NOTICE OF SHORELINE TASK FORCE REGULAR MEETING
CITY OF SOUTH PADRE ISLAND

WEDNESDAY, APRIL 14, 2021

3:00 PM AT THE MUNICIPAL COMPLEX
2ND FLOOR COUNCIL CHAMBERS
4601 PADRE BOULEVARD SOUTH PADRE ISLAND, TX 78597

1.Call to Order

2.Pledge of Allegiance

3.Public Comments and Announcements

This is an opportunity for citizens to speak to Shoreline Task Force relating to agenda or non-agenda items. Speakers are required to address Shoreline Task Force at the podium and give their name before addressing their concerns. [Note: State law will not permit the Shoreline Task Force to discuss, debate or consider items that are not on the agenda. Citizen comments may be referred to City Staff or may be placed on the agenda of a future Shoreline Task Force meeting]

4.Regular Agenda

4.1. Discussion and action to approve the minutes from the regular meeting on March 23, 2021. (Boburka)

4.2. Discussion and action to recommend to City Council project proposal ideas for the Coastal Management Program (CMP)'s Cycle 27 and the Coastal Erosion Planning and Response Act (CEPRA)'s Cycle 12. (Boburka, Hughston)

4.3. Discussion and action to recommend to City Council approval of a final project proposal with the United States Geological Survey (USGS) for the living shoreline feasibility study under the National Fish and Wildlife Foundation (NFWF)'s grant. (Boburka, Hughston)

5.Adjourn

NOTE:

One or more members of the City of South Padre Island City Council may attend this meeting; if so, this statement satisfies the requirements of the OPEN MEETINGS ACT.

DATED APRIL 9, 2021

Angelique Soto, City Secretary

I, THE UNDERSIGNED AUTHORITY, DO HEREBY CERTIFY THAT THE ABOVE NOTICE OF MEETING OF THE SHORELINE TASK FORCE OF THE CITY OF SOUTH PADRE ISLAND, TEXAS IS A TRUE AND CORRECT COPY OF SAID NOTICE AND THAT I POSTED A TRUE AND CORRECT COPY OF SAID NOTICE ON THE BULLETIN BOARD AT CITY HALL/MUNICIPAL BUILDING ON **APRIL 9, 2021**, AT/OR BEFORE 5:30 PM AND REMAINED SO POSTED CONTINUOUSLY FOR AT LEAST 72 HOURS PRECEDING THE SCHEDULED TIME OF SAID MEETING.

Angelique Soto, City Secretary

THIS FACILITY IS WHEELCHAIR ACCESSIBLE, AND ACCESSIBLE PARKING SPACES ARE AVAILABLE. REQUESTS FOR ACCOMMODATIONS OR INTERPRETIVE SERVICES MUST BE MADE 48 HOURS PRIOR TO THIS MEETING. PLEASE CONTACT PUBLIC WORKS DIRECTOR, CARLOS SANCHEZ AT (956)761-8103.

CITY OF SOUTH PADRE ISLAND

CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM

MEETING DATE: April 14, 2021

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM
Discussion and action to approve the minutes from the regular meeting on March 23, 2021. (Boburka)

ITEM BACKGROUND
February 23rd, 2021 Meeting Minutes

BUDGET/FINANCIAL SUMMARY
N/A

COMPREHENSIVE PLAN GOAL
N/A

LEGAL REVIEW
Sent to Legal:
Approved by Legal:

RECOMMENDATIONS/COMMENTS:

MINUTES OF REGULAR MEETING
CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE

Tuesday, March 23rd, 2021

I. CALL TO ORDER.

The Shoreline Task Force of the City of South Padre Island, Texas, held a regular meeting on Tuesday, March 23rd, 2021, at the Municipal Complex Building, 2nd Floor, 4601 Padre Boulevard, South Padre Island, Texas. Chairman Virginia Guillot called the meeting to order at 3:00 p.m. A quorum was present with Task Force Chairman Virginia Guillot, Task Force Members Stormy Wall, Abbie Mahan, Robert Nixon, and Nancy Gray. Task Force Members with an excused absence Norma Trevino and Michael Sularz.

City Council members present include: Ken Medders and Kerry Schwartz. City staff members present were: Shoreline Director Kristina Boburka and Shoreline Grants and Special Projects Administrator Erika Hughston.

II. PLEDGE OF ALLEGIANCE.

Chairman Virginia Guillot led the Pledge of Allegiance.

III. PUBLIC COMMENTS AND ANNOUNCEMENTS:

Director Boburka thanked the workers who helped clean bay inlets after the massive fish kill following the February freeze.

IV. REGULAR AGENDA

I. DISCUSSION AND ACTION TO APPROVE THE MINUTES FROM THE REGULAR MEETING ON FEBRUARY 9TH, 2021. (BOBURKA)

Task Force Member Nixon made a motion to approve the minutes. The motion was seconded by Task Force Member Wall. Motion carried unanimously.

II. DISCUSSION AND ACTION TO APPROVE THE MINUTES FROM THE REGULAR MEETING ON FEBRUARY 23RD, 2021. (BOBURKA)

Task Force Member Nixon made a motion to approve the minutes. The motion was seconded by Task Force Member Gray. Motion carried unanimously.

III. DISCUSSION AND ACTION TO RECOMMEND TO CITY COUNCIL THE APPROVAL OF A BEACH AND DUNE PERMIT FOR CONSTRUCTION OF A DUNE WALKOVER AT 5550 GULF BOULEVARD. (BOBURKA, HUGHSTON)

Chairman Guillot asked if there had been a walkover prior. Property owner Laura Breedlove commented that they were excited to rebuild their dunes and provide the best protection possible to their property by installing a walkover. Task Force Member Nixon made a motion to approve the walkover construction at 5550 Gulf Blvd. The motion was seconded by Task Force Member Gray. Motion carried unanimously.

IV. DISCUSSION AND ACTION TO RECOMMEND TO CITY COUNCIL THE APPROVAL OF THE BEACH AND DUNE PERMIT FOR CONSTRUCTION OF A SINGLE FAMILY HOME AND DUNE WALKOVER AT 8354 BREAKERS BOULEVARD. (BOBURKA)

Task Force Members discussed the importance and use of the immediate north access point to the property and would prefer not to move the walkover forward. Mahan made a motion to approve the design and permit regarding the single family home, but to table the walkover till the properties owners could be present to defend the addition of one. The motion was seconded by Task Force Member Wall. Motion carried unanimously.

V. DISCUSSION AND ACTION TO RECOMMEND TO CITY COUNCIL THE APPROVAL OF THE BEACH AND DUNE PERMIT FOR CONSTRUCTION OF A PRIVATE DUNE PATH AT 4000 GULF BOULEVARD. (BOBURKA, HUGHSTON)

This item was pulled from the agenda pending more information.

V. ADJOURNMENT.

There being no further business, Chairman Guillot adjourned the meeting at 3:30 p.m.

_____ _____

Kristina Boburka, Shoreline Director Virginia Guillot, Chairman

CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM

MEETING DATE: April 14, 2021

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM
Discussion and action to recommend to City Council project proposal ideas for the Coastal Management Program (CMP)'s Cycle 27 and the Coastal Erosion Planning and Response Act (CEPRA)'s Cycle 12. (Boburka, Hughston)

ITEM BACKGROUND
The Coastal Management Program (CMP)'s pre-proposals are due on June 9, 2021. Notification for proposals will be in August 2021. Those final proposals will be due October 6, 2021. Notification of award early 2022. Project start date October 1, 2021. Possible CMP project ideas that City staff have worked on include Cora Lee bay access improvements, Access 22 Fantasy Circle beach access improvements, and the living shoreline permitting and final design.

The Coastal Erosion Planning and Response Act (CEPRA) proposals are due June 1, 2021. Notification of award will be Fall 2021. Possible CEPRA project ideas that City staff have worked on include beneficial use of dredged material (BUDM), feasibility study for renourishiment utilizing offshore sand sources, restoration/stabilization of the bay street endings, and Tompkins Channel maintenance dredging.

BUDGET/FINANCIAL SUMMARY
None at this time.

CMP match- 40% minimum
CEPRA match- 25% minimum for beach renourishment projects; 40% minimum for other projects

COMPREHENSIVE PLAN GOAL

LEGAL REVIEW
Sent to Legal:
Approved by Legal:

RECOMMENDATIONS/COMMENTS:

CMP Cycle 27

- Max cost is $200,000 for construction projects
    - CMP funding $120,000 max for 60%
- Pre-proposals due June 9, 2021
- Notification for final proposal August 2021
- Final proposals due October 6, 2021
- Project to start October 2022
- Ideas:
    - Cora Lee Street bay access improvements
    - Living Shoreline permitting and final engineering
        - This would be a phase 2 of the project
        - Phase 1 is currently in the works to obtain data and begin the engineering design through the National Fish and Wildlife Foundation
        - Possible project of special merit ($200,000-$5 million with no match)
    - Access 22 improvements
        - Amenities and wooden emergency drive-over this cycle
        - Parking lot and sidewalk improvements in a future cycle

CEPRA Cycle 12

- Beach nourishment projects match is 75/25
- Any other coastal erosion project or study- 60/40
- Final proposals due June 1, 2021
- Award notification Fall 2021
- Ideas:
    - Beneficial use of dredged material with the regular maintenance dredging of the entrance channel (what the City usually applies for)
    - Feasibility study for renourishment from offshore sand sources
    - Restoration/stabilization of the bay street endings
        - More natural erosion control measures aside from the concrete rip-rap
    - Tompkins Channel
        - Dredging to maintain boating access
        - Utilize dredge materially beneficially for restoration in bay

Timeline

- April 13 SLTF meeting
    - Brainstorm and finalize project ideas; recommend to City Council
- April 21 CC meeting
    - Present projects for approval to move forward with applications
- May 11 virtual SLTF meeting
    - Recommend submission
- May 21 CC meeting
    - Approve applications, submission, letter of support, and funding letter (for CEPRA)

CITY OF SOUTH PADRE ISLAND
SHORELINE TASK FORCE
AGENDA REQUEST FORM

MEETING DATE: April 14, 2021

NAME & TITLE: Kristina Boburka, Shoreline Director

DEPARTMENT: Shoreline Department

ITEM
Discussion and action to recommend to City Council approval of a final project proposal with the United States Geological Survey (USGS) for the living shoreline feasibility study under the National Fish and Wildlife Foundation (NFWF)'s grant. (Boburka, Hughston)

ITEM BACKGROUND
USGS Project Proposal and Joint Funding Agreement for the Laguna Madre Living Shoreline

BUDGET/FINANCIAL SUMMARY
Total Joint Funding Agreement: $338,000.00
City Matching: $238,000.00
USGS Cooperative Funds: $100,000.00

COMPREHENSIVE PLAN GOAL
N/A

LEGAL REVIEW
Sent to Legal:
Approved by Legal:

RECOMMENDATIONS/COMMENTS:

USGS
science for a changing world

A Proposal, in cooperation with the City of South Padre Island, Texas

Science Support for the South Padre Island Shoreline Protection Plan: Assessment of Bathymetry, Wave and Current Hydrodynamics, Water Quality, and Biology in a Nearshore Area of the Laguna Madre, South Padre Island, Texas

Introduction

The City of South Padre Island's Shoreline Master Plan covers four main areas of interest: environmental education, tourism, conservation, and public access (City of South Padre Island, 2018). The master plan sets an ambitious path towards improving the community and visitor experience. Ideas for improved community development and resiliency were taken from the 2008 City Comprehensive Plan and gathered through a series of public meetings/open houses where residents ranked the importance of shoreline projects (City of South Padre Island, 2021).

South Padre Island (SPI) is faced with a series of coastal risks that emphasize the need for community protection. As a barrier island, SPI is subject to flooding from *both* shorelines during tropical events. The City has been mindful of this problem and for the last four decades has built up dunes as a means of providing a protective ecofriendly infrastructure. However, a major risk during coastal storms is severe flooding throughout the island as bay and beach waters meet. With the increased dune capacity, bay flooding gains attention for coastal resiliency projects.

One of the proposed projects of the Master Plan is bay restoration and the development of a "living shoreline." A living shoreline is aesthetically pleasing to view, resilient, and naturally sustainable.

A major component of the living shoreline plan is the establishment of intertidal berms to create a natural bulkhead that will reduce wave energy impacting the bay shoreline and decrease bay flooding from storm swells. The placement of berms will further assist with erosion control coming from the inner coastal waterway that is a frequent highway for barges and boats.

In addition, the proposed shoreline protection berms are intended to support bay restoration efforts by increasing habitat and ecosystem diversity. The berms will lead to further development of wetland intertidal zones offering juvenile nurseries, foraging areas for migratory

birds, and improved water quality. Berms will be designed for the environmental protection of local species like green sea turtles, Kemp's ridley sea turtles, piping plovers and others.

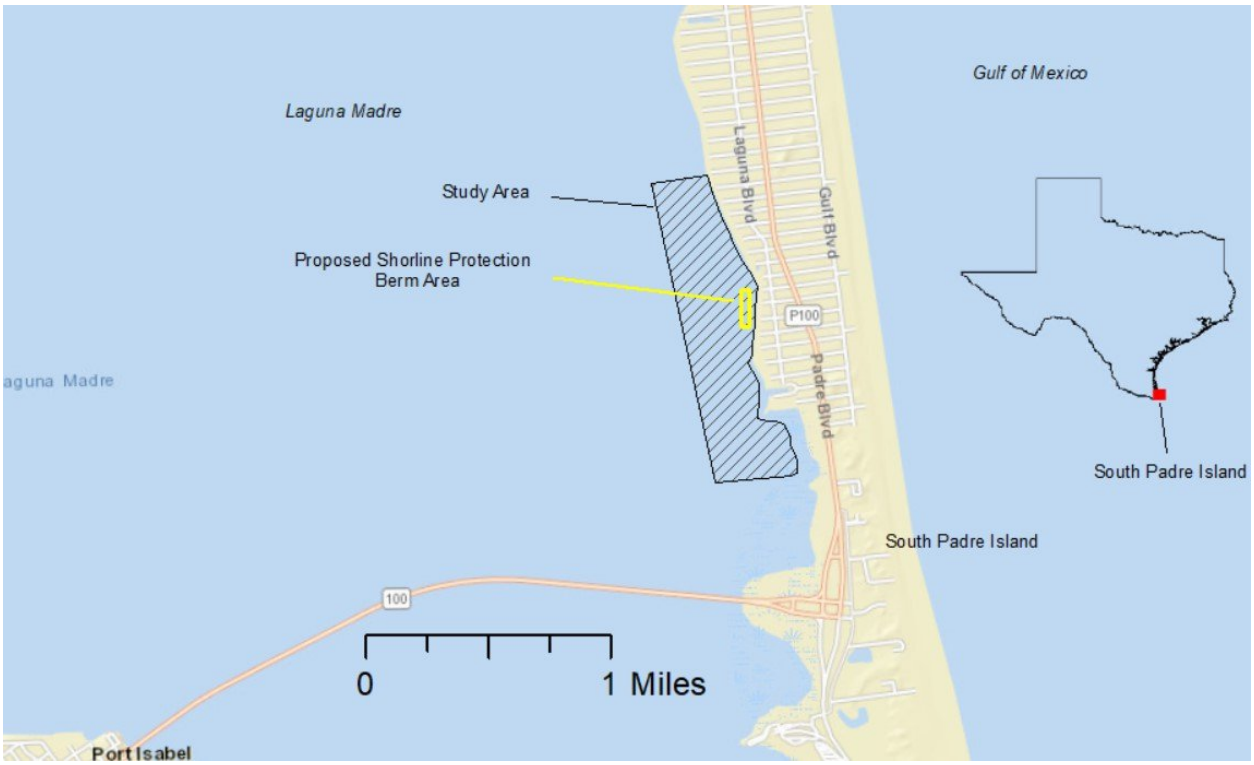

Figure 1. Map of South Padre Island, showing location of study area, including the proposed shoreline protection berm area

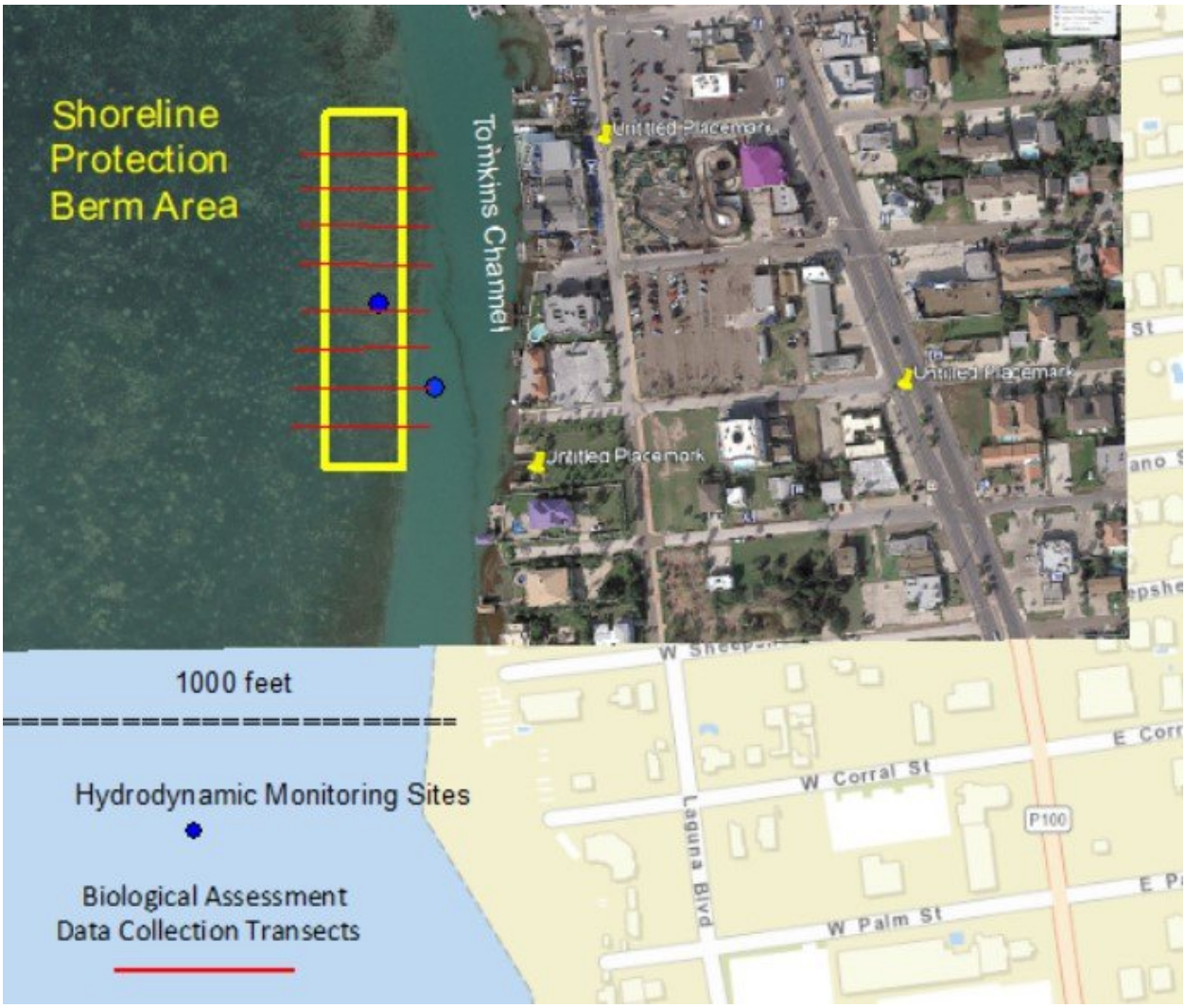

Figure 2. Map showing location of proposed shoreline protection berm area, hydrodynamic monitoring sites, and biological assessment data collection transects

Problem

Baseline bathymetric, wave hydrodynamics, water-quality, and biological data are needed by planners to help in the design, construction, and permitting of the shoreline-protection/berm network. This information is critical for shoreline planners to ensure success in the building of a sustainable “living shoreline” network, needed for SPI shoreline protection, ecological growth, and recreation. However, the current baseline science information needed for the project area are currently lacking or limited. Without an assessment of these vital monitoring data, future berm design, placement, and sustainability could be compromised. The monitoring data are also important for evaluating project success and future transferability to other areas of the shoreline.

Objective

The objective of this project is to provide an assessment of bathymetric, wave hydrodynamics, water-quality, and biological data for science support of shoreline planners. These data can be used by planners and managers in the design and construction of a network of intertidal berms on the bayside shore of South Padre Island. These berms are intended to provide shoreline protection from erosion, improve water quality, and enhance habitat for important local species. This pilot project can be the first step to create a "Living Shoreline" along the bay shoreline. The monitoring data will provide information useful for the design of these berms. The collection of "existing conditions" data could be used to assess the success of this project in the future.

Approach

The U.S. Geological Survey (USGS) proposes to support the development of the City of South Padre "Living Shoreline" project through an integrated approach in the collection, processing, and analysis of bathymetric, wave hydrodynamics, water-quality, and biological data.

Bathymetry Data Collection and Processing

A bathymetric survey will be performed for an approximately 100-acre area along South Padre Island (about 1 mile of bay shoreline, as shown in figure 1). Traditional marine sonar-type bathymetry equipment might be difficult to use in the shallow depths (about 3 feet) of the study area. Therefore, the survey will be conducted using rod-mounted Global Navigation Satellite Systems (GNSS) survey equipment deployed by wading and boat according to methods described in Rydlund and Densmore (2012). Numerous transects will cover the study area.

Reference positioning will be performed using real-time kinematic (RTK) surveying techniques to establish benchmarks. The data will be referenced in Texas State Plane Coordinate System, South Zone, North American Datum of 1983 (NAD83) with elevations referenced to North American Vertical Datum of 1988 (NAVD88).

Bathymetric survey points will be measured in a series of transects. The transects will be spaced approximately 100 feet apart, oriented perpendicular to, and extending about 800 feet

from the shoreline. Each transect will have about 20 individual survey points. Survey points will be spaced about 40 feet apart. Based on an estimate of 50 transects, about 1000 survey points will be measured.

After the initial collection and review process, the point data will be provided in digital format through an online USGS ScienceBase Data Release. Data will be archived on the web for all stakeholders. A bathymetry contour map will be included in the Data Release and the final Scientific Investigations Report (see Deliverables section).

Wave and Current Hydrodynamic Data Collection

Sensors will be installed at two hydrodynamic monitoring sites; one of which will use an acoustic current velocimeter (ADV) to collect continuous current data, whereas the other will use an acoustic doppler current profiler (ADCP) to collect wave data. Possible site locations are shown in figure 2 — the final locations will be determined after reconnaissance and discussion with the project partners. The hydrodynamic data will be collected for 12 months, beginning with installation in May or June 2022.

The ADV will collect current speed and direction data and provide real-time data, accessible by the internet, through the USGS National Water Information System, NWIS (U.S. Geological Survey, 2021). The ADCP will collect wave height and direction data in addition to current velocity. This ADCP will be mounted near the bottom of the seabed and will not include capability to provide real-time data transmission. Instead, the data will be logged internally and will be downloaded during periodic visits (about 4 weeks).

The current and wave data will be processed and analyzed to depict continuous current and wave data for the entire data-collection period as well as seasonal trends and typical tidal-cycle trends. Storm tides are also possible during the data-collection period. Current and wave patterns during possible storms also will be described. These data will be important for understanding hydrodynamic conditions that can affect the future design and placement of the berms.

Water-Quality Data Collection

Discrete water-quality measurements will be included during biological sample collection (see Biological Assessment) and will occur at one site in each of the 8 transects. Measured parameters will include dissolved oxygen, specific conductance, temperature, turbidity, and pH. Water-quality data will be reviewed and published with the biological data through a USGS ScienceBase Data Release.

Discrete samples will be collected and analyzed for suspended-sediment concentration at the ADV/water-quality monitoring site. Ten samples plus two additional quality-assurance samples will be collected during the 4-month period that the continuous water-quality instrument is deployed. Samples will be collected, processed, and analyzed according to procedures described by Edwards and Glysson (1999). Samples will be analyzed by the USGS National Water Quality Laboratory.

Biological Assessment

The purpose of the biological assessment is to provide an inventory of the seagrass and benthic macro invertebrate resources of the study area. The biological assessment will focus on the area of the proposed shoreline protection berm area in figure 2.

Collection of 24 seagrass and benthic macro invertebrate samples are planned. Three samples will be collected along each of 8 transects (figure 2). Seagrass samples will be collected by a coring device, by methods described by Onuf and Ingold (2007). Data to be recorded during the sample collection include:

- Location coordinates
- Water depth
- Seagrass species present and dominant species
- Seagrass shoot density
- Secchi disk readings
- Specific conductance
- Dissolved oxygen
- Temperature
- pH
- Turbidity

Benthic macroinvertebrate samples will be collected by an offshore field crew from the sediment surface. Samples will be emptied from the Ponar grab sampler into plastic holding tubs and partially sorted in the field using 0.5-1.5mm sieve trays (EPA, 2016). Remaining sediment, organic matter, and organisms will be transferred into labeled plastic collection bottles, preserved with ethanol, and shipped to the Fort Worth lab for analysis.

Samples will be sorted further in the lab to prepare for taxonomic analysis. Stainless steel 0.5mm sieves will be used to remove organisms from sediment and debris. Organisms will then be moved to gridded petri dishes or trays and subsampled. Subsamples will be chosen by randomly selecting three out of the thirty grids from the petri dishes or trays to ensure that the sample is representative of the overall sample (EPA, 2015). A dissecting scope and taxonomic keys will be used to identify the subsampled macro invertebrates to the genus level, or to family if it is not feasible to taxonomically ID to genus.

Deliverables

The USGS will provide status updates and preliminary results to the City of South Padre Island during quarterly meetings.

Bathymetry data, hydrodynamic data, and biological and water-quality data will be published in digital format through three separate online USGS ScienceBase Data Releases.

1. The review and approval of the bathymetry Data Release is expected to take 3 months after completion of the data collection (December 2021).
2. The biological assessment and water-quality Data Release is scheduled to be published in March 2022.
3. The hydrodynamic Data Release is scheduled to be published in August 2022.

Also, a USGS Scientific Investigation Report (SIR) will be published to describe the data collection methods and analysis of the bathymetry, hydrodynamics, biological assessment, and water-quality data. Review and approval of the SIR is scheduled to be completed in December 2022.

Timeline

Project Task	Jul-Sept Q4 2021	Oct-Dec Q1 2021	Jan-Mar Q2 2022	Apr-Jun Q3 2022	Jul-Sept Q4 2022	Oct-Dec Q1 2023
Conduct bathymetric survey						
Install hydrodynamic monitoring instrumentation						
Collect and analyze hydrodynamic data						
Collect suspended-sediment samples						
Conduct biological assessment						
Publish USGS bathymetric survey Data Release						
Publish USGS biological assessment Data Release						
Publish USGS hydrodynamic Data Release						
Publish USGS Scientific Investigations Report describing bathymetry, hydrodynamics, and biological assessment and water-quality data collection						

Funding

Project Task	FY21	FY22	FY23	Total
Bathymetry data collection, processing, and data publishing	$ 46,000	$ 35,000		$ 81,000
Hydrodynamic instrumentation installation, data collection, and data publishing	$ 48,000	$ 45,000		$ 93,000
Suspended sediment sampling	$ 6,000	$ 3,000		$ 9,000
Biological assessment, water-quality data collection and data publishing	$ 50,000	$ 25,000		$ 75,000
Publication of Scientific Investigations Report		$ 25,000	$ 55,000	$ 80,000
Total	$ 150,000	$ 133,000	$ 55,000	$ 338,000
Funding Partner				
U.S. Geological Survey	$ 45,000	$ 35,000	$ 20,000	$ 100,000
City of South Padre Island	$ 105,000	$ 98,000	$ 35,000	$ 238,000
Total	$ 150,000	$ 133,000	$ 55,000	$ 338,000

Relevance and Benefits

The proposed study will provide better understanding of existing shoreline and bay conditions and support restoration efforts to reduce shoreline erosion and increase habitat and ecosystem diversity. The data provided as part of this study are vital for permitting and construction of intertidal shoreline protection berms that are intended to promote the development and improved quality of wetland intertidal zones offering juvenile nurseries, foraging areas for migratory birds, and improved water quality. The understanding gained through this study also will be valuable for other similar restoration projects.

The "U.S. Geological Survey Water Science Strategy—Observing, Understanding, Predicting, and Delivering Water Science to the Nation (Evenson, 2013)," describes USGS strategic goals and priorities and develops the steps and actions to move the USGS forward to a strategic focus. This proposed study addresses several of the USGS water science strategy goals and priorities as well as building on USGS core capabilities. Specific priorities include 1) delivery of water data and analysis to the Nation and 2) advancement of hydrologic networks and techniques.

Finally, the proposed study will emphasize cooperation with local agencies and the public through communication of data and study results in real-time and through online data release publications. Direct participation with cooperating agency personnel in data-collection activities is expected to be one of the highlights of the study.

Data Management Plan

This project will follow USGS guidelines to increase public access to scientific publications and digital scientific data resulting from research funded by the USGS and outlined in "Public access to results of Federally Funded Research at the U.S. Geological Survey (U.S. Geological Survey, 2021)" and available online at: (http://www.usgs.gov/quality_integrity/open_access/default.asp).

All data collected as part of this study will be stored and publicly available through the USGS National Water Information System (NWIS) database and/or published in an online ScienceBase Data Release.

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