

Attachment 1

Enhancing Opportunities for Beneficial Use of Dredge Sediments (Lower Perdido Bay/Perdido Pass Navigation Project Hydrological Modeling and Sediment Budget Study) (Planning)

1.0 SUMMARY AND JUSTIFICATION

The City of Orange Beach (City) will receive an award from the Alabama Department of Conservation and Natural Resources (ADCNR) in the amount of \$475,000 to complete the *Lower Perdido Bay/Perdido Pass Navigation Project Hydrological Modeling and Sediment Budget Study* component of the project. The City will be responsible for the selection and subsequent oversight of the contractor who will be conducting the sediment budget study and hydrodynamic and morphological modeling. Additionally, the City will oversee Auburn University, who will be performing pre-modeling environmental inventories, and with whom the City has an existing intergovernmental agreement.

A better understanding of interactions between tidal, wave, and other hydrodynamic processes and inlet sedimentology and morphology can lead to more systematic management of coastal zone resources. The results of these modeling studies will ultimately guide the dredging and sediment placement practices such that shoaling and erosion hot-spots in lower Perdido Bay and Robinson Island can be addressed through beneficial use placement and/or directed dredging of the navigation project. The City is currently participating in the Orange Beach, Gulf State Park, and Gulf Shores Beach Nourishment Program, which required extensive studies, permitting, and monitoring, and can attest that the costs for this project are in line with costs for similar projects completed in the past.

TOTAL PROJECT OR PROGRAM FUNDS REQUESTED	\$475,000
<i>Total Pre-Award Funds Requested</i>	<i>\$0</i>
<i>Total Direct Costs Requested</i>	<i>\$0</i>
<i>Total Allowable Indirect Costs Requested</i>	<i>\$0</i>
<i>Total Program Income Anticipated</i>	<i>\$0</i>

2.0 CONTRACTORS/CONSULTANTS

The City of Orange Beach intends to procure one contractor to carry out the modelling portion of the proposed project. The method of selection will be per the City's written Purchasing Manual pursuant to 2 C.F.R. § 200.317 - 200.324, and a contract for professional services will be signed by the Mayor. A request for qualifications (RFQ) will be utilized to secure an engineering firm with experience in hydrodynamic and morphological modeling. The RFQ will be publicized and will identify all evaluation factors and their relative importance. At this time the proposed contractor is unknown but will be selected based on qualification and experience in hydrodynamic and morphological modeling. The period of performance will be 24 months from the date of the signed notice to proceed. Prior to contractor selection for the modelling portion, the City will utilize an existing agreement with Auburn University for the collection of

field data, which will include installing tide gauges and current meters, inventory of environmental resources, and sediment inventories.

The scope of work for this project will include the collection of aforementioned field data and the development, creation, and calibration of a hydrodynamic and morphological model. Deliverables include: field survey, investigations, maps, studies and/or reports, a functional hydrodynamic and morphological model, and a final project activity report with modeling of sediment management alternatives.

Once this planning phase is completed, the City and the ADCNR will have a better understanding of the feasibility of conducting restoration projects in these areas, complete with sediment data, field data with maps, and a model of the existing conditions.

The project manager will monitor and supervise the contractor and the University during the period of performance. A formal list of deliverables along with a coinciding schedule will be followed. Periodic progress reports will be required every quarter to determine contractor progress. The grant coordinator will also verify that reporting and deadlines, including close of period of performance, are adhered to.

Itemized Budget and Justification:

- \$89,273.22 Environmental resources and sediment inventories will be conducted. The results will be mapped and current conditions will be established. This will also assist in identifying areas needing to be restored and resources/habitat/populations to be impacted.
- \$130,000 Field data collection. This will include controlled aerial photography and updated topographic and bathymetric survey data of Perdido Pass and the surrounding area. Water level measurements and tidal current measurements will be observed and recorded.
- \$40,000 Evaluated inlet sediment budget. This will compare and calculate sediment volume changes and reveal erosion hot-spots within lower Perdido Bay and the tidal inlet.
- \$130,000 Hydrodynamic/Morphological Model creation. This includes the creation, calibration, and verification of a functioning model that will emulate existing conditions.
- \$65,000 Numerical modeling of sediment management alternatives. These results will improve sediment management in Perdido Pass.

Organization	Description	Amount
<i>TBD</i>	<i>Contract for environmental resources and sediment inventories.</i>	<i>\$89,273.22</i>
<i>TBD</i>	<i>Contract for development & delivery hydrodynamic and morphological model</i>	<i>\$365,000</i>