

**NEPA CATEGORICAL EXCLUSION REVIEW AND DECISION RECORD
FOR NON-DESTRUCTIVE MARINE SURVEYS
U.S. GEOLOGICAL SURVEY**

Require Fields are marked with *.

*Proposed Project:

Create a coupled river – Mississippi Sound hydrodynamic model for sustainable coastal restoration in Mississippi

*Description of Proposed Project:

For description of project information, see the attachment provided in the "Additional Information" section of this document.

*Description of Location :

For description of location information, see the attachment provided in the "Additional Information" section of this document.

List of Reviews Undertaken (for consistency with CZMA, MMPA, ESA, Magnuson-Stevens Act, State and local regulations, etc. as necessary) :

CATEGORIAL EXCLUSION REVIEW

The proposed project qualifies for the following Department of Interior categorical exclusion under the USGS National Environmental Policy Act (NEPA) procedures defined for certain surveys in the ocean, coastal zone, estuaries, lakes, river canals:

CFR §46.210 (e): Nondestructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research, and monitoring activities.

Extraordinary Circumstances Review



(43 CFR 46.215, Categorical Exclusions: Extraordinary circumstances)

“Significance”, as used in NEPA requires consideration of both context and intensity.

Context means the effected environment in which a proposed action would occur; it can be local, regional, national, or all depending on circumstances. Both short- and long-term effects are relevant.

Intensity is the severity of the impact. Answering the following questions below will help evaluate intensity.

*If the response on the following questionnaire is “YES”, attach pertinent document is required. Question 6-4 attachment document are mandatory.

- | | |
|--|--------------------------|
| <p>1. Will the project require significant disturbance to the seafloor?
<i>If the response is "yes", attach pertinent supporting documentation.</i></p> <div style="border: 1px solid black; padding: 2px; width: fit-content;"> File Attachment</div> | <p>Ye:
No</p> |
| <p>2. Will the project potentially result in the release of toxic, hazardous, or radioactive materials to the environment or in the exposure of people to such materials? (43 CFR Part 46.215(i)). <i>Action: If "Yes", notify the Office of Management Services for further guidance.</i></p> <div style="border: 1px solid black; padding: 2px; width: fit-content;"> File Attachment</div> | <p>No</p> |
| <p>3. Is the project likely to be inconsistent with any applicable Federal, State, Tribal, or local law or regulation designed to protect any aspect of the environment? (43 CFR Part 46.215(i)). <i>If the response is "Yes", attach pertinent supporting documentation.</i></p> | <p>No</p> |

 File Attachment

4. Will the project result in significant impacts on public health or safety? (43 CFR Part 46.21 5 (a)). *If the response is "Yes", attach pertinent supporting documentation.* **No**

 File Attachment

5. Will the project or associated disturbance have significant impacts to natural resources and/or unique geographic characteristics such as park, recreation, or refuge lands; wilderness areas; wild or scenic rivers; national monuments; national natural landmarks; state or locally recognized cultural, economic, and historical resources; sole or principal drinking water aquifers; wetlands; floodplains; migratory birds; wildlife; marine mammals, fish, marine birds, or marine protected species (e.g., turtles); or other ecologically significant or critical areas? (43 CFR Part 46.2 15(b)) Will specific mitigation measures (e.g., Protected Species Visual Observers, shutdown periods) be used to reduce the potential for impact of the activities on the environment? *If the response is "Yes", attach pertinent supporting documentation.* **No**

 File Attachment

6. Will the project or associated disturbance have a significant Impact on species listed, or proposed to be listed, on the Federal list of Endangered or Threatened Species or have significant impacts on the designated critical habitat for these species? (43 CFR Part 46.21 5(h)) *Attach the Fish and Wildlife Service determination documentation for all consultations. If consultations were not performed, a detailed explanation must be provided.* **No**



MSEP - Additional Information_FINAL_7-1-15_T&E.docx
Microsoft Word Document
16.9 KB

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7. Will the project limit access to and ceremonial use of Tribal sites on lands by Tribal religious practitioners or significantly adversely affect the physical integrity of such sacred sites? (43 CFR Part 46.215(k)). Will the project occur in areas routinely used for subsistence activities by tribal groups? *Attach supporting documentation, if applicable.* **No**



MSEP - Additional Information_FINAL_7-1-15_tribal.docx
Microsoft Word Document
17.0 KB

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8. Will the project likely encounter marine archaeological sites and, if so, what measures will be taken to ensure their integrity? (43 CFR Part 46.215(g)) *Attach pertinent supporting document.* **No**



MSEP - Additional Information_FINAL_7-1-15_archeology.docx
Microsoft Word Document
16.9 KB

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9. Will the project have highly uncertain and potentially significant environmental effects or involve unique or **No**

unknown environmental risks?(43 CFR Part 46.215(d)) Action: *If "Yes", notify the Office of Management Services for further guidance.*

10. Will the project establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects. (43 CFR Part 46.2 15(e). *If the response is "Yes", attach pertinent supporting documentation.* No

 File Attachment

11. Will the project have a direct relation to other actions with individually insignificant but cumulatively significant environmental effects? (43 CFR Part 46.2 15(f)). *If the response is "Yes", attach pertinent supporting documentation.* No

 File Attachment

12. Will the project have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources? (43 CFR Part 46.215(c)). *If the response is "Yes", attach pertinent supporting document.* No


 File Attachment

13. Will the project have a disproportionately high and adverse effect on low income or minority populations? (43 CFR Part 46.215(J)). *If the response is "Yes", attach pertinent supporting documentation.* No

 File Attachment

14. Will the project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species? (43 CFR Part 46.215(1)). *If the response is "Yes", attach pertinent supporting documentation.* No

 File Attachment



Supporting documentation
for CMPG_MSEP_MS.docx
Microsoft Word Document
2.08 MB

Additional Information:

Please attach additional information, if necessary, that will assist the Environmental Program Manager in the decision-making process that was not provided above.

DECISION



If the answers to all the questions are NO, the project requires no further environmental review and qualifies for categorical exclusion under NEPA ([516 DM 9.5](#)) (*reference the specific categorical exclusion*). The Evaluator and the Science Center Designee shall sign and date the checklist, and send the checklist to the Environmental Program Coordinator for review and signature. The signed checklist and all supporting documentation shall become part of the official project record.

If the answer to any question is YES, the project requires further environmental review (possibly an Environmental Assessment or an Environmental Impact Statement) and may not qualify for Categorical Exclusion under NEPA. The Evaluator and the Science Center Director or Designee shall sign and date the checklist, and submit the checklist to the Environmental Program Coordinator.

for review. The checklist and all supporting documentation shall become part of the official project record.

If the last signature block is signed, then the proposed project qualifies for the categorical exclusion under USGS national Environmental Policy Act (NEPA) procedures at Departmental manual 516, chapter 9.5.

Change in scope of work, project schedule, location, or passage of new environmental regulations may trigger additional compliance requirements.

Approved By Environmental Protection Specialist: Herrington, Larry E. on 07/09/2015

Comment: (Require if Disapproved was click):

Approved By Science Center Director, Associate Director, or Regional Director: Weaver, Jess D. on 07/10/2015

Comment: (Require if Disapproved was click):

Requestor/Evaluator : Submitted On Date :

Environmental Protection Specialist :

Science Center Director, Associate Director, or Regional Director:

Question 6 Response

RESTORE Funded Priorities List - Environmental Compliance Checklist

<u>Environmental Compliance Type</u>	Yes	No	Applied For	N/A
Federal***				
National Marine Sanctuaries Act (NMSA)				x
Coastal Zone Management Act (CZMA)				x
Fish and Wildlife Coordination Act				x
Farmland Protection Policy Act (FPPA)				x
NEPA – Categorical Exclusion				x
NEPA – Environmental Assessment				x
NEPA – Environmental Impact Statement				x
Clean Water Act – 404 – Individual Permit (USACOE)				x
Clean Water Act – 404 – General Permit(USACOE)				x
Clean Water Act – 404 – Letters of Permission(USACOE)				x
Clean Water Act – 401 – WQ certification				x
Clean Water Act – 402 – NPDES				x
Rivers and Harbors Act – Section 10 (USACOE)				x
Endangered Species Act – Section 7 – Informal and Formal Consultation (NMFS, USFWS)				x
Endangered Species Act – Section 7 - Biological Assessment (BOEM,USACOE)				x
Endangered Species Act – Section 7 – Biological Opinion (NMFS, USFWS)				x
Endangered Species Act – Section 7 – Permit for Take (NMFS, USFWS)				x
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) – Consultation (NMFS)				x
Marine Mammal Protection Act – Incidental Take Permit (106) (NMFS, USFWS)				x
Migratory Bird Treaty Act (USFWS)				
Bald and Golden Eagle Protection Act – Consultation and Planning (USFWS)				x
Marine Protection, Research and Sanctuaries Act – Section 103 permit (NMFS)				x
BOEM Outer Continental Shelf Lands Act – Section 8 OCS Lands Sand permit				x
NHPA Section 106 – Consultation and Planning ACHP, SHPO(s), and/or THPO(s)				x
NHPA Section 106 – Memorandum of Agreement/Programmatic Agreement				x
Tribal Consultation (Government to Government)				x
Coastal Barriers Resource Act – CBRS (Consultation)				x
State				
As Applicable per State				

*** It is anticipated that the establishment of the Mississippi Sound Estuarine Program will not require environmental compliance as it is the establishment of a coordinating program. Council approval of funding for this proposed activity would not involve or lead directly to ground-disturbing activities that may have significant effects on the environment individually or cumulatively, nor would it commit the Council to a particular course of action affecting the environment. The Council has considered potential extraordinary circumstances, including potential negative effects to threatened and endangered species, essential fish habitat, Tribal interests and/or historic properties, where applicable, and has determined that no such circumstances apply. Accordingly, the Council has determined that this proposed activity would

Question 6 Response

be covered by the Council's NEPA Categorical Exclusion for planning, research or design activities. (See the Council's NEPA Procedures, Section 4(d)(3). The establishment of the program includes a sampling component which will require minor physical data collection including collection of water quality samples and making circulation/velocity measurements. These are non-destructive marine surveys that would be conducted at 50 to 100 locations in a shallow draft 23-26 ft. skiff. Compliance for this activity is covered under CFR 46.210 (e): Non-destructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research and monitoring activities). Endangered and Threatened species compliance, Tribal and marine archaeological compliance are provided below.

As it pertains to 43 CFR 46.21 5(h) – Endangered and Threatened species. The only sample collection will be for water (both surface and near bottom water samples). The size of the sampling container is less than 1 gallon. The craft used to collect the samples is a recreational shallow draft vessel (length 23-26') with a draft depth of 12". This sample collection will not have a significant impact on the Federal list of Endangered and Threatened species or have significant impacts on the designated habitat of these species.

RESTORE Funded Priorities List - Environmental Compliance Checklist

<u>Environmental Compliance Type</u>	Yes	No	Applied For	N/A
Federal***				
National Marine Sanctuaries Act (NMSA)				x
Coastal Zone Management Act (CZMA)				x
Fish and Wildlife Coordination Act				x
Farmland Protection Policy Act (FPPA)				x
NEPA – Categorical Exclusion				x
NEPA – Environmental Assessment				x
NEPA – Environmental Impact Statement				x
Clean Water Act – 404 – Individual Permit (USACOE)				x
Clean Water Act – 404 – General Permit(USACOE)				x
Clean Water Act – 404 – Letters of Permission(USACOE)				x
Clean Water Act – 401 – WQ certification				x
Clean Water Act – 402 – NPDES				x
Rivers and Harbors Act – Section 10 (USACOE)				x
Endangered Species Act – Section 7 – Informal and Formal Consultation (NMFS, USFWS)				x
Endangered Species Act – Section 7 - Biological Assessment (BOEM,USACOE)				x
Endangered Species Act – Section 7 – Biological Opinion (NMFS, USFWS)				x
Endangered Species Act – Section 7 – Permit for Take (NMFS, USFWS)				x
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) – Consultation (NMFS)				x
Marine Mammal Protection Act – Incidental Take Permit (106) (NMFS, USFWS)				x
Migratory Bird Treaty Act (USFWS)				
Bald and Golden Eagle Protection Act – Consultation and Planning (USFWS)				x
Marine Protection, Research and Sanctuaries Act – Section 103 permit (NMFS)				x
BOEM Outer Continental Shelf Lands Act – Section 8 OCS Lands Sand permit				x
NHPA Section 106 – Consultation and Planning ACHP, SHPO(s), and/or THPO(s)				x
NHPA Section 106 – Memorandum of Agreement/Programmatic Agreement				x
Tribal Consultation (Government to Government)				x
Coastal Barriers Resource Act – CBRS (Consultation)				x
State				
As Applicable per State				

*** It is anticipated that the establishment of the Mississippi Sound Estuarine Program will not require environmental compliance as it is the establishment of a coordinating program. Council approval of funding for this proposed activity would not involve or lead directly to ground-disturbing activities that may have significant effects on the environment individually or cumulatively, nor would it commit the Council to a particular course of action affecting the environment. The Council has considered potential extraordinary circumstances, including potential negative effects to threatened and endangered species, essential fish habitat, Tribal interests and/or historic properties, where applicable, and has determined that no such circumstances apply. Accordingly, the Council has determined that this proposed activity would

Question 7 Response

be covered by the Council's NEPA Categorical Exclusion for planning, research or design activities. (See the Council's NEPA Procedures, Section 4(d)(3). The establishment of the program includes a sampling component which will require minor physical data collection including collection of water quality samples and making circulation/velocity measurements. These are non-destructive marine surveys that would be conducted at 50 to 100 locations in a shallow draft 23-26 ft. skiff. Compliance for this activity is covered under CFR 46.210 (e): Non-destructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research and monitoring activities). Endangered and Threatened species compliance, Tribal and marine archaeological compliance are provided below.

As it pertains to 43 CFR Part 46.215(k), limiting access to and ceremonial use of Tribal sites on lands. This project does not take place on land and has no restrictions in terms of access or any disturbance that would affect physical integrity of sites. Sample collection will not occur in areas routinely used for subsistence activities by Tribal groups. The only sample collection will be for water (both surface and near bottom water samples). The size of the sampling container is less than 1 gallon. The craft used to collect the samples is a recreational shallow draft vessel (length 23-26') with a draft depth of 12".

RESTORE Funded Priorities List - Environmental Compliance Checklist

<u>Environmental Compliance Type</u>	Yes	No	Applied For	N/A
Federal***				
National Marine Sanctuaries Act (NMSA)				x
Coastal Zone Management Act (CZMA)				x
Fish and Wildlife Coordination Act				x
Farmland Protection Policy Act (FPPA)				x
NEPA – Categorical Exclusion				x
NEPA – Environmental Assessment				x
NEPA – Environmental Impact Statement				x
Clean Water Act – 404 – Individual Permit (USACOE)				x
Clean Water Act – 404 – General Permit(USACOE)				x
Clean Water Act – 404 – Letters of Permission(USACOE)				x
Clean Water Act – 401 – WQ certification				x
Clean Water Act – 402 – NPDES				x
Rivers and Harbors Act – Section 10 (USACOE)				x
Endangered Species Act – Section 7 – Informal and Formal Consultation (NMFS, USFWS)				x
Endangered Species Act – Section 7 - Biological Assessment (BOEM,USACOE)				x
Endangered Species Act – Section 7 – Biological Opinion (NMFS, USFWS)				x
Endangered Species Act – Section 7 – Permit for Take (NMFS, USFWS)				x
Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat (EFH) – Consultation (NMFS)				x
Marine Mammal Protection Act – Incidental Take Permit (106) (NMFS, USFWS)				x
Migratory Bird Treaty Act (USFWS)				
Bald and Golden Eagle Protection Act – Consultation and Planning (USFWS)				x
Marine Protection, Research and Sanctuaries Act – Section 103 permit (NMFS)				x
BOEM Outer Continental Shelf Lands Act – Section 8 OCS Lands Sand permit				x
NHPA Section 106 – Consultation and Planning ACHP, SHPO(s), and/or THPO(s)				x
NHPA Section 106 – Memorandum of Agreement/Programmatic Agreement				x
Tribal Consultation (Government to Government)				x
Coastal Barriers Resource Act – CBRS (Consultation)				x
State				
As Applicable per State				

*** It is anticipated that the establishment of the Mississippi Sound Estuarine Program will not require environmental compliance as it is the establishment of a coordinating program. Council approval of funding for this proposed activity would not involve or lead directly to ground-disturbing activities that may have significant effects on the environment individually or cumulatively, nor would it commit the Council to a particular course of action affecting the environment. The Council has considered potential extraordinary circumstances, including potential negative effects to threatened and endangered species, essential fish habitat, Tribal interests and/or historic properties, where applicable, and has determined that no such circumstances apply. Accordingly, the Council has determined that this proposed activity would

Question 8 Response

be covered by the Council's NEPA Categorical Exclusion for planning, research or design activities. (See the Council's NEPA Procedures, Section 4(d)(3). The establishment of the program includes a sampling component which will require minor physical data collection including collection of water quality samples and making circulation/velocity measurements. These are non-destructive marine surveys that would be conducted at 50 to 100 locations in a shallow draft 23-26 ft. skiff. Compliance for this activity is covered under CFR 46.210 (e): Non-destructive data collection, inventory (including field, aerial, and satellite surveying and mapping), study, research and monitoring activities). Endangered and Threatened species compliance, Tribal and marine archaeological compliance are provided below.

As it pertains to 43 CFR Part 46.215(g), the project will not encounter marine archeological sites in the area of sampling. The only sample collection will be for water (both surface and near bottom water samples). The size of the sampling container is less than 1 gallon. The craft used to collect the samples is a recreational shallow draft vessel (length 23-26') with a draft depth of 12".

NEPA CATEGORICAL EXCLUSION REVIEW AND DECISION RECORD FOR NON-DESTRUCTIVE MARINE SURVEYS U.S. GEOLOGICAL SURVEY

Proposed Project: Create a coupled river – Mississippi Sound hydrodynamic model for sustainable coastal restoration in Mississippi

Description of Proposed Project:

This objective will be a collaborative coordinated research effort towards understanding connectivity between our rivers and streams, and how they influence hydrological patterns of our bays, estuaries, and eventually the Mississippi Sound. There have been several excellent, yet disparate, research efforts across the Mississippi Gulf coast of bays and estuaries and the Mississippi Sound. For example, the US Army Corps of Engineers CH3D modeling for the Mississippi Sound for the MsCIP program in 2007; ERDC/NRL conducted a 3D watershed model of the Biloxi Bay Watershed and coupled it to ADCIRC in Biloxi Bay and the Mississippi Sound; the Northern Gulf Institute has conducted an integrated ecosystem assessment for St. Louis Bay around water quality drivers and stressors, and there is currently a WASP/EFDC effort underway through Mississippi State University in St Louis Bay. There are likely an additional half dozen data sources, that have either had no connectivity to link these research efforts, nor were the efforts not explicitly focused on restoration outcomes, and there are still missing pieces that are required to understand the system holistically.

This objective's effort will be a foundational step in identifying critical observational data gaps needed to support and implement an interdisciplinary modeling framework designed to address Mississippi's directive towards sustainable coastal restoration. The final deliverable will be a foundational hydrodynamic model that represents a key beginning to understanding transport dynamics in our coastal system. The modeling framework will be designed to directly benefit several restoration efforts such as marsh creation and preservation, artificial reef placement, support of beach re-nourishment, and supporting oyster reef restoration and production. The modeling framework will be developed in phases to provide a coupled hydrologic and hydrodynamic framework within which distributions of suspended sediment, nutrients, dissolved oxygen and other key water quality parameters can be added. Additionally, the framework's ability to simulate circulation will assist in the design and construction of restoration projects. For example, simulation of circulation will improve the design and likelihood of success of oyster reef restoration by optimizing structure height, avoidance of high siltation, and positioning according to larval transport for spat recruitment to established sites. By exploring various inflow scenarios, model-generated projections will deliver guidance on how best to implement living resource restoration through site selection assessments that offer objective justification of coastal restoration expenditures.

Ground-truthing with new and existing data will validate the user- and public-friendly model, and the product will be applied to the adaptive measures for site restoration and management. Moreover, this foundational program will gain added value and potential leverage from other funded and proposed oil-spill research and modeling studies to provide the most effective use of restoration dollars.

Supporting Documentation

The general scope of work for this proposed project will include:

- Coordination and data assimilation of existing models and data inputs
- Decision to type of model, extent of model, and phases of model development
- Model development – including grid development, data synthesis, assimilation, and analyses
- Model calibration including ground truthing by collecting water samples, and measuring current velocities

The only physical data collection within this model development will be the collection of water quality samples, as well as making circulation/velocity measurements.

Water sample collection will occur in the general location highlighted by the planning units in the description of location below. It is anticipated that between 50 – 100 water sampling stations may be sampled over the course of the model development. Existing data collections by the respective state and federal agencies will be leveraged at all junctures to enhance model validation. At each station both surface water sample as well as water sample at depth (if necessary) will be collected. Surface samples will be collected with a grab bucket, while at depth samples will be sampled with a Van-Dorn bottle. No sediment samples will be taken. All water samples will be stored and transported to USM/MSU water quality labs for subsequent water quality analyses. Water samples will likely be analyzed for a suite of nitrogen and phosphorus species, including total suspended sediments. Turbidity measurements will occur in the field with turbidimeters as well as flourometers that measure fluorescence of each water sample. Dissolved oxygen, pH, salinity, and specific conductance will be measured in situ using a typical data sonde that allows for instantaneous parameter analysis. Flow or current velocity will be measured with standard magnetometers both at the surface as well as at depth.

Data collection will occur by boat, likely a 23-26ft skiff, with a shallow draft depth. The depth of the monitoring locations could be from < 2ft, to approximately 20ft deep. It is highly unlikely that samples will be taken in deeper waters, unless samples are taken in federal navigation channels.

Description of Location:

Below is an outline of the area of interest for the development of a hydrodynamic model. It is highly unlikely, based on funding that the entire area will be captured and sampled for the model. Each hexagonal unit represent 200ha within the Mississippi Sound, bay/estuary complex. It extends from the Pearl River in the West to the Grand Bay complex in the east, extends up our river systems, and 3 miles beyond our barrier islands.

