MEMORANDUM OF UNDERSTANDING
BETWEEN THE
CORPS OF ENGINEERS,
U.S. DEPARTMENT OF THE ARMY;
THE TEXAS GENERAL LAND OFFICE;
AND THE
BUREAU OF OCEAN ENERGY MANAGEMENT,
U.S. DEPARTMENT OF THE INTERIOR
TO COORDINATE
GULF OF MEXICO SEDIMENT SOURCE IDENTIFICATION
FOR
TEXAS COASTAL PROTECTION AND RESTORATION PROJECTS AND PLANS

June 1, 2020

I. Introduction

The U.S. Army Corps of Engineers Galveston District (USACE), Texas General Land Office (GLO), and the U.S. Department of the Interior's (DOI) Bureau of Ocean Energy Management (BOEM) are the "Parties" to this Memorandum of Understanding (MOU). This MOU is intended to synchronize Gulf of Mexico Sediment Source Identification for Texas Coastal Protection and Restoration Projects and Plans.

The purpose of this MOU is to establish a joint framework for early and sustained coordination and cooperation among the Parties to satisfy each agency's mission. The MOU supports consistency in environmental compliance, project scheduling, and contracting, for the purposes of sediment source identification; characterization; processing; and data management, including database expansion and analysis.

Coordination and cooperation among the Parties can help streamline and optimize coastal planning and data collection while ensuring that each Party can support its mission and meet its responsibilities under the National Environmental Policy Act (NEPA) and other applicable Federal, state, and local laws and regulations including, but not limited to, those identified in this MOU.

II. Background

USACE and GLO have a combined mission that includes Texas Coastal Storm Risk Management and Ecosystem Restoration (CSRM/ER). A series of ongoing geophysical and oceanographic phenomena are reducing the effectiveness of coastal features to protect people and land-based infrastructure from future storms. These phenomena include sea-level rise, land subsidence, and interruption of coastal sediment budgets and sediment transport systems. Reduced sediment volumes from upland sources to the coast also result in the loss of beach, dune, and wetland systems necessary to act as a storm buffer to the mainland. These systems no longer receive enough sediment loadings to recover from episodic erosional events such as hurricanes.

The GLO and USACE have collaborated with multiple agencies and stakeholders to conduct a Coastal Texas Protection and Restoration Feasibility Study. In addition, the GLO maintains, in consultation with coastal stakeholders, The Texas Coastal Resiliency Master Plan and Texas Sediment Management Plan (all three collectively referenced to as "The Plans") for CSRM/ER on the Texas Coast.

As the federal agency with jurisdiction over marine minerals on the Outer Continental Shelf, BOEM facilitates access to and manages use of non-energy marine minerals, including sediment, through environmentally responsible stewardship, prudent exploration and leasing activities, coordination with governmental partners and stakeholders, and mission-focused research to improve decision-making and management. In particular, BOEM's needs align in seeking to better understand where sediment resources are located and how much may be available for coastal protection and restoration projects. Through the agencies mission, BOEM will further facilitate the common goals of all Parties to address coastal issues in the State of Texas.

The Plans propose a combination of gray infrastructure and natural or nature-based features to protect people and infrastructure on the Texas coast from storms. The Plans also include at least 160,000 acres of ecosystem restoration including beaches, dunes, and wetlands. The Plans will require at least 200,000,000 cubic yards of sediment, predominately extracted from State and Federal waters offshore, to rebuild natural features that support CSRM/ER. In addition, because sediment transport rates, which maintained the Texas coast prior to anthropogenic activity (high discharge from rivers, for example), cannot be restored, intermittent nourishment and resource restoration will be required to address coastal sediment loss.

III. Purpose

The Parties, acting within their respective areas of responsibility and authority, will collaborate to identify and characterize State and Federal offshore sediment sources and develop a sustainable methodology to share data and extract sediment resources for construction and maintenance of coastal features required for CSRM/ER and other Texas and federal priorities, such as Beneficial Use of Dredge Material. Other agencies may be invited to participate and contribute at any point in these coordination efforts, particularly within DOI Region 6, based on their agency priorities and identified needs. As appropriate, the Parties may also evaluate potential opportunities for collaborative studies, data collection, database management, and related activities. Notwithstanding, this MOU does not obligate or transfer funds, or otherwise commit the Parties to such activities.

A framework will be developed to collect and share data and optimize engineering, economic, and environmental criteria by matching potential sediment sources with designated construction projects and post-construction, 50 to100 year renourishment requirements. The methods used will be based on existing studies, tools, and databases developed and managed by the GLO, USACE, BOEM and other agencies. The framework will be demonstrated for CSRM/ER on the Texas coastal reach from the Sabine River to the Rio Grande. In subsequent studies, the framework will be applied

to other regions of the Texas coast. The framework will provide the Parties with robust communication strategies and methods to evaluate alternatives to maximize utilization of offshore resources for CSRM/ER, which can be applied anywhere in the United States.

To this end, the proposed optimization methodology among the Parties will include:

(1) working together to identify and map offshore infrastructure, including infrastructure removal costs and risk, and review applicable dredging setbacks;
(2) identifying and mapping potentially available sediment volumes and sediment quality based on identified infrastructure alternatives;
(3) mapping sediment requirements, including volumes, locations, and quality for CSRM/ER under the Plan;
(4) matching potential sediment sources with specific construction projects in the Plan;
(5) utilizing existing tools to map previously unidentified ecological resources and evaluate ecological risk and benefits from dredging and construction;
(6) identifying ways to maximize use of offshore sediment sources;
(7) monitoring the performance and operation of the borrow sites;
(8) evaluating the hydrodynamic, sediment transport, and morphological consequences from offshore dredging; and
(9) based on user-defined priorities and weightings, developing alternatives for dredging, transport, and construction, which balance the risks, benefits, and costs using optimization tools maintained by the USACE.

Database applications that will aid in the above optimization strategy will be modified or, in some cases, developed based upon the analysis needed on physical processes, estimates of sediments (qualities and quantities), infrastructure risks, required offsets, ecological risks, and general processes involved in the sediment management initiatives. A description of statutory authority and the discrete components of the Plans are provided in the Sections IV and V.

IV. Statutory Authorities

A. **Outer Continental Shelf Lands Act (OCS Lands Act), as amended (43 U.S.C. §§ 1331 *et seq.*).** Sections of particular relevance include Section 4(f), Section 8(k), Section 11, and Section 20 of the OCS Lands Act, which authorizes the Secretary of the Interior, acting through BOEM, to conduct activities such as negotiated noncompetitive agreements for the use of OCS sand, gravel, and shell resources; regulate artificial islands and all installations and other devices on the seabed of the OCS; conduct studies; and issue cooperative agreements.

B. **National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. §§ 4321 *et seq.*).** NEPA requires Federal agencies to use a systematic, interdisciplinary analysis approach that will ensure the integrated use of the natural and social sciences in planning and decision making that may have an impact on the natural and manmade environment. In the development of any detailed environmental impact statement,

the responsible Federal official shall consult with, and request cooperating agency status with, any Federal agency that has jurisdiction by law or special expertise with respect to any environmental impact involved.

C. **Section 10 of the Rivers and Harbors Act of 1899 (RHA) (33 U.S.C. § 403).** Section 10 of the RHA requires authorization from the Secretary of the Army, acting through the USACE, for work in or affecting any navigable water of the United States. The USACE's authority under Section 10 extends to artificial islands, installations, and devices located on the OCS. As a rule, the USACE Section 10 authority does not regulate dredging on the OCS. Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if the structure or work would affect the course, location, or condition of the water body.

D. **Section 404 of the Clean Water Act (CWA) (33 U.S.C. § 1344).** Section 404 of the CWA requires authorization from the Secretary of the Army, acting through the USACE, for the discharge of dredged or fill material into waters of the United States, including wetlands. Discharges of fill material generally include, without limitation, placement of fill that is necessary for the construction of any structure or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; dams and dikes; artificial islands; property protection or reclamation devices such as riprap, groins, seawalls, breakwaters, and revetments; beach nourishment; levees; fill for intake and outfall pipes and subaqueous utility lines; fill associated with the creation of ponds; and any other work involving the discharge of fill or dredged material. A USACE permit is required whether the work is permanent or temporary. Examples of temporary discharges include dewatering of dredged material prior to final disposal and temporary fills for access roadways, cofferdams, and storage and work areas. The USACE's authority under Section 404 does not extend to the OCS.

F. **Texas Natural Resources Code (TNRC), Section 11.012.** The TNRC defines the gulfward boundary of the State of Texas' ownership boundary, sovereignty, and ownership in accordance with Texas v. Louisiana, 426 U.S. 465 (1976).

G. **Texas Natural Resources Code (TNRC), Section 11.041.** The TNRC provides that the arms, beds, and shores of the Gulf of Mexico are dedicated to the Permanent School Fund and shall be managed in accordance with Texas law.

H. **Coastal Management Program (CMP) (Texas Natural Resource Code, Section 33.001-238).** CMP provides GLO with responsibility for identification of coastal natural resources, and the preservation of coastal public land and coastal natural resources.

G. **Coastal Emergency Planning and Restoration Act (CEPRA) (Texas Natural Resource Code, 33.602-606).** CEPRA provides responsibility for the GLO to implement coastal erosion remediation and planning and to collaborate and enter

into agreements with state and federal agencies and other qualified project partners to undertake studies and projects.

V. Identified Collaborative Optimization Opportunities

A. **Expansion of the Offshore Sediment Sources Database.** The Parties will work collaboratively to identify sediment sources that will be used for CSRM/ER on the Texas coast. While it is understood that large predominately sandy deposits are available offshore of the Texas coast these resources have not been fully mapped and analyzed.

Multiple stakeholders operating offshore maintain data related to surface sediment characteristics (top 10 meters [33 feet] of the sediment bed). The Parties will work collaboratively with stakeholders, including industry through the Offshore Operators Committee, to obtain these data and merge them into one database and develop additional capabilities. The Parties agree to data sharing, to the extent permitted by applicable laws and agency regulations or other requirements, which may include storage and potential analysis in databases such as the BOEM-developed Marine Minerals Information System (MMIS) or the GLO Texas Sediment Database (TXSED). These systems are specifically designed to support management of offshore mineral resources. Additional analysis capabilities in tools available to the Parties will be considered based on identified needs to improve the CSRM/ER application and support sediment management evaluation and dredge optimization tools.

Additional considerations for collaboration may include development of a volume estimation tool capable of predicting available sediment based on present conditions (with existing infrastructure) as well as volumes under various infrastructure removal alternatives. Another goal of this tool will be to provide data to the cost and production rate estimator tool.

In addition, data gaps will be identified and the level of survey effort for closure of these gaps will be documented. Finally, a comprehensive plan for data acquisition to address identified gaps will be developed to streamline data acquisition and funding opportunities.

B. **Implementation of a Sediment Resource Data Acquisition Program.** All Parties will collaborate and explore work in-kind and cost share options, as appropriate, with stakeholders to address sediment data gaps identified during project development. Data collection may include the acquisition of existing sub-surface imagining from industry, academia, or other government agencies. Physical borings to a feasible dredge depth in the areas of interest that have been previously identified would also be included in a programmatic strategy to address data gaps similar to the strategy as identified in Opportunity A above.

C. **Development of a Multi-Objective Optimization of Sediment Sources near the Texas Coast.** In support of the proposed plans as outlined in the Coastal Texas

Study, all Parties will participate in the identification and prioritization of offshore sediment sources for Texas CSRM/ER based on relevant, clearly communicated criteria. Specific considerations shall include mining, transport, and construction costs; infrastructure removal costs; environmental impacts; project ecological benefits and risks; sustainable sediment sources; risk to active and decommissioned infrastructure; changes to coastal storm risk from offshore mining operations; and sediment suitability for various coastal construction projects as well as the modification of the USACE's Dredged Material Management Decisions D2M2 and the Multi-Criteria Decision Analysis tool to aid in the evaluation of alternatives from offshore sediment sources and to aid in CSRM/ER data input/output linkages to other databases and existing systems. The D2M2 CSRM/ER output will be used for both internal assessment within BOEM/USACE and communication with stakeholders. Emphasis will be placed on utilizing previously developed plans.

D. **Numerical Models of Physical Transport Processes and Ecological Evolution on the Texas Coast.** The USACE maintains a suite of coupled numerical models to evaluate circulation, storm surge, wave dynamics, sediment transport, and coastal morphology. These models will be applied to address multiple issues relevant to prioritizing offshore sediment management, including:

(1) infilling rates of dredging sites to evaluate potential for future use;
(2) the risk to offshore infrastructure from dredging, pump-out, and other activities;
(3) setbacks required between dredging sites and infrastructure;
(4) the borrow area margin and slope stability after dredging; and
(5) using Party databases to supplement relevant data in support of the decision-making process.

In addition to the models developed and/or available by the USACE, BOEM, and GLO, other stakeholders also may maintain models or have existing studies that could feed into these numerical models. The Parties will evaluate any opportunities for the leveraging of models, data, and studies that may improve existing tools.

E. **Expansion of the Offshore Infrastructure Database.** Operational and decommissioned infrastructure within identified State and Federal sediment resource regions must be identified and included in the analysis of potential sediment management alternatives. To meet this requirement, all Parties will collaborate with industry, the Offshore Operators Committee, and regulatory agencies such as the Bureau of Safety and Environmental Enforcement to identify and map infrastructure not already captured in existing infrastructure database tools. Besides location, relevant information such as removal costs, condition, potential effects from unintended disturbance, offsets required to reduce risk to acceptable levels, and the potential for re-activation of decommissioned infrastructure will be identified during the USACE scoping process. Infrastructure information not previously identified, particularly in State waters, will be incorporated into a geospatial database determined by the Parties, and tools may be developed to query and analyze the infrastructure data. The data imbedded in the infrastructure databases will be

coupled with sediment transport predictions from mining sites to characterize the risk to infrastructure from mining operations and post-mining morphology change.

F. **Ecological Resources Database and Modeling Historic and Ecological Risk/Response.** The Parties will collect and catalog unidentified historic and ecological resource data and incorporate it into a new or existing geospatial database to be determined by the Parties. In addition, a suite of historic and ecological risk characterization models previously developed by the Parties will be applied to quantify the risk to habitat and species during dredging operations, construction, and post-construction, such as those developed by BOEM including the Analyzing Sea Turtle Entrainment Risk (ASTER) and Shoalmate tools, which evaluate sea turtle and fisheries risk. These models and potentially others will be applied to inform sediment dredging and nearshore construction alternatives designated under the Plans.

   In addition, the USACE and GLO may apply ecological evolution models to quantify habitat benefits and evolution after construction. The ecological model will be coupled to the transport/morphology model so that proper feedback between ecology and transport are captured.

G. **Offshore Mineral Sediment Resource Science Component.** This agreement includes a coastal science component, which would be used to improve the Parties' capabilities to efficiently manage offshore resources for CSRM/ER, including areas such as paleo-valleys, and incised channels in nearshore and Federal OCS borrow areas. The science components shall include, at least, the items below.

   (1) Numerical models for circulation, sediment transport, morphology change, ecological risk and ecological evolution components for nearshore regions where sand or any other sediment is dredged from paleo-valleys or incised channels, overburden beneficially used or otherwise sidecast, and coastal regions where the sediment is placed. This may be coupled with physical/chemical/ecological modeling systems.
   (2) Support the applications of tools that will support the Parties to maintain and expand relevant input data, including ecology and ecological risk/benefits, offshore infrastructure, CSRM/ER benefits, the impacts of seafloor changes on hydrodynamics, sediment quality, renewable sediment resources, etc.
   (3) Develop, expand, and integrate web-based databases with other relevant databases, tools, and systems.

VI. Agency Contacts

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VII. Communications and Information Exchange

The Parties agree to continue to work collaboratively on the optimization opportunities identified as well as any other opportunities that fall within the scope of identified needs to support the proposed and other potential projects as outlined in the Plans to ensure that timely decisions are made, the responsibilities of each Party as defined by their agency missions are performed, and the goals of each Party are met. The Parties will share with all cooperating agencies and other participating agencies any information gathered, as appropriate. Specifically, the Parties agree to

(1) cooperate as appropriate in the preparation of requests for additional studies or data and compile a consistent set of information available to all the parties;
(2) cooperate in identifying and developing data collection needs and information required, including any requirements related to geophysical surveys, biological sampling, diver observations, and/or modeling; and
(3) provide to the other Parties available information relevant to the activities described in Section V requested by any Party that may be necessary to complete an administrative or decision record.

(4) notify each other of any public information request specifically related to the MOU or work performed under the scope of the MOU as soon as practical after receipt of the request.

(5) notify the other Parties in writing of a change in contact under Section VI as early as practical prior to the change

VIII. Administration

A. This MOU is to be construed in a manner consistent with all existing laws and regulations. This MOU neither expands nor detracts from those powers and authorities vested in the participating Parties by applicable laws, statutes, or regulations.

B. The terms of this MOU are not intended to be enforceable by any Party. This MOU is intended only to improve the working relationships of the participating Parties in connection with the data acquisition and management related to the use of sand, gravel, and shell resources and is not intended to, nor does it, create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by any person or party against the United States or the State of Texas, their agencies, its officers, or any other person.

C. This MOU may be modified, amended, or terminated upon written request of either Party. Changes to this MOU shall be made by mutual consent of all Parties through the issuance of a written modification signed and dated by all Parties. Participation in this MOU may be terminated 60 days after one Party provides written notice of such termination to the other Parties through the contacts identified in Section VI.

D. This MOU in no way restricts the Parties of this MOU from participating in similar activities or arrangements with other public or private agencies, organizations, or individuals, as authorized by law.

E. The Parties will consult with one another to resolve disputes at staff levels and elevate disputes through the respective organizational levels only if necessary. Notification of potential conflict or a dispute by either Party must be put in writing and attempts to resolve the matter at the staff level should occur within 30 days. If there is no resolution at this level within 30 days, either Party may elevate the issue to the appropriate officials. Notwithstanding any such referral, each of the Parties reserves the right to make a final decision on any matter within its regulatory authority.

F. The Parties shall schedule meetings to review progress and identify opportunities for advancing the principles of this MOU.

G. Nothing in this MOU, in and of itself, requires any Party to enter into any contract, grant, or interagency agreement.

H. Nothing in this MOU may be construed to obligate the Parties to this MOU or the United States to any current or future expenditure of resources in advance of the availability of appropriations from Congress or the Texas Legislature. Nor does this MOU obligate the Parties or the United States to spend funds on any project or purpose, even if funds are available.

I. This MOU is neither a fiscal nor a funds obligation document. Any endeavor involving reimbursement, contribution of funds, or other transfer of anything of value between the Parties will be handled in accordance with applicable laws, regulations,

and procedures, including those for government procurement and printing. Such endeavors, to the extent necessary, will be outlined in separate agreements that shall be made in writing by representatives of the Parties and shall be independently authorized by appropriate statutory authority.

J. Documents furnished to a Party under this MOU may be subject to the Freedom of Information Act (FOIA) (5 U.S.C. § 552) and the Public Information Act (PIA)(552 Texas Government Code, Section 305). To the extent practicable, before releasing documents originating with another Party, the releasing Party shall forward the request to the originating Party and provide a reasonable opportunity to review and object to disclosure. Nothing in this paragraph shall prevent a Party from releasing documents through a public information request if otherwise required by applicable law and/or agency regulation.

K. All data jointly created as a result of this MOU will be jointly owned by the Parties.

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IX. Effective Date

This MOU shall become effective as of the date the last Party duly executes it below and will terminate 5 years from that date, unless extended by amendment with the written consent of all three Parties.

For the U.S. Army Corps of Engineers

12 JUN 20

Timothy R. Vail
Colonel, U.S. Army, Commanding

Date

For the Bureau of Ocean Energy Management

June 17, 2020

Michael A. Celata
Regional Director, New Orleans Office

Date

For the Texas General Land Office

7/13/2020

Mark Havens
Chief Clerk/Deputy Land Commissioner

Date