



**FY 2022/2023**

**Bipartisan  
Infrastructure Law  
Annual Work Plan**





*Protecting our bays  
and estuaries*

# **BIPARTISAN INFRASTRUCTURE LAW FY 2022/2023 Annual Work Plan**

Submitted October 24, 2022

**COASTAL BEND BAYS & ESTUARIES PROGRAM**

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## PROGRAM OVERVIEW

The Coastal Bend Bays & Estuaries Program (CBBEP) was formed as a nonprofit to ensure that there is a thriving bay system in the Texas Coastal Bend that supports a high-quality life and is sustained for generations to come. For over twenty years, the organization has been driven and guided by local stakeholders whom recognize our interdependence on the bay system and place a high value on protecting and restoring our bays and estuaries. As part of the National Estuary Program, the CBBEP is a nonregulatory, voluntary partnership effort working with industry, environmental groups, bay users, governments, and resource managers to improve the health of the bay system. Public participation by individuals and organizations is encouraged. A mix of local governments, private industry, and state (Texas Commission on Environmental Quality) and federal (United States Environmental Protection Agency) agencies provide program funding. The CBBEP also seeks private grants/donations and additional governmental funding.

The CBBEP project area encompasses the estuarine environment of 75 miles of the south central Texas coastline, and includes the 12 counties of the region known as the Coastal Bend. This 514 square mile area of water includes all bays, estuaries, and bayous in the Copano, Aransas, Corpus Christi, Nueces, Baffin, and upper Laguna Madre bay systems, which together represent three of the seven major Texas estuaries.

The CBBEP's mission is to protect the bays and estuaries of the Coastal Bend, while supporting continued economic growth and public use of the bays. Major milestones for the CBBEP include:

- In 1994, the Corpus Christi Bay National Estuary Program is established and a multi-year, stakeholder-driven planning effort begins to develop the *Coastal Bend Bays Plan*
- *Coastal Bend Bays Plan* is approved in 1998
- In 1999, the CBBEP is established as a nonprofit organization, responsible for overseeing implementation of the *Coastal Bend Bays Plan*
- CBBEP's Coastal Bird Program is established in 2000 to halt declines of heron, egret, pelican, tern, and other colonial waterbird populations
- In 2003, CBBEP begins acquiring property in the Nueces River Delta to create the Nueces Delta Preserve
- CBBEP's environmental education program, now called Delta Discovery, begins using the Nueces Delta Preserve in 2007 to educate students, teachers, and families about the importance of conserving our bays and estuaries
- In 2016, CBBEP began working with stakeholders to develop the *Coastal Bend Bays Plan, 2nd Edition*, which received approval from EPA in January 2021
- In 2021, funds from the Bipartisan Infrastructure Law were designated for use by the National Estuary Programs

## HISTORY AND ACCOMPLISHMENTS

Efforts to improve the health and productivity of the Coastal Bend bays and estuaries began in the 1990's and resulted in the region being designated as an "estuary of national significance." This eventually led to the establishment of the Corpus Christi Bay National Estuary Program, which in turn initiated a multi-year, community-based planning effort to identify the problems facing the bay system and to develop a long-term "Comprehensive Conservation and Management Plan" (CCMP) that outlined how to address the major priorities and issues.

The CCMP, often referred to as *The Coastal Bend Bays Plan*, identified specific actions that would benefit the bay system and the users of the bays. It was designed to complement and coordinate existing resource management programs and plans, and it received approval in 1998. The action plans were developed and refined through a series of workshops and committees that involved more than 325 individuals representing over 100 organizations. Federal and state agencies played an important role in the development of *The Coastal Bend Bays Plan*. However, stakeholders wanted to localize and take ownership of *The Bays Plan* as it moved forward into the implementation phase. Therefore, the CBBEP was created in 1999 as a non-profit organization with the specific role of implementing *The Bays Plan*, which calls for the protection and restoration of the health and productivity of the bays and estuaries, while still supporting continued economic growth and public use of the bays. The CBBEP recognizes that its action plans cannot remain static and must be modified to respond to the changing needs of communities, incorporate new programmatic, scientific, and technological advances, and address new environmental challenges. In 2016, the CBBEP initiated a new collaborative effort to revise *The Bays Plan* in order to incorporate developments that have occurred since the previous plan was drafted and to ensure that new priorities are being addressed. The *Coastal Bend Bays Plan, 2nd Edition* received EPA approval in January 2021.

The priority issues identified in *The Bays Plan, 2nd Edition* are: (1) alteration of freshwater inflow into bays and estuaries; (2) condition of living resources, (3) loss of wetlands and estuarine habitats, (4) degradation of water quality, (5) altered estuarine circulation, (6) increasing amounts of bay debris, (7) selected public health issues, (8) declining coastal bird populations, (9) resilient coastal ecosystems and human communities that can adapt to changing conditions, (10) implementation of effective adaptive management practices at CBBEP properties, and (11) well-educated public to be wise stewards of the environment. *The Bays Plan, 2nd Edition* addresses these priority issues under the following categories of action plans: (1) Human Uses, (2) Maritime Commerce and Dredging, (3) Habitat and Living Resources, (4) Coastal Birds, (5) Land Conservation and Stewardship, (6) Water and Sediment Quality, (7) Freshwater Resources, (8) Public Education and Outreach, (9) Delta Discovery, and (10) Coastal Resilience.

Since 1999, the CBBEP has been working to create a Texas Coastal Bend with cleaner water and sediment, healthier habitats and wildlife, greater public access, and a more aware and engaged public. With the help of numerous partners, the CBBEP has restored thousands of acres of marsh habitat, with projects stretching from Matagorda Island down to the Laguna Madre. We have also developed an education program that provides outdoor, hands-on learning experiences for thousands of students, teachers, and families every year. We have implemented projects that help provide better access to our bays for both residents and visitors, and we have partnered with local governments, agencies, and landowners to address water quality issues, such as harmful algal blooms, stormwater, and bacteria. We also started an important program to both study and address the issues associated with our declining coastal bird populations, and we of course cannot forget our land acquisition projects which have protected close to 14,000 acres of valuable coastal habitats. The sections below highlight some of the successes of the CBBEP in recent years and also provide an idea of the types of projects that CBBEP is able to implement with funding from EPA and other partners.

**CBBEP RECEIVED THE GULF GUARDIAN AWARD from the EPA's Gulf of Mexico Division for its Egery Flats Restoration Project. The project was designed to restore water flow to the Egery Flats system and reduce salinity to over 600 acres of marsh, seagrass and tidal flat habitat.**



### **Habitat and Wildlife**

Healthy bay and estuarine habitats provide the critical foundation for sustainable environments and thriving economies. These habitats help maintain wildlife and plant populations, improve water quality, support fishing activities, enhance local tourism, and reduce the impact of coastal hazards, such as flooding and storm surge. Coastal population growth, development, and rising sea levels threaten coastal habitats and wildlife, and this effect will continue unless projects are implemented to address these ongoing threats.

**Abandoned Crab Trap Removal:** With funding from the NOAA Marine Debris Program, CBBEP has been working with partners to expand efforts to remove derelict crab traps on the mid-Texas coast and gather standardized data that can be used to better assess the ecological and economic impacts, as well as the root causes of trap abandonment. Removal efforts over the last two years have involved 121 boats and 332 volunteers, with volunteers collecting a total of 2,254 derelict crab traps and removing approximately 11.25 tons of debris from our bays.

**Protection and Restoration of Rookery Islands:** CBBEP is undertaking two major rookery island restoration projects in the Upper Laguna Madre - one at Triangle Tree Island and another at Tern Island. Both islands are suffering from severe erosion, which is limiting the amount of nesting habitat available for colonial waterbirds in the Coastal Bend. CBBEP has secured millions in funding from the Texas General Land Office, US Fish and Wildlife Service, and the National Oceanic and Atmospheric Administration to construct shoreline protection structures that increase the long-term productivity of these islands. In 2021, CBBEP also received funds from the Texas General Land Office to begin looking at restoration and protection options for three additional rookery island complexes: Deadman and Long Reef Islands in Aransas Bay, Benny's Shack Islands in the Lower Laguna Madre, and Pita Chain Islands in the Upper Laguna Madre. Once engineering and design options are complete, the project will begin the permitting process and CBBEP will seek additional funds for the construction phase.

**Dune Management and Restoration on Mustang Island:** Partners of the Texas Gulf Region Cooperative Weed Management Area (CWMA) have recently chosen to focus their removal and restoration efforts on four zones of dune habitat located in Port Aransas on Mustang Island. These areas have high concentrations of peppertrees and are owned by CWMA partners. In 2021, with funding from the Texas General Land Office, Coastal Management Program, the CWMA removed peppertrees from an impacted dune habitat on Mustang Island and also began the dune restoration process by replanting and/or reseeding treated areas. This restoration provides habitat and dune stabilization, while also preventing the reintroduction of peppertrees by limiting the germination of seeds that are otherwise easily dispersed.

**CWMA FREQUENTLY HOSTS VOLUNTEER REMOVAL EVENTS targeted at removing invasive Brazilian peppertrees. CBBEP staff are pictured below with partners from the Mission-Aransas National Estuarine Research Reserve and Texas Parks & Wildlife Department at a recent removal event on Mustang Island.**



**Nueces Delta Shoreline Protection and Restoration:** The Nueces Delta is experiencing rapid erosion that is causing the loss of significant marsh habitat for a variety of estuarine species, including juvenile fishes, shrimp, and crabs that support important commercial and recreational fisheries. In 2020, CBBEP received over \$3,000,000 in funding from the National Fish and Wildlife Foundation - Gulf Environmental Benefit Fund to construct 3,900 linear feet of breakwater to protect 650 acres of marsh habitat along the face of the Nueces Delta shoreline. In 2021, CBBEP received notice of award for an additional \$1,290,925 from the Texas General Land Office - Coastal Erosion Planning and Response Act Program to help cover increased costs of construction. The project is permitted and construction will begin in 2022.

### Land Conservation and Stewardship

Despite their tremendous value, coastal habitats are threatened and at risk of being developed. The CBBEP Land Conservation Program has identified areas in need of protection within the Coastal Bend and is working with partners to conserve these valuable habitats. The Land Conservation Program has acquired either fee simple title or conservation easements for close to 14,000 acres of freshwater and saltwater marsh, forested wetlands, mudflats, riparian corridors, and native upland habitat. The CBBEP also works to manage these lands responsibly and sustainability for the long-term benefit of both wildlife and people.

**Expansion of Nueces Delta Preserve:** CBBEP has acquired around 11,500 acres in the Nueces River Delta and established the Nueces Delta Preserve. This area serves as a haven for fish and wildlife, while also providing a place for education programs, monitoring and freshwater inflow projects, and habitat restoration efforts. CBBEP continues to look for opportunities to expand the Nueces Delta Preserve by acquiring additional adjacent tracts. In 2021, CBBEP purchased a 58.6 acre “tamaulipian thorn scrub, low lying deltaic” tract of land in the Nueces River watershed. The property was purchased fee simple for the purpose of habitat conservation.

**Packery Flats Cleanup:** CBBEP manages several properties on Mustang Island, including portions of an area known as Packery Flats. In September 2021, CBBEP hosted the “4th Annual Packery Flats Cleanup.” 124 volunteers helped remove 200 bags of trash and harmful debris from intertidal and marsh areas, as well as along two miles of highway roadside! This area sees such high usage that CBBEP added a winter cleanup in February 2022 as well. The winter cleanup attracted 207 volunteers of all ages who contributed an astounding 621 hours of their time to remove 350 bags of trash from these critical habitats.

**CBBEP HAS BEEN WORKING WITH PARTNERS AND VOLUNTEERS for multiple years to cleanup trash and debris from the Packery Flats area. They are now hosting two events each year to focus removal efforts on this popular public access site and its valuable coastal habitats.**



**Texas Mid-Coast Initiative:** In 2021, CBBEP entered into a partnership with Ducks Unlimited and the Guadalupe Blanco River Trust to implement the “Texas Mid-Coast Initiative,” a Wetland Reserve Enhancement Partnership project through the Natural Resources Conservation Service. The project seeks to conserve nearly 700 acres of priority wetland habitats for migratory birds and other state and federally listed species through restoration and enhancement efforts. CBBEP’s Land Conservation Program is working closely with partners to help identify willing landowners and develop effective project ideas that will conserve and restore wetland habitats.

### Water Quality and Freshwater Inflows

Water quality is important to estuarine productivity, wildlife habitats, and the economic vitality of the Coastal Bend. Maintaining water quality is challenging as populations increase and development continues, but it is possible through proper planning, pollution prevention programs, and other best management practices. CBBEP collaborates with partners to implement projects, programs, and planning efforts that seek to get ahead of water quality problems. We also work with partners on efforts to ensure that our bays and estuaries receive the optimal amount of freshwater inflows they need to maintain productive ecosystems.

**Baffin Bay Water Quality Monitoring:** Baffin Bay is considered the jewel of the Texas coast because of its tremendous fishing and recreation potential, as well as its positive economic impact on surrounding communities. However, water quality degradation in Baffin Bay poses a long-term threat to the ecosystem and its fishery. In 2021, the “Baffin Bay Water Quality Monitoring” efforts marked its ninth straight year of collecting water quality data, such as inorganic nutrients, total dissolved nitrogen/organic carbon, chlorophyll-a, and phytoplankton. The long-term Baffin Bay water quality study has been critical for identifying nutrient inputs as the cause of this water quality degradation. With millions of dollars in funding targeted to improve conditions in the Baffin Bay watershed and bay, this effort is more crucial than ever as it allows stakeholders to evaluate the impact of restoration efforts.

**LONG-TERM WATER QUALITY SAMPLING has been critical in identifying excessive nutrient pollution from the bay’s watershed as the cause of water quality degradation in Baffin Bay.**



**Outreach to Wastewater Treatment Plants:** In 2021, the Nueces River Authority (NRA) worked as a contractor for the CBBEP on the Wastewater Treatment Plant Assistance Program - they reached out to the 13 wastewater plants discharging to streams leading into Baffin Bay. In several cases, NRA was able to provide immediate assistance by recommending process changes to improve wastewater treatment quality and efficiencies. Several other issues were discovered, such as staffing issues, lack of preventative maintenance, inability to pursue grant opportunities, etc.



Building on this project, NRA and CBBEP are collaborating on a second phase of the program to work with a subset of the facilities to address the grant and funding needs that would help address ongoing issue at the sites. This second phase is currently underway.

**Welder Flats Hydrologic Restoration:** In 2021, CBBEP began working in partnership with US Fish and Wildlife Service, through the Gulf Coast Conservation Initiative, to enhance Whooping Crane Habitat by implementing a hydrologic restoration project on private lands. The project involves planning, designing, and constructing a series of culvert systems across a ranch road that is currently impeding circulation. The project is currently in the planning and design phase.

**Water Quality Status and Trends:** In 2021, researchers at the Harte Research Institute completed an updated analysis of water quality in Coastal Bend bays using data obtained from the Texas Commission on Environmental Quality through 2019. Summary statistics for the period 2010 through 2019 and trend analysis over the period of record suggested that some bays are experiencing effects of eutrophication, changing freshwater inflows, and watershed derived pollutants. Observations determined that: (1) several Coastal Bend bays are experiencing signs of eutrophication such as high and/or increasing chlorophyll a concentrations - the most consistent trends were observed in Port Bay, Oso Bay, Baffin Bay and segments of the Laguna Madre; (2) fecal bacteria concentrations periodically exceeded the single sample limit in several bays; and (3) metal concentrations were below criteria except for copper, which exceeded criteria at all four stations where it is measured.

**Freshwater for Whooping Cranes:** With funding from an industry partner, CBBEP was able to partner with a local land trust, Aransas Pathways, to install a new water well on a property located in the Whooping Crane wintering grounds. The water well will provide reliable freshwater resources that can be used by cranes and other wildlife during times of drought. Funds were also used to purchase game cameras for the International Crane Foundation to monitor the well for use by Whooping Cranes.

## Coastal Birds

South Texas is the cradle and crossroads for an array of resident and migratory birds. A variety of coastal habitats support millions of shorebirds, waterfowl, and wading birds. CBBEP's Coastal Bird Program has worked to conserve coastal birds and their habitats, identifying and addressing conservation needs through on-the-ground management actions, research, and education and outreach. The Program has a strong track record of bringing innovative management, diversified partnerships, and science-based decision-making to bird conservation on the Texas coast.

**PROTECTION AND RESTORATION OF CAUSEWAY ISLAND has been a priority for CBBEP for many years. Construction of a rock breakwater around the island began in December 2021 and was completed in February 2022.**



**Rookery Island Restoration:** Erosion is causing the on-going loss of critical nesting island habitat for colonial waterbirds such as Great Blue Herons, Great Egrets, Snowy Egrets, Roseate Spoonbills, Reddish Egrets, Royal Terns, and Black Skimmers. Protection and restoration of Causeway Island has been a priority for CBBEP for many years. With funding from the Texas General Land Office, Coastal Erosion Planning and Response Act program and the U.S. Fish and Wildlife Service, CBBEP constructed a rock breakwater around the island to protect it from further erosion. Construction began in December 2021 and was completed in February 2022. The breakwater will also allow for future expansion of the island through placement of sediment.

**Rookery Island Monitoring & Management:** Every year, the Coastal Bird Program manages hundreds of bird nesting islands from San Antonio Bay down to the Lower Laguna Madre to ensure that colonial waterbirds have a safe place to nest - islands are also monitored annually to determine nesting success.

**Shorebird Research & Management:** The Coastal Bird Program has expanded its conservation and research efforts to include migratory shorebirds which depend on the Texas coast for portions of their life cycles. For example, with two monitoring projects initiated in the Boca Chica region starting in 2017, the Program has documented declines in shorebird populations over time that correspond with increasing human disturbance in the region. This data has proven crucial for wildlife agencies to properly evaluate impacts to Endangered Species and other wildlife.

**Rookery Island Cleanups:** CBBEP's Coastal Bird Program created the annual "Rookery Island Cleanup" as an opportunity to engage with volunteers from the public on waterbird conservation and to clean important waterbird rookery shorelines. The event has grown considerably and now focuses additional effort on also cleaning shorelines where the birds feed. The 2021 cleanup was held on October 24, removing over 50 bags of trash along with other miscellaneous items from rookery islands and shorelines in the Lower and Upper Laguna Madre.

## Environmental Education

CBBEP is committed to fostering the next generation of environmental stewards. To fulfill this commitment, the CBBEP has created the Delta Discovery Program which provides opportunities for students, teachers, and families to connect with the outdoors at the Nueces Delta Preserve. Delta Discovery strives to remove educational roadblocks by offering programs to local communities at no cost. In recent years, the pandemic has impacted CBBEP's ability to host many of our traditional educational programs, but our staff continue to adapt and find new ways to connect students, teachers, and families with nature.

**STUDENTS VISITING THE NUECES DELTA PRESERVE participate in field trips that are TEKS-aligned, developmentally-appropriate, and give them the opportunity to further develop their process skills.**



**Student Field Trips:** In 2021, the Delta Discovery Program was thrilled to start welcoming students back out to the Nueces Delta Preserve for hands-on, discovery-based field trips that get them out in nature and help reinforce the concepts they learn in the classroom. However, restrictions on travel due to the pandemic, have continued to limit the ability of many schools to travel outside of the school for field trips. In an effort to address this issue and continue connecting students and teachers with nature, Delta Discovery began offering “hybrid” field trips that include a virtual visit to the Nueces Delta Preserve, followed by a trip to the classroom by staff. Just like our regular field trips, content is aligned to state standards, is developmentally-appropriate, and gives students opportunities to further develop their process skills. Students are presented with tools and information that they cannot get from reading or talking about it in the classroom. For example, students are able to see the coastal prairie habitat at the Nueces Delta Preserve during the virtual field trip, and they then get to touch and feel some of the animals that call that habitat home when staff come into the classroom.

**Training Educators:** CBBEP’s Delta Discovery Program facilitates multiple workshops each year that focus on equipping teachers and educators with the skills, curriculum, and materials they need to strengthen science teaching as it relates to the environmental resources of the Coastal Bend. In 2021, workshops focused on educating teachers about the Project Learning Tree curriculum and how to conduct Science in the Schoolyard.

**Community Programs:** CBBEP’s Delta Discovery Program provides families with the opportunity to visit the Nueces Delta Preserve and participate in programs like Nature Story Times, Delta Discovery Days, and Home School Days - programs are designed to create conservation-minded families that are connected to nature and have a desire to protect it. Delta Discovery staff and expert volunteers also focus on providing programs that bring the learning to the community. Through school science nights, after school clubs, parks and recreation events, and other public programs, staff are reaching thousands of individuals each year.

**Coastal Issue Forums:** CBBEP continues to support the Coastal Bend Bays Foundation’s efforts to host monthly public forums that bring together diverse community interests to discuss regional resource management issues and seek solutions. Despite COVID-19 restrictions, the Bays Foundation has continued to engage with stakeholders in the region by hosting the Coastal Issue Forums virtually on Facebook live.

## Public Access & Nature Tourism

To ensure that people continue to benefit from a safe, clean bay system, it is important to promote stewardship of our bay resources and to plan for the increasing number of people who visit the Coastal Bend to enjoy its natural resources. Well-planned and well-managed access areas help curtail resource damage, while providing enough parks and facilities for the growing number of users. It is also important to inform the citizens of our community and the millions of visitors about how to enjoy the resources without degrading them. Ensuring that the waters are safe to swim in and that the fish, crabs, and shrimp are safe to eat are also extremely important goals.

**Public Access Enhancements at Packery Flats:** In 2020, Hurricane Hanna made landfall south of Corpus Christi bringing strong winds and large storm surge to the Coastal Bend region. Packery Flats Coastal Habitat, a very popular public access location, was damaged by the storm surge associated with the hurricane. CBBEP received funds in 2021 to add road base and replace any missing or damaged bollards that delineate the road and parking area that helps keep vehicles out of sensitive habitat areas.

**Educational Signage for the Leonabelle Turnbull Birding Center:** CBBEP partnered with the City of Port Aransas Nature Preserve to install new signs at the Leonabelle Turnbull Birding Center. With funding from CBBEP, the Nature Preserve was able to design, purchase, and install 15 interpretive signs detailing insects, reptiles, amphibians, as well as resident birds.

**Port Aransas Nature Preserve - Charlie’s Pasture Habitat Enhancement:** CBBEP partnered with the City of Port Aransas Nature Preserve to continue invasive plant and grass removal and plant native grasses or seeds to enhance the habitat within and surrounding the Clay’s Hill at Charlie’s Pasture. Removing the invasive species and replanting native plants and grasses will enhance the food, water and cover in the area and potentially attract a variety of wildlife that visitors can enjoy. The site offers freshwater marsh habitat and the hills within the 40-acre project site provide shelter from the salt air and high winds. The City contracted with Gulf Corps to remove Guinea grass and white lead tree from the area in December 2021. Around 75 trees and shrubs were planted and the area was seeded following the invasive plant removal. Additional re-treatments of the invasive grasses are planned.

**Up2U Litter Campaign:** The Up2U Litter Prevention Campaign has been in full swing for over a year with the goal of cultivating a sustainable behavior-changing litter prevention program in the Coastal Bend. The cornerstone of the program is a yellow mesh bag emblazoned with the empowering Up2U message. The bag serves as a tool for trash removal but also contains a powerful outreach message. In the first year of the campaign, 12 distribution partners were established. Through these partners and other events, over 30,000 Up2U litter bags were distributed. In 2022, CBBEP and partners kicked off the Up2U PLUS program, which is designed to address illegal dump sites that pose health hazards and have economic impacts on local communities. Up2U PLUS will strive to remove barriers like cost and accessibility that prevent correct disposal of dumped items. Dumpsters that highlight the Up2U message will be provided for communities at no cost, while clean up of existing dump sites will also be part of the project.

**PACKERY FLATS IS A POPULAR PUBLIC ACCESS SITE in the Coastal Bend, but roads at the site sustained damage during a recent hurricane. CBBEP placed 125 tons of road material at the site to repair the damaged roads. In addition, replacement of damaged bollards and installation of new signs will occur in 2022.**



## INTRODUCTION

This FY 2022/2023 Bipartisan Infrastructure Law Annual Work Plan, which has been prepared in accordance with guidance provided by the EPA titled “National Estuary Program Bipartisan Infrastructure Law Funding Implementation Memorandum for Fiscal Years 2022-2026,” addresses priority projects which will be implemented using funds from the Bipartisan Infrastructure Law, also known as the “Infrastructure Investment and Jobs Act of 2021” (IIJA) or “BIL.” This Work Plan only addresses funds being provided through the BIL, and additional projects, using funds from a combination of other sources, including EPA-320 funds, can be found in the CBBEP FY 2023 Comprehensive Annual Work Plan.

The FY 2022 and FY2023 BIL funds will accelerate and enhance CBBEP’s ability to implement actions identified in the *Coastal Bend Bays Plan, 2nd Ed.* These BIL funds will also allow CBBEP to develop and strengthen partnerships necessary to make the most effective use of these new funds. This FY 2022/2023 Annual Work Plan describes several implementation projects, as well as project management support, that will be undertaken pending approval and receipt of BIL funds. Additional projects and other administrative support, using EPA-320 funds and non-EPA grant funds, will also be implemented in FY 2023.

All data and information produced under the auspices of the CBBEP and this BIL Work Plan will adhere to standardized formats and be made publicly accessible. A public participation strategy, refined under “The Bays Plan” chapter of the *Coastal Bend Bays Plan, 2nd Edition* will continue to guide public participation efforts regarding implementation of action plans. The list of Priority Issues, refined through public input and characterization projects will continue to serve as the focus for implementation.

The CBBEP implementation teams, Coordination Team, and Bays Council will also continue to play a key role in identifying issues and supporting implementation of the priorities as listed in *The Bays Plan*. The implementation teams continue to identify, initiate and select project ideas for inclusion in the CBBEP work plans, and these teams will play a role in

both the development and implementation of BIL-funded projects. The current teams are: Habitat & Living Resources Team; Human Uses Team; Maritime Commerce & Dredging Team; Water & Sediment Quality Team; and Environmental Education & Outreach Team. The Bays Plan Coordination Team, consisting of all the chairs of the Implementation Teams and key members of the Bays Council, coordinates the Annual Work Plan recommendations to the CBBEP Bays Council.

As part of this BIL Work Plan, however, CBBEP will also be funding the development of an “Equity Strategy” in order to guide efforts to more meaningfully engage the communities in which we are working, particularly with respect to communities that have experienced, or continue to experience, disproportional environmental health and climate change burdens. The purpose of the equity strategy is to ensure that CBBEP is reviewing potential projects and utilization of BIL funds through the lens of equitable and fair access to the benefits from environmental programs for all individuals. The equity strategy will outline how BIL funds will be utilized to increase investments in disadvantaged communities and the benefits that flow to them. This Equity Strategy will be incorporated into CBBEP’s BIL Long-Term Plan that describes the key activities we will pursue with the five years of available BIL funds. More specifically, the BIL Long-Term Plan will include: (1) proposed types of projects; (2) estimated timelines; (3) potential additional sources of funding; (4) program capacity building needs to deliver BIL supported activities; (5) opportunities for potential coordination with other key stakeholder groups; and (6) equity strategy. The Long-Term Plan and Equity Strategy will both be developed prior to June 1, 2023.

For the purposes of this FY 2022/2023 BIL Annual Work Plan, CBBEP has used the new five-factor Supplemental Demographic Index (SDI) tool in EPA’s EJScreen to determine where disadvantaged communities benefiting from proposed projects are located. The SDI combines the following factors: percent low-income; percent limited English speaking; percent less than high school education; percent unemployed; and low life expectancy. If the SDI percentile in a census block group exceeds 80%, it will be identified as a disadvantaged community for the purposes of establishing baselines and tracking investments and benefits. SDI values are provided for those projects which CBBEP has developed to benefit disadvantaged communities.

## **PERIOD OF PERFORMANCE**

The execution of the tasks associated with this work plan will occur over a 5-year period, which is anticipated to begin February 1, 2023, and to end January 31, 2028. The exact start date of the work plan and all due dates for deliverables are contingent upon the actual date the funds are awarded and contracts are executed.

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## **ACCOMPLISHMENTS**

The FY2022/2023 BIL Annual Work Plan, represents the first round of BIL funds being administered by CBBEP. Future work plans will include details about accomplishments achieved with BIL funding.

## **FY 2022/2023 IMPLEMENTATION OF BIL PROJECTS**

Project activities for the FY2022/2023 BIL Annual Work Plan have been selected for their contribution towards implementation of the *Coastal Bend Bays Plan, 2nd Edition*, as well as towards EPA’s BIL goals. CBBEP is proposing to utilize BIL funding to implement nine (9) important projects addressing shoreline and habitat protection; bird nesting island protection and restoration; nutrient enrichment; public access; climate change planning; and equity strategy development. CBBEP will not be using FY 2022/2023 BIL funds for promotional items, food items, or travel. Specific ways in which each project meets both *Coastal Bend Bays Plan* and BIL goals are outlined in more detail in the project descriptions.

All projects are grouped under the following two tasks:

### **Task 1.0 Bays Plan and BIL Implementation**

The following nine (9) projects will be implemented using FY 2022/2023 BIL funding:

- #2313 Tern Island Protection and Restoration, Phase II
- #2335 Copano Bay Shoreline Protection and Restoration, Phase I
- #2336 OSSF Assistance Program, Phase I
- #2337 Training Program for Wastewater Operators in the Baffin Bay Watershed
- #2338 Access Improvements and Trail Development at the Held-Moran Sanctuary
- #2339 Aransas Bay Bird Island Restoration, Phase II
- #2340 Town of Bayside Shoreline Protection and Public Access, Phase II
- #2341 CBBEP Climate Change Risk-based Adaptation Plan and Equity Strategy
- #2342 Coastal Bend Regional Wastewater Treatment Facility Feasibility Study

### **Task 2.0 Project Management**

The FY 2022/2023 BIL Annual Work Plan is designed to ensure that adequate staff support is available to manage and administer the BIL-funded projects listed above. Funds in the amount of \$150,728 will be allocated towards the salary and fringe for a Project Manager.

## **TASK 1 - BAYS PLAN AND BIL IMPLEMENTATION**

Nine (9) projects will be implemented using FY 2022 and FY 2023 BIL funds, and each of these projects is described in detail on the following pages.

# Project #2313 Tern Island Protection and Restoration, Phase II

<b>Performing Organization:</b>	CBBEP
<b>Project Partners:</b>	TGLO, USFWS
<b>Total Project Funding:</b>	\$2,691,272
<b>BIL Funding:</b>	\$118,108
<b>Bays Plan, 2nd Edition Actions:</b>	CB 1.1, HLR 1.1, HLR 1.2
<b>Project Status:</b>	Ongoing - Phase II
<b>Estimated Completion Date:</b>	01/31/2027

## Objectives:

The objective of this project is to increase the amount of bird nesting habitat on Tern Island by (1) completing the engineering design, permitting, and construction of a rock breakwater around the perimeter of the Island and (2) expanding the acreage of Tern Island through the placement of imported fill material behind the newly constructed breakwaters.

## Need:

Tern Island is a rookery island located in the upper Laguna Madre near Corpus Christi, Texas. The Island is approximately 1.5 acres in size and is owned by the Texas General Land Office (TGLO) and leased for the purposes of protection and management of colonial nesting waterbirds by Audubon Texas. CBBEP's Coastal Bird Program partners with Audubon Texas to manage and protect rookery islands, including Tern Island, throughout the mid- and lower-Texas coast. On Tern Island, CBBEP has annually controlled invasive vegetation, placed and maintained protective signs, restored native vegetation, and treated and removed red imported fire ants and other nest predators.

Tern Island supports large numbers of nesting colonial waterbirds like pelicans, egrets, skimmers, and terns, but erosion of the northern and southern shorelines of the Island is causing the on-going loss of this critical rookery island habitat. Tern Island is experiencing erosion from continuous wave and wind action, and the rate of erosion and the subsequent loss of nesting habitat is expected to increase as sea level continues to rise. Despite its small size, Tern Island is an extremely important rookery island and currently supports a high number of nesting waterbirds. Unlike many other low-lying rookery islands in this region, Tern Island has enough elevation to support a healthy shrub community that can be utilized by a large number of nesting birds. With projected sea level rise and increasing human development further limiting available nesting habitat in this region, Tern Island will likely become an even more critical nesting site. Protection of Tern Island from ongoing erosion and future sea level rise is a high priority project for CBBEP.

CBBEP previously received Texas General Land Office, Coastal Management Program (CMP), Cycle 25 funds to contract with a qualified engineering firm to complete a feasibility study and alternatives analysis for erosion protection of Tern Island. The alternatives analysis identified the construction of 1,300 linear feet of riprap breakwater around the perimeter of the Island as the best alternative. The breakwater structure will protect the Island from wind and wave action and will help the Island be more resilient to sea level rise. The structure is also designed to trap and secure imported fill to allow for island expansion. By adding fill material inside of the breakwater, the current 1.5-acre footprint of the island could be increased to approximately 2.5 acres.

CBBEP will utilize \$162,164 in funding from the Texas General Land Office, Coastal Erosion Planning and Response Act Program (TGLO-CEPRA) and \$2,411,000 from the Texas General Land Office, Gulf of Mexico Energy Security Act (TGLO-GOMESA) to complete the preliminary design (50%), permitting and lease application, final design (100%), bidding, and construction of the breakwater structure. Construction will also include placement of imported fill material inside the breakwater structure. CBBEP will provide \$118,108 in EPA-BIL funds towards the engineering and design costs and these funds will be used to match the TGLO funding. Following construction, CBBEP will conduct monitoring to gauge the success of the project in terms of bird usage (e.g., yearly bird surveys to document total number of breeding pairs and number of active nests). CBBEP will also inspect the integrity of the breakwater structures through site visits and a final grade survey.

### Project Deliverable Description:

Deliverables for this project will include preliminary engineering/design documents, permit, lease, final engineering/design documents, bid package, monitoring reports, and final grade surveys. Deliverables will also include semi-annual progress reports, draft final report, and final report.

### Project Outcomes:

The expected outcome of this project is protection and restoration of approximately 2.5 acres of nesting habitat for colonial waterbirds.

### Support of BIL NEP Priorities

Protection and restoration of Tern Island will support the following BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The need to conserve coastal birds and the habitats they depend upon is identified as a priority goal in the *Coastal Bend Bays Plan, 2nd Ed*. The proposed project will specifically focus on implementing successful waterbird management actions to reverse declines in colonial nesting waterbirds in the Coastal Bend (CB 1.1) by supporting efforts to restore and enhance existing rookery islands and/or create new islands (CB 1.1.- Step 4). The project also supports CBBEP’s broader habitat restoration goals of restoring and enhancing degraded habitats and creating new habitats where feasible (HLR 1.2).

**Build the adaptive capacity of ecosystems and communities:** During the past decade alone, the erosion of bird nesting islands has been exacerbated by the acceleration of relative sea-level rise in Texas coastal waters. Some bay systems have experienced the near complete disappearance of all nesting islands over that time. Tropical storms, such as Hurricane Harvey in 2017, have contributed to major losses in the quantity and quality of island nesting sites, including the complete destruction of the vegetation used as nesting substrate on some islands. These and other events have reshaped the utilization patterns of nesting islands across the Coastal Bend area by colonial waterbirds. Consequently, these changes have increased the need for active ecological restoration actions needed to maintain suitable and resilient nesting habitat. Island creation projects are expensive, requiring extensive engineering, permitting, equipment mobilization and construction costs. However, they are considered essential to address the declines in waterbird populations. By examining sea level rise and storm events during the engineering/design process, the proposed project will increase the resiliency and adaptive capacity of Tern Island and the species that depend on it to provide a safe place to nest and raise their young.

**Leverage additional resources:** CBBEP has a strong history of leveraging and supporting program implementation with additional federal and non-federal resources. The proposed project will leverage \$2,573,164 in funding from the Texas General Land Office.

### Project Deliverables/Schedule:

Execute Contract .....	02/01/2023
Preliminary Engineering/Design .....	11/31/2023
Permit and Lease .....	11/31/2024
Final Engineering/Design .....	11/31/2024
Bid Documents .....	06/30/2025
Construction .....	06/30/2026
Monitoring .....	09/30/2026
Progress Reports .....	semi-annually
Draft Final Report .....	12/30/2026
Final Report .....	01/31/2027

### Project Budget:

BIL Funds	\$ 118,108
TGLO-CEPRA	\$ 162,164 (approved)
<u>TGLO-GOMESA</u>	<u>\$2,411,000</u> (approved)
TOTAL	\$2,691,272



# Project #2335 Copano Bay Shoreline Protection and Restoration, Phase I

<b>Performing Organization:</b>	CBBEP
<b>Project Partners:</b>	NRCS, TPWD, Mission-Aransas NERR
<b>Total Project Funding:</b>	\$235,000
<b>BIL Funding:</b>	\$235,000
<b>Bays Plan, 2nd Edition Actions:</b>	HLR, 1.1, HLR 1.2
<b>Project Status:</b>	New
<b>Estimated Completion Date:</b>	01/31/2025

## Objectives:

The objective of this project is to complete a feasibility study and alternatives analysis for an eroding shoreline in Copano Bay.

## Need:

The project will fund the completion of a feasibility study and alternatives analysis by a qualified engineering firm for an approximately 1.6 mile section of eroding shoreline in Copano Bay. The eroding shoreline is located on a private property in the Mission River Delta region. The majority of the property, including all of its wetlands, are under a conservation easement with the Natural Resources Conservation Service through the Wetlands Reserve Program. The area contains valuable coastal marsh and tidal flat habitats that provide critical habitat for migratory waterfowl, shorebirds, waterbirds, fish, shrimp, crabs and other wildlife. Recent observations also show use of this area by the endangered Whooping Crane. However, the shoreline is rapidly eroding and these valuable habitats are being lost at an alarming rate.

Between 2008 and 2020, estimated erosion rates along the majority of the shoreline were 140 ft or greater - this is an estimated erosion rate of 11.7 ft/yr. In some areas, erosion rates were greater than 225 ft over the same time period. In 2017, Hurricane Harvey resulted in a significant breach of the shoreline, and erosion of this particular area was further exacerbated by Hurricane Hanna in 2020, with the breach now measuring approximately 130 ft wide. Breaching into large ponds of the lower marsh is especially concerning because it serves to further accelerate marsh loss and can seriously compromise estuarine habitat of the lower marsh system. The landowner of this property has reached out to CBBEP to explore options for protection and restoration of the shoreline. After documenting the rapid erosion of the important habitats in this area, CBBEP has agreed to collaborate with the landowner and other relevant partners to implement protection and restoration strategies for the eroding shoreline.

CBBEP will contract with a qualified engineering firm to complete the feasibility study and alternatives analysis. Project engineers will be responsible for acquiring and reviewing readily available project data (e.g., existing surveys, geotechnical borings, tidal data, oyster and submerged aquatic vegetation maps) and conducting necessary site visits. Collection of topographic, bathymetric, and geotechnical probing will also be performed as necessary to aid in preparing the feasibility study and alternatives analysis. The desktop and field data needed for a comprehensive cultural resource analysis of the project site will also be collected.

The alternatives analysis will include developing up to three alternatives for erosion protection. The engineering firm will be responsible for: (1) evaluating the feasibility of the chosen alternatives, including the preliminary opinion of probable construction costs for each alternative, (2) participating in up to two meetings with CBBEP and other interested stakeholders to discuss the feasibility of each alternative and select an alternative to carry forward to preliminary design in Phase II, and (3) preparing the feasibility study and alternatives analysis report.

To ensure that all project deliverables are fulfilled in a timely manner, the engineering firm will be required to perform the following project management activities: (1) participate in project status calls with CBBEP, (2) respond to project

communications (e.g., correspondence and phone calls) outside the project status calls, and (3) prepare and submit a final summary report per the contract for engineering services.

### Project Deliverable Description:

Deliverables for this project will include data collection, site visits, stakeholder meetings, and feasibility study and alternatives analysis report. Deliverables will also include semi-annual progress reports, draft final report, and final report.

### Project Outcomes:

The expected outcome of this project is a chosen alternative for shoreline protection along an approximately 1.6 mile stretch of eroding shoreline in Copano Bay. Construction will occur in later project phases and will ultimately result in the protection of approximately 996 acres of coastal marsh and upland habitat that is under a conservation easement with NRCS. Although it is not considered a primary goal of the project, the proposed breakwater structure will also potentially allow for the recruitment and growth of oyster larvae, a threatened habitat. Development of an oyster reef complex will have the added benefit of creating complex fish habitat for numerous recreationally and commercially important species.

### Support of BIL NEP Priorities

The proposed shoreline protection and restoration project will support the following BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The need to increase and preserve the quantity, quality, and diversity of habitats and living resources in the Coastal Bend is identified as a priority goal in the *Coastal Bend Bays Plan, 2nd Ed*. The proposed project will specifically focus on both preserving functional, nature habitats (HLR1.1) and restoring and enhancing degraded habitats and creating new habitats where feasible (HLR 1.2). By conducting a feasibility study and alternatives analysis for shoreline protection strategies in Copano Bay, the project will enhance efforts and activities to implement site-specific plans for restoration and enhancement of degraded habitats and/or creation of new habitats.

**Build the adaptive capacity of ecosystems and communities:** The marsh area that would be protected by this project is the most significant marsh habitat located near the Town of Bayside. In addition to providing foraging, breeding, and nursery grounds for numerous estuarine and marine species, the marsh habitats along Copano Bay provide nearby communities with enhanced protection and buffering from the growing impacts of sea-level rise, floods, storm events, and other environmental stressors. As the shoreline erodes and marsh habitat is lost, its ability to provide benefits (i.e. storm protection) to surrounding communities also changes. Human communities, such as the Town of Bayside, face risks to sea level rise and storm surge and that storm surge impacts from “today’s” hurricane will be substantially amplified by climate-enhanced sea level rise and storm surge in the future. Marshes also provide a valuable ecosystem service by protecting the coast against storm damages by attenuating storm surge and waves and that the absence of marsh habitat in this area could amplify the impacts of storm surge and increase the damages potentially suffered by human communities in future storm events.

**Leverage additional resources:** CBBEP has a strong history of leveraging and supporting program implementation with additional federal and non-federal resources. The proposed project will look to leverage additional funds, including other sources of BIL funding, in future phases (i.e., final engineering, construction). Potential future funding sources include the TGLO-CEPRA, TGLO-GOMESA, NOAA’s Transformational Habitat Restoration and Coastal Resilience Grants, NOAA’s National Estuarine Research Reserve System Habitat Protection and Restoration Grants, and NOAA’s Coastal Zone Management Habitat Protection and Restoration Grants.

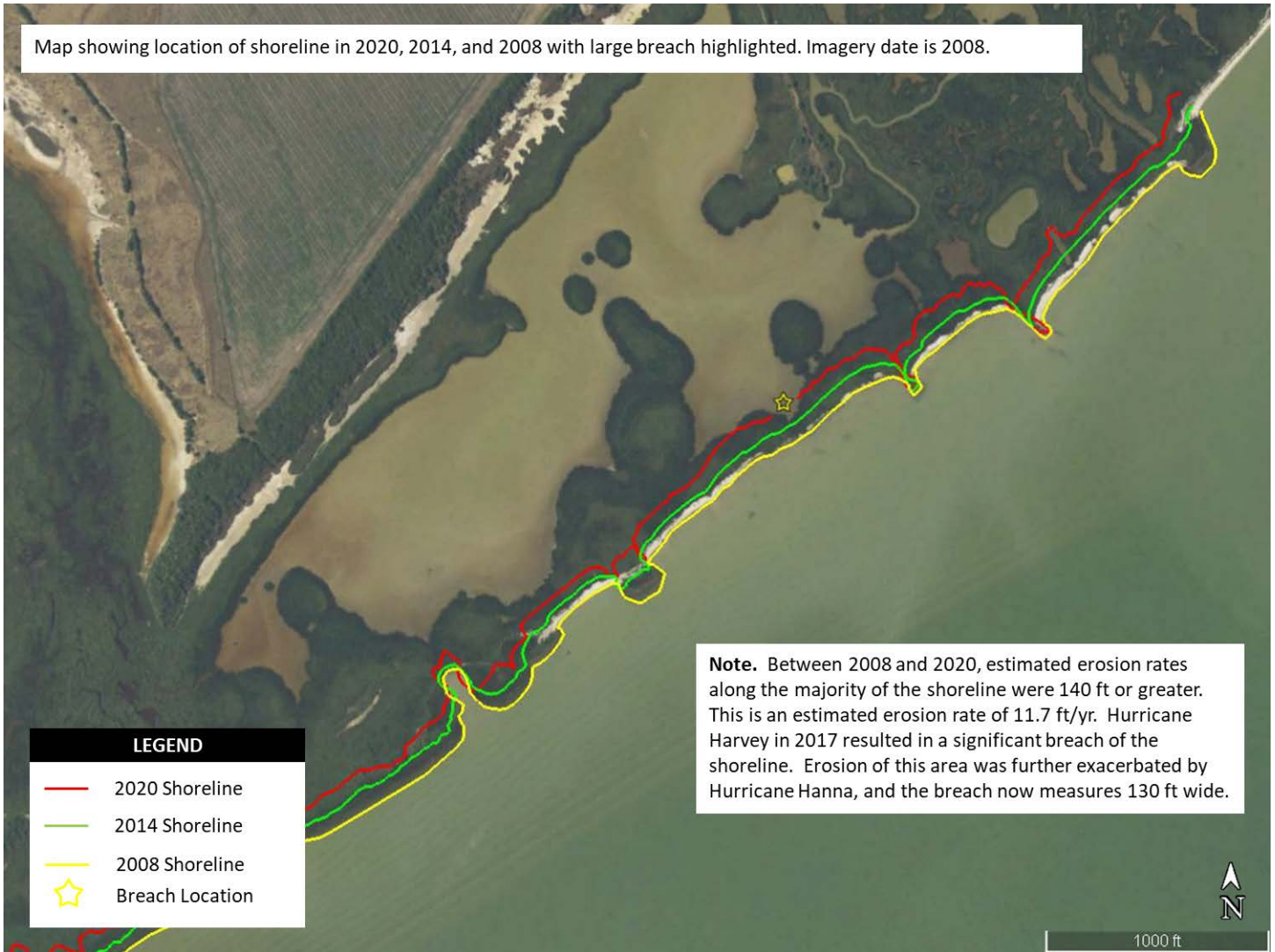
### Project Deliverables/Schedule:

Execute Contract .....	02/28/2023
Data Collection .....	10/31/2023
Site Visit .....	10/31/2023
Stakeholder Meetings .....	09/30/2024
Feasibility Study and Alternatives Analysis .....	09/30/2024
Progress Reports .....	semi-annually
Draft Final Report .....	12/31/2024
Final Report .....	01/31/2025

**Project Budget:**

BIL Funds	\$235,000
<u>Other Funds</u>	\$ -
TOTAL	\$235,000

Map showing location of shoreline in 2020, 2014, and 2008 with large breach highlighted. Imagery date is 2008.



# Project #2336 OSSF Assistance Program, Phase I

<b>Performing Organization:</b>	Nueces River Authority
<b>Project Partners:</b>	CBBEP
<b>Total Project Funding:</b>	\$512,356
<b>BIL Funding:</b>	\$512,356
<b>Bays Plan, 2nd Edition Actions:</b>	NPS 1.3
<b>Project Status:</b>	New
<b>Estimated Completion Date:</b>	01/31/2026

## Objectives:

Address nutrient and bacteria problems in targeted watersheds by inspecting, repairing, and replacing OSSFs that are failing or non-existent, focusing on underserved communities with limited resources.

## Need:

On-site Sewage Facilities (OSSFs) are used to treat wastewater where centralized Wastewater Treatment Facilities (WWTFs) are not available. Conventional systems use a septic tank and gravity-fed drain field that separates solids from wastewater prior to its distribution into the soil where treatment occurs. However, in many coastal watersheds, the soils are considered very limited, which means conventional septic tank systems are not suitable for the proper treatment of household wastewater. In these areas, advanced treatment systems, most commonly aerobic treatment units, are suitable alternative options for treatment. While advanced treatment systems are highly effective, operation and maintenance needs for these systems are rigorous compared to conventional septic systems. Limited awareness and lack of maintenance can lead to system failures.

Unlike pollution from industrial and sewage treatment plants, nonpoint source (NPS) pollution comes from many diffuse sources. Rain events create runoff which picks up human-made and/or natural pollutants and transports them into water bodies. Failing or non-existent OSSFs can produce significant bacteria and nutrient loading into the watershed in the form of NPS pollution.

Factors contributing to OSSF failure include improper system design or selection, improper operation and maintenance, and lack of financial resources for proper maintenance. There are numerous areas within the Coastal Bend where poorly functioning OSSFs are believed to be contributing bacteria and nutrients to receiving waterbodies. Many of these OSSFs were installed before regulations existed and may not have been designed for full-time dwelling occupancy. A program that offers pump-out and inspection followed by repair or replacement where needed, at no cost to the owner, is a proven way to address this problem. This strategy is especially important when working in underserved communities with limited resources.

The poorly functioning OSSF problem is believed to be widespread in the Coastal Bend, and a long-term, well-funded effort is needed to address OSSF water quality issues within the region. The project will address nutrient and bacteria problems in targeted watersheds by inspecting, repairing, and replacing septic systems. In order for this effort to truly be effective, however, multiple years of funding will be needed to increase the number of failing OSSFs addressed. CBBEP will utilize Bipartisan Infrastructure Law (BIL) funding to implement this important project over multiple years and will also look for opportunities to leverage these funds with other resources.

The proposed project is a collaboration between CBBEP and the Nueces River Authority (NRA). CBBEP will contract with NRA to administer the OSSF Assistance Program, including oversight of all inspections, repairs, and replacements. NRA will also deliver homeowner trainings related to OSSF. NRA has previously administered an OSSF assistance and training program in the Nueces River Watershed and has extensive experience working with homeowners to address OSSF issues. NRA will be responsible for working with licensed septic service providers to complete the inspections/pumpouts, repairs, and replacements of the targeted number of OSSFs.

## Project Deliverable Description:

Deliverables for this project will include approximately (1) 30 OSSF inspections and pumpouts and (2) 27 OSSF systems that are repaired or replaced. Additional deliverables include semi-annual progress reports, draft final report, and final report.

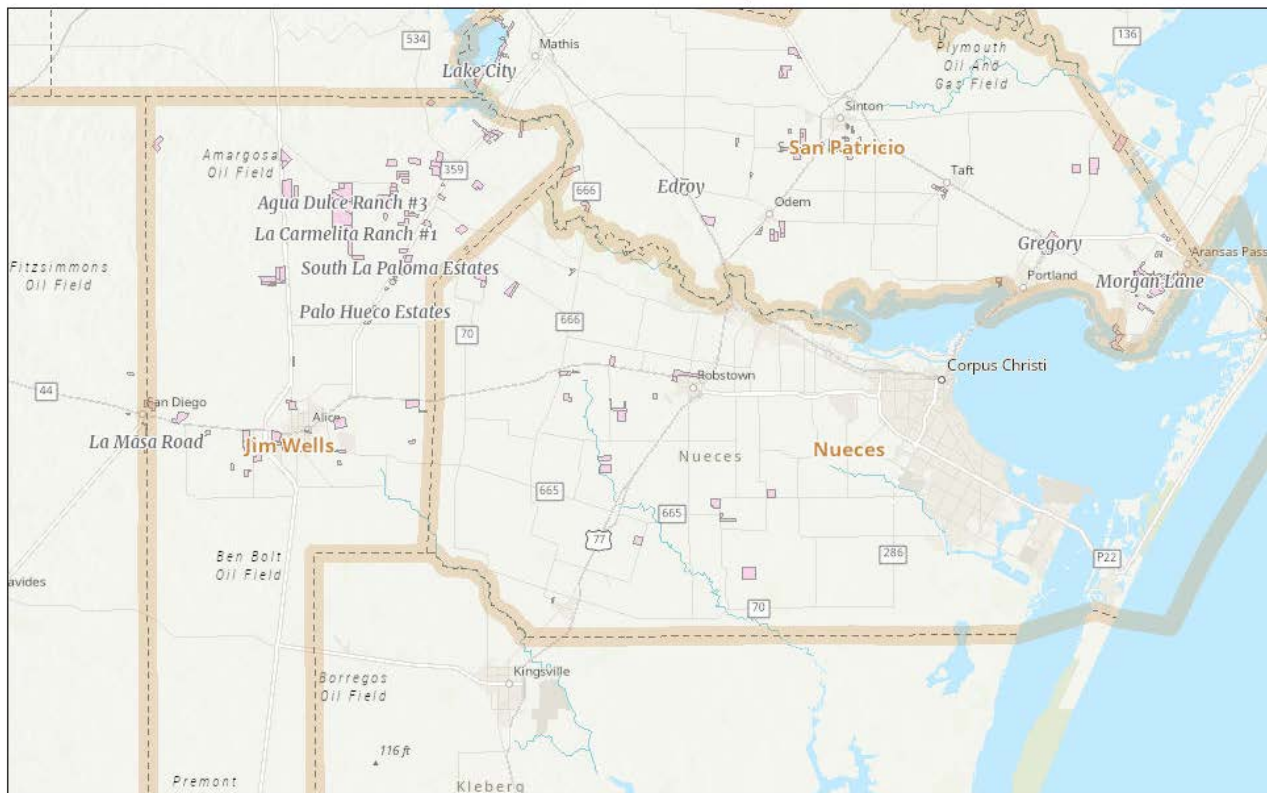
## Project Outcomes:

The expected outcome of this project is improved water quality in the Coastal Bend through load reductions of both bacteria and nutrients.

## Support of BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The need to improve management of all loadings to the bay system is identified as a priority goal in the *Coastal Bend Bays Plan, 2nd Ed*. The Plan specifically calls for efforts to assess and improve nonpoint source management throughout the region, and outlines actions to assist local governments and organizations to implement OSSF programs and projects (NPS 1.3). Examples of OSSF programs and projects identified in the Plan include inspection of existing OSSFs, financial assistance for repair or replacement, and education on proper maintenance.

**Ensure that benefits reach disadvantaged communities:** Colonias are substandard housing developments found along the Texas-Mexico border where residents lack basic services such as drinking water, sewage treatment, and paved roads. Colonia residents tend to be young, predominately Hispanic, and speak Spanish as their primary language. They are low to very low income and employed in low paying sectors. Family incomes in the counties are much lower than the state and national averages. Many of these colonias that lack access to wastewater are located in rural areas and rely on either failing septic systems, cesspools, or outhouses that may pose a risk to private wells. Adequate wastewater disposal systems are critical to preventing contaminated water from harming colonias residents, their surrounding communities, and the ecosystems of the Coastal Bend. The Texas Coastal Bend contains numerous colonias that do not have adequate sewage treatment. The proposed project will focus on implementing



an OSSF Assistance Program in colonia communities located in Jim Wells, Nueces, and San Patricio counties. A database of these communities is maintained by the Texas Office of the Attorney General, and a map of these communities is shown on the previous page. The project will prioritize colonia communities that are in the closest proximity to receiving water bodies, such as creeks, streams, and rivers. The exact locations of the OSSF repairs and replacements are not known at this time, but the Supplemental Demographic Index for census blockgroups where they occur will be tracked throughout the project.

**Build the adaptive capacity of ecosystems and communities:** Climate change poses a number of difficult challenges to coastal infrastructure - the most commonly discussed impacts include flooding of roads, bridges, and culverts, or water damage to buildings and electric utilities. A less discussed, but equally alarming challenge to infrastructure, is how climate change is affecting OSSFs. Rising sea levels, increased precipitation, and warmer temperatures due to climate change are all adversely impacting these systems leading to increased system failures, which ultimately leads to smelly, unhealthy wastewater backing up into homes and flowing into drinking water supplies or recreational waters, creating a public health problem. Low-income and disadvantaged people who settled in areas with poor soils are disproportionately affected by the impacts of climate change on OSSFs. By focusing on the installation of advanced treatment systems (i.e., aerobic treatment units) that provide a more suitable treatment option for addressing climate change impacts, the proposed project will increase the adaptive capacity and resilience of both human communities and the bays and estuaries of the Coastal Bend.

**Project Deliverables/Schedule:**

Execute Contract .....	02/28/2023
OSSFs inspected, repaired, and/or replaced .....	09/30/2025
Progress Reports .....	semi-annually
Draft Final Report .....	12/31/2025
Final Report .....	01/31/2026

**Project Budget:**

BIL Funds	\$512,356
<u>Other Funding</u>	<u>\$ -</u>
TOTAL	\$512,356

# Project #2337 Training Program for Wastewater Operators in the Baffin Bay Watershed

<b>Performing Organization:</b>	Nueces River Authority
<b>Project Partners:</b>	CBBEP
<b>Total Project Funding:</b>	\$250,000
<b>BIL Funding:</b>	\$250,000
<b>Bays Plan, 2nd Edition Actions:</b>	WSQ 1.1
<b>Project Status:</b>	New
<b>Estimated Completion Date:</b>	01/31/2026

## Objectives:

Address nutrient and bacteria problems in the Baffin Bay Watershed by implementing a 24-month training program for personnel at wastewater facilities, focusing on increasing the human capital of underserved communities with limited resources.

## Need:

The Nueces River Authority (NRA) will implement an educational training program for wastewater operators in the Baffin Bay Watershed. This program will expand on the “Wastewater Treatment Outreach Phase 1” and “Wastewater Treatment Outreach Phase 2” projects that have been ongoing since 2020. As a result of the outreach efforts, NRA identified the need for properly trained personnel to operate the wastewater facilities within the Baffin Bay watershed. Following the initial outreach efforts, NRA went into contract with three municipalities and water districts to operate their wastewater facilities. This will greatly help with the quality of discharge from those facilities. However, multiple other municipalities would like the NRA to help them, but they have funding or employment issues.

To help meet the needs in these communities, NRA is proposing to develop a “Training Program” for wastewater operators. As part of the Training Program, NRA would provide twice-monthly assessments and operations assistance at a minimum of five wastewater facilities that discharge into the primary tributaries of Baffin Bay. Through these assessments, NRA will provide recommendations and teaching guidance for implementing the recommendations in each bi-weekly plant visit. They will monitor improvements through both sampling and physical inspection. They will help train the existing operators to improve the procedures at each plant. This will come at no expense to the municipalities. The communities and current operators at these facilities would greatly benefit from the knowledge NRA can provide. In addition, the Training Program would help leadership at these facilities play a more active role in the ongoing efforts to protect Baffin Bay.

The Training Program will run for 24 months. NRA will add a new licensed, experienced employee to help implement the program. Initial sites proposed for the Training Program include a minimum of five of the following communities within the Baffin Bay Watershed: Riveria, Agua Dulce, Kingsville, Robstown, Premont, Benavides and San Diego.

## Project Deliverable Description:

Deliverables for this project will include twice-monthly visits to a minimum of five wastewater treatment facilities over a two-year period, and operations assessments will also be conducted during each site visit. Additional deliverables include semi-annual progress reports, draft final report, and final report.

## Project Outcomes:

The expected outcome of this project is improved water quality through load reductions of both bacteria and nutrients.

## Support of BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The need to maintain and/or enhance water and sediment quality and understand total loadings, transport pathways, and biological/ecological

effects of loadings to the bay system are identified as priority goals in the *Coastal Bend Bays Plan, 2nd Ed.* The Plan specifically calls for efforts to support the implementation of plans and projects to improve water and sediment quality in identified segments (WSQ 1.1). More specifically, the project will support the implementation of a project to improve water quality in segments that do not meet TCEQ or EPA standards.

**Ensure that benefits reach disadvantaged communities:** This project will focus on providing training for wastewater operators at a minimum of five communities in the Baffin Bay Watershed. The communities that will be targeted include Riveria, Agua Dulce, Kingsville, Robstown, Premont, and San Diego. The demographic indicators below were gathered from EJ Screen using a one-mile radius around the communities, and the results highlight the disadvantaged nature of these areas. The “Supplemental Demographic Index” from EJ Screen is also provided for each community. Index values were averaged when multiple census blocks occurred within a community.

Community	Low Income (%-ile)	Limited English Speaking (%-ile)	Less than high school education (%-ile)	Unemployed (%-ile)	Supplemental Demographic Index (%-ile)
Riveria	82	82	92	81	81
Agua Dulce	85	87	82	67	83
Kingsville	80	83	87	72	74
Robstown	82	87	93	92	86
Premont	83	88	93	85	85
San Diego	83	90	94	77	80
AVERAGE	83	86	90	79	82

**Build the adaptive capacity of ecosystems and communities:** Climate change is considered to be one of the main challenges to wastewater systems in future decades. More extreme weather events, including increased flooding and periods of intense droughts, are leading to challenging conditions at wastewater treatment plants. Large volumes of stormwater can easily overwhelm treatment plants and lead to combined sewer overflow when the capacity of a sewage system has reached its limit. This results in wastewater being released with little or no treatment. Periods of intense drought can also affect the quantity and quality of treated water, leading to complications in operations, damage to systems, and increased costs. The proposed project will allow the Nueces River Authority to provide the expertise and experience needed for these communities to deal with the potential impacts to their treatment facilities from a changing climate. The training program will focus on increasing the human capital of these underserved communities with limited resources and build their capacity and resilience changing conditions.

**Project Deliverables/Schedule:**

Execute Contract .....	02/28/2023
Site Visits and Operations Assessments .....	twice-monthly, Mar 2023 - Mar 2025
Progress Reports .....	semi-annually
Draft Final Report .....	12/31/2025
Final Report .....	01/31/2026

**Project Budget:**

BIL Funds	\$250,000
Other Funding	\$ -
TOTAL	\$250,000



# Project #2338 Access Improvements and Trail Development at the Held-Moran Sanctuary

<b>Performing Organization:</b>	CBBEP
<b>Project Partners:</b>	Audubon Outdoor Club
<b>Total Project Funding:</b>	\$33,600
<b>BIL Funding:</b>	\$30,000
<b>Bays Plan, 2nd Edition Actions:</b>	TR 2.1, TR 3.1, HLR 1.1
<b>Project Status:</b>	New
<b>Estimated Completion Date:</b>	01/31/2025

## Objectives:

Objectives for the project include (1) constructing off-street, gravel parking lot on the north side of the Held-Moran Sanctuary on Mediterranean Drive with enough space for four to five cars; (2) designing and installing a half-mile loop-trail, oriented north to south, from the proposed parking area; and (3) repairing and replacing damaged bollard and cable system that is designed to limit access to the interior of the property by motorized and/or wheeled vehicles.

## Need:

The Held-Moran Sanctuary is a 92-acre nature sanctuary located within the City of Corpus Christi that is owned and managed by the Audubon Outdoor Club of Corpus Christi (AOC). The Sanctuary is composed of seasonal ponds, live oak mottes, sweet bay, and other native trees and scrubs that support a diversity of wildlife, including numerous migratory birds and other native animals, such as deer and javelinas. The Sanctuary is managed by the AOC, with careful attention to the removal of litter, cultivation of native plants, restoration efforts to enhance natural water features, and establishment of habitat ideally suited to migratory birds.

Currently there is no off-street parking at the Held-Moran Sanctuary. This is not only a safety and right-of-way issue, but the parking issues at the site also negatively affect the surrounding neighbors when users park in areas that block driveways or turnarounds. There also are no established trails at the Sanctuary, and visitors to the Sanctuary traverse the property indiscriminately, often trampling sensitive vegetation and disturbing habitat. In addition to reducing habitat loss, the establishment of a trail system would also allow the AOC members greater access for invasive species control and an easier way to monitor the area for homeless encampments that can cause major habitat destruction. Trail development will be an ongoing project with future phases of development. There is also a need to limit access by motorized and/or wheeled vehicles to the interior of the Sanctuary. The current bollard and cable system that is installed along the streets that dead end into the property, particularly on the east and south sides, are in disrepair. This allows easy access to cars, trucks, ATVs, and dirt bikes, which can cause major damage to the Sanctuary habitats. Funds are needed to repair and replace the bollard and cable system. The project will focus on installing a parking area, developing the initial components of a trail system, and repairing and replacing the damaged bollard and cable system to help control access.

## Project Deliverable Description:

Project deliverables include off-street parking area, half-mile loop trail, and bollard and cable system. Additional deliverables include semi-annual progress reports, draft final report, and final report.

## Project Outcomes:

Outcomes of the project include increased accessibility to users of the Held-Moran Sanctuary while enhancing user safety, limiting damage to the environmentally sensitive live oak forest from misuse, and elimination of the inconvenience and/or negative interactions from users with the surrounding property owners.

## Support of BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The need to maintain, manage, and expand tourism and recreational opportunities in a way that enhances the local economy and protects the

natural resources of the bays is identified as a priority goal in the *Coastal Bend Bays Plan, 2nd Ed.* The project will focus on providing an improved, well-managed public access site (TR 2.1). This action specifically calls for CBBEP to work with its Human Uses Implementation Team to develop and implement strategies that provide improvements to existing public access sites. The project was brought to CBBEP through the Human Uses Team and it was prioritized for implementation by the Team members. The project will also support the development and implementation of management strategies that reduce or avoid impacts from recreational uses (TR 3.1). The Plan specifically calls for the implementation of projects that mitigate the impacts of human intrusion on critical habitats, using such techniques as the bollard and cable system that will be part of this project.

**Build the adaptive capacity of ecosystems and communities:** The Held-Moran Sanctuary is located in the Flour Bluff community of Corpus Christi, Texas. Although the site itself is located in a Block Group with a lower Supplemental Demographic Index (483550031012 = 56 percentile), it is less than three miles from multiple Block Groups that have higher Index values (483550030042 = 93 percentile; 483550030043 = 90 percentile; 483550030022 = 82 percentile). The proximity of the project to these disadvantaged areas will increase individuals ability to access, enjoy, and benefit from coastal habitats and engage them better in volunteer opportunities, capacity-building, and educational activities.

**Leverage additional resources:** CBBEP has strong history of leveraging and supporting program implementation with additional federal and non-federal resources. The proposed project will leverage \$3,600 in funding from the Audubon Club of Corpus Christi.

**Project Deliverables/Schedule:**

Off-street Parking Lot .....	09/30/2024
Half-mile Loop Trail .....	09/30/2024
Repaired/Replaced Bollard and Cable System .....	09/30/2024
Progress Reports .....	semi-annually
Draft Final Report .....	12/31/2024
Final Report .....	01/31/2025

**Project Budget:**

BIL Funds	\$30,000
<u>Other Funding</u>	<u>\$ 3,600</u> (approved)
TOTAL	\$33,600

# Project #2339 Aransas Bay Bird Island Restoration, Phase II

<b>Performing Organization:</b>	CBBEP
<b>Project Partners:</b>	Mission-Aransas NERR, NOAA, TGLO
<b>Total Project Funding:</b>	\$4,650,000
<b>BIL Funding:</b>	\$243,964
<b>Bays Plan, 2nd Edition Actions:</b>	CB 1.1, HLR 1.1, HLR 1.2
<b>Project Status:</b>	Ongoing - Phase II
<b>Estimated Completion Date:</b>	01/31/2027

## Objectives:

The objectives of this project are to increase the amount of bird nesting habitat in the Aransas Bay System by (1) completing the final engineering/design and construction of a rock breakwater around the perimeter of Deadman Island and (2) expanding the acreage of the Island through the placement of imported fill material behind the newly constructed breakwaters.

## Need:

Texas colonial waterbirds typically nest in spring/summer months in dense groups on small islands in the bays. Today, threats such as development, habitat loss, and human disturbance are taking their toll. Long-term data shows that the majority of colonial waterbirds in Texas are declining, some as much as 60-70%. On the Texas coast, including within the Mission-Aransas Estuary, suitable nesting habitat is thought to be the most limiting factor for the majority of the colonial waterbird species.

Increased vessel traffic, rising sea levels, and impacts from storm surge have led to significant erosion of almost all remaining rookery islands in the Aransas Bay System, and in most cases the islands are no longer able to support nesting birds. The 2020 Environmental Indicators Report produced by the Coastal Bend Bays & Estuaries Program (CBBEP) classified the Aransas Bay System as having poor nesting habitat for colonial waterbirds and identified this system as a priority area for island protection and restoration efforts. The urgency to provide additional rookery habitats was elevated even further after Hurricane Harvey struck the Coastal Bend in 2017. This Category 4 hurricane resulted in major erosion of every rookery island in the Aransas Bay system.

Deadman Island is located in Aransas Bay, near Rockport, TX. The Island is part of the historical Long Reef that extends off of the west side of San Jose Island. San Jose Island protects Deadman Island from waves of the Gulf of Mexico, but the Island is exposed to long fetches, up to 10 miles, in all directions. In addition, because of the location relative to the Gulf Intracoastal Waterway, boat and barge wakes are also a factor. These factors, in combination with rising sea levels and storm surges from recent hurricanes, have led to significant erosion of the Island, which is now at point that it can no longer support colonial nesting waterbirds.

However, Deadman Island presents a good option for rookery island restoration in the Aransas Bay System. Historically, the Island has provided nesting habitat for colonial waterbirds like pelicans and egrets, and it has been especially important for ground-nesting birds like skimmers and terns. Despite its relatively small size, the Island has historically been an extremely important rookery island and represents some of the last remaining rookery island habitat within this system. With projected sea level rise and increasing human development further limiting available nesting habitat in this region, these islands will likely become an even more critical nesting site in the near future. Protection of Deadman Island from ongoing erosion and future sea level rise will help conserve this important rookery, making it more resilient to future threats.

In 2021, CBBEP received funding from the Texas General Land Office to contract with a qualified engineering firm to develop a project to restore and protect rookery islands in Aransas Bay, focusing on Deadman Island, as well as an island known as Long Reef. Using these funds, CBBEP has contracted with an engineering firm to collect data, perform an

alternatives analysis, submit permit applications, collection, and complete preliminary design (70%) for these rookery islands. Data collection efforts are complete and the alternatives analysis is currently underway. CBBEP anticipates the completion of preliminary design and submission of a permit application later this year. It is anticipated that construction efforts will involve the installation of a breakwater structure around the perimeter of the island and placement of imported fill material inside the breakwater structure in order to expand the footprint of the Island from its current size to closer to three acres.

CBBEP is proposing to use BIL funds to support the final design (100%), bid assistance, construction oversight, and construction of the chosen alternative. Construction costs are estimated at \$4,400,000, while final engineering, bid assistance, and construction oversight will cost \$250,000, resulting in a total cost for the project of \$4,650,000. In partnership with the Mission-Aransas National Estuarine Research Reserve, CBBEP has submitted a proposal to NOAA's National Estuarine Research Reserve System Habitat Protection and Restoration Grants requesting \$4,000,000 to support the project costs. CBBEP is proposing to use \$242,848 of BIL funds to support the project, and the remaining \$407,152 will be requested from the TGLO-CEPRA program in the Spring 2023.

The proposed project cost is comparable to other shoreline protection projects completed in the region, particularly when compared to the high-value habitat provided by this rookery island. Once completed, the project will ultimately protect, enhance, and expand habitat for numerous species of nesting colonial waterbirds. Following construction, CBBEP will conduct monitoring to gauge the success of the project in terms of bird usage (e.g., yearly bird surveys to document total number of breeding pairs and number of active nests). CBBEP will also inspect the integrity of the breakwater structures through site visits and a final grade survey.

### **Project Deliverable Description:**

Deliverables for this project will include final engineering/design documents, permit, bid package, monitoring reports, and final grade surveys. Deliverables will also include semi-annual progress reports, draft final report, and final report.

### **Project Outcomes:**

The expected outcome of this project is protection and restoration of approximately 3 acres of nesting habitat for colonial waterbirds.

### **Support of BIL NEP Priorities**

Protection and restoration of Deadman Island will support the following BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The need to conserve coastal birds and the habitats they depend upon is identified as a priority goal in the *Coastal Bend Bays Plan, 2nd Ed*. The proposed project will specifically focus on implementing successful waterbird management actions to reverse declines in colonial nesting waterbirds in the Coastal Bend (CB 1.1) by supporting efforts to restore and enhance existing rookery islands and/or create new islands (CB 1.1.- Step 4). The project also supports CBBEP's broader habitat restoration goals of restoring and enhancing degraded habitats and creating new habitats where feasible (HLR 1.2).

**Build the adaptive capacity of ecosystems and communities:** During the past decade alone, the erosion of bird nesting islands has been exacerbated by the acceleration of relative sea-level rise in Texas coastal waters. Some bay systems have experienced the near complete disappearance of all nesting islands over that time. Tropical storms, such as Hurricane Harvey in 2017, have contributed to major losses in the quantity and quality of island nesting sites, including the complete destruction of the vegetation used as nesting substrate on some islands. These and other events have reshaped the utilization patterns of nesting islands across the Coastal Bend area by colonial waterbirds. Consequently, these changes have increased the need for active ecological restoration actions needed to maintain suitable and resilient nesting habitat. Island creation projects are expensive, requiring extensive engineering, permitting, equipment mobilization and construction costs. However, they are considered essential to address the declines in waterbird populations. By examining sea level rise and storm events during the engineering/design process, the proposed project will increase the resiliency and adaptive capacity of Deadman Island and the species that depend on it to provide a safe place to nest and raise their young.

**Leverage additional resources:** CBBEP has strong history of leveraging and supporting program implementation with additional federal and non-federal resources. CBBEP has requested \$4,000,000 in funding from NOAA's National Estuarine Research Reserve System Habitat Protection and Restoration Grants and an additional \$407,152 will be requested from the TGLO-CEPRA program.

**Project Deliverables/Schedule:**

Execute Contract .....	03/31/2023
Final Engineering/Design .....	12/31/2024
Bid Documents .....	06/30/2025
Construction .....	01/31/2026
Monitoring .....	08/31/2026
Progress Reports .....	semi-annually
Draft Final Report .....	12/30/2026
Final Report .....	01/31/2027

**Project Budget:**

BIL Funds	\$ 242,848
NOAA NERRS BIL	\$4,000,000 (pending)
<u>TGLO-GOMESA</u>	<u>\$ 406,036</u> (pending)
TOTAL	\$4,650,000



# Project #2340 Town of Bayside Shoreline Protection and Public Access, Phase II

<b>Performing Organization:</b>	CBBEP
<b>Project Partners:</b>	Refugio County, Town of Bayside
<b>Total Project Funding:</b>	\$190,000
<b>BIL Funding:</b>	\$190,000
<b>Bays Plan, 2nd Edition Actions:</b>	HLR 1.1, HLR 1.2, TR 2.1
<b>Project Status:</b>	Ongoing, Phase II
<b>Estimated Completion Date:</b>	01/31/2025

## Objectives:

The objective of this project is to complete the preliminary engineering and design and permitting for a shoreline protection structures near the Town of Bayside. The project will seek to reduce and prevent erosion over time at Bayside City Park, while also creating and restoring habitat for aquatic and avian species and improving public access opportunities.

## Need:

Refugio County is currently in the process of completing Phase I of this project, which includes improvements to the County-owned and operated boat ramp. Phase I consists of demolishing existing wooden deck, framing, and existing timber piles. This phase also consists of dredging the boat ramp area, relocating dredged material, constructing a new wooden dock, and placing crushed concrete gravel topped with concrete rip-rap. CBBEP will use BIL funds to begin the implementation of Phase II of the project, which involves elements of shoreline stabilization, habitat creation, and increased public access opportunities. The project proposes the construction of (1) 600 linear feet of limestone breakwater living shoreline feature that will help protect the boat ramp from future sediment deposition and (2) 390 linear feet of oyster reef balls that will help protect nearby marsh from further erosion due to boat traffic. Finally the project will involve the planting of cord grass behind the reef balls to enhance habitat restoration. Together these features will allow for wave attenuation and, along with marsh plantings, will aid in the restoration of wetlands. Further, this project will also examine opportunities to acquire five acres of additional park land for parking to accommodate the anticipated increased use by the public of the boat ramp and park area.

## Project Deliverable Description:

Deliverables for this project will include data collection, site visits, stakeholder meetings, preliminary engineering and design report, permit, and lease. Deliverables will also include semi-annual progress reports, draft final report, and final report.

## Project Outcomes:

The expected outcome of this project is completion of the preliminary engineering and design and the acquisition of a permit and lease for shoreline protection features and marsh planting near the Town of Bayside boat ramp. Construction will occur in later project phases and will ultimately result in the protection public access opportunities for residents and visitors and protection and restoration of coastal marsh and upland habitat. Although it is not considered a primary goal of the project, the proposed breakwater structures will also potentially allow for the recruitment and growth of oyster larvae, a threatened habitat. Development of an oyster reef complex will have the added benefit of creating complex fish habitat for numerous recreationally and commercially important species.

## Support of BIL NEP Priorities

The proposed shoreline protection and restoration project will support the following BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The need to increase and preserve the quantity, quality, and diversity of habitats and living resources in the Coastal Bend is identified as a priority goal in the *Coastal Bend Bays Plan, 2nd Ed*. The proposed project will specifically focus on both preserving functional, natural habitats (HLR1.1) and restoring and enhancing degraded habitats (HLR 1.2). By completing the preliminary engineering and design for shoreline protection strategies in Copano Bay, the project will enhance efforts and activities to implement site-specific plans for restoration and enhancement of degraded habitats and/or creation of new habitats.

The *Coastal Bend Bays Plan, 2nd Ed*. also focuses on the need to maintain, manage, and expand tourism and recreational opportunities in a way that enhances the local economy and protects the natural resources of the bays. The project will focus on providing an improved, well-managed public access site (TR 2.1) through the protection of the existing boat ramp. The project will ensure that Refugio County’s Phase I improvements to the boat ramp are protected for bay users well into the future.

**Build the adaptive capacity of ecosystems and communities:** The marsh area that would be protected by this project is located in close proximity to the Town of Bayside, as well as Highway 136 that serves as an important evacuation route for many residents. In addition to providing foraging, breeding, and nursery grounds for numerous estuarine and marine species, the marsh habitats along Copano Bay provide nearby communities with enhanced protection and buffering from the growing impacts of sea-level rise, floods, storm events, and other environmental stressors. As the shoreline erodes and marsh habitat is lost, its ability to provide benefits (i.e. storm protection) to surrounding communities also changes. Human communities, such as the Town of Bayside, face risks to sea level rise and storm surge and that storm surge impacts from “today’s” hurricane will be substantially amplified by climate-enhanced sea level rise and storm surge in the future. Marshes also provide a valuable ecosystem service by protecting the coast against storm damages by attenuating storm surge and waves and that the absence of marsh habitat in this area could amplify the impacts of storm surge and increase the damages potentially suffered by human communities in future storm events.

Although the site itself is located in a Blockgroup with a lower percentile Supplemental Demographic Index (483919504001 = 63 percentile), the boat ramp and associated amenities service a much broader area. Within 18 miles of the project site, there are numerous communities with a much higher Supplemental Demographic Index percentile (484090110004 = 97 percentile; 484090110002 = 92 percentile; 484090110003 = 82 percentile; 484090108001 = 90 percentile; 484090108004 = 96 percentile; 484090108003 = 94 percentile, 480079505011 = 94 percentile). The proximity of the project to these disadvantaged areas will increase individuals ability to access, enjoy, and benefit from coastal habitats and engage them better in volunteer opportunities, capacity-building, and educational activities.

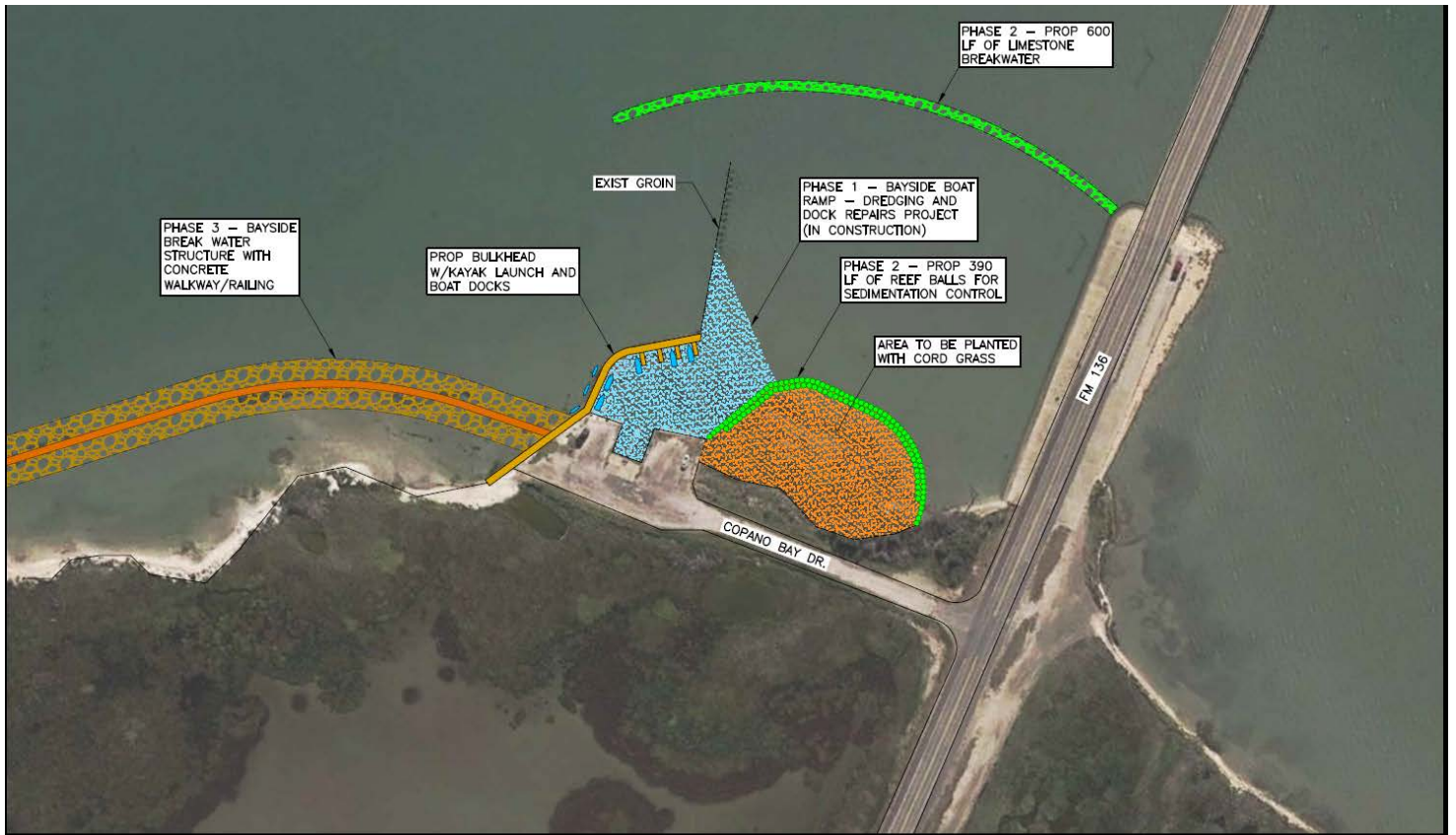
**Leverage additional resources:** CBBEP has strong history of leveraging and supporting program implementation with additional federal and non-federal resources. The proposed project will look to leverage additional funds, including other sources of BIL funding, in future phases (i.e., final engineering, construction). Potential future funding sources include the TGLO-CEPRA, TGLO-GOMESA, NOAA’s Transformational Habitat Restoration and Coastal Resilience Grants, NOAA’s National Estuarine Research Reserve System Habitat Protection and Restoration Grants, and NOAA’s Coastal Zone Management Habitat Protection and Restoration Grants.

**Project Deliverables/Schedule:**

Execute Contract .....	02/28/2023
Data Collection .....	11/30/2023
Site Visit .....	11/30/2023
Stakeholder Meetings .....	03/31/2024
Preliminary Engineering and Design .....	03/31/2024
Progress Reports .....	semi-annually
Draft Final Report .....	12/31/2024
Final Report .....	01/31/2025

**Project Budget:**

BIL Funds	\$190,000
<u>Other Funds</u>	<u>\$ -</u>
TOTAL	\$190,000




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REFUGIO COUNTY, TEXAS  
 RESTORATION PROJECT  
**BAYSIDE IMPROVEMENTS  
 EXHIBIT**

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 BY: ROBERT M. VIERA PE  
 LICENSE NO. 88618 STATE TX 3/26/21



# Project #2341 CBBEP Climate Change Risk-based Adaptation Plan and Equity Strategy

<b>Performing Organization:</b>	CBBEP
<b>Project Partners:</b>	TBD
<b>Total Project Funding:</b>	\$75,000
<b>BIL Funding:</b>	\$75,000
<b>Bays Plan, 2nd Edition Actions:</b>	CR 1.1
<b>Project Status:</b>	New
<b>Estimated Completion Date:</b>	08/31/2024

## Objectives:

The objective of this project is to develop a climate change risk-based adaptation plan that contains effective solutions that CBBEP and our partners can implement to better manage potential risks from a changing climate. The project will also focus on developing an equity strategy that ensures CBBEP is reviewing potential projects and utilization of our funds through lens of equitable and fair access from our programs to all individuals.

## Need:

Climate change will bring additional challenges to places and ecosystems that are already under environmental stress. The expected climate changes will worsen existing problems as well as bring new problems. Identifying risks associated with climate change and managing them to reduce their impacts is essential. CBBEP will use EPA's "Being Prepared for Climate Change: A Workbook for Developing Risk-Based Adaptation Plans" as a guide to climate change adaptation planning.

The process described in the Workbook leads users to take a broad look at how climate change will affect their environmental system and their organization. The creation of a planning-level risk-based vulnerability assessment will help CBBEP develop an action plan with effective solutions that your stakeholders and partners can help implement. The Workbook presents a step-by-step application of a risk management methodology to climate change adaptation. By taking a risk-based approach to assessing vulnerability, users have a formal way to choose among adaptation actions. Selected actions are not simply beneficial, they rise to the top because they will be best for reducing risk. The ten steps needed to complete the risk-based adaptation planning process are listed below:

- Step 1 - Communication and Consultation: Inform key people about the vulnerability assessment and ask for input.
- Step 2 - Establish the Context for the Vulnerability Assessment: Identify organizational goals that are susceptible to climate change.
- Step 3 - Risk Identification: Brainstorm about how climate stressors will interact with your goals.
- Step 4 - Risk Analysis: Develop an initial characterization of consequence and likelihood for each risk.
- Step 5 - Risk Evaluation: Use a consequence/probability matrix to build consensus about each risk.
- Step 6 - Establish the Context for the Action Plan: Identify opportunities and constraints that will affect your adaptation decisions.
- Step 7 - Risk Evaluation/Decide on a Course: Decide at a high level whether you will mitigate, transfer, accept or avoid each risk.
- Step 8a - Find Adaptation Actions: Find mitigating actions that look promising for further investigation.
- Step 8b - Select Adaptation Actions: Screen potential actions, and select a set of risk-reducing actions to implement.
- Step 9 - Prepare & Implement an Action Plan: Create a plan to track mitigating actions and which risks they address.
- Step 10 - Monitor and Review: Keep track of your actions and maintain your vulnerability assessment.

The proposed project will also involve the development of an equity strategy that CBBEP can utilize to ensure that we are reviewing potential projects and utilizing BIL and other funding sources through the lens of equitable and fair access to

the benefits from environmental programs for all individuals. The equity strategy will specifically outline how BIL funds will be utilized to increase investments in disadvantaged communities and the benefits that flow to them. The strategy will include: (1) definition of disadvantaged communities; (2) baseline analysis to identify the recent (pre-BIL) percentage of NEP funds flowing to projects that benefit disadvantaged communities; (3) analysis of disadvantaged communities that may benefit from NEP projects to identify where additional investments can be made that benefit such communities while implementing CCMs; (4) development of numeric target for activities supporting disadvantaged communities that contribute to achieving a target at or above 40% of benefits to such communities for the national program over the lifespan of total NEP BIL funds; (5) an outline of the path to achieve the new goal may include projects, locations of activity, milestones, training and outreach needs, capacity building, and interim goals; and (6) identification of tracking metrics.

CBBEP will contract with a consultant to oversee the implementation of the project, but CBBEP staff and partners will be closely involved in the process, providing guidance and input on both planning efforts. Although both projects will begin immediately, CBBEP will focus on ensuring the equity strategy can be completed prior to June 30, 2023.

**Project Deliverable Description:**

Deliverables for this project will include data analysis, stakeholder meetings, risk-based adaptation plan, and equity strategy. Deliverables will also include semi-annual progress reports, draft final report, and final report.

**Project Outcomes:**

The project will allow CBBEP to better address environmental justice and climate change issues when implementing actions identified in the *Coastal Bend Bays Plan, 2nd Ed.*

**Support of BIL NEP Priorities**

The proposed project will support the following BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The project will conduct a risk-based adaptation that takes a broad look at how climate change will affect CBBEP’s environmental system and our own organization. The process will specifically look at the goals and actions outlined in the Plan and determine how these could be affected by changing climatic conditions.

**Build the adaptive capacity of ecosystems and communities:** One of the major objectives of this project is to ensure that CBBEP develops an equity strategy that will ensure sufficient funds are being targeted at disadvantaged communities.

**Project Deliverables/Schedule:**

Execute Contract .....	02/28/2023
Data Collection .....	10/31/2023
Stakeholder Meetings .....	09/30/2023
Risk-based Adaptation Plan .....	05/30/2024
Equity Strategy .....	05/30/2023
Progress Reports .....	semi-annually
Draft Final Report .....	07/31/2024
Final Report .....	08/31/2024

**Project Budget:**

BIL Funds	\$ 75,000
<u>Other Funds</u>	<u>\$ -</u>
TOTAL	\$ 75,000

# Project #2342 Coastal Bend Regional Wastewater Treatment Facility Feasibility Study

<b>Performing Organization:</b>	Nueces River Authority
<b>Project Partners:</b>	CBBEP, TCEQ, Nueces County, TGLO
<b>Total Project Funding:</b>	\$400,000
<b>BIL Funding:</b>	\$26,800
<b>Bays Plan, 2nd Edition Actions:</b>	WSQ 1.1
<b>Project Status:</b>	New
<b>Estimated Completion Date:</b>	01/31/2024

## Objectives:

Address nutrient and bacteria problems in the Baffin Bay Watershed by conducting a feasibility study for the proposed construction of a regional wastewater treatment plant, servicing the rural communities of western Nueces County. The study will include a proposed location for the facility as well as proposed routes for transmission mains, estimate of probable cost of the project, design and specification services for infrastructure improvements, and assistance with the pre-permitting process.

## Need:

The wastewater treatment plants (WWTP) in western Nueces County are old and the mechanical equipment is failing. The facilities struggle to meet permitted parameters. The result is often noncompliance with state issued permits which has led to fines and enforcement proceedings. The receiving streams as well as the Nueces and Baffin Bays are experiencing negative impacts due to the lesser quality wastewater effluent containing higher levels of nutrients and *E. coli* bacteria.

During the past few decades, the Texas Water Development Board and the Texas Commission on Environmental Quality, have promoted a policy of regional treatment of wastewater. The construction of regional facilities allows for a single point of discharge and the economy of scale allows for higher levels of treatment at lower cost. This often allows for removal of higher levels of nutrients, resulting in higher quality effluent and less impact on receiving streams and bays. Recent conversations with TWDB, Texas General Land Office, and US Department of Agriculture show continued support for this approach in Nueces County. The purpose of the project is to conduct a feasibility study for the construction of a regional wastewater treatment plant to service the rural communities of western Nueces County and account for projected growth in the region. If deemed feasible, the facility to be constructed will be a common wall plant utilizing best available technology. A common wall footprint can be expanded as needed economically and can adequately treat the current and future flows anticipated from the assessment planning period. The plant could be expanded as future treatment needs require.

The project will consist of an assessment of current wastewater treatment plants within the area to: (1) determine if existing plant(s) can be rehabilitated economically; (2) evaluate on-site septic facilities and provide a recommendation on future wastewater service for unsewered areas; (3) provide recommendation of which areas to include in a regional wastewater facility, (4) recommend a location for the proposed regional wastewater plant; (5) recommend proposed routes for wastewater transmission to the proposed regional facility; (6) provide a cost estimate for recommended improvements to existing infrastructure. The project will also provide design and specification services for needed improvements and pre-permitting support.

CBBEP will partner with NRA to complete this project. The NRA and CBBEP have been working closely for several years to address wastewater issues in the Coastal Bend region and continue partnering to develop solutions, such as the regional facility. NRA will use their established procurement process to issue a Request for Qualifications, and based on responses, will then select a qualified engineering firm to complete the feasibility assessment.

## Project Deliverable Description:

Deliverables for this project will include completed feasibility study report. Additional deliverables include semi-annual progress reports, draft final report, and final report.

## Project Outcomes:

The expected outcome of this project is improved water quality through load reductions of both bacteria and nutrients.

## Support of BIL NEP Priorities:

**Accelerate and more extensively implement the Coastal Bend Bays Plan, 2nd Ed:** The need to maintain and/or enhance water and sediment quality and understand total loadings, transport pathways, and biological/ecological effects of loadings to the bay system are identified as priority goals in the *Coastal Bend Bays Plan, 2nd Ed*. The Plan specifically calls for efforts to support the implementation of plans and projects to improve water and sediment quality in identified segments (WSQ 1.1). More specifically, the project will further the support of assessments and planning that address problematic levels of fecal pollution and other water quality issues identified by stakeholders for specific portions of the project area that are of concern (i.e., Baffin Bay).

**Ensure that benefits reach disadvantaged communities:** This project will focus on conducting a feasibility study for the proposed construction of a regional wastewater treatment plant, servicing the rural communities of western Nueces County. The communities that will be targeted include Driscoll, Bishop, and Banquete. The demographic indicators below were gathered from EJ Screen using a one-mile radius around the communities, and the results highlight the disadvantaged nature of these areas. The “Supplemental Demographic Index” from EJ Screen is also provided. Index values were averaged when multiple census blocks occurred within a community.

Community	Low Income (%-ile)	Limited English Speaking (%-ile)	Less than high school education (%-ile)	Unemployed (%-ile)	Supplemental Demographic Index (%-ile)
Driscoll	98	82	93	84	96
Bishop	73	68	80	72	82
Banquete	68	89	97	88	94
AVERAGE	80	80	90	81	91

The rural areas of western Nueces County also contain several colonias (see figure on next page). Colonias are substandard housing developments found along the Texas-Mexico border where residents lack basic services such as drinking water, sewage treatment, and paved roads. Colonia residents tend to be young, predominately Hispanic, and speak Spanish as their primary language. They are low to very low income and employed in low paying sectors. Family incomes in the counties are much lower than the state and national averages. Many of these colonias that lack access to wastewater are located in rural areas and rely on either failing septic systems, cesspools, or outhouses that may pose a risk to private wells. Adequate wastewater disposal systems are critical to preventing contaminated water from harming colonias residents, their surrounding communities, and the ecosystems of the Coastal Bend. The Texas Coastal Bend contains numerous colonias that do not have adequate sewage treatment. Opportunities to offer these communities centralized wastewater treatment as part of the regional facility will also be a focus of the feasibility study.

**Build the adaptive capacity of ecosystems and communities:** Climate change is considered to be one of the main challenges to wastewater systems in future decades. More extreme weather events, including both increased flooding from storm events and periods of intense drought, are leading to challenging conditions at wastewater treatment plants. Large volumes of stormwater can easily overwhelm treatment plants and lead to combined sewer overflows when the capacity of a sewage system has reached its limit. This results in wastewater being released with little or no treatment. While periods of intense drought can also affect the quantity and quality of treated water, leading to complications in operations, damage to systems, and increased costs. Changing climatic conditions will be considered as part of the planning and design phase of the project, in order to ensure that the new regional facility and the communities that are dependent upon it are resilient to changing climatic conditions.

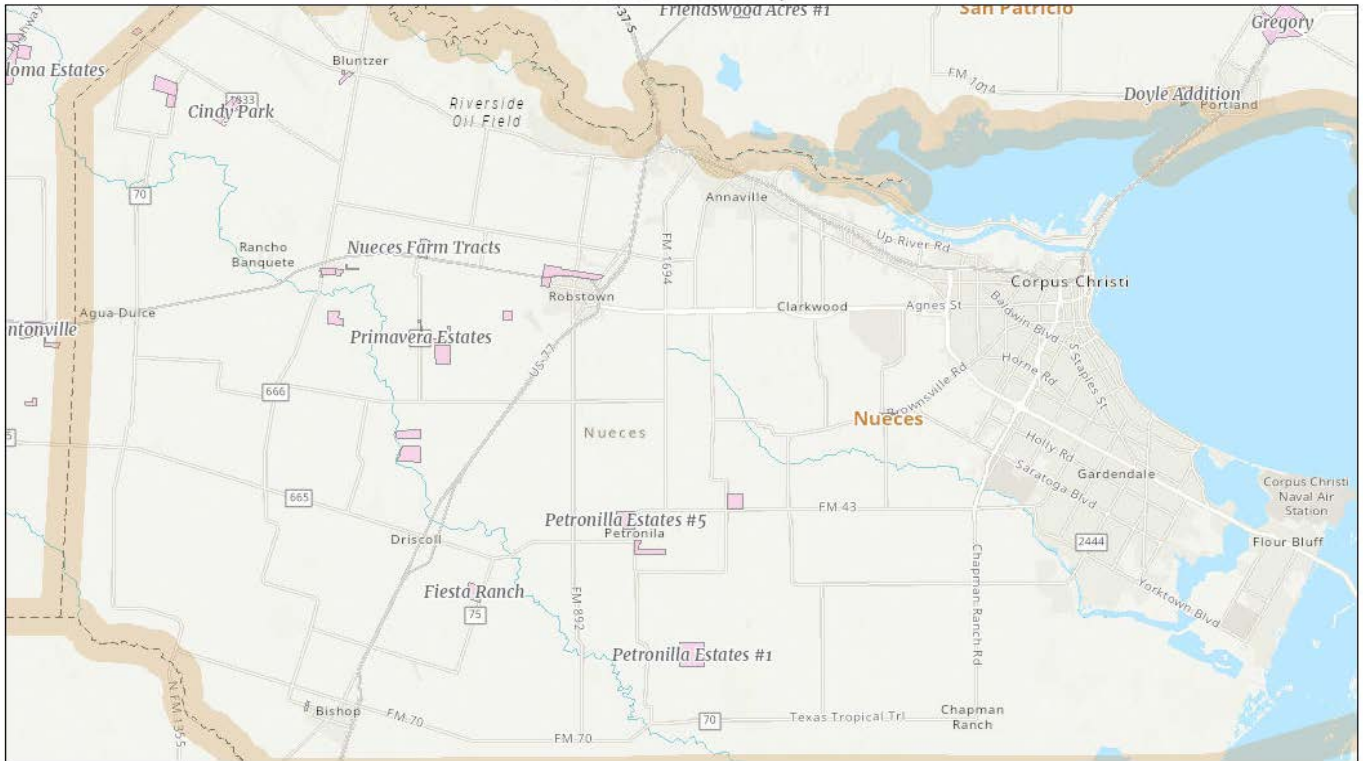
**Leverage additional resources:** CBBEP has a strong history of leveraging and supporting program implementation with additional federal and non-federal resources. The proposed project will leverage \$373,200 in BIL funds from the EPA that are being administered by TCEQ through their 604b Program.

**Project Deliverables/Schedule:**

Execute Contract .....	02/28/2023
Feasibility Study Report .....	10/31/2023
Progress Reports .....	semi-annually
Draft Final Report .....	12/31/2023
Final Report .....	01/31/2024

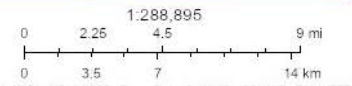
**Project Budget:**

BIL Funds	\$ 26,800
<u>TCEQ 604b/BIL</u>	<u>\$373,200</u> (pending)
<b>TOTAL</b>	<b>\$400,000</b>



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Colonias



## TASK 2 - PROJECT MANAGEMENT

To support the administration and management of BIL-funded projects, CBBEP will utilize \$138,372 of BIL funds to support salary and fringe for a project management position. The Project Manager will provide organizational and logistical support BIL-funded projects and will ensure that all tasks and deliverables are completed.

FY 2022/2023 BIL Funds: \$138,372

Completion date: 01/31/2028

## COMPETENCY STATEMENT

Competency for generating environmental measurement data under US EPA (Agency) funded assistance is demonstrated at the Coastal Bend Bays & Estuaries Program through the maintenance of quality assurance project plans for data collection activities that involve water quality monitoring and other environmental measurements, and through the approved Quality Management Plan that provides descriptions of the quality policies, including all requirements described in EPA QA/R-2.

## SUMMARY

The CBBEP has been working on implementing the *Coastal Bend Bays Plan* for over 24 years, successfully completing projects that restore the water quality and ecological integrity of the Coastal Bend region. The *Coastal Bend Bays Plan* has provided a strong, structured framework for the delivery of investments, and CBBEP's collaborative, locally driven approach has over time generated large returns on each federal dollar invested, delivering habitat protection and restoration and water quality enhancement projects. The FY 2022 and FY2023 BIL funds will accelerate and enhance CBBEP's ability to implement actions identified in the *Coastal Bend Bays Plan, 2nd Ed.* These BIL funds will also allow CBBEP to develop and strengthen partnerships necessary to make the most effective use of these new funds.

This FY 2022/2023 Annual Work Plan describes several implementation projects, as well as project management support, that will be undertaken pending approval and receipt of BIL funds. All work under this Cooperative Agreement is scheduled for completion by January 31, 2028. Of the total funds identified in the Work Plan budget, \$1,819,600 is new FY 2022/2023 BIL funding, and \$7,356,000 is leveraged funds from other funding sources to be provided by the CBBEP (\$2,576,764 confirmed; \$4,779,236 pending). Detailed budget information can be found in the following tables.

**TABLE 1: FY 2022/2023 BIL Annual Work Plan Milestone Summary and Schedule****PERIOD OF PERFORMANCE: February 1, 2023 – January 31, 2028**

<b>TASK 1 - PROJECT IMPLEMENTATION</b>	
<b>Project #2313 Tern Island Protection and Restoration, Phase II</b>	
Execute Contract	02/01/2023
Preliminary Engineering/Design	11/31/2023
Permit and Lease	11/31/2024
Final Engineering/Design	11/31/2024
Bid Documents	06/30/2025
Construction	06/30/2026
Monitoring	09/30/2026
Progress Reports	semi-annually
Draft Final Report	12/30/2026
Final Report	01/31/2027
<b>Project #2335 Copano Bay Shoreline Protection and Restoration, Phase I</b>	
Execute Contract	02/28/2023
Data Collection	10/31/2023
Site Visit	10/31/2023
Stakeholder Meetings	09/30/2024
Feasibility Study and Alternatives Analysis	09/30/2024
Progress Reports	semi-annually
Draft Final Report	12/31/2024
Final Report	01/31/2025
<b>Project #2336 OSSF Assistance Program, Phase I</b>	
Execute Contract	02/28/2023
OSSFs inspected, repaired, and/or replaced	09/30/2025
Progress Reports	semi-annually
Draft Final Report	12/31/2025
Final Report	01/31/2026
<b>Project #2337 Training Program for Wastewater Operators in the Baffin Bay Watershed</b>	
Execute Contract	02/28/2023
Site Visits and Operations Assessments	twice-monthly, Mar 2023 - Mar 2025
Progress Reports	semi-annually
Draft Final Report	12/31/2025
Final Report	01/31/2026
<b>Project #2338 Access Improvements and Trail Development at the Held-Moran Sanctuary</b>	
Off-street Parking Lot	09/30/2024
Half-mile Loop Trail	09/30/2024
Repaired/Replaced Bollard and Cable System	09/30/2024
Progress Reports	semi-annually
Draft Final Report	12/31/2024
Final Report	01/31/2025

<b>Project #2339 Aransas Bay Bird Island Restoration, Phase II</b>	
Execute Contract	03/31/2023
Final Engineering/Design	12/31/2024
Bid Documents	06/30/2025
Construction	01/31/2026
Monitoring	08/31/2026
Progress Reports	semi-annually
Draft Final Report	12/30/2026
Final Report	01/31/2027
<b>Project #2340 Town of Bayside Shoreline Protection and Public Access, Phase II</b>	
Execute Contract	02/28/2023
Data Collection	11/30/2023
Site Visit	11/30/2023
Stakeholder Meetings	03/31/2024
Preliminary Engineering and Design	03/31/2024
Progress Reports	semi-annually
Draft Final Report	12/31/2024
Final Report	01/31/2025
<b>Project #2341 CBBEP Climate Change Risk-based Adaptation Plan and Equity Strategy</b>	
Execute Contract	02/28/2023
Data Collection	10/31/2023
Stakeholder Meetings	09/30/2023
Risk-based Adaptation Plan	05/30/2024
Equity Strategy	05/30/2023
Progress Reports	semi-annually
Draft Final Report	07/31/2024
Final Report	08/31/2024
<b>Project #2342 Coastal Bend Regional Wastewater Treatment Facility Feasibility Study</b>	
Execute Contract	02/28/2023
Feasibility Study Report	10/31/2023
Progress Reports	semi-annually
Draft Final Report	12/31/2023
Final Report	01/31/2024
<b>TASK 2 - Project Management</b>	
Project Management	01/31/2028



**TABLE 2: FY 2022/2023 BIL Annual Work Plan Project Funding Summary**

TASK	BIL 2022/2023	OTHER FUNDS		TOTAL
<i>Task 1 - Project Implementation</i>				
2313 - Tern Island Protection and Restoration, Phase II	\$118,108	\$2,573,164	TGLO	\$2,691,272
2335 - Copano Bay Shoreline Protection and Restoration, Phase I	\$235,000	--	--	\$235,000
2336 - OSSF Assistance Program, Phase I	\$512,356	--	--	\$512,356
2337 - Training Program for Wastewater Operators in the Baffin Bay Watershed	\$250,000	--	--	\$250,000
2338 - Access Improvements and Trail Development at the Held-Moran Sanctuary	\$30,000	\$3,600	Audubon Outdoor Club	\$33,600
2339 - Aransas Bay Bird Island Restoration, Phase II	\$243,964	\$4,406,036*	NERRS IIIA; TGLO	\$4,650,000
2340 - Town of Bayside Shoreline Protection and Public Access, Phase I	\$190,000	--	--	\$190,000
2341 - CBBEP Climate Change Risk-based Adaptation Plan and Equity Strategy	\$75,000	--	--	\$75,000
2342 - Coastal Bend Regional Wastewater Treatment Facility Feasibility Study	\$26,800	\$373,200*	TCEQ 604b (IIJA)	\$400,000
<i>Task 2 - Project Management</i>				
	\$138,372	--	--	\$138,372
<b>TOTAL</b>	<b>\$1,819,600</b>	<b>\$7,356,000</b>		<b>\$9,175,600</b>

\* Indicates funds are pending grant approval.

