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Inspiration and education through unique coastal experiences

Oppe Elementary Coastal Studies Program

SCOPE OF SERVICES

Coastal Studies Ecosystem and Learning Laboratory

Goal: Master Plan an outdoor Coastal Studies ecosystem and learning laboratory to serve Kindergarten through 4th grade learners in an estimated ½ acre area of the campus and deliver a phase one demonstration native plant area of coastal prairies and wetland plant communities that culminates in a feature modeling flood retention and water filtration that improves storm water runoff water quality and mitigates flooding. This will engage teachers, students, and neighbors in the designing and building of the project.

Title: Coastal Studies Ecosystem and Learning Laboratory

Strategic Goal Alignment: *Coastal Studies Ecosystem and Learning Laboratory* Meets EPA Strategic Goal 1 and its objective 1.2 by addressing providing American's with clean water and ensuring waters are clean through improved water infrastructure through partnerships. This will provide students and teachers with the opportunity to design and build a project filtering and retaining storm water run-off water through WaterSmart landscape features on the Oppe campus and to build awareness of the causes and consequences of poor water quality in Galveston Bay and the Gulf of Mexico. This program will develop critical thinking skills necessary to mitigate pollution from storm water runoff going into the bay and the gulf, and create actions to increase water conservation and reduce storm run-off from school campuses.

Project Description - *Coastal Studies Ecosystem and Learning Laboratory!* Proposed project will reduce non-point source pollution and improve water quality to the Bay and the Gulf with the student and teacher community of the Oppe Elementary Coastal Studies Campus, and the Galveston Community. This project will work the magnet school campus to model and demonstrate the EPA's environmental education continuum through 1) raising awareness and knowledge through a field based workshops and adventures by foot to the Coastal Heritage Preserve that engage critical thinking skills about water quality and sources of pollution during Habitat Restoration Adventures (funded by Moody Permanent Endowment Fund), 2) providing opportunities for critical thinking and problem solving through decision making as the students and teachers participate in feedback sessions for presentations of a WaterSmart landscape feature design for their campus, and 3) engaging students in actions and stewardship as they build the WaterSmart landscape feature titled *Coastal Studies Ecosystem and Learning Laboratory!*

Components:

Teacher Introduction and Content - six hour professional development We will begin the workshop with a primer on the causes and consequences of poor water quality in the Gulf of Mexico Watershed & Galveston Bay Watershed. Watershed models will demonstrate how watersheds are connected to bays and oceans through hydrologic events such as storm water, extreme weather, and natural water cycles. Models will also introduce the sources of non-point source and point sources pollution and some basic ways to prevent non-point source pollution. We will use hands-on, interactive lessons to discuss regional and long-term precipitation trends for Texas and the Gulf. We will discuss what changes and predictions mean for the water quality and quantity of the Bay and Gulf. We will then introduce a ‘tool-kit’ of WaterSmart landscapes that schools can choose from to increase water conservation and reduce storm water-run off. The ‘tool-kit’ may include building prairie/meadows, a rain catchment and retention system for watering, a native plant garden, a rain garden, or a wetland pond.

Stakeholder Meetings: Artist Boat will meet three times with teachers, principals, and parents to present sets of design options for features, scales of features, and environmental outcomes; prioritize the preferences and develop a three phased plan for the area with a budget; and determine what components can be implemented.

Master Plan: Artist Boat will develop a final written and drawn master plan of the site with a timeline, task list, and specific budget amounts per feature (e.g. rain garden/stream, wetland pond, trails, prairies or meadows, rain catchment, solar power, irrigation or watering solutions, shade and gathering areas, built lab or outdoor classroom, art features, nesting or “housing” for animals such as birds, etc.).

- This will include review and approval by the GISD Facilities Director
- This will include review and inclusion of anything like gas lines or other obstacles that must be avoided
- This will include a Phase 1 budget that will focus on ecosystem features and functions first
- This will include Phase 2 and /or 3 to achieve a full vision for the campus a place-based experiential learning area that is unique to the campus and our island community, it may include built structures such as an outdoor classroom or gather area or stage depending on design outcomes

Preparation, Logistics and Procurement: Artist Boat will plan the design, implementation, workdays, and delivery of the phase one project and obtain / stage all supplies (Mulch and soil, plants, irrigation materials, excavation if required, rocks, pumps, etc. dependent on Phase 1 final implementation plan)

Workdays: Artist Boat will oversee workdays during the school days and/or weekends to complete the project (5-10estimated group work events).

Proposed Budget:

Description	Qty	Per Cost	Total
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Design and Teacher PD (total six hours) and prep/design	25	55	\$ 1,375.00
Stake Holder Meetings (3 at 2 hours) and prep/design	40	55	\$ 2,200.00
Workdays and Logistics (4hours with volunteers and include prep and planning and arrange for all deliveries and site visits	80	55	\$ 4,400.00
Master Plan Final	40	60	\$ 2,400.00
Sub total			\$ 10,375
Supplies and Materials (including any printing or supplies for meetings or PD)	TBD by plan		\$ 14,625
TOTAL			\$ 25,000