JOINT APPLICATION AND NOTIFICATION
U.S. ARMY CORPS OF ENGINEERS
MISSISSIPPI DEPARTMENT OF MARINE RESOURCES
MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY/OFFICE OF POLLUTION CONTROL

Applicant: Louisiana State University
Mailing Address: 3173 Energy, Coast and Environment Bldg
Baton Rouge LA, 70803
Phone Number:
Email Address: [redacted]

Agent:
Mailing Address:
Phone Number:
Email Address:

Date Submitted:

06/23/2022

DMR Permit Number:
DMR22-000440

Historic DMR Permit Numbers:

DMR22-000440

DMR File Number:
22-000389

Project Location:

GNERR - Grand Bature Rd
Moss Point, MS 39562
County

Latitude: 0
Longitude: 0

Do you still need to enter a Project Location?
How will you identify the project location:

Project Information:

Project Name or Title: Comparative study of Spartina patens to inform optimal elevations for soil strength and sea-level rise resilience

Project Description: In order to test the hypothesis that S. patens-dominated marshes at sub-optimal elevations (in Louisiana) are weaker than S. lancifolia marshes and more stable S. patens-dominated marshes in Grand Bay, MS, we will implement a comparative field investigation. Barataria Bay is located within an interdistributary basin of the Mississippi River between the natural levees of Bayou Lafourche and the Mississippi River. Wetlands in the lower part of the bay have been undergoing rapid subsidence and erosion for a number of reasons including major changes to the hydrology and sediment loading to the system, canal dredging, etc. In contrast, the wetlands of Grand Bay MS may be more vertically stable. Spartina patens-dominated marshes will be selected as study sites in both systems and a S. lancifolia marsh in Barataria Bay will also be selected for comparison. Soil shear strength measurements will be made along replicate transects (n = 10) from the marsh edge to the interior (100 m) in each location every 10 m. Elevation (RTK GPS, Leica GS-14) and vegetation measurements (e.g., species percent cover) will be made at each shear strength sampling point. To examine the potential differences in environmental factors to these marshes, using elevation survey data and local tidal hydrology data, we will calculate inundation metrics (e.g., percent time and area flooded). We will also gather available salinity data and install continuous water level and salinity recorders in the marsh (In-situ Solonst, Inc.). Water level will be collected every 15 minutes and salinity data every 30 minutes. Porewater nutrient concentrations will be determined three times throughout the study and estimates of nutrient loading will be gathered from existing datasets. In order to examine the possible mechanisms of greater erodibility in S. patens marshes in LA as compared to the other two marshes, we will intensively measure belowground biomass depth profiles (30 cm diameter x 60 cm depth), root tensile strength, microtopographic heterogeneity, characterization of organic matter (size distribution), sediment grain size, and soil porosity at five locations sampled from soil shear strength in each marsh.

Project Purpose and Need: Data and management recommendations

Intended Use: Public/Government

Will the Proposed Project have a Public Benefit?: Yes
Increased tax base:
Increased employment:
National security benefits:
Improved habitat:
Other:

Does Project area contain any marsh Vegetation?: Yes

What measures will be taken to reduce detrimental off-site effects to the Coastal Wetlands during and after the proposed activity?: Best Management Practices

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Impact Information:

Number of Impact Types	**01**
Impact Type:	**Plant material collection**
Species to be Collected (Plant Material Collected)	Spartina patens
What will be Collected?	03. Whole Plants
Is this a component of a larger project?	No
Is any portion of this impact complete?	No

Additional information relating to the proposed activity

Have any other federal, state, or local agencies issued permits or other types of approvals for the proposed project?: No

Have any other federal, state, or local agencies denied approval for the proposed project?: No

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Project Schedule

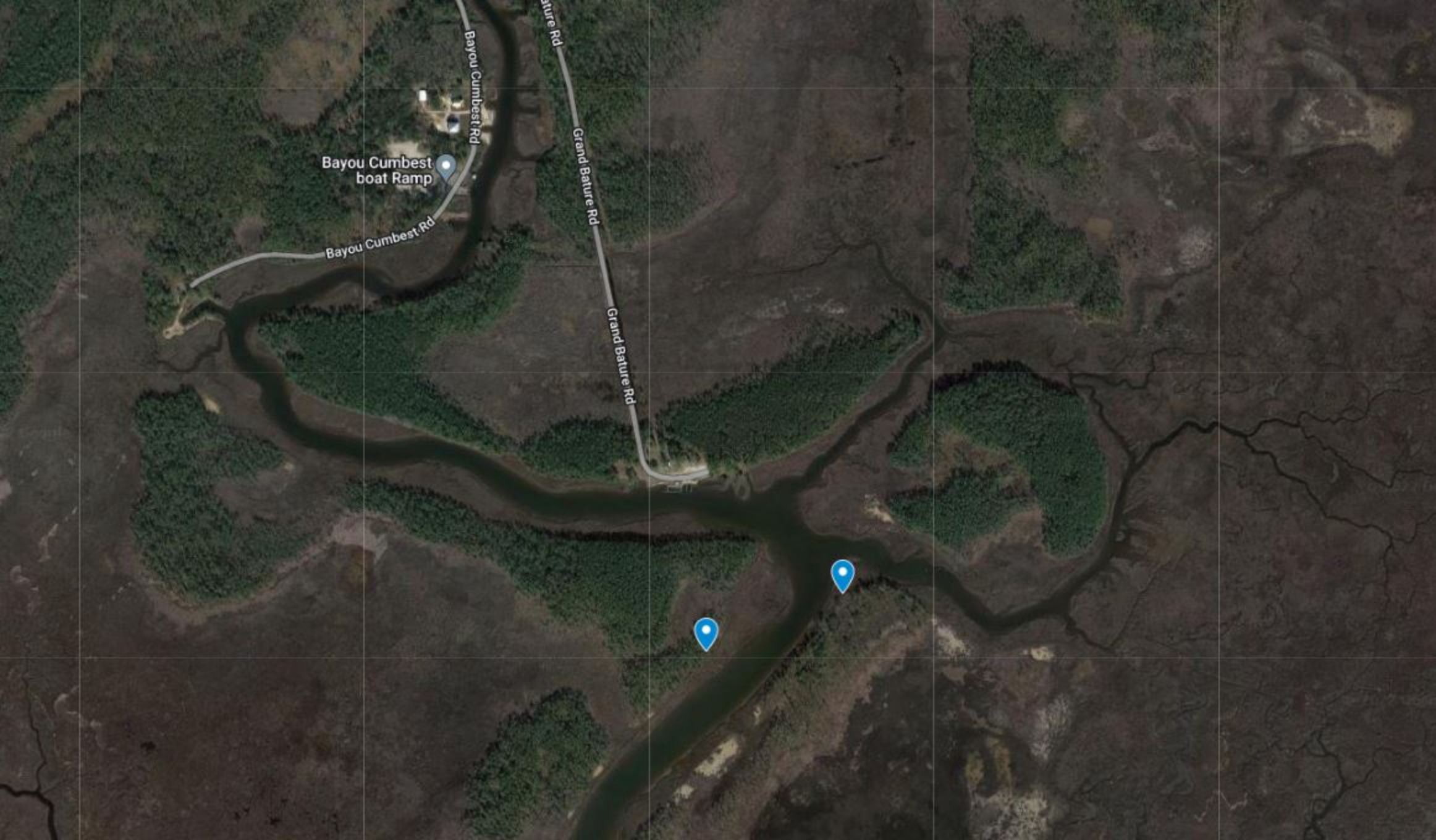
Do you know the Proposed Start Date? Yes
06/30/2022

Do you know the Proposed Completion Date? Yes
06/22/2023

Do you know the Estimated Cost of the Project?

Adjacent Property Owners:

Application Certified by: [redacted]


Bayou Cumbest Rd
Grand Bature Rd
Bayou Cumbest boat Ramp
Bayou Cumbest Rd
Grand Bature Rd