ALABAMA STATE EXPENDITURE PLAN (SEP)

Project #4: Auburn University Gulf Coast Engineering Research Station

Project Description/Summary

a) This project proposes the planning, engineering and design, and construction to establish the Auburn University Gulf Coast Engineering Research Station (GCERS). In addition, the proposed activity includes two years' operation and maintenance. The GCERS will be led by the Samuel Ginn College of Engineering at Auburn University in collaboration with the City of Orange Beach, and with opportunities for collaboration with other institutions.

   The vision is to develop a world-class research facility where engineers and collaborating applied scientists from private and public institutions in Alabama can engage in fundamental and applied engineering research of critical importance to coastal Alabama and the larger Gulf Coast region.

   Activities also include the comprehensive administration of this grant, including, but not limited to, project development and oversight, contracting, and sub-recipient monitoring.

   a. **Need**: The Gulf of Mexico ecosystem is comprised of diverse, interconnected coastal, marine, and built environments and resources which together contribute to its function, health, and productivity. The health of the Gulf of Mexico environment and resources is intimately tied to the urban and natural conditions existing within its coastal and upland margins. Northern Gulf of Mexico coastal and upland areas are varied and complex, comprising unique freshwater and estuarine ecosystems, coupled with an array of built infrastructure systems. The effects of urban development and natural and man-made disasters on these systems add considerable complexity. Additionally, factors and issues unique to coastal Alabama infrastructure and economic resiliency and sustainability have historically been poorly addressed. Moreover, access to engineering-related STEM educational opportunities for K-12 students is absent in Baldwin County.

      Purpose: The purpose of this project is to design, construct, and begin operations of the Auburn University Gulf Coast Engineering Research Station. The GCERS will be led by the Samuel Ginn College of Engineering at Auburn University in collaboration with the coastal community of Orange Beach. The GCERS will focus on several broad coastal research areas, including water quality and quantity protection and restoration; engineering approaches for protection and restoration of coastal estuaries and upland freshwater wetlands; coastal community infrastructure and economic resilience and sustainability; coastal emergency management and transportation systems; and engineering-related STEM education opportunities for Baldwin County K-12 students. Internal efforts will be undertaken at the grant application stage to adequately define collaborative relationships and to address any duplication issues.

      Objective: The overall objective of this project is:

- Construct a new world-class research facility to engage in fundamental and applied engineering research; and
- Fund 2 year's operation & maintenance**.**

b. This project is located in the Gulf Coast region and will be implemented in the City of Orange Beach in Baldwin County.

c. The project is expected to begin on 7/1/19 and end 6/30/24 (5 years).

d. The proposed project will be implemented by Auburn University.

b) This project will contribute to the overall economic and ecological recovery of the Gulf Coast by providing a world-class research facility in Orange Beach which will enhance economic resiliency and sustainability by fostering diversification and growth in the region, providing an anchor for both existing and new high-technology, research-oriented businesses.

Eligibility and Statutory Requirements

This activity is located in the Gulf Coast Region and is eligible for Spill Impact Component funding under Category #6 - Infrastructure project benefitting the economy or ecological resources, including port infrastructure (primary). Secondary activities include Category #1 - Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region; Category #2 - Mitigation of damage to fish, wildlife, and natural resources; Category #3 - Implementation of a federally approved marine, coastal, or comprehensive conservation management plan, including fisheries monitoring; Category #4 - Workforce development and job creation; Category #7 - Coastal flood protection and related infrastructure; Category #10 - Promotion of tourism in the Gulf Coast Region, including recreational fishing; and Category #11 - Promotion of the consumption of seafood harvested from the Gulf Coast Region. Because the primary activity is classified as infrastructure, the 25% infrastructure cap is applicable.

Comprehensive Plan Goals and Objectives

This project is consistent with the following Comprehensive Plan goals:

- Goal 1: Restore and Conserve Habitat – Restore and conserve the health, diversity, and resilience of key coastal, estuarine, and marine habitats;
- Goal 2: Restore Water Quality and Quantity – Restore and protect water quality of the Gulf Coast region's fresh, estuarine, and marine waters;
- Goal 3: Replenish and Protect Living Coastal and Marine Resources – Restore and protect healthy, diverse, and sustainable living coastal and marine resources;
- Goal 4: Enhance Community Resilience – Build upon and sustain communities with capacity to adapt to short- and long-term changes; and
- Goal 5: Restore and Revitalize the Gulf Economy – Enhance the sustainability and resiliency of the Gulf economy.

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This project complies with the following Comprehensive Plan objectives:

- Objective 1: Restore, Enhance, and Protect Habitats – Restore, enhance, and protect the extent, functionality, resiliency, and sustainability of coastal, freshwater, estuarine, wildlife, and marine habitats. These include barrier islands, beaches, dunes, coastal wetlands, coastal forests, pine savannahs, coastal prairies; submerged aquatic vegetation, oyster reefs, and shallow and deepwater corals.
- Objective 2: Restore, Improve, and Protect Water Resources – Restore, improve, and protect the Gulf Coast region's fresh, estuarine, and marine water resources by reducing or treating nutrient and pollutant loading; and improving the management of freshwater flows, discharges to and withdrawals from critical systems;
- Objective 3: Protect and Restore Living Coastal and Marine Resources – Restore and protect healthy, diverse, and sustainable living coastal and marine resources including finfish, shellfish, birds, mammals, reptiles, coral, and deep benthic communities;
- Objective 4: Restore and Enhance Natural Processes and Shorelines – Restore and enhance ecosystem resilience, sustainability, and natural defenses through the restoration of natural coastal, estuarine, and riverine processes, and/or the restoration of natural shorelines;
- Objective 5: Promote Community Resilience – Build and sustain Gulf Coast communities' capacity to adapt to short- and long-term natural and man-made hazards, particularly increased flood risks associated with sea-level rise and environmental stressors. Promote ecosystem restoration that enhances community resilience through the re-establishment of non-structural, natural buffers against storms and flooding;
- Objective 6: Promote Natural Resource Stewardship and Environmental Education – Promote and enhance natural resource stewardship efforts that include formal and informal educational opportunities, professional development and training, communication, and actions for all ages; and
- Objective 7: Improve Science-Based Decision-Making Processes – Improve science-based decision-making processes used by the Council.

Major Milestones

a) Milestone 1: Planning

b) Milestone 2: Design team selection

c) Milestone 3: Design development

d) Milestone 4: Contract documents

e) Milestone 5: Construction bid

f) Milestone 6: Site work/construction

g) Milestone 7: 1st year operation and maintenance

h) Milestone 8: 2nd year operation and maintenance

Success Criteria/Metrics/Outcomes

The anticipated outcome of the Auburn University Gulf Coast Engineering Research Station will be:

- Completed construction of an engineering research facility with 2 years' operation and maintenance:

Table 5. Proposed Projects Success Criteria/Metrics/Outcomes

Activity	Anticipated Project Success Criteria/Metrics	Short-term outcome	Long-term outcome
Construction and operation of the Auburn University Gulf Coast Engineering Research Station	Completed plans for engineering and design Construction of building Post-construction - 2 years' O&M	Creation of an Engineering Research Program	Improved ecosystem services and resiliency

Monitoring and Evaluation

a) Submission of completed design and engineering for ADCNR review and approval

b) Provide evidence to ADCNR that all required permits were obtained (including SHPO)

c) Submit results of bid process to ADCNR prior to awarding contracts

d) ADCNR will conduct periodic onsite reviews

e) Submission of quarterly and final reports

f) Post construction monitoring/reporting as required

Best Available Science

A Best Available Science (BAS) review is required for programs and activities that would restore and protect the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, coastal wetlands, and economy of the Gulf Coast. The primary focus of this project is to design and construct a facility to house an engineering research program; therefore, BAS does not apply.

However, all GCERS buildings will be designed to Auburn University Design Standards and to the character of the surrounding area. The goal is to design and construct all GCERS structures to LID and LEED guidelines.

Budget/Funding

a) Estimated Cost of the Project and Amount to be Requested from Oil Spill Impact Component Funds: $9,270,000 (15-25% - Planning, 85-75% - Implementation). While it is noted that funding available under a grant award cannot exceed the amount described in the SEP for this project, the percentages listed in this section are estimated and will be more clearly cultivated in the grant application.

b) No other funding sources are anticipated at this time.

Partnerships/Collaboration (if applicable)

Not applicable at this time.

Leveraged Resources (if applicable)

During planning/design/construction:

In-kind contributions from City of Orange Beach, Alabama (long term lease interest in 4.5 acre building site (2011 appraised value of $1,195,000); other in-kind contributions valued at not less than $25,000. (Committed)

During first 2 years of operation (period of time RESTORE funds are provided):

In-kind and actual contributions are anticipated from the Cities of Orange Beach and Gulf Shores, Auburn University, and other collaborators/partners (Not yet determined).

Funds Used As Non-Federal Match (if applicable)

Not applicable at this time.

Other

Not applicable at this time.

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Figure 4. The Auburn University Gulf Coast Engineering Research Station will be located in Orange Beach, Alabama.