dept. of Defense National Environmental Policy Act Implementing Procedures: Appendix A. Department of Defense Categorical Exclusions \(CATEX\)](#), at 6 (Army CatEx (c)(5)) and 18 (Navy CatEx 45).

¹⁴ *Id.* at 17 (Navy CatEx 33); private communications, on file with authors.

¹⁵ Fiscal Responsibility Act of 2023, Pub. L. 118-5, div. C, title III, Sec. 321(b); 42 USC 4336c; NEPA Section 109.

compliance work with the “cooperating agencies” to ensure their subject matter expertise is taken into account.¹⁶

Additional Federal Consultations

A coastal habitat restoration project may implicate a variety of other protected cultural and natural resources such as archaeological artifacts or protected species and their associated habitats. Consultations required by federal law related to these resources include:

Endangered Species Act. “Section 7 consultations” are required for agency actions that have the potential to impact threatened or endangered species or their designated critical habitats. The “action agency” must undertake a screening-level review of a proposed project’s potential impacts, called a Biological Assessment (BA). The BA is presented to the “resource agency” for review (US Fish and Wildlife Service and/or National Marine Fisheries Service (NOAA Fisheries)). Further analysis, in the form of a Biological Opinion (BiOp) may be required if likely impacts are significant. Resource agencies may demand monitoring, changes to project design, specific windows of time for construction, or other protective measures to minimize potential harm to listed species.

Magnuson-Stevens Fishery Conservation and Management Act. “EFH consultations” are required for agency actions that have the potential to negatively affect essential fish habitat as defined by NOAA Fisheries. An agency proposing to undertake a project must submit their analysis of potential impacts on essential fish habitat to NOAA Fisheries. Agency biologists review that information and may recommend protective measures of various types, similar to the requests made through ESA Section 7 consultations. Recommendations made by NOAA Fisheries under the Magnuson-Stevens Act are just that – recommendations – and are not enforceable through litigation filed by outside parties. Nevertheless, these recommendations carry significant weight because failure to incorporate them into permit conditions can lead to interagency conflict that creates administrative inefficiencies.

Marine Mammal Protection Act. “Incidental Take Authorizations” from NOAA Fisheries are required for any project that will result in “harassment” (i.e., injury or disturbance) to marine mammals such as dolphins, whales, or manatees. Restoration projects using dredged material have the potential to affect marine mammals both during construction phases and over the long term (for example, if containment structures around a marsh

¹⁶ 42 USC 4336a.



enhancement project are insufficient). Incidental Harassment Authorization or a Letter of Authorization from NOAA Fisheries may require mitigation measures such as bubble screens to prevent adverse impacts from noise, time-of-day or time-of-year restrictions, and monitoring and stop-work requirements.

National Historic Preservation Act. “Section 106/SHPO consultations” are required for agency actions that might affect a site, structure, object, or other cultural resource that is included in or eligible for inclusion in the National Register of Historic Places. The project proponent conducts an initial screening assessment and then consults with the relevant State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO). The SHPO or THPO might develop a Memorandum of Agreement (MOU) or Programmatic Agreement (PA) with the project proponent; that is, a legally binding document that requires archaeological surveys before the project begins, restrictions on where work may be performed (no-work buffers), or other alternatives that would avoid, minimize, or mitigate adverse impacts to historic or cultural resources.

North Carolina

North Carolina has a long history and established procedure for beneficially using dredged material for beach renourishment, and interest in BUDM for other purposes on the estuarine side – such as marsh restoration and bird island establishment – is growing, including for larger scale projects. At least two small-scale projects have been completed at Marine Corps Base Camp Lejeune, one at Freeman Creek and another at Mile Hammock Bay. Other military installations in the state can be found [here](#). Coastal marsh and bird island restoration projects are still considered novel. The state has 3,375 shoreline miles and a variety of coastal ecosystems in the outer coastal plain.¹⁷

Division of Coastal Management and Coastal Area Management Act Permits

At the state level, the NC Division of Coastal Management (DCM), part of the NC Department of Environmental Quality (DEQ), carries out the state's Coastal Area Management Act (CAMA), the Dredge and Fill Law, and the federal CZMA using rules and policies of the NC Coastal Resources Commission (CRC). DCM serves as staff to the CRC. The Division of Marine Fisheries and the Division of Water Resources (both under the

Habitat Restoration with BUDM in North Carolina: Two Examples

In [North Carolina](#), there are two small-scale, proof of concept projects using dredged material to restore and increase the resilience of coastal wetlands on Marine Corps Base Camp Lejeune. [Mile Hammock Bay marsh](#), located on a barrier island in the Atlantic Intracoastal Water Way (AIWW), saw notable retreat between 1956 and 2004, due in part to the presence of ponds within the marsh. Here, NOAA researchers proposed to fill some ponds to “create a more cohesive marsh platform” that is less susceptible to erosion and provides a beneficial use for material dredged from nearby waterways. Despite project delays due to the need to find the right sediment type, plantings successfully took hold in parts of the pond filled to the intertidal elevation, becoming indistinguishable from the surrounding natural marsh. The researchers concluded that BUDM for pond fill was “successful as a proof of concept for shoreline pond filling to create marsh habitat.”

A similarly successful proof of concept thin layer placement project took place at [Freeman Creek](#), where elevation growth of low-lying marsh was outpaced by sea level rise. Researchers applied dredged material to elevate treatment plots with material dredged specifically for the project. The mean elevation of the treated plots continued after sediment placement, and plant growth responded favorably to surface elevation. This growth in turn led to increased biomass and increased capacity to build more elevation, improving the overall resilience of the treated plots to future increases in sea level rise.

¹⁷ NOAA Office of Coastal Management, “[Shoreline Mileage of the United States](#)” (n.d.). The mileage includes “offshore islands, sounds, bays, rivers, and creeks to the head of tidewater or to a point where tidal waters narrow to a width of 100 feet.”

DEQ), are important, as is the NC Wildlife Resources Commission. At the federal level, North Carolina falls under the USACE Wilmington District and NMFS Southeast Regional Office.

In practice, DCM often operates as the clearinghouse for DWR and USACE: The application process is a "one-stop-shop" for applicants trying to get their DWR, USACE, and CAMA permits. A submitted application is circulated to DWR and USACE and, in many cases, fulfills their application requirements as well. In practice, DCM often requests scoping meetings where an applicant presents their project proposal in an informal meeting to both state and federal resource agencies to discuss any issues those agencies may have prior to submitting an application. This informal meeting can identify such issues and help resolve them, an example of the benefits of early engagement.

In North Carolina, CAMA lays out the policy and laws for the state's coastal zone management program through DCM. It recognizes that coastal lands and waters are among the most valuable resources in North Carolina, and it prioritizes the opportunity for the public to enjoy the physical, aesthetic, cultural, and recreational features of the coast and protecting water and land resources.¹⁸

The CRC, housed within DEQ, oversees how coastal management is implemented. The CRC establishes policies for the NC CZMP and adopts rules for both CAMA and the NC Dredge and Fill Act. Any applicant requesting a permit for a BUDM project would receive a single permit that ensures compliance with both state laws. The CRC has designated geographic areas of the coast as "areas of environmental concern," and development in these areas requires a permit. These AECs – where marsh enhancement and bird island development are likely to occur – include:

1. Coastal wetlands and contiguous areas needed to protect them;
2. Estuarine waters;
3. Watersheds or aquifers that are present sources of public water supply;
4. Fragile or other areas containing environmental or natural resources of great significance; and
5. Waterways and tidal lands that are part of the public trust.¹⁹

A CAMA permit is required for, among other development, projects involving fill in coastal areas and specifically in estuarine waters, tidelands, marshlands, or state-owned

¹⁸ N.C. Stat. Ann. § 113A-3.

¹⁹ N.C. Stat. Ann. § 113A-113.

lakes.²⁰ The permit application must include basic project location and design information, as well as ownership documents or permission to use the land. The application will be circulated to relevant state agencies for input on aspects that fall under their jurisdiction. DCM makes permit decisions after considering agency and public comments, and after determining whether a proposed project meets CRC rules and the local government's land-use plan.

There are three types of CAMA permits in North Carolina: major, general, and minor, depending on project size, methods, scope, and other required permits. A major permit is for projects that exceed twenty acres or construction that exceeds 60,000 square feet and that require other state or federal permits. Major permits are reviewed by up to ten other state agencies and four federal agencies. General permits fall below this size threshold and are considered routine projects that pose little or no threat to the environment; minor permits apply to single-family home projects. Marsh enhancement and bird island BUDM projects would require a major permit.

Grounds for denying the application are a significant adverse impact to:

- Public water use,
- Nearby riparian owners,
- Public health, safety, or welfare;
- Conservation of public or private water supplies; or
- Wildlife or fisheries (fresh water, estuarine, or marine).²¹

If granted, a CAMA permit is valid for up to five years. If a CAMA permit is denied, applicants may petition the CRC for a variance to complete a project that is prohibited by the CRC rules. For a marsh restoration or bird island creation BUDM project, a variance could be granted if the “requested variance is consistent with the spirit, purpose, and intent” of coastal management rules, standards, or orders.²²

In practice, BUDM projects currently proposed in North Carolina would be denied because filling coastal wetlands is contrary to existing law and policies; the project proposal would then shift to the variance process. The applicant would present the proposal to the CRC for approval or denial. The CRC may approve the project if the applicant demonstrates:

²⁰ N.C. Stat. § 113-229.

²¹ N.C. Stat. § 113-229.

²² N.C. Stat. § 113A-120.1

1. The proposed project will have public benefits consistent with protecting the coastal areas of the state;
2. The public benefits outweigh the adverse impacts of the project;
3. No alternate site is available for the project; and
4. All means and measures to mitigate adverse impacts are part of the project design and will be implemented at the applicant's expense.²³

The variance process also provides the CRC the opportunity to decide if they would like to proceed with rulemaking to address future projects, or the CRC can use the approved project as a pilot for establishing thresholds and other criteria.

Table 2. CAMA & Dredge and Fill Permit Considerations in North Carolina	
Factors for Permit Denial	Implication for BUDM Project Applications
<i>General Factors</i>	
The development is inconsistent with written State guidelines or the local land-use plans.	Review guidelines and land-use plans to ensure the project is consistent; discuss any concerns with relevant agencies early in the project proposal phase.
There is a practicable alternative that would accomplish the overall project purposes with less adverse impact on the public resources, considering engineering requirements and all economic costs.	Provide research and data on the benefits of coastal marsh restoration, including the value of ecosystem services such as hazard reduction and recreation opportunities that will benefit local communities; provide comparison to costs of offshore disposal or upland containment.
The proposed development would contribute to cumulative effects that would be inconsistent with specific written guidelines on various AECs.	Emphasize that the BUDM project is intended and designed to have myriad positive environmental and ecosystem benefits; include monitoring and adaptive management plans.

²³ 15A N.C. Admin. Code 07H .0208.



<i>Areas of Environmental Concern</i>	
In <i>coastal wetlands</i> , the BUDM project would contradict any order (G.S. 113-230) to promote public safety, health, and welfare or to protect public and private property, wildlife, and marine fisheries in coastal wetlands.	Emphasize that the BUDM project is intended to specifically achieve state goals and policies to promote public safety, health, and welfare and to protect property and wildlife in and around coastal wetlands; provide research and data on the benefits and success of smaller pilot projects on coastal wetland restoration.
In <i>estuarine waters</i> , a permit would also be denied per the state's Dredge and Fill law for having a significant adverse effect on public use of water, on the value and enjoyment of property of riparian owners, on public health, safety, or welfare; on conservation of public and private water supplies; on wildlife or fresh water, estuarine, or marine fisheries (G.S. 113-229(e)).	Cite scientific research and data on the ecosystem services provided by healthy and intact coastal wetlands; on the property value increase; anticipate implementing best management practices for sediment and erosion control during project implementation period.
In a <i>fragile or historic area or area containing environmental or natural resources of significance</i> , the development will result in major or irreversible damage to one or more of the historic, cultural, scientific, environmental or scenic values or natural systems (G.S. 113A-113(b)(4)).	Emphasize how the proposed BUDM project will support and improve resilience in coastal areas; cite scientific research that show negative impacts of a “do nothing” alternative.
On <i>public trust lands</i> , the BUDM project will jeopardize the public rights or interests in those lands (G.S. 113A-113(b)(5)).	Highlight recreational opportunities, increased ecosystem resilience, and other public benefits of the BUDM project.
In <i>natural hazard areas</i> , the BUDM project would occur in such a manner as to unreasonably endanger life or property.	Cite scientific research and data that demonstrates coastal marsh benefits for estuarine beaches, shoreline of estuarine and public trust waters, floodways and floodplains, G.S. 113A-113(b)(6).

Variance Approval	
The requested variance is consistent with the spirit, purpose, and intent of the rules, standards, or orders; will secure public safety and welfare; and will preserve substantial justice.	Cite language from CAMA and other state policies that support preserving coastal wetlands and their values; provide evidence of public benefits from healthy coastal wetlands and bird islands, such as recreation, hazard reduction, and productive fisheries.

In 2022, DCM published guidelines for thin-layer placement (TLP) as a coastal wetland restoration or enhancement strategy where dredged sediment is “intentionally placed on a wetland to increase its elevation while maintaining hydrology and inundation durations necessary for native [or targeted] wetland vegetation to persist.”²⁴ Wetlands that would benefit from TLP include those with low stem-density or stunted vegetation; wetlands that have been fragmented or partitioned through either natural processes or with ditches, channels, or impoundments; wetlands with elevation deficits; or wetlands with encroaching ponds or pools.

The guidelines specifically emphasize that the primary goal of a project should be to restore wetland by adding sediment – beneficial use – and not simply to create a convenient disposal site for dredged material.²⁵ The guidelines also note that, while TLP is an available strategy for beneficial use, natural infrastructure, and marsh restoration projects, it is not a mitigation strategy that generates credits for regulatory purposes.²⁶

Because relatively few marsh or wetland restoration projects with BUDM have occurred statewide, the guidelines suggest monitoring criteria to gather as much information and data as possible throughout the project timeline and after hurricanes or other large-scale disturbances. TLP projects should be monitored to ensure that the goals and objectives have been met, to determine whether the project was built as designed, and to evaluate the effects of the project on populations of interest. Monitoring should include site visits for qualitative monitoring data, measuring elevation changes, mapping habitats and surveying vegetation and soil characteristics, as well as measuring vegetation biomass, water quality near sensitive habitats, changes to hydrology and tidal creek structure, and assessing biogeochemical functions.²⁷

²⁴ [Guidance for Thin Layer Placement in North Carolina](#) (TLP Guidance) (Sept. 2022).

²⁵ [TLP Guidance](#).

²⁶ [TLP Guidance](#).

²⁷ [TLP Guidance](#).

Consistency with the Coastal Zone Management Program

A number of federal activities are required to comply with the enforceable policies of the state's CZMP. In North Carolina, the federal consistency determination process requires a separate submission than the CAMA permit application.²⁸ DCM recommends a two-part submission for federal agencies seeking a consistency review:

1. A cover letter that requests concurrence with the federal agency's consistency determination and includes a statement that the federal agency has reviewed the state's coastal program and the proposed activity is consistent to the maximum extent practicable; and
2. Supporting documents establishing that the activity is consistent with North Carolina's coastal program and how any unavoidable adverse impacts will be addressed.

The consistency review should occur after obtaining other state permits to minimize "the potential for 'late hits' in the review process" and helps the federal agency "in demonstrating implied conformance" with the coastal management program. It requires a public notice period and state agency review. Other environmental documents, such as those required for NEPA review, must be submitted to the North Carolina State Environmental Review Clearinghouse because NEPA and consistency review processes are "discrete independent procedures requiring separate courses of review and action."²⁹

Army Corps Permitting

The USACE Wilmington District Office issues individual, regional, and nationwide permits. Individual permits are reserved for projects with the potential for substantial environmental impacts and require a full public interest review and public notice and comment, as well as input from other affected agencies and interested parties.

As noted [above](#), Nationwide Permit (NWP) 27, "Aquatic Habitat Restoration, Enhancement, and Establishment Activities," is the most relevant to projects that would beneficially use dredged material for marsh enhancement or bird island creation. The Wilmington District has not established any regional conditions on NWP 27 that apply

²⁸ North Carolina also has a "consistency certification" that is required for a non-federal entity that seeks a federal permit. 15 CFR 930. NOAA Office for Coastal Management, "[North Carolina's Listed Federal Actions](#)" (n.d.).

²⁹ N.C. Dep't Coastal Management, "[North Carolina Federal Consistency Determination Submissions Guidance \(Subpart 'C' 15 CFR 930\)](#)" (2013).

specifically to the BUDM projects covered in this guide.³⁰ However, all projects in the Wilmington District that move forward under NWP 27 must comply with a number of requirements arising out of the interagency review that the district undertook when finalizing the NWPs:

First, North Carolina's Clean Water Act Section 401 Water Quality Certification for NWP 27 does not apply to projects in wetland or coastal areas that involve permanent fill into or modification of wetlands or that involve permanent impact to high-value, designated waters or wetlands adjacent to those waters. Such projects must apply to DEQ for an Individual Water Quality Certification for associated NWPs.

Second, the projects must comply with an ESA Programmatic Biological Opinion or Standard Local Operating Procedures for Endangered Species (SLOPES) for some [federally listed species](#) and designated critical habitats, to which mandatory conditions and terms apply.

The Wilmington District has also issued Regional General Permit 291 that could potentially apply to marsh restoration or bird island creation BUDM projects. This general permit applies to activities in the coastal counties across the state that are not otherwise eligible for a nationwide general permit or other regional general permits. However, a BUDM project would require specific authorization because in general no fill projects are allowed in waters or wetlands.³¹

³⁰ The specific regional condition for NWP 27 applies to dam removal activities or other impounding structure construction. USACE Wilmington District, "[Public Notice Final Regional Conditions for the Nationwide Permits](#)" (Feb. 4, 2022).

³¹ USACE Wilmington District, [General Permit 198000291](#) (Jan. 1, 2017). The operating conditions have somewhat limiting language for BUDM projects that make the efficiency of using an RGP unclear. For example, the conditions require all fill material placed in waters or wetlands to be generated from an upland source and also require all excavated material to be disposed in an upland area as well.

South Carolina

South Carolina's coastal counties are home to Marine Corps, Air Force, Navy, and Army [installations](#), as well as National Wildlife Refuges, National Estuarine Research Reserves, state Wildlife Management Areas, and a variety of SERPPAS partners. The state boasts 344,500 acres of salt marsh, thanks to decades of conservation.³² Its coastal geography also includes many rivers and estuarine systems. This diverse socio-ecological context creates a variety of opportunities for beneficially using dredged material to enhance marshes or create bird islands.

Department of Environmental Services & Critical Area Permit

The South Carolina Department of Environmental Services (SCDES) is the lead agency for reviewing a proposed project's impacts on the state's water resources. Within SCDES, the [Bureau of Coastal Management](#) (BCM) handles permitting and regulatory review in the areas where projects utilizing dredged material might enhance marshes or create bird islands.

The key permit needed from BCM before proceeding with a beneficial use project is the state Critical Area Permit (CAP). South Carolina's 1977 Coastal Tidelands and Wetlands Act established a requirement that projects in the state's "critical areas" obtain a permit prior to construction. Critical areas are coastal waters, tidelands (defined to include coastal wetlands and mudflats), beaches, and primary oceanfront sand dunes. The BUDM projects that are the focus of this report will require a Critical Area Permit.

For projects on military installations, it is worth noting that South Carolina has ceded jurisdiction over lands owned by the federal government.³³ Thus, it is not necessary to obtain a Critical Areas Permit for work that will occur exclusively on federal land, since the state and SCDES have no jurisdiction over the land.

The standard of review, generally, for a Critical Area Permit is that "critical areas shall be used to provide the combination of uses which will insure the maximum benefit to the people, but not necessarily a combination of uses which will generate measurable maximum dollar benefits."³⁴ This vague general standard is further elucidated in a list of ten factors that BCM staff are to consider when reviewing a permit application. The ten factors cover everything from impacts on aquatic life to a comparison of the economic

³² S.C. Department of Natural Resources, "[Marine Salt Marsh Habitat](#)" (2020).

³³ S.C. Code § 3-1-120.

³⁴ S.C. Code § 48-39-30(D)

benefits of the project as compared to leaving the site in an unaltered state.³⁵ See Table 3 for the full list of factors and notes on implications for permit seekers who are proposing marsh enhancement or bird island BUDM projects.

Critical Area Permit applications should be submitted through the [SCDES ePermitting site](#).

TABLE 3: Critical Areas Permit Review considerations in South Carolina	
Statutory Consideration	Implications for BUDM Project Applications
The extent to which the activity requires a waterfront location or is economically enhanced by its proximity to the water.	Projects are inherently waterfront.
The extent to which the activity would harmfully obstruct the natural flow of navigable water.	For bird islands, design to maintain natural flow.
The extent to which the applicant's completed project would affect the production of fish, shrimp, oysters, crabs or clams or any marine life or wildlife or other natural resources in a particular area including but not limited to water and oxygen supply.	Scientific literature on secondary production benefits should be included in application. Site-specific monitoring may be required as a condition of permit approval – plan ahead!
The extent to which the activity could cause erosion, shoaling of channels or creation of stagnant water.	Hydrographic/hydrodynamic modeling results will strengthen permit application.
The extent to which the development could affect existing public access to tidal and submerged lands, navigable waters and beaches or other recreational coastal resources.	For projects on military installations, public access is already limited due to operational security issues. Bird islands technically eliminate access to submerged lands and navigable waters. If they attract species of conservation concern, access could be further limited.
The extent to which the development could affect the habitats for rare and endangered species of wildlife or irreplaceable historic and archeological sites of South Carolina's coastal zone.	Projects should be designed and constructed to ensure only short-term or transient impacts. Applicants might cite scientific research to show negative impacts of “do nothing” and likely positive impacts of project implementation.

³⁵ S.C. Code § 48-39-150(a); S.C. Code Regs. 30-11.B.

The extent of the economic benefits as compared with the benefits from preservation of an area in its unaltered state.	Applicants might cite scientific studies showing ecological and flood-risk management benefits of enhancing marsh. Historic aerial imagery can show marsh degradation and be used to estimate future losses. “Unaltered” may involve loss of aquatic function, which could be preserved or enhanced through BUDM.
The extent of any adverse environmental impact which cannot be avoided by reasonable safeguards.	BMPs for sediment and erosion control should be utilized during construction. Project proponents should anticipate and plan protective measures for species of conservation concern (e.g., time-of-year or time-of-day restrictions on work). Project proponents should develop monitoring and adaptive management plans.
The extent to which all feasible safeguards are taken to avoid adverse environmental impact resulting from a project.	Consider implementing pilot-scale projects in the area first, or using a phased approach. Project proponents should develop monitoring and adaptive management plans.
The extent to which the proposed use could affect the value and enjoyment of adjacent owners.	Negative impacts are most likely during construction phases, which might be mitigated through early engagement and various BMPs. Positive impacts should be emphasized: improvements in ecosystem services.

BCM staff must also analyze the “cumulative effects of the project ... within the context of other possible development and the general character of the area.” For marsh enhancement or bird island projects, this cumulative effects analysis is unlikely to be a barrier to permit approval since the projects are inherently low-impact development intended to enhance ecosystem services and/or aquatic functions. That is, they will not

add to the development pressures and possible negative impacts on protected areas and in fact may offset or protect against development impacts.

Critical Area Permit approval also depends on BCM staff analyzing whether the project aligns with the priority uses of Geographic Areas of Particular Concern as described in the state's CZMP (see below).

SCDES regulations have additional rules specific to dredged material sediment disposal, which include language that could make it difficult to obtain a Critical Area Permit for sediment placement projects intended to enhance coastal marshes. In particular, Rule 30-12(I) states:

“Upland disposal of dredged material shall always be sought in preference to disposal in wetlands. Vegetated wetlands and mudflats shall not be utilized for disposal of dredged materials unless there are no feasible alternatives. Any other wetlands should not be utilized for disposal of dredged materials when other alternatives exist.”³⁶

These seemingly strict prohibitions are rooted in a history of dredging practices that resulted in significant amounts of marsh loss and are intended to stem those destructive practices. The prohibitions create open questions as to how BCM will treat projects designed to achieve marsh enhancement and preservation using dredged sediment, and whether approval of such projects creates a litigation risk for the agency (i.e., whether a third party might sue, arguing that BCM approval of a marsh enhancement project violates the statute and its implementing regulations). Arguably, using dredged material for marsh enhancement is not “disposal,” and so these projects would not violate the above-quoted standard.

SCDES encourages project development teams to reach out early in the design process to share their vision and obtain the agency's feedback and advice. In fact, agency regulations all but require it.³⁷ Initiating consultation with SCDES staff around the 30% design stage can facilitate a useful knowledge exchange, in which the conversation goes beyond hypotheticals and avoids wasted effort in case the regulatory staff raise issues that the design team had not anticipated. Once an application has been submitted and is deemed complete, a public notice and interagency review process ensues. If twenty or more people request one in writing, BCM will hold a public hearing. Once the public review process is done, BCM endeavors to complete its review (including site inspection and technical analysis) in 90 days.

³⁶ S.C. Code Regs. 30-12(I)(2)(a).

³⁷ See S.C. Code Regs. R.30-2.A.

Possible outcomes of application review are approval, approval with conditions, or denial. Assuming the project proponents develop a complete and robust application package sufficient to meet regulatory and statutory standards, the most likely outcome will be approval with conditions. Typical conditions might include time-of-year restrictions to protect species of conservation concern (especially sea turtles, migratory birds, and anadromous fish). For less common projects like marsh enhancement or bird island BUDM projects, project proponents might also expect monitoring requirements. They should plan to discuss the possibility of such requirements and the agency's needs in the pre-app meeting.

State law gives SCDES broad authority to establish general permits under the CAP program. However, the existing permits are not applicable to marsh enhancement or bird island BUDM projects.³⁸ Similarly, although SCDES regulations establish exemptions from the CAP program, none is applicable to these projects.³⁹

Public Trust Doctrine

As with all states in the SERPPAS region, South Carolina holds submerged lands (lands below the high water line) in public trust, with a responsibility to manage them for the benefit of the public over the long term. The SC Supreme Court has interpreted the state's CZMP, Critical Areas Permit program, and their implementing regulations – in particular, the requirement that decisions be made to promote maximum benefit to the public – as the embodiment of the public trust doctrine in the state.⁴⁰ Thus securing a Critical Area Permit and Coastal Zone Consistency determination or concurrence is sufficient authorization to use the state's public trust resources.

Consistency with the Coastal Zone Management Program

BUDM project proponents will need to establish that their project is consistent with the state's Coastal Zone Management Program (CZMP). Federal agencies, including the military services, make their own consistency determinations, submit them to BCM in a letter, and seek concurrence on that determination from BCM. Other potentially affected agencies and organizations submit information about the project and its likely environmental impacts to BCM, and BCM makes the consistency determination.

³⁸ See S.C. Department of Environmental Services, "[Critical Area Permitting](#)" (2025).

³⁹ See S.C. Code Regs. 30-5.

⁴⁰ *Kiawah Development Partners, II v. S.C. Dept. of Health and Environmental Control*, 411 S.C. 16, 766 S.E.2d 707 (Dec. 10, 2014).

BCM has published a [series of checklists](#) to assist project development teams in their Coastal Zone Management Act compliance efforts. The checklists are a helpful compilation of the enforceable policies from the state's Coastal Zone Management Program document and related laws and regulations. Project development teams should complete the checklists relevant to their proposed project and submit them with their application or determination letter. The application or determination letter should be submitted through the state's ePermitting portal, ideally at the same time as the related CAP application.

Project development teams should take note of the CZM language providing general guidance for projects in the coastal zone, which might be interpreted as both supportive and discouraging of potential BUDM projects. For example, on the supportive end, the guidelines declare that the state policy is to “protect and, where possible, to restore or enhance the resources of the State’s coastal zone for this and succeeding generations.”⁴¹ However, cutting against that language, the CZMP document also warns against sediment placement on coastal marshes and certain other sensitive habitats (see the Dredging and Dredged Material Management Policies). These policies include statements such as “Wetlands shall not be utilized as depositories for waste materials except as discussed in R.30-12(I)” (quoted above) and “To the maximum extent feasible, dredged material must not be placed on high value natural habitats such as salt, brackish or freshwater wetlands; submerged vegetation; oyster reefs or tidal guts.”

Ultimately, a CZMA consistency determination (or concurrence) involves balancing multiple factors, therefore, engaging SCDES early in the design process is critical to project success. The standard of review under South Carolina’s CZMP is nuanced. By statute, the core state policy is “to protect the quality of the coastal environment and to promote the economic and social improvement of the coastal zone and of all the people of the State.”⁴² To effectuate this policy, SCDES reviews proposed projects under the laws it is responsible for implementing and coordinates review by seventeen other state agencies that have some purview over activities in the coastal zone. Each of these authorities is designed to promote an important social value, whether it be future economic development opportunities or conservation of threatened and endangered species. Thus, good analysis, design, and engineering should endeavor that sediment placement, even on high-value habitat, can have a net-positive effect over the long run, ultimately supporting the state’s coastal zone management goals.

⁴¹ [Coastal Zone Management Program, Appendix A: Guidelines for Evaluation of All Projects.](#)

⁴² S.C. Code § 48-39-30.

Army Corps Permitting

BUDM project development teams will also need to ensure compliance with Section 404 of the federal Clean Water Act and Section 10 of the Rivers and Harbors Act. A pre-application meeting with staff from the US Army Corps of Engineers' Charleston District office is a critical step in determining the optimum path forward. Following the pre-app meeting and further planning and design, a project proponent should submit a full permit application via the [Regulatory Request System](#).

As discussed above, CWA compliance for marsh enhancement or bird island projects using dredged material may be possible through Nationwide Permit 27, which covers "Aquatic Habitat Restoration, Enhancement, and Establishment Activities."

The Charleston District office has established several regional conditions on NWP 27.⁴³ Four are applicable to all projects covered by any Nationwide Permit and potentially relevant to marsh enhancement or bird island projects utilizing dredged material:

- Regional Condition (RC) C.2 - NWP activities are "not authorized in areas known or suspected to have sediment contamination"
- RC C.3 - A pre-construction notification (PCN) is required for all projects located in a floodway designated by the Federal Emergency Management Administration (FEMA)
- RC C.4 - A PCN is required for any project in or adjacent to a US Army Corps of Engineers Civil Works project, including navigational channels maintained by the Corps (a list of such projects is provided in the Charleston District's regional conditions notice)
- RC D.11 - NWP 27 cannot be used for discharges that will cause a loss of greater than 0.05 acres of stream bed (potential barrier to bird island creation)

The Charleston District office has established several Regional General Permits, one of which may be relevant to marsh enhancement projects. [Regional General Permit 36](#) was designed for "Wetland & Stream Restoration & Enhancement Activities." This permit is only available for projects that are either sponsored by the South Carolina Department of Natural Resources (SCDNR) or have SCDNR as the applicant or a project participant.

⁴³ See USACE Charleston District, "[Public Notice Announcing the Reissuance of the Nationwide Permits, the Approved Nationwide Permit Regional Conditions for South Carolina, the Water Quality Certifications and Coastal Zone Consistency Determinations](#)" (Feb. 7, 2022).



Furthermore, use of this permit is only allowed for projects that will impact less than five acres of wetland or 3,000 linear feet of waters of the United States. Nevertheless, the permit could be useful if a military installation were to partner with SCDNR on, for instance, a marsh enhancement project using dredged material.

If Charleston District office staff determine that approval of the project is not possible under NWP 27 or RGP 36, project development teams will need to apply for an Individual Permit. This is accomplished through a “Joint Permit Application.” The Joint Permit Application developed by the Charleston District office and SCDES is available [here](#) and should be submitted both to SCDES-BCM through the state’s ePermitting portal and to USACE Charleston District via the federal Regulatory Request System. If an Individual Permit is necessary, the project proponent will also have to coordinate with the district office on Clean Water Act Section 401 Water Quality Certification from SCDES, NEPA compliance, and the various other consultations. For more information about these reviews and about timelines for USACE review, please see the [introductory section](#).

Georgia

Georgia's 110-mile coastline is home to a diverse mix of developed and undeveloped lands, including a major international port in Savannah, preserved coastal marshes and barrier islands in McIntosh, Glynn, and Camden Counties, and [military installations](#) such as the Naval Submarine Base at Kings Bay. More than 360,000 acres of salt marsh lay along the coast, providing naturally resplendent surroundings and storm surge protection for human populations, as well as vital habitat for a variety of aquatic, terrestrial, and avian species. Five decades ago, the Georgia legislature passed the Coastal Marshlands Protection Act (CMPA) to manage the impacts of human development and recreation on the marshes. While effective management and investments in conservation have had major benefits for coastal marshes, there are still opportunities for restoration or enhancement projects that make use of dredged sediment.

Department of Natural Resources Coastal Resources Division

Georgia's coastal plain extends approximately sixty miles inland from the Atlantic Ocean, and the state's Department of Natural Resources (DNR) Coastal Resources Division (CRD) is the primary regulatory authority for projects in that area that would utilize dredged material to enhance marshes or create bird islands. The framework for CRD's regulatory authority is laid out in Georgia's Coastal Management Plan (CMP),⁴⁴ a document that incorporates various enforceable state laws and policies governing activities in the coastal zone, including the CMPA and the Shore Protection Act (SPA). CRD also has a role as an agency coordinator and a technical advisor. It is the lead agency for fostering coordination and cooperation among agencies operating within the jurisdiction of the CMP. As part of this role, CRD has many Memoranda of Agreement with other agency participants in the Georgia Coastal Management Program network, and these agencies coordinate with CRD in return for technical assistance and regulatory support.

Georgia's coastal zone comprises all tidally influenced waters and submerged land seaward to the state's jurisdictional limits into the ocean. This includes all lands, submerged lands, waters, and other resources within eleven coastal counties: Brantley,

⁴⁴ See GA DNR, CRD, "[GCMP Program Documents](#)" (last visited June 3, 2025).

Bryan, Camden, Charlton, Chatham, Effingham, Glynn, Long, Liberty, McIntosh, and Wayne.⁴⁵

Georgia code defines “coastal marshlands” or “marshlands” as any marshland intertidal area, mud flat, tidal water bottom, or salt marsh within the estuarine area (all tidally influenced waters and marshlands lying with a tide-elevation range from 5.6 feet above mean tide level and below) of the state.⁴⁶ The SPA includes protection for all coastal dunes, beaches, sandbars, and shoals within the coastal zone. For BUDM projects, these jurisdictions determine which permit process applicants will need to follow based on where the project site is located. However, if project sites include both coastal marshlands and dynamic dune fields, CRD may apply either or both of the statutes at their discretion in order to protect the public’s interest in Georgia’s coastal resources.⁴⁷

Application and procedural requirements for a CMPA permit are established in O.C.G.A. 12-5-283-286, and requirements for an SPA permit are established in O.C.G.A. Sections 12-5-238, 239, and 244. These sections cover application requirements, public notice requirements, permit conditions, and permit appeals processes for their relevant permits. Although permit application forms are available on CRD’s website, the exact required documents or conditions on permits may vary slightly from project to project. Contacting the relevant CRD Permitting Coordinator can save applicants time and resources. In general, permits for both the CMPA and SPA generally include, but are not limited to:

1. The project description;
2. A site map or survey of project area;
3. A landfill/hazardous site determination letter, issued by DNR Environmental Protection Division;
4. A zoning letter from the local zoning authority that confirms the project complies with local zoning requirements;
5. A soil and erosion control letter; and
6. The relevant legal instruments or deeds related to property ownership or affected properties.

Under both the SPA and CMPA, if CRD is notified of the denial of any permit or authorization necessary for the project, the review and application of the project will be

⁴⁵ GA DNR, CRD, “[Chapter 2: Georgia’s Coast](#)” in *GCMP Final Environmental Impact Statement (GCMP FEIS)* (1997).

⁴⁶ O.C.G.A. § 12-5-282(3).

⁴⁷ O.C.G.A. § 12-5-286(r).

suspended. If the denial of the permit or authorization becomes final, the SPA or CMPA permit will be denied.

For a project involving strategic placement of sediment on a marsh, the CMPA allows a project to be permitted if the Coastal Marshlands Protection Committee (an appointed board) determines that the project is “in the public interest.” CRD staff undertake detailed review of permit applications to support the Committee’s decision-making. The CMPA states that the Committee’s public interest consideration should be based on three factors:

1. Whether or not unreasonably harmful obstruction to or alteration of the natural flow of navigational water within the affected area will arise as a result of the proposal;
2. Whether or not unreasonably harmful or increased erosion, shoaling of channels, or stagnant areas of water will be created; and
3. Whether or not the granting of a permit and the completion of the applicant’s proposal will unreasonably interfere with the conservation of fish, shrimp, oysters, crabs, clams, or other marine life, wildlife, or other resources, including but not limited to water and oxygen supply.⁴⁸

An applicant must demonstrate that the project is not contrary to the public interest and that no feasible alternative site exists.⁴⁹ The permit “may be conditioned upon the applicant’s amending the proposal to take whatever measures are necessary to protect the public interest.” A recent mapping exercise indicates that less than 10% of Georgia’s coastal marshes have a platform elevation that is so low as to be unsuitable for *Spartina alterniflora* marsh vegetation (i.e., susceptible to marsh loss), which suggests that it could be difficult to find sites for beneficially using dredged material to enhance marsh and make a public interest determination.⁵⁰

Contacting CRD early in the design process is essential to enabling the agency to coordinate with the other agencies involved (or potentially involved) in permit application review. Coordination meetings with all relevant agencies allow applicants to avoid delays and agencies to avoid regulatory conflict. CRD also functions as a technical advisor: The agency can advise a project proponent on how to minimize environmental

⁴⁸ OCGA § 12-5-286(g).

⁴⁹ OCGA § 12-5-286(h).

⁵⁰ See Georgia Wetlands Restoration Access Portal, “[Spartina Range](#)” layer.

impacts of a proposed project and provide expertise on coastal management issues and regulations for the project.

Additionally, CRD is responsible for making recommendations to the DNR Environmental Protection Division for Section 401 Water Quality Certifications, which will be required for the federal permits (see below).

State Tidelands

Activities that require a CMPA permit generally also require a revocable license for use of State-owned lands. CRD encourages project applicants to contact them for technical assistance in completing permit applications.

Consistency with the Coastal Management Plan

Chapter 8 of Georgia's Coastal Management Plan (CMP) outlines the plan's Federal Consistency requirement.⁵¹ CRD is responsible for ensuring that federal actions or federally supported actions within Georgia's jurisdiction are consistent with the enforceable policies in the state's federally approved CMP. CRD is the single point of contact for federal consistency determinations and is responsible for notifying federal agencies whether all necessary state permits have been issued and whether the proposed activity is consistent with the CMP, or other relevant state laws.

There are no categorical exemptions for complying with the CMP for federal activities. The CMP encourages all federal agencies or parties receiving licenses, permits, or funding from federal agencies to contact CRD "at the earliest possible moment in the planning of the activity to ensure early State and federal coordination and consultation" to reduce potential conflicts.

In practice, the coastal zone management program consistency certification happens in phases. CRD staff will first review the project design for consistency with the CMPA, SPA, and other aspects of the NOAA-approved coastal zone management program; later, CRD staff will review the USACE permitting application for consistency and concur with those aspects of the USACE application that are consistent with state authorizations.

Army Corps Permitting

Project proponents in Georgia will need to obtain a DA permit from the USACE Savannah District office for a project that uses dredged material to enhance marsh or build a bird

⁵¹ GA DNR, CRD, "[Chapter Eight: Federal Consistency](#)" in GCMP FEIS (1997).



island. Similar to other states in the SERPPAS region, compliance in Georgia may be possible through Nationwide Permit 27, which covers “Aquatic Habitat Restoration, Enhancement, and Establishment Activities.” The USACE Savannah District office has placed a number of regional conditions on CWA Nationwide Permits.⁵² First, a Pre-Construction Notification (PCN) is required for all NWP 27 uses. Compensatory mitigation will also be required for any project with adverse effects on more than one-tenth of an acre of wetland or one-hundredth of an acre of stream that results in a loss of aquatic function. Regional conditions tied to Georgia EPD’s 401 Water Quality Certification for the NWPs also require installing BMPs to minimize total suspended solids and sedimentation and testing to ensure the fill is free of solid waste, toxic, or hazardous substances.

Verification of compliance with a nationwide permit may be conditioned upon other requirements established by the Savannah District Engineer.

⁵² USACE Savannah District Regulatory Division, “[Public Notice – Savannah District 2021 Nationwide Permit Regional Conditions \(RCs\)](#)” (Feb. 4, 2022).

Florida

On both the Atlantic and Gulf coasts, Florida has salt marsh, estuarine, and riverine systems that provide important ecosystem services to surrounding communities and might benefit from marsh enhancement or bird island projects that use dredged material. The state's estuaries, often fringed by salt marsh, provide nursery areas for at least 70% of Florida's important recreational and commercial fishes, shellfish, and crustaceans.⁵³ People and property are protected by marshes too. The St. John's River Water Management District in northeast Florida, for instance, recognizes floodplain wetland protection as an important tool in flood risk reduction.⁵⁴ Opportunities abound to beneficially use dredged material to enhance the marsh or create bird islands. For example, [MacDill AFB](#) is actively pursuing a BUDM installation resilience project. A list of military bases in Florida is available [here](#).

Department of Environmental Protection and Environmental Resource Permits

The Florida Department of Environmental Protection (FDEP) Office of Resilience and Coastal Protection is the key state-level regulatory agency with jurisdiction over potential BUDM projects. The Florida Water Resources Act is implemented through the Environmental Resource Permitting (ERP) program. An ERP permit or an approved exemption is required before work can begin and is typically valid for five years. Available exemptions are written into Florida's statutes and administrative code, but none is applicable to dredged material placement to enhance marshes or establish bird islands. FDEP has also established general permits, which allow for speedier application and approval, but again, none is relevant to the BUDM projects that are the focus of this document.

By law, approval of an ERP permit application constitutes a coastal zone management program consistency determination.⁵⁵ FDEP regulations also state that CWA 401 WQC is obtained when an individual permit is issued for a project.⁵⁶ These concurrent approvals streamline the permitting process.

The ERP permitting process is based on a public interest standard of review; that is, technically, regulatory agency staff will review proposed projects to ensure that they are not contrary to the public interest. Florida law and regulation list the factors that agency

⁵³ FDEP, "[Salt Marshes](#)" (Dec. 13, 2024).

⁵⁴ St. John's River Water Management District, "[Flood Protection](#)" (2025).

⁵⁵ Fla. Stat. § 380.23(1)-(2); Fla. Admin. Code R. 62-330.062.

⁵⁶ Fla. Admin. Code R. 62-330.062.

staff must consider when reviewing a project under the public interest standard. The factors and notes on implications for beneficial use projects covered in this guide are summarized in the table below.

Table 4: Environmental Resource Permitting Considerations in Florida	
Factors for FDEP Review⁵⁷	Implication for BUDM Project Applications
Whether the activity will adversely affect the public health, safety, or welfare or the property of others.	Emphasize the positive outcomes from ecosystem services.
Whether the activity will adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats.	Screen for species of concern and provide citations to scientific literature about habitat needs of any species of concern.
Whether the activity will adversely affect navigation or the flow of water or cause harmful erosion or shoaling.	Provide hydrodynamic and hydrographic modeling to show no adverse effects.
Whether the activity will adversely affect the fishing or recreational values or marine productivity in the vicinity of the activity.	Provide scientific literature on benefits of diversified and healthy coastal ecosystems.
Whether the activity will be of a temporary or permanent nature.	Design for stability; consider providing modeling or theoretical predictions about marsh evolution or possibility of bird island erosion or accretion.
Whether the activity will adversely affect or will enhance significant historical and archaeological resources under the provisions of s. 267.061.	Provide screening-level assessment of possible historical or archaeological resources.
The current condition and relative value of functions being performed by areas affected by the proposed activity.	Provide site condition assessment and cite available scientific literature on marsh conditions after sediment enhancement from reference sites. For bird islands, provide site condition assessment and cite to scientific literature on aquatic and riparian habitat post-construction of reference site bird islands.

⁵⁷ Fla. Stat. § 373.414(a); Fla. Admin. Code R. 62-330.302(1)(a).

FDEP has provided extensive guidance for permit applicants in an “[Applicant’s Handbook](#).” All permit application forms are also available on the FDEP [website](#). A marsh enhancement or bird island project using dredged material is likely to require three key forms:

1. The basic application, Form 62-330.060(1), Section A;
2. Supplemental information for projects involving wetlands, Form 62-330.060(1), Section C; and
3. Supplemental information for projects on state-owned submerged lands; Form 62-330.060(1), Section F.

It is important to request a pre-application meeting with FDEP staff prior to submitting an application. Regulatory agency staff encourage pre-application meetings so that permit seekers can be prepared to develop and submit robust applications.

Applications must include: an overview of the project, including purpose and need; maps and plans to show both existing conditions and planned changes; descriptions of how the project aligns with the public interest factors listed above, including efforts to minimize or eliminate impacts to protected resources; documentation of wetlands delineations, fish and wildlife assessments, historical and cultural resources assessments, and any related consultations with relevant agencies; evidence of ownership interest in the project site and notification of nearby property owners; and more.

A project will undergo both a “regulatory review” and a “proprietary review” with FDEP. These reviews are conducted simultaneously but have slightly different standards. FDEP coordinates review of proposed projects based on information that a project developer provides in a “Joint Application,” which is designed to ensure compliance with the Florida Water Resources Act, state laws governing the use of state-owned submerged lands, and the federal CWA and Rivers and Harbors Act.

FDEP *regulatory review* ensures compliance with the Florida Water Resources Act and other elements of the state’s Coastal Zone Management Program. The program incorporates twenty-four state statutes and their implementing regulations. FDEP is not the lead agency for all of those statutes, so other state and local agencies are involved in reviewing applicants’ documentation of how a proposed project complies with all relevant laws and regulations. The Florida Fish and Wildlife Conservation Commission is an important stakeholder in the process, given their responsibility to protect various terrestrial and aquatic species of conservation concern.



FDEP *proprietary review* ensures that a proposed project does not run contrary to the state's obligation to manage "sovereign submerged lands" and associated aquatic resources for the long-term benefit of the public. FDEP regulations clarify that state-owned submerged lands "shall be managed primarily for the maintenance of essentially natural conditions, propagation of fish and wildlife, and traditional recreational uses such as fishing, boating, and swimming."⁵⁸

Two provisions of the regulations seem to pose a challenge for BUDM projects. First, the regulations allow "reclamation activities ... only if avulsion or artificial erosion is affirmatively demonstrated."⁵⁹ Creating a bird island may fit the definition of reclamation ("restoring the upland shoreline to a condition that existed prior to avulsion or artificial erosion")⁶⁰ but might be limited to only historical bird islands and not new ones because of the requirement to affirmatively demonstrate avulsion or artificial erosion of a historic shoreline. The regulations also prohibit placement of fill below the ordinary or mean high water line "unless it is necessary to provide shoreline stabilization, access to navigable water, or for public water management projects."⁶¹ This language might cut against approval of either sediment placement on a marsh or bird island creation unless the applicant can show that the project will stabilize the shoreline.

That said, it has been suggested that the term "public water management activities" is broad enough to encompass various BUDM projects insofar as they provide various ecosystem service benefits to the public. Public water management activities are defined in Florida regulations as "an activity primarily for the purpose of flood control, conservation, recreation, water storage and supply, and allied purposes, which is authorized and funded by the US Congress, the state, or a water management district."⁶²

Consistency with Coastal Zone Management Plan

In Florida, approval of an ERP permit application constitutes, by law, a CZMA consistency determination.⁶³

⁵⁸ Fla. Admin. Code R. 18-21.004(2)(a).

⁵⁹ Fla. Admin. Code R. 18-21.004(2)(e).

⁶⁰ Fla. Admin. Code R. 18-21.003(58).

⁶¹ Fla. Admin. Code R. 18-21.004(2)(e).

⁶² Fla. Admin. Code R. 18-21.003(57).

⁶³ Fla. Stat. § 380.23(1)-(2); Fla. Admin. Code R. 62-330.062.

Non-Sovereign Submerged Lands

Not all submerged lands in Florida are sovereign submerged lands subject to proprietary review. Researchers from the University of Florida and other local partners are developing a pilot-scale marsh enhancement project using dredged material in one such area. Careful consideration of land title might reduce regulatory review. For more information about the University of Florida's Cat's Paw project, [click here](#).

Army Corps Permitting

BUDM project development teams will also need to ensure compliance with Section 404 of the federal Clean Water Act and Section 10 of the Rivers and Harbors Act. A pre-application meeting with staff from the US Army Corps of Engineers' Jacksonville District office is a critical step in determining the optimum path forward.

NWP 27 is a potential option, and the Jacksonville District office has established several Regional Conditions (RC) that have implications for use of NWP 27 for BUDM projects:

- Excluded areas. NWP 27 activities are allowable in “designated critical resource waters” where activities under some other NWPs are prohibited, but the proposed NWP 27 activities must be presented to the Corps in a PCN (designated critical resource waters include: wetlands and other surface waters in National Estuarine Research Reserves, NOAA-managed National Marine Sanctuaries, NOAA-managed marine monuments, Biscayne National Park, Everglades National Park; state natural heritage areas, the Marjorie Harris Carr Cross Florida Greenway State Recreation and Conservation Area; Wetlands and other surface waters in active designated State of Florida Areas of Critical State Concern, including the Green Swamp Area, the Big Cypress Area, and the Apalachicola Bay Area).
- *RC 1, Endangered Species*. A PCN is required “if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat.”
- *RC 2, Historic Properties*. Requires the project development team to do initial screening using the Florida Master Site File and by contacting the Seminole Tribe's Historic Preservation Compliance Office; a PCN may be required based on results.

- *RC 3, Prehistoric/Historic Artifacts.* If artifacts are discovered, a 100-meter no-work buffer must be established around them, with additional consultations required.
- *RC 9, Tribal lands.* A PCN is required for any activity adjacent to Tribal lands.

The Jacksonville District has established a number of other general permits (Regional General Permits, Programmatic General Permits, the State Programmatic General Permit), but none appears to be applicable to marsh enhancement or bird island projects using dredged material: The potentially relevant Regional General Permits only allow fill in non-tidal waters and adjacent wetlands; the Programmatic General Permits only allow limited and minor activities that are small-scale; and the State Programmatic General Permit is only applicable to projects that advance through FDEP's ERP permitting process with an exemption or general permit, which as noted above is not possible for marsh enhancement or bird island projects.

Regardless of whether a project will move forward through a general or individual permit from the Jacksonville District, materials should be submitted through the new Regulatory Request System or via email to the appropriate permitting branch, based on [this map](#).

More detailed information about the Jacksonville District's regulatory review process is available through their online "[Source Book](#)."

Mississippi

Mississippi has shown an early and consistent commitment to retaining and restoring wetlands, including beneficial use of dredged material for supporting coastal wetlands. Among SERPPAS states, Mississippi is a pioneer in BUDM projects for coastal restoration. The state contains around 700,000 acres of wetlands⁶⁴ along the state's 370 miles of shoreline, which includes a wide variety of coastal marsh and other wetland habitats.⁶⁵ In a recent assessment, the state reported acquiring more than 2,400 acres for long-term protection and establishing an additional 280 acres through the beneficial use of dredged material program.⁶⁶ The state's coastal counties are Hancock, Harrison, and Jackson; military installations can be found [here](#).

Department of Marine Resources and the Wetlands Act

In Mississippi, there are three Coastal Program Agencies that work together: The primary agency is the Department of Marine Resources (MDMR), which administers the BU program and issues permits for regulated activities in coastal areas of the state. Another important agency is the Department of Environmental Quality (MDEQ), which oversees water quality certification and any coastal air pollution issues. The Mississippi Department of Archives and History is also a Coastal Program Agency.

The Mississippi Advisory Commission on Marine Resources oversees the Mississippi Coastal Program, the collective set of guidelines and goals for waterfront development, natural resources conservation and preservation, national interest considerations, coordinating with local governments for public services, and implementing public policy. The Commission is authorized to oversee all permit-related aspects for activities on the coast and must base its decision on the findings and recommendations of MDMR.⁶⁷

In Mississippi's Coastal Wetlands Protection Act ("Wetlands Act"), the state policy is clear:

⁶⁴ MDMR, [Mississippi Coastal Program Coastal Zone Management Act § 309 Assessment and Strategy 2021-2025](#) (Mississippi § 309 Assessment) (Apr. 2020).

⁶⁵ Lawrence R. Handley, Kathryn A. Spear, Ali Leggett, and Cindy A. Thatcher, "[Statewide Summary for Mississippi](#)" in *Emergent Wetlands Status and Trends in the Northern Gulf of Mexico: 1950-2010* (USGS, EPA 2012). The state also has approximately 27 miles of man-made beach.

⁶⁶ MDMR, [Mississippi § 309 Assessment](#) (Apr. 2020).

⁶⁷ The Commission consists of five members, appointed by the governor, to serve a four-year term. The five members represent the following coastal interests: charter boat operators, recreational sports fishermen, commercial seafood processors, non-profit environmental organizations, and commercial fishermen.

It is declared to be the public policy of this state to favor the preservation of the natural state of the coastal wetlands and their ecosystems and to prevent the despoliation and destruction of them, except where a specific alteration of specific coastal wetlands would serve a higher public interest in compliance with the public purposes of the public trust in which coastal wetlands are held.⁶⁸

Under the Wetlands Act, permits are required for “filling or depositing any soil, stones, sand, gravel, mud, or aggregate directly or indirectly on or in any coastal wetlands.”⁶⁹ Applications fall into one of four categories, in order of more stringent to less stringent review: regulated activity, excluded activity or entity, non-regulated activity subject to federal consistency review; or state agency action subject to review.⁷⁰ In addition to a standard description of the project, the application must include the following information:

1. The primary and secondary purposes of the project;
2. A description of “any public benefit to be derived from the proposed project dependent upon the proposed activity”;
3. A description of efforts to reduce negative off-site effects to the coastal wetlands;
4. A report on the environmental impact on the affected coastal wetlands, or an environmental impact statement required for other federal or state agency approval;
5. Certifications that all other required permits from federal, state, or municipal agencies have been applied for or are not required.

After MDMR receives an application, it must begin notifying public officials in the area of the proposed activity and provide a copy of the application to Coastal Program Agencies so they can review the application. MDMR may also schedule a hearing on any application and is required to, if requested by the applicant, by a political subdivision, or by five or more persons affected by the application; the hearing must be held within twenty days after the deadline for filing objections ends. The burden of proof is on the applicant, and the stated policy preference is to preserve coastal wetlands in their natural state unless there is a higher public interest in the proposed alteration.⁷¹

Factors for the permit review can be grouped by five broad areas: whether the project meets applicable laws and regulations; the extent of the project’s impact and whether

⁶⁸ Miss. Code Ann. § 49-27-3.

⁶⁹ Miss. Admin. Code, Title 22, Part 23, [Ch. 01-123](#).

⁷⁰ Miss. Admin. Code, Title 22, Part 23, [Ch. 04-100.04](#).

⁷¹ Miss. Admin. Code, Title 22, Part 23, [Ch. 05-102](#).

adverse impacts can be avoided; whether the project meets stated public policy goals and aligns with the public interest; whether the project meets environmental criteria, and whether the project meets federal considerations and national interests. The table below lists the factors most relevant to a coastal wetland BUDM project.

Table 5: Wetlands Act Permit Factors in Mississippi	
Permit Review Criteria	Implications for BUDM Project Applications
<i>Compliance with Law and Policy</i>	
Whether the project aligns with applicable legislative and judicial statements of public interest.	Cite language from Wetlands Protection Act, the state BUDM law, and other coastal zone policies that support protecting, restoring, and preserving coastal wetlands and their functions.
Whether the project is allowed by the Coastal Wetlands Use Plan.	Check for applicability of a CWUP and ensure consistency.
Whether the project complies with Requirements for Conducting Regulated Activities for activities affecting coastal wetlands and for the beneficial use of dredged material.	Ensure consistency with applicable laws.
<i>Impacts of the Proposed Project</i>	
The extent of the precedent-setting effects and existing or potential cumulative impacts of similar or other development in the project area.	Emphasize that the BUDM project is intended and designed to have myriad environmental and ecosystem benefits and thus positive impacts; include monitoring and adaptive management plans.
The extent of indirect and direct impacts on the biological integrity and productivity of coastal wetland communities and ecosystems.	Include scientific literature on secondary production benefits; anticipate implementing best management practices for sediment and erosion control during construction; develop plans for monitoring and adaptive management.

The full extent of the project, including intended and unintended but reasonably anticipated impacts.	Cite scientific research to show negative impacts of “do nothing” and likely positive impacts of project implementation; develop plans for monitoring and adaptive management.
The extent to which adverse impacts can be avoided with mitigation, safeguards, or modifications.	Design project and implementation timeline to accommodate important species’ lifecycles or such that impacts are short-term and temporary; cite research that affirms the long-term benefits of marsh enhancement or bird-island creation.
<i>Site Considerations in Coastal Wetlands Areas</i>	
Whether there are alternative sites available to reduce unavoidable project impacts.	Establish the need for a specific site by documenting marsh retreat or historical presence of a bird island; design project with limited or temporary potentially negative impacts.
Whether the project requires a waterfront location.	Projects are inherently waterfront or in the water.
Whether the project preserves natural scenic qualities.	Emphasize that a coastal wetlands BUDM project is intended to go beyond preserving natural scenic qualities and enhance coastlines by increasing their health, productivity, and resilience.
<i>National Interest Considerations</i>	
The need for national defense and to establish and maintain facilities necessary to accomplish national defense.	For projects on military installations, describe the flood hazard reduction benefits, wave attenuation, and natural buffering from coastal storms and processes provided by healthy, resilient coastal wetlands that will protect military facilities, roads, and other infrastructure.
The need to improve public recreational opportunities.	Note that, for projects on military installations, public access is already limited due to security concerns.

The need to protect federally listed endangered species.	Anticipate and plan for measures, such as seasonal or temporal restrictions on construction, to protect species of conservation concern.
The impact on wild and scenic rivers under the Wild and Scenic Rivers Act.	Identify any designated rivers potentially affected by the proposed project, emphasize environmental benefits of restored coastal marshes at the mouth of the river.
The reduction of loss of life and property damage from natural hazards, including flooding and erosion and the protection of the physical integrity of barrier islands as buffers in coastal areas.	Cite scientific studies showing ecological and flood-risk management benefits of enhancing marsh; provide historical aerial imagery to show marsh degradation and estimate future losses under a “do nothing” scenario.

Within the coastal zone, Special Management Area (SMA) designation is for specific geographical areas where all levels of government (federal, state, and local) plan development activities in advance so that regulatory decisions can be streamlined and permit conflicts minimized. When a SMA is formally and officially approved, the specific provisions of a SMA Plan prevail over the more general provisions of the coastal program.⁷²

A Wetlands Act permit applicant may also request a variance⁷³ and justify the request, and a public hearing that addresses the variance must be held. For a BUDM project, a variance may be approved based on one or more of these factors:

- (1) The impacts on coastal wetlands would be no worse than if the requirements were followed;
- (2) There are no feasible, alternative sites or techniques available; there is significant public benefit in the activity, and a public hearing has been held; or
- (3) The activity requires a waterfront location; there is a significant public benefit in the activity; and a public hearing has been held.⁷⁴

In practice, a proposal for a large-scale BUDM project such as marsh enhancement or bird island creation would go through the variance process.

⁷² Miss. Admin. Code, Title 22, Part 23, [Ch. 21](#).

⁷³ Miss. Admin. Code, Title 22, Part 23, [Ch. 08-118](#).

⁷⁴ Miss. Admin. Code, Title 22, Part 23, [Ch. 08-118](#).

Beneficial Use Program

As early as 2002, Mississippi developed a master plan for beneficial use of dredged material in coastal areas. In the aftermath of Hurricane Katrina, interest in alternative, environmentally beneficial use of dredged materials piqued and led to the formation of a Beneficial Users Group (BUG) that formed in 2008. This group, comprising USACE, US Fish and Wildlife Service, EPA, NOAA Fisheries, MDEQ, the Secretary of State, Congressional representatives, and local port authorities and other stakeholders, eventually developed and facilitated the enactment of the statewide BUDM requirement. In 2011 Mississippi also published an updated Master Plan for the Beneficial Use of Dredged Material for Coastal Mississippi. Together these documents guided the development of the BU program at DMR.⁷⁵

Under the Wetlands Act, dredged material is “viewed as a potential reusable resource,” and material suitable for habitat restoration and enhancement must be used or stockpiled for that future use, among others. A 2011 amendment to the Wetlands Act requires beneficial use of dredged material for projects greater than 2,500 cubic yards of sediment as long as the material is “suitable” and a beneficial use site is available and preferably close to the dredge site.⁷⁶ This requirement aligns with the state policy to keep sediment in the littoral transport system, an evolution away from the historical practice of relying on open-water sites or upland containment facilities. However, one challenge has been to determine the suitability of dredge material for beneficial uses and to gauge the appropriate thresholds for potential contaminants for using that material for ecosystem restoration purposes.

State Tidelands

In Mississippi, the state – specifically the Secretary of State – holds tidelands and submerged lands in trust for “use of all the people.”⁷⁷ Those lands include the beds and shores of the sea and tidally affected arms and tributaries.⁷⁸ The state policy favors preserving “the natural state of the public trust tidelands and their ecosystems” and

⁷⁵ Gulf of Mexico Habitat Restoration Team & MDMR, [Master Plan for the Beneficial Use of Dredged Material in Mississippi](#) (Mississippi BUDM Master Plan) (July 2011).

⁷⁶ Miss. Code Ann. § 49-27-61.

⁷⁷ Miss. Code Ann. § 29-15-5.

⁷⁸ Miss. Code Ann. § 29-15-5.

preventing deterioration and destruction of them, “except where a specific alteration would serve a higher public interest.”⁷⁹

A lease is required for any activities that occupy public trust lands, and use or rental fees are charged and deposited into the state Tidelands Fund. However, public projects by a federal, state, or local governmental entity that serve a public purpose are exempt for use or rental fees. Public projects include those that conserve, reclaim, or preserve tidelands and submerged lands, promote public access, or promote public use for fishing, recreation, or navigation.⁸⁰ BUDM for coastal preservation would likely meet this exemption.

Consistency with the Coastal Zone Management Plan

Mississippi consolidates the determination of federal consistency with the state Coastal Program and the state-level permit review process. Several aspects of marsh enhancement or bird island creation BUDM projects require consistency review under the state’s CZMP. Federal activities that require consistency review include erosion control structures, dredging, flood protection, and beach replenishment for USACE and designing new or enlarged defense installations within the coastal zone for the Department of Defense. Federal licenses and permits that require consistency reviews include permits by EPA and USACE under the Clean Water Act and by USACE under the Rivers and Harbors Act.⁸¹ Federal financial assistance that could trigger consistency review include grants from, among other federal entities, the Gulf Coast Ecosystem Restoration Council, which has proposed at least one BUDM bird island project in Mississippi.⁸²

By law, MDMR is a one-stop permitting to coordinate, process, and issue permits for the coastal area, so that decision-making is expeditious among the different entities with jurisdiction over activities in the coastal area. One-stop permitting means:

1. A single application form for all required permits that includes all the necessary information for the affected governmental entities to review;
2. A single, consolidated public hearing;
3. The shortest practicable review period that allows interested parties to participate or give opinions; and

⁷⁹ Miss. Code Ann. § 29-15-3.

⁸⁰ Miss. Code Ann. § 29-15-13.

⁸¹ Miss. Admin. Code, Title 22, Part 23, [Ch. 13](#).

⁸² Gulf Ecosystem Habitat Restoration Council, “[Initial Funded Priorities List Amendment Approval Summary](#)” (Aug. 18, 2021).

4. Joint permitting procedures for state and federal agencies.⁸³

Thus, a permit applicant should plan to begin discussing project plans at the early stages of conception and design with MDMR staff and advisors and to continue these frequent contacts throughout the permitting process.

Army Corps Permitting

The US Army Corps of Engineers' Mobile District office will review projects in Mississippi's coastal counties for compliance with the Clean Water Act and Rivers and Harbors Act, issuing Department of the Army (DA) permits for those that meet all relevant legal requirements.

The joint permit application for the Mobile District and MDMR is [available here](#).

Prior to obtaining a federal permit, however, an applicant must obtain a 401 Water Quality Certification from MDEQ. As part of the "one-stop permitting" process in Mississippi, the application for water quality certification consists of largely the same information requested on the wetlands permit, with a few requirements specific to water quality:

1. The degree of physical, chemical, and biological impacts on waters of the State;
2. Degree of compliance with the State of Mississippi Water Quality Criteria for Intrastate, Interstate, and Coastal Waters; and
3. The degree of consistency with approved and adopted water quality management plans.

In a BUDM context, factors for denying a certification might include:

1. A feasible alternative to the proposed activity exists and would cause less adverse impacts to water quality and classified or existing uses of waters of the State;
2. The proposed activity adversely impacts threatened or endangered species or special or unique aquatic habitat.

NWP 27, "Aquatic Habitat Restoration, Enhancement, and Establishment Activities," is a possible path forward for projects that will use dredged material beneficially to enhance

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Miss. Code Ann. § 57-15-6.



marshes or create bird islands.⁸⁴ However, MDMR has not granted CZMA concurrence for NWP activities in the state's three coastal counties.⁸⁵ Thus, project applicants must contact MDMR for individual, CZMA project review for projects located in tidal waters, in waters of the US that have a surface hydrological connection to tidal waters and are within 200 feet landward of the mean high tide mark; and for all marsh habitats with a surface hydrological connection to tidal waters.

⁸⁴ USACE Vicksburg District, "[State of Mississippi Nationwide Permit Regional Conditions](#)" (2017). Mississippi also has Regional General Permits for Minor Structures and Activities, including MSGP-01 for shoreline stabilization projects such as living shorelines that may help protect coastal marshes. This RGP is unlikely to be helpful for BUDM projects: It is limited to minor activities, and it does not allow filling of wetlands or other special aquatic sites. All the RGPs require compliance with the state BUDM regulations. USACE Mobile District, "[General Permits for Minor Structures and Activities in the State of Mississippi and Outer Continental Shelf Waters off the Coast of Mississippi](#)" (May 17, 2023).

⁸⁵ USACE Vicksburg District, "[State of Mississippi Nationwide Permit Regional Conditions](#)" (2017).

Conclusion & Recommendations

Coastal marshes provide myriad ecosystem services that support and protect nearby development, whether military or civilian. Bolstering these ecosystems by restoring marsh acreage and elevation or by reestablishing historical bird islands with dredged material is gaining interest across the SERPPAS states. North Carolina, South Carolina, Florida, Georgia, and Mississippi have similar legal and regulatory frameworks at the state level, overlaid by a common federal framework. However, the types of marsh, the acreage, and the resources and experience among the states differ significantly. As interest in these BUDM projects grows and more applications are submitted or projects completed, more lessons can be shared about efficiencies in permitting processes, designs, and model legislation.

From an applicant's perspective, three recommendations are key:

First, applicants should engage with state regulators early and often in the design and proposal process. Open lines of communication with regulators, who can provide technical and permitting advice, will go a long way toward facilitating the permitting process.

Second, through this early engagement, applicants should be aware of the regulatory requirements in this guide and develop projects with a goal of consistency with a state's coastal zone management program. In most SERPPAS states, the federal consistency determination is part of the state permit review, so ensuring a project proposal fits within the state's CZMP is extremely helpful.

Third, projects should be designed primarily to benefit coastal marshes and coastal ecosystems and secondarily as a cost-efficient and effective method of disposing of dredged material. In many instances, the beneficial use of dredged material is an afterthought of a dredging project, although that may be changing with USACE's ongoing efforts to achieve 70% BUDM in navigation projects by 2030. Bringing BUDM to the forefront will maximize the environmental and ecosystem benefits of these projects.

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