Progress Report for Contract # 026
Saving the Integrity of Keller Bay and Sand Point Peninsula

End of 4th quarter: May 30, 2023

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Project Summary: Our overarching goal is to protect the unique estuarine resources of Keller Bay by stopping the Sand Point Peninsula from breaching. Our strategy is to develop a living shoreline solution that incorporates public and private partners. Specific objectives include to:

(1) Identify and model the best actions to stop the peninsula from breaching
(2) Engage a working group, composed of stakeholders and agencies, to help design and identify a preferred action plan
(3) Produce engineering/design plans and obtain permits for the Sand Engine

Task 1: Identify and model the best actions to stop the peninsula from breaching

Progress this Quarter: The team at Texas A&M University (TAMU) conducted another field trip during this quarter. TAMU personnel visited the field to maintain the existing sensors focused on the collection sediment flux data. The collected datasets were then downloaded and taken to the lab, analyzed, and graphs were created and discussed among the larger team to include the sub-contracted engineering firms (Aqua Strategies and West Inc.). In the next report or the following one, we will give a longer written report with many figures and graphics that back up our findings about how the hydrodynamics and sediment dynamics are working at the study location. At this point, we know enough to begin the Delft3D modeling in support of the creation of the deliverables 2 and 3 listed below, and as well enough to begin the engineering and design process outlined in Task 3 below.

We have begun Delft3D modeling, which will allow us to identify the best actions to stop the breaching. Thus far, we have created the topo-bathymetric map and developed the input data streams for the wind, tides, salinity, etc.

Next Quarter: We expect to continue the Delft3D modeling work. We expect that the baseline model will be completed in this next quarter, and that the solution alternatives will begin to be simulated as well.

Deliverables:
(1) High resolution topo-bathymetric map of study area **– completed, for ease of comprehension of how this data is useful, we will deliver it together with the below items in a single package on a later date**
(2) Wave and flow velocity exceedance graphs for living shoreline design criteria – **mostly completed**

(3) Maps and videos of future morphologic evolution of study area, with and without various living shoreline alternatives, including a single or multiple Sand Engines – **recently started**

Task 2: Engage a working group, composed of stakeholders and agencies, to help design and identify a preferred action plan

Progress this Quarter: Personnel from TAMU, Aqua Strategies, and West conducted two formal meetings on 4/12 and 5/1 to discuss the project. Approximately 5 additional informal phone calls also occurred between these entities. During these meetings, we discussed: field work on sand flux estimates, the time line for the Coastal Boundary Survey and permitting, early work on engineering and design plans, Delft3D modeling time line, bathymetry work for the Delft3D model, and plans for stakeholder meetings in the future.

TAMU additionally conducted one informal phone call with the Matagorda Bay Foundation, to discuss the latest news on the Matagorda Ship Channel (MSC).

Subcontractor West created an online stakeholder matrix, for the team to catalog the stakeholders that will be invited to a series of meetings over the next year. This matrix has been accessed and continually updated by team members.

Next Quarter: The team will soon invite members of the MBMT, local officials, and adjacent private landowners to visit the site in person and discuss the project. The team plans to hold a broader stakeholder meeting in the Fall and additionally to begin K-12 student programming at the site.

We also aim to re-engage on the subject of the MSC, as the USACE appears to be submitting a Supplemental EIS to continue that project – as mentioned in the last report, this is a potential source of sediment and our project could potentially help guide the USACE to less negative outcomes in terms of the placement of material.

Deliverables:
(4) Working group meeting recordings – **ongoing, and saved for later submission**
(5) Report on working group's regional strategy and funding plans – **not started**

Task 3: Produce engineering/design plans and obtain permits for the Sand Engine

Progress this Quarter: Subcontractor Aqua Strategies began drawing up initial engineering and design (E&D) products, based on the criteria and data provided by TAMU's scoping research efforts. The overall team met and identified approximately 6 potential sub-projects or alternatives that could be constructed to address the overall problem. Aqua Strategies then continued to work on these designs.

Next Quarter: Expect to continue developing the E&D products, and share them with stakeholders for their input over the next two quarters.

Deliverables:
(6) 30% E&D plans and alternatives for Sand Engine on state/federal-owned land – **started**
(7) Coastal Boundary survey – **not started**
(8) Support package for permitting of Sand Engine – **not started**
(9) Section 404 and other required permits for Sand Engine, 80% E&D – **not started**