



Living on the Edge
Protecting Our Bays and Estuaries

Coastal Bend Bays & Estuaries Program

FY 2012 Comprehensive Annual Work Plan

Coastal Bend Bays & Estuaries Program, Inc.
1305 N. Shoreline Blvd., Suite 205
Corpus Christi, TX 78401

www.cbbep.org

Approved September 2011

Go with the flow...
Log on cbbep.org

COASTAL BEND BAYS & ESTUARIES PROGRAM

FY 2012 Comprehensive Annual Work Plan

TABLE OF CONTENTS

I.	Introduction.....	1
II.	Starting Date	2
III.	Federal & State Program Coordinators and Project Officers	2
IV.	Accomplishments to Date.....	3
V.	Goals for FY 2012	3
VI.	Implementation of Projects	3
VII.	Project Deliverables/Schedule	3
VIII.	Program Administration.....	38
IX.	Project Management & Implementation.....	38
X.	Program Expenses	38
XI.	Working Capital	39
XII.	Summary	39
	Table 1: FY 2012 Comprehensive Annual Work Plan Outline	40

I. Introduction

History

In its 1987 reauthorization of the Water Quality Act, the U.S. Congress established the National Estuary Program (NEP) to promote long-term planning and management of nationally significant estuaries threatened by pollution, development, or overuse. The Administrator of the Environmental Protection Agency (EPA) was given authority to convene Management Conferences and to award Federal financial assistance grants to approved state programs for the purpose of developing and implementing a CCMP. The Act defines criteria by which Management Conferences are charged with balancing the conflicting uses in target estuaries, while restoring or maintaining their natural character.

The Coastal Bend Bays & Estuaries Program (formerly the Corpus Christi Bay National Estuary Program) was formally established in October 1992 with committee meetings beginning in late 1993. The CBBEP was one of the first NEPs to use a streamlined approach to the development of a CCMP. The goal of the CBBEP to complete a Preliminary CCMP within 12 to 18 months (from 09/01/94) and a Final CCMP in approximately four years (by September 1998) was achieved.

A State-EPA Management Conference Agreement detailing this and other specific outputs of the four-year program was signed in May 1994 by the Regional Administrator of the EPA and the Chairman of the State-lead agency for the Program, the Texas Natural Resource Conservation Commission (now the Texas Commission on Environmental Quality - TCEQ). The Program Office had been established as a program of the TNRCC since December 1993. In 1999, CBBEP became a non-profit organization to lead implementation.

CBBEP Operations

The 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 Texas 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 Priority Issues for the CBBEP are:

- Alteration of Freshwater Inflow into Bays and Estuaries
- Condition of Living Resources
- Loss of Wetlands and Estuarine Habitats
- Degradation of Water Quality
- Altered Estuarine Circulation
- Bay Debris
- Selected Public Health Issues

The *Coastal Bend Bays Plan* has been developed to address each of these priority issues under the following categories of action plans: Human Uses; Maritime Commerce and Dredging; Habitat and Living Resources; Water and Sediment Quality; Freshwater Resources; and Public Education and Outreach. The projects selected for implementation reflect a combination of priority and readiness or feasibility for implementation. Implementing Partners for other actions

of the *Bays Plan* will likewise be called upon to begin and continue to implement their own portions of the *Plan*. The role of Program staff is multi-faceted, but will include at a minimum the following tasks: (1) acquire, manage, and disperse funds to implement the *Bays Plan*; (2) develop and implement partnership projects with local governments, state and federal agencies, and private organizations; (3) monitor, track, and report on implementation performance by implementing partners, and work to maintain implementation commitments; and (4) coordinate the environmental monitoring and assessment of Plan implementation effectiveness.

Work Plan Development

The FY 2012 Comprehensive Work Plan will allow the CBBEP to continue the implementation of the *Coastal Bend Bays Plan*. This Work Plan describes implementation projects and administrative support that will be undertaken pending approval and receipt of funds by the funding entities.

All data and information produced under the auspices of the CBBEP will adhere to standardized formats and be made publicly accessible. A public participation strategy, refined under the 'public education and outreach' chapter of the *Bays Plan*, will continue to guide public participation efforts in Comprehensive Conservation and Management Plan (CCMP) implementation. The list of Priority Issues, refined through public input and characterization projects will continue to serve as the focus for implementation.

II. Starting Date

The starting date for this FY 2012 Comprehensive Work Plan will be September 1, 2011.

III. Federal and State Program Coordinators and Project Officers

Federal

Mr. Doug Jacobson
CBBEP Program Coordinator
U.S. EPA Region 6
Marine and Wetlands Section (6WQ-EM)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Ms. Betty Ashley
CBBEP Project Officer
U.S. EPA Region 6
Office of State & Tribal Program Section (6WQ-AT)
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

State

Mr. Jeff Foster
CBBEP Program Coordinator
Texas Commission for Environmental Quality
NRC Bldg, #3300
6300 Ocean Dr.
Corpus Christi, TX 78412

IV. Accomplishments To Date

The CBBEP achieved its primary goal for FY 2011, which was to continue the successful initiation and completion of projects developed to implement the *Coastal Bend Bays Plan*. The Program and its partners achieved programmatic progress on 94 percent of CCMP actions. Action-specific environmental progress directly attributed to CBBEP activities has resulted in thousands of acres of restored or protected habitat. The Program's success in leveraging funds for CBBEP projects has also been noteworthy. Broad support for the Program's activities is evidenced by the range of contributors, including local governments, industries, NGOs and state and federal agencies. The CBBEP Management Conference has not made any changes in the priorities as listed in the CCMP.

All project deliverables identified during the FY 1999 through FY 2006 implementation years have been completed. FY 2007, FY 2008 and FY 2009 projects are expected to be completed by June 30, 2012. FY 2010 projects are expected to be completed by August 31, 2012, and FY 2012 projects are expected to be completed by August 31, 2013.

V. Goals for FY 2012

The overarching goal for FY 2012 is to continue the successful implementation of the *Coastal Bend Bays Plan*. CBBEP Implementation Teams continue to identify, initiate and select project ideas for inclusion in the Program work plans. The teams are: Habitat & Living Resources, Human Uses Team; Maritime Commerce and Dredging Team; Water & Sediment Quality Team; and Environmental Education & Outreach Team. The CBBEP Coordination Team, consisting of all the chairs of the Implementation Teams and key members of the Conference, coordinates the annual work plan recommendations to the CBBEP Board of Directors, and reviews and proposes update recommendations to the *Bays Plan*.

VI. Implementation of Projects

Project activities for FY 2012 have been selected for their contribution towards implementation of the *Coastal Bend Bays Plan*. Thirty-one projects will be implemented in FY 2012. A comprehensive list of projects outlining project numbers, titles, action items, performing party(s), and budget can be found in Table 1: FY 2012 Comprehensive Annual Work Plan Outline. This list represents the combined efforts of the many volunteers who have donated their time and expertise to help assure the successful implementation of the *Coastal Bend Bays Plan*.

VII. Project Deliverables/Schedule

Specific project deliverables and schedules for completion are to be negotiated with the sub-contractor of the project and will be included in the scope of work of the project contract. The project contract and any amendments will be subject to review by funding entities and are incorporated into this annual work plan by reference.

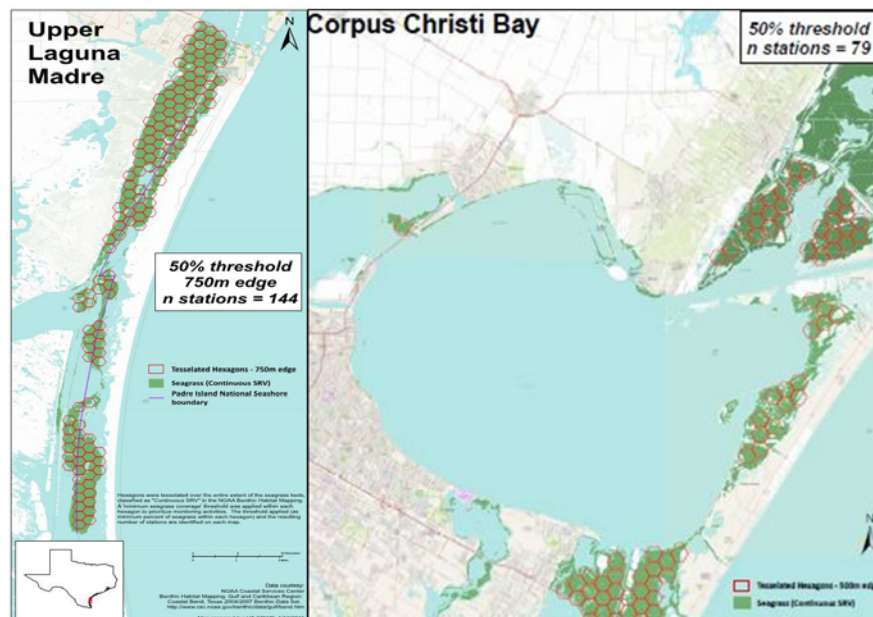
Performing Organization: University of Texas Marine Science Institute
Total Project Funding: \$35,000
CBBEP Bays Plan Actions: WSQ-4, WSQ-5

Background:

The purpose of this project is to support the Seagrass Monitoring Program (SMP) for monitoring Corpus Christi Bay and the Upper Laguna Madre seagrasses in order to establish the quantitative relationships between physical and biotic parameters that ultimately control seagrass condition, distribution, and persistence.

UTMSI has initiated the SMP (<http://texasseagrass.org/Maps.html>), an initiative funded by Coastal Bend Bays & Estuaries Program (CBBEP) and completed by the University of Texas Marine Science Institute (UTMSI) and Texas State in September 2010, in two Coastal Bend areas: on the back side of the Padre Island National Seashore (PINS) and within the boundaries of the Mission Aransas- National Estuarine Research Reserve (MA-NERR). PINS is funding the SMP work along PINS and the MA-NERR is funding the work within their boundary in the northern part of the Coastal Bend. Corpus Christi Bay and parts of the Upper Laguna Madre are currently not being considered for monitoring due to lack of funding. This project would close a gap on data collection and create a full picture of seagrass health in the Coastal Bend from the land cut in the Upper Laguna Madre up to the south end of San Antonio Bay. Sampling will be conducted in late summer to early fall. All protocols and methodologies will be under the direction of a Quality Assurance Project Plan.

Water quality and other parameters to be sampled at a minimum include: light attenuation, turbidity, depth, water temp, salinity, DO, TSS, Chl a, seagrass species composition, epiphyte density, and percent cover.



Areas to be sampled: Upper Laguna Madre west of ICWW and Corpus Christi Bay.

Project Objective:

Monitor seagrass/water quality in Corpus Christi Bay and the Upper Laguna Madre to support the SMP and possible creation of water quality criteria for seagrass beds.

Performing Organization: Conrad Blucher Institute
Total Project Funding: \$61,000
CBBEP Bays Plan Actions: FW-1, FW-2, FW-3, FW-4

Background:

The purpose of this project is for the Conrad Blucher Institute for Surveying and Science (CBI) at Texas A&M - Corpus Christi (TAMU-CC) to maintain 4 current salinity monitoring stations along Rincon Bayou for another year in order to characterize freshwater inflows into the Nueces Delta; maintain the real time data collection weather station, and the maintenance of the Nueces Bay tide gauge. CBI will move equipment from NUDE1 to NUDE2. Additional salinity sensors will be installed and maintained by the Center for Coastal Studies (CCS) TAMU-CC, for up to 3 pumping events into the Delta, with up to 6 sensors deployed per event at various locations within the lower Delta.

Normally, a river flows through a delta area prior to making its confluence with its receiving water body. The Nueces River is different in that it flows into Nueces Bay at a point along the south shore of the bay, 2 ½ to 3 miles from the delta-bay interface, completely bypassing the delta. Only during times of severe flooding, causing over-banking of the river, or locally heavy rain, did much freshwater make it into the delta proper.

To provide more freshwater diversions during normal flow conditions, the City of Corpus Christi has had a pipeline and pump station built to divert up to the first 3000 AF of pass-throughs per month from above the saltwater barrier dam directly into the upper Rincon Bayou.

The primary project objectives will be to continue monitoring the freshwater inflows coming into the delta via the pipeline by recording salinities within the water column at various stations along the Rincon Bayou, maintain a real-time weather station and a tide gauge in Nueces Bay. These instruments will be used to calculate spatial and temporal environmental effects as well as the amount of freshwater needed to manage a healthier estuary.

Project Objective:

Maintain real time and mobile water quality and meteorological monitoring stations in the Nueces Delta and Bay to measure effects of Rincon Pipeline freshwater inflows.

Performing Organization: CBBEP
Total Project Funding: \$135,000
CBBEP Bays Plan Action Items: HLR-1, HLR-4

Background:

The *Living Resources Characterization Report* prepared for the CBBEP documented the declining populations of certain colonial waterbird populations. Some species of colonial waterbird have experienced a 90% reduction in breeding pairs since the 1960's. Colonial waterbird populations are indicators of the overall health of the estuary. Bird watching, especially viewing colonial waterbirds, is an important and growing component of ecotourism and the local economy.

Building on the efforts of the CBBEP Colonial Waterbird projects in previous years, this project will continue the implementation of specific management actions of the *CBBEP Colonial Waterbird Rookery Island Management Plan*. Additionally, efforts to protect other imperiled coastal bird species will be made. Management actions will include efforts to reduce human-disturbance, nesting substrate management, vegetation management to enhance rookery island habitat, and predator control where necessary. Outreach will continue to be a crucial component in achieving project objectives.

Objectives:

- Continue efforts towards the enhancement and construction of nesting habitat.
- Continue to promote public programs to protect colonial waterbirds.
- Assist in efforts to note fluctuations of colonial waterbird populations for management purposes.
- Install signage to reduce impacts of human disturbance on waterbird colonies.
- Implement predator control efforts.

Performing Organization: CBBEP
Total Project Funding: \$160,000
CBBEP Bays Plan Actions: PEO 3, PEO 5

Background:

Learning on the Edge began as a partnership that focuses on equipping teachers with the skills, curriculum, support and materials to strengthen science teaching as it relates to the environmental treasures of Texas Coastal Bend.

The Coastal Bend Bays & Estuaries Program's Environmental Educator will provide field trip opportunities for teachers and students to visit the Nueces Delta Preserve. The co-curricular trip is to be organized by the teacher, with assistance from the Environmental Educator, to create an educational TEKS-aligned agenda for outdoor education. This program sees over 6,000 students a year.

The Environmental Educator will facilitate workshops throughout the school year as an extension of Learning on the Edge. These workshops will address local environmental science topics and will align to the TEKS objectives. Hands-on learning in the field will dominate and field work correlation to the classroom will follow the outdoor learning experience. Participating teachers will receive CPE credits.

The Environmental Educator will facilitate three summer workshops designed for teachers to address local environmental science topics. Participants will enhance their science knowledge through direct instruction, hands-on learning, field excursions, and TEKS-aligned lesson presentations. As a State Board for Educator Certification (SBEC) continuing professional education (CPE) provider, teachers will receive CPE credits as well as Texas Environmental Education Advisory Committee (TEEAC) credits.

Objective:

Coastal Bend Bays & Estuaries Program partners will facilitate and perform a portion of teaching during the week long teacher academy. The teachers will receive all information provided by these partners, a curricula guide from CBBEP, and equipment for the classroom. The workshops will be small scale educational seminars with equipment provided. The CBBEP will provide fieldtrips for classrooms to come to the Nueces Delta Preserve.

Performing Organization: TBD
Section 104(b)3 Funding: \$15,000
CBBEP Bays Plan Actions: HLR-2, PEO-3, BTR-2

Background:

The San Antonio Bay System, located at the terminus of the San Antonio River and the Guadalupe River watershed (approx. 53,100 km²), is one of the seven major estuaries along the Texas coast. This large (531 km²) estuarine complex is extremely unique in that wetlands associated with large portions of the surrounding shoreline provides critical habitat for the last wild flock of the endangered Whooping Crane (*Grus americana*). The protection, restoration and enhancement of wetlands within the San Antonio Bay System has assumed a high priority as factors such as diminished freshwater inflow and hydraulic modifications within wetland areas have affected habitat quality within the historic wintering grounds for this iconic bird species. San Antonio Bay also supports important commercial (oysters and shrimp) and recreational fisheries, which depend on surrounding wetlands for maintaining water quality and providing nursery grounds for fish and shellfish.

A preliminary inventory of potential wetlands projects was developed in 2011 with sites aimed at wetland protection, restoration, and enhancement within the San Antonio Bay System. The sites were mapped and accessible on Google Earth.

Objective:

Expand the existing preliminary inventory of potential wetlands projects within the San Antonio Bay System.

Performing Organization: Harte Research Institute
Total Project Funding: \$40,000
CBBEP Bays Plan Actions: WSQ-3, WSQ-4, WSQ-5

Background:

The purpose of Phase II is to analyze data that was mined for the development of the Phase I modern data archiving and delivery system for the CBBEP area. Phase I consisted of placing existing status and trends data in a modern data base, updating the existing status and trends data base, and constructing web services to make data available for the CBBEP area. The end product of phase II will be identification of areas with parameters that are trending higher, lower, or exceeding standards, and discuss specific parameter trends linked to major TMDL area issues in the Coastal Bend that are being analyzed. This project will provide analyses of historical data from the Coastal Bend that were collected mainly by USGS, TGLO, TCEQ, EPA, CBBEP, TAMU-CC, and UTMSI.

The original status and trends report for the Coastal Bend area was completed more than 14 years ago (Ward and Armstrong 1997), and included analyses of data through December 1994. This status and trends project is split into two projects: one to assemble and organize the data base, and one to perform analyses and write the report. This kind of project can require multiple years of effort, and each time the data base has to be re-invented unless permanent data archives exist. Much change has occurred since 1997 in the world of data management, especially with respect to developing access to data over the internet using web services. Therefore, scientists are currently in a position to finally address the data management recommendations made in the 1997 report.

Recently the entire Rincon Bayou and Corpus Christi Bay hypoxia data bases were archived using a data base technology called the CUAHSI Observations Data Model (ODM), and made available over the internet by creating CUAHSI Web Services. A similar approach will be used in this project. Follow this link to the recently completed ODM: <http://ccbay.tamucc.edu/dash/>

This project is an outgrowth of existing projects and builds on previous CBBEP projects. The ODM, programming, and web-server infrastructure are paid for by existing multi-million dollar National Science Foundation projects to electronically publish water data.

PHASE I (FY2011) \$50K- *In Progress*

- Put the existing status and trends data in a modern data base.
- Update the existing status and trends data base.
- Enhance existing web services to make the new data available.
- Put all data collected at end of Phase 1 on a hard drive.

PHASE II (FY2012) \$40K

- Choose specific parameters to focus on.
- Discuss specific parameter trends linked to major TMDL area issues.
- Analyze data and develop management recommendations and on future work.

Objective:

A final report that will identify areas with parameters that are trending higher, lower, or exceeding standards, and discuss specific parameter trends linked to major TMDL area issues in the Coastal Bend.

Performing Organization:	Nueces County
Total Project Funding (CBBEP):	\$25,000
County Provided Match:	\$46,500 (Skilled Labor)
CBBEP Bays Plan Actions:	BTR-2, BD-1, BTR-3, HLR-1, HLR-2, WSQ-1

Background:

Hazel Bazemore Park is a 77.6 acre outdoor recreation and nature park along the Nueces River near Calallen. The park is a mixed-use outdoor recreational area that includes picnic and playground areas, fishing, the award winning “Hawk Watch Tower and Pavilion”, two birding blinds overlooking a wetland marsh and pond, and the Louis Kimmel Woodland Trail. Although the park allows walking and biking along the Nueces River and more active fishing and boat access areas, the project will provide managed public access and ADA accessibility to the undeveloped bottomland habitat managed as a nature preserve. There are several existing information kiosks that also can be improved with more weather resistant interpretive information.

Nueces County is proposing an addition to the nature preserve and public access/eco-tourism opportunities at Hazel Bazemore Park through development of the Nueces River Bottomland Nature Area. The addition, the bottomland and riparian parklands will help further protect, restore, and enhance this unique Nueces River habitat while promoting outdoor recreation and increased public awareness of the ecological value of bottomland habitat. The initial phase of this park expansion is proposed to involve this funding request from the CBBEP with a key focus on the first phase of park improvements including addition of ADA accessible park features, interpretive areas with timber bridges, observation blinds, and overlook pavilion. Phase 2 would include additional park improvements along an existing trailhead and the development of additional wetlands and a riparian bottomland habitat trail. In addition, the County is developing a more long term Master Plan of improvements and a phased expansion that could involve doubling the size of Hazel Bazemore Park. The County has received funds from the Coastal Impact Assistance Program which will be used for park improvements.

This project will involve a public and ADA accessible trail access for individuals seeking an outdoor recreation experience to the riparian preserve areas within the initial 30 acres of expanded park boundary. A small ADA accessible parking area, timber bridge crossing, 600 ft. timber boardwalk and observation blind to the new preserve bottomlands, habitat interpretive areas, and cleanup of concrete debris along the drainage ditch at the location of the proposed timber bridge crossing. The Nueces River Bottomland Nature Area will highlight the importance of the living resources within three (3) habitat areas: riparian wetlands marsh, bottomland forested riparian zone, and habitat enhancement pond. Approximately 30 acres of adjacent property will be added to the Hazel Bazemore Park as “parkland” during the initial phases of park expansion. The new Nueces River Bottomland Nature Area will be a compatible outdoor recreational resource separate from the existing fishing and sports/picnic areas. The new Bottomland “Nature Access” will highlight the management of the parkland as a “nature preserve” with birding/naturalist components to compliment the nationally known Hawk Watch Tower and Pavilion and other existing and future park facilities. Interpretive areas will be developed to include information on protection and restoration of bottomland habitat. Informational signage and posters including identification of living resources within the bottomland hardwood and wetlands complex will be developed.

Objectives:

Because this project was only partially funded, only some of the following objectives will be completed.

- Expand Hazel Bazemore Park through transfer of added County land to the Nueces County Parks and incorporate the proposed Nueces River Bottomland Nature Area into a nature preserve public access features.
- Construct a nature trail to allow public access along the Nueces River bottomlands including a timber foot bridge, 600 ft. of crushed limestone path, observation overlook, 300 ft. of elevated

boardwalk, 10 vehicle parking area with ADA accessible aisle, and establish a preserve in the park bottomlands.

- Create three (3) interpretive areas highlighting the bottomland riparian habitat area identifying marsh, bottomland woodlands, and pond/wetland enhancement. Design and install interpretive signage at each area outlining habitat features, habitat protection and restoration, and benefits of riparian habitat to coastal natural resources including the Nueces Delta Region.
- Promote public and visitor awareness of bottomlands and riparian habitat as well as protection and restoration through information kiosks and posters.
- Increase and improve outdoor recreational opportunities involving nature interpretation, birding, and the relationship of bottomland riparian habitat to the ecology of the Nueces River, estuary, and bay.
- Develop a Management Plan that maintains the ecological and compatible public access values of the park and nature preserve components. Utilize stakeholder and agency coordination with regard to the need, size, and configuration of the proposed pond and other wetlands/bottomland habitat restoration and enhancement components of the Master Plan.
- Provide debris cleanup for the removal of the concrete debris from the drainage area that intersects with the Nueces River (site of the timber bridge walkway).
- Establish a new regional ADA accessible eco-tourism opportunity in the outlying Nueces County region.

Performing Organization: **CBBEP**
Total Funding: **\$5,000**
CBBEP Bays Plan Actions: **BD-1**

Background:

Bay debris poses public health risks and reduces the aesthetic appeal of the bay system. It can degrade habitats, snare aquatic and wildlife species. These impacts result in costs: to the shrimper who tears his net by hanging up on debris; to the windsurfer who steps on a broken bottle; to the tourist industry when hotel rooms are unfilled because potential visitors would rather visit cleaner beaches; and to agencies and organizations who devote thousands of hours to cleaning the beaches along the bays.

Debris clean-up along the shoreline is a continual challenge along the Texas Coastal Areas. Every year, numerous clean-up events are coordinated and hundreds of tons of debris are collected and disposed. During certain periods of the year, heavy visitation by tourists results in overflowing garbage receptacles causing debris to be spread over large areas. Additionally, frustrated beach goers leave debris behind, not willing to transport it with them to their lodging site. Since prevention is generally more cost-effective than clean-up, CBBEP will approach this issue by strategically placing large garbage receptacles by request and in areas of high use to prevent debris from being mismanaged and ending up along the bay shorelines.

The CBBEP will also make dumpster service available upon request for Coastal Cleanups. The CBBEP will determine which cleanups to provide dumpsters to based on the amount of project funding available.

Objectives:

- To reduce the amount of debris along coastal roadsides and shorelines by the placement of large garbage receptacles in strategic locations during high traffic weekends. (for example Memorial Day, Fourth of July, and Labor Day.)
- The CBBEP will also make dumpster service available upon request for Coastal Cleanups. Some examples of possible partners are the City of Corpus Christi Spring Break cleanup, TGLO Adopt a Beach, and other organized coastal clean ups. The CBBEP will determine which cleanups to provide dumpsters based on the amount of project funding available.

Performing Organization: Nueces County
Total Project Funding: \$15,000
CBBEP Bays Plan Actions: BTR-1, BTR-2, HLR-1

Background:

A sand boat ramp at Wilsons' Cut Channel, heavily used by the public, has provided access to remote areas of Corpus Christi Bay for over 40 years. The boat ramp and launch area has been used by fishermen, boaters, duck hunters and federal resource agencies allowing access to back bay areas on the bay side of Mustang Island and eastern shores at Corpus Christi Bay. The Wilsons' Cut boat launch is 8 miles south of the City of Port Aransas, and 12 miles north of Packery Channel and is the only boat launch area in this remote area of Mustang Island. Coastal resource management agencies such as the General Land Office (GLO) and CBBEP, as well as TPWD/USFWS game management/wardens use the ramp to access the Shamrock Island Nature Preserve and other coastal natural resource management areas.

The Wilsons' Cut boat launch area property is privately owned and the property owner is proposing to restrict any further public access and use of the area. The property owner is planning to develop the area as a private waterfront residential and marina area and a U.S. Army Corps of Engineers permit is currently being processed. There is significant public concern regarding the need for a new public boat launch in the general area to replace the Wilsons' Cut boat launch.

The CBBEP is a property owner of a tract of approximately ¼ miles due south of the boat ramp which may allow a new access route to Wilsons' Cut. The CBBEP and City of Corpus Christi have an agreement regarding the tract of property owned by CBBEP and are involved with Nueces County and area fishing conservation groups who have showed interest in investigating the feasibility of a new public access area to Wilsons' Cut.

In addition to the CBBEP/City of Corpus Christi property there are oil/gas industry roads that access production facilities along Wilsons' Cut that involve easements with the Texas General Land Office. These oil/gas service roads could provide potential access to a new public boat launch area. The feasibility of a new public access road "route" and boat launch site would involve CBBEP/property and oil/gas service road easement, as well as a possible coastal lease with the GLO and a permit from the U.S. Army Corps of Engineers for the actual construction of a boat launch.

The primary factors influencing the feasibility of a new road and boat launch site involves the interest/willingness of the property owners (CBBEP, City, GLO, developer) to allow use of their property as well as issues involving the oil/gas service road/facilities and related easements. The new road access may involve new road segment options involving the CBBEP/City property in combination with the existing oil/gas facility service road, as well as a Coastal Lease with the GLO and a U.S. Army Corps of Engineers permit for the boat launch site at the Wilsons' Cut. There are also road access routes/segments on the CBBEP/City property that potentially involve possible avoidance/minimization of USACE jurisdictional wetlands.

Objectives:

- Coordinate with landowner interest including CBBEP, City of Corpus Christi, and GLO to assess interest/willingness in the new road access and boat launch including alternative and preferred routes/sites.
- Assist facility stakeholder group participation and planning including three (3) meetings during the Feasibility Study.
- Perform a constraint and opportunities assessment including preparation of a constraint map with alternative routes and boat launch sites.

- Prepare a USACE permitting and GLO coastal lease analysis to identify permits that may be required including preliminary jurisdiction wetlands review of the road routes and boat launch sites.
- Identify alternative and preferred access road routes and boat launch sites based on the landowner coordination and review of constraints, opportunities and permitting analysis.
- Identify funding opportunities and strategies.
- Prepare a final Feasibility Review Report including findings and results of landowners and stakeholders coordination including recommendations regarding feasibility with continued development, funding and permitting on a new Wilsons' Cut Channel Access Road and Boat Launch.

Performing Organization: CBBEP
Total Project Funding: \$25,000
CBBEP Bays Plan Actions: PEO 3, PEO 5

Background:

Classroom teachers today face an almost overwhelming challenge of helping students progress through the required subject material. Many of the students that are being exposed to scientific concepts for the first time have never really spent much time outdoors or in dedicated environmental education facilities. There is a need to bring classroom concepts alive in the proper setting through fieldtrips.

The Coastal Bend Bays & Estuaries Program will conduct environmental education leaning experiences for students and their teachers. The funding is intended to support the education trip in its entirety, including associated educational materials, and the necessary and reasonable costs associated with transporting the teacher and students from the school to the destination.

Getting students out of the classroom and into the outdoors adds greatly to the students understanding of natural processes. The goal is to plant seeds of appreciation and passion for a new generation of naturalists, biologists, and nature lovers to protect and preserve the Coastal Bend through educating school children about preserving our environment and protecting our animals and plant life.

Objective:

Coastal Bend Bays & Estuaries Program's Environmental Educator and partners will organize and conduct fieldtrips for students throughout the Coastal Bend.

Performing Organization: CBBEP
Total Project Funding: \$5,000
CBBEP Bays Plan Actions: PEO 3, PEO 5

Background:

Learning on the Edge is an exceptional partnership that focuses on equipping teachers with the skills, curriculum, support and materials to strengthen science teaching as it relates to the environmental treasures of Texas Coastal Bend. The Coastal Bend Bays & Estuaries Program's Environmental Educator has noticed that some teachers would like continuing education in Environmental Science. Partnering throughout the year would allow quarterly workshops to introduce environmental issues to teachers who may not be able to spend a full week in the summer at a workshop. It will also allow those teachers who may need more instruction in a specific area of science to continue their education.

Objective:

Coastal Bend Bays & Estuaries Program partners will perform a portion of teaching during the teacher workshop. The teachers will receive a copy of classroom activities from the CBBEP as well as equipment for the classroom. The workshops will be small scale educational seminars with equipment provided.

Performing Organization: CBBEP
Total Project Funding: \$30,000
CBBEP Bays Plan Actions: BTR: 1, PEO 2, PEO 3 & PEO 5

Background:

Public outreach continues to be a key element of the CBBEP to educate Coastal Bend residents about the importance of bays and estuaries to their communities. The CBBEP will utilize local and regional media, which includes television, radio, print, and websites, to implement the goals of the CBBEP Public Outreach Strategy. The priority issues for this media campaign as identified in the *Coastal Bend Bays Plan* are: altered freshwater inflow into bays and estuaries; non-point source pollution; loss of wetlands and estuarine habitats; degradation of water quality; condition of living resources; altered estuarine circulation; public health issues.

Some or all of the priority issues listed above will be considered for public outreach through the media.

Objective:

The goal is to use the media to provide the public with the environmental science knowledge to make sound decisions regarding the effective management of bay resources and to promote environmental stewardship through increasing awareness of the resources and the issues regarding their use.

Performing Organization: Coastal Bend Bays Foundation
Total Project Funding: \$40,000
CBBEP Bays Plan Actions: PEO 1, 2, 3, 4 and 5

Background:

The CBBEP is constantly working to promote public/private partnerships as stated in the *Coastal Bend Bays Plan* to help achieve its educational goals. One of the benefits of the partnership between the CBBEP and the Coastal Bend Bays Foundation (CBBF) is addressing the need for continued dialogue between competing user groups and the need for an engaging public forum to allow for individual input in the public policy debate. The *Bays Plan* calls for continued involvement from CBBF, as the region prepares itself for ever-increasing number of people wanting to make use of the bays and estuaries. Minimizing conflict through informed discussion will help achieve the overall objective of ensuring the public's safety, health and enjoyment of our bays and estuaries.

The CBBEP will work closely with the CBBF on the project objectives outlined below but will not be limited to only those listed. The environmental education and outreach activities will include: monthly Coastal Issues Forums; bay-resource or related workshops; the Adopt-a-Beach program, continuation of the Earth Day celebration held in April; and the coordination of the annual CBBF Conservation and Environmental Stewardship Awards. The CBBEP will be acknowledged as one of the major funding partners at the various events and activities.

CBBEP is the most important funding partner for CBBF programs. The CBBF is a public interest organization (non-profit 501(c)(3)) dedicated to the conservation of freshwater and coastal natural resources through communication, advocacy, research and education.

Objectives:

- Host, organize and coordinate turnkey operation of Earth Day festival.
- Host, organize and coordinate turnkey operation of Adventure Day at Bayfest.
- Host, organize and coordinate CBBF Conservation and Environmental Stewardship Annual Awards Banquet.
- Conduct monthly Coastal Issues Forums to increase communications between resource managers, users and general public.
- Organize and coordinate Adopt-a-Beach cleanups.
- Organize and coordinate bay-resource/related workshops with CBBEP's approval.
- Continue to seek matching funds.

Performing Organization: CBBEP
Total Project Funding: \$30,000
CBBEP Bays Plan Actions: PEO 1, 2, 3, 4 and 5 and BTR 1

Background:

One of the most important goals of the *Bays Plan* is to educate citizens about the ecology of the bay system, its many environmental and economic values, and how an individual can make a positive difference to ensure its long-term health. To accomplish this, the *Public Education and Outreach Action Plan* is designed to raise the public's environmental awareness, foster community stewardship of bay resources; and increase individual involvement in bay resource management issues.

Helping residents and visitors understand the complex issues concerning bay resource management will be a priority. In addition to understanding how the bay system functions, it is important that citizens develop a sound appreciation for the significant value and economic impact derived from the renewable resources of the bays. As a result of the need for the public outreach events and activities, the CBBEP may participate in the following:

- Community events and festivals
- CBBEP educational materials
- CBBEP web site
- CBBEP e-newsletter
- Other outreach opportunities
- National Ocean Science Bowl

Objective:

To provide the general public with the environmental science knowledge to make sound decisions regarding the effective management of bay resources and to promote environmental stewardship through increasing awareness of the resources and the issues regarding their use.

Performing Organization: CBBEP & USFWS
Total Project Funding: \$5,000
CBBEP Bays Plan Actions: PEO-3, PEO-5

Background:

In several discussions with teachers and principals, it has been determined that moving students to learning opportunities (field trips) is becoming more difficult. Buses are expensive and finding personnel to supervise as well as scheduling has become challenging. Field trips at the middle school and junior high level are almost non-existent. One way to solve this problem would be to bring learning opportunities to schools in the form of an outdoor classroom. Outdoor classroom is defined as an outdoor area on campus set aside for student investigation and learning. Components are varied but often include benches or picnic tables adjacent to a study or natural area where students can gain field experience.

Objective:

To provide public schools with the option of an outdoor classroom that will promote interest in science, include community experts, support parent involvement, provide field experience to students, and help to improve scores.

Performing Organization: HDR and To Be Determined
Total Project Funding: \$2,082,000 (plus additional match of \$132,000 required)
CBBEP Bays Plan Action Items: HLR-1, HLR-2

Background:

Nueces Bay Causeway supports the section of U.S. Highway 181 that crosses the mouth of Nueces Bay between Corpus Christi and Portland. Historically, this area consisted of significant amounts of crucial marsh habitat. Approximately 180 acres of marsh habitat was lost to dredging and construction of the causeway in the late 1940s, and approximately 160 acres of marsh has been lost to subsequent erosion. This assessment does not include impacts caused by the construction of the roadway or railroad that existed prior to the 1940s.

Based on a habitat assessment conducted in 2006, the general health of the remaining marsh complex is good, supporting a variety of fisheries (including crucial nursery habitat) and providing foraging and loafing opportunities for migratory colonial waterbirds. Low-marsh communities, dominated by smooth cordgrass (*Spartina alterniflora*), are much more ecologically productive than mid-marsh communities and adjacent uplands. Unfortunately, it is the low-marsh communities that have suffered the greatest loss – to the point where they are no longer the dominant community type in the area.

The marsh complex and adjacent uplands serve as a buffer, protecting U.S. Highway 181 from erosion. The causeway also provides public access for bird watchers, wade-fishers and light watercraft. Currently, public access along the Nueces Bay side of the Nueces Bay Causeway is largely unmanaged, increasing the vulnerability of crucial habitat and adding to the effects of natural erosion.

CBBEP started this effort in FY 2005 with the development of a feasibility assessment and conceptual design. A first phase of restoration (construction) was implemented with FY 2009 and 2010 funds. The requested FY 2012 funds will be combined with FY 2011 funds, which will allow for completion of restoration and related activities for the entire 160-acre project site.

This project's final phase (utilizing combined funding) will 1) restore of a total of 70+ acres of marsh complex, increasing ecological productivity and diversity, 2) construct of a rock revetment against the outer berm (in essence converting it to a rock breakwater) that will provide long-term protection of both the restored marsh and U.S. Highway 181, and 3) construct improvements to managed public access at the site, which will increase user safety and protect adjacent habitat from degradation due to human intrusion.

Objectives:

- Restore 70+ acres of marsh complex.
- Complete construction of a rock revetment against the outer berm.
- Construct improvements to managed public access at the project site.

Performing Organization: HDR and To Be Determined
Total Project Funding: \$ 280,000 (plus additional match of \$70,000 required)
CBBEP Bays Plan Action Items: HLR-1, HLR-2

Background:

The Nueces River's flow has been greatly reduced by the construction of Choke Canyon/Lake Corpus Christi Reservoir System. Under normal flow conditions, the Nueces River flows directly into Nueces Bay and bypasses the deltaic wetlands. Under high flow conditions, resulting from moderate to large floods, a portion of the river discharges into the delta via an old river channel (Rincon Bayou).

Under the terms of a 2001 Agreed Order with Texas Commission on Environmental Quality, the City of Corpus Christi is required to provide freshwater inflows into the Nueces River Delta. Every month, the City must pass-through to the delta an amount of water equal to the measured inflow into the Choke Canyon/Lake Corpus Christi Reservoir System, up to a target amount. In 2009, the City constructed a diversion pipeline to divert flow from the Nueces River (above the tidally influenced segment) into the delta's Rincon Bayou. Waters delivered to the delta eventually find their way into Nueces Bay, providing significant ecological benefits as they pass through the delta's wetlands.

The City commonly passes-through as much as 3,000 acre-feet of water per month via the discharge pipeline. Due to flat terrain of the Nueces Delta and the hydraulic gradient created by water pumped through the pipeline, the majority of the pass-through discharge flows back upstream through Rincon Bayou, returns to the Nueces River, and flows to the bay via the river's main channel – bypassing the delta's wetlands.

Several studies regarding freshwater inflows into the Nueces River Delta can be found on CBBEP's web site, at <http://www.cbbep.org/publicationsFW.html>.

The mouth of the discharge pipeline is located on a 16-acre City-owned tract, for which CBBEP has a management agreement. CBBEP owns and manages approximately 5,400 acres within the delta, surrounding the City-owned tract. The controlled discharge of freshwater onto wetland property owned and managed by CBBEP creates a unique management opportunity. Unfortunately, much of this management potential is lost when pass-through discharge return to the Nueces River.

CBBEP has been awarded \$210,000 from CMP to design and install a freshwater inflow management structure upstream from the discharge pipeline and to implement earth-moving activities as needed to maximize the retention of freshwater inflows in the Nueces Delta. CBBEP must provide non-federal match of \$140,000.

Objectives:

- Design a water control structure to manage freshwater inflows delivered by the City of Corpus Christi diversion pipeline, to be constructed in the vicinity of and upstream from the pipeline's discharge.
- Implement construction of the water control structure, along with any earthwork, roadwork, site preparation, and clean-up activities that are needed in conjunction with the structure.

Performing Organization: To be Determined
Total Project Funding: \$ 55,000
CBBEF Bays Plan Action Items: HLR-1, HLR-2

Background:

Tule Marsh East, located adjacent to State Highway 35, in Rockport, is listed as the Great Texas Coastal Birding Site #50. The site was originally part of extensive wetlands to the east and downstream from Tule Lake, with Tule Creek draining into it. The wetlands acted as a floodwater retention area for Tule Creek drainage from the north and west, along with Long Reach Canal and Canoe Lake farther to the east. The original Tule Lake extended from the north end of this site, went under State Highway 35, and backed north about a mile. It covered about 12 acres and was up to 6 ft deep in the year 1939. When the lake overflowed, water moved into the Tule Marsh East and was retained and only spilled into Little Bay, a secondary bay in the Aransas Bay system, during extreme flood events. The Tule West Lake has subsequently silted in. A TXDOT Roadside Park was placed adjacent to the lake and marsh in 1939.

The Tule West Ditch was later built to carry treated sewer plant effluent and storm water from around County Road 2165 and adjacent development areas to the old Tule Lake site. The Tule East Marsh was drained prior to 1948 into a ditch built from Little Bay. The sea level ditch was extended to the Lake in 1965, draining it, and the east of SH 35 portion of the lake was filled in as part of a subdivision development. The elevation between Tule Ditch East and the marsh site currently prevents ditch (creek and tidal) water from entering the old marsh area except in heavy flood events.

Based on priorities described in *The Tule Creek Master Plan*, Aransas First recently restored 5 acres of upland and marsh and reestablished the native plant demonstration garden in the Roadside park with funds from a Coastal Management Program (CMP) grant, combined with a grant from Aransas County to enhance ecotourism through the restoration and preservation of native habitats typical of the Live Oak Peninsula. The project provided boardwalks, an observation deck/pavilion area, ground granite walking paths, and interpretive signage. It initially involved the clearing and removal of large impenetrable thickets of invasive plants, including thick monotypic stands of non-native invasive plants such as wild bamboo, Brazilian pepper, African potato vine, Japanese honeysuckle, and Chinese tallow. Heavy equipment was used to open up or clear these thickets and upland areas with excess under story (mustang grape, scrub oak, yaupon, brier, and invasive vines) during the process. One of the outcomes of the project was the opening up of marsh habitat by clearing out invasive vegetation and allowing beneficial under story to reemerge. No replanting was needed. Old ponds seen on aerial photos were deepened, and the drained, dry marsh bed had shallow ponds placed in to hold rainwater.

The site now contains a system of “seep ponds” along the upland areas where the vegetation was cleared. Along the upland marsh rim are native trees such as live oak, sweet bay and black willow; and shrubs such as yaupon, coral bean, bayberry, American beautyberry, wax myrtle, and bluestem grasses. The adjacent freshwater wetland areas in the former marsh bed are reestablishing with Black Willow, persimmon, trumpet vine, Bushy bluestem, and other species. Members of the Mid-Coast Chapter of the Texas Master Naturalists have identified over forty plant species on the site. It has again become a major birding site, especially when the ponds are filled for the weeks following good rainfalls.

This project will implement a number of habitat restoration and enhancement activities.

Removal of Invasive Species: Removing non-native invasive plants will allow for the natural colonization of nearby native trees, shrubs, and forbs; provide significant improvements in the habitat quality for wildlife use; and help improve water quality conditions in the immediate wetland area and downstream by trapping sediments and maintaining enhanced wetland function.

Wetland Restoration: This task involves the excavation of sediment and deepening of the old marsh areas to depths conducive to the establishment of freshwater wetland ponds. No existing natural wetlands will be filled as a result of this project. Most of the excavated material will be placed in designated upland

areas located within the site, and excess material will be used by the Aransas County Navigation District and Aransas County for beneficial purposes. Some of the fresh water ponds along the adjacent upland ridge will be further enlarged. Their freshwater source comes primarily from seep flow by infiltration from the adjacent sandy hillside and has allowed for some amount of the marsh to hold water except during severe drought conditions. The ponds will become interconnected during heavy rainfall events.

Stormwater Diversion: This task will involve tapping into a stormwater conduit or drain (36" pipe) located along SH35 immediately adjacent to the Tule Marsh East and diverting stormwater into the wetland pond on the TxDot portion of the site through buried polyethylene piping. Beds of aggregate rock will be installed at the discharge points to prevent scouring. Excess inflow to the wetland pond will be diverted into the newly enhanced ponds in the adjacent old marsh site on the City of Rockport property. The new marsh ponds will serve to trap sediments and to cleanse the stormwater by filtering and uptake of pollutants with biologic degradation before it is infiltrated or discharged downstream

Pumping Fresh Water into the Ponds: A pump will be installed which will take water from Tule Creek or from a sediment pond at Tule Lake West and provide freshwater to the upper reaches of the marsh system, which will allow for some amount of the marsh to hold water even during severe drought conditions.

Finally, additional project planning and scoping will be conducted to identify nearby restoration actions that will work in synergy with this project to increase wetland quality and productivity throughout Aransas County and Live Oak Peninsula.

Objectives:

- Removal of Invasive Species
- Wetland Enhancement at Tule East Marsh
- Stormwater Diversion
- Install a Freshwater Inflow Pump
- Wetland Restoration Planning

Performing Organization: To Be Determined
Total Project Funding: \$ 10,000
CBBEP Bays Plan Action Items: HLR-1, HLR-2, HLR-3

Background:

Most Colonial nesting waterbird populations have declined over the last forty years, according to data from the Texas Colonial Waterbird Survey. The reasons for the declines include mammalian predators, red imported fire ants, human disturbance of nesting sites, loss of coastal wetlands, and loss of nesting habitat. While some of these problems can be addressed by habitat management and education/outreach, the direct loss of nesting habitat to erosion and sea level rise poses a real threat that is not easily addressed; therefore when an opportunity to create a new island arises, serious consideration should be given to the feasibility and cost.

Currently, an opportunity exists to easily create a new island in Oso Bay. The island would be located on the east side of the bay just north of South Padre Island Drive. Currently an old road extends approximately 2,000 feet into the bay to an abandoned well pad. This abandoned well pad provides suitable habitat for ground nesting colonial species such as black skimmers, as well as, gull-billed and forsters terns. Although these species attempt to nest on the well pad each year, the road access allows disturbance of the colony by vehicles and fisherman.

The road and well pad are owned by the Texas General Land Office (GLO). The GLO has expressed a willingness to allow a portion of the road near the well pad to be removed, creating an island; however driving access to the remaining road would need to be enhanced.

Objective:

Conduct preliminary project planning, assessment, and scoping activities to analyze possible restoration alternatives, establish a cost estimate, and create conceptual design drawings. As appropriate, use these materials to develop permit applications and/or funding proposals.

Performing Organization: To Be Determined
Total Project Funding: \$ 100,000
CBBEP Bays Plan Action Items: HLR-1, HLR-2, HLR-3

Background:

The mottled duck (*Anas fulvigula*) is a Texas coastal resident whose complete life cycle requirements must be met in Gulf coast marshes and associated habitats. In Texas, mottled duck numbers have declined precipitously leading to much concern by managers. In 2007 the Gulf Coast Joint Venture developed and adopted a mottled duck conservation plan (Wilson, 2007). This consensus based plan was developed to address declines of this species, particularly in Texas. According to the Plan the highest priorities to improve mottled duck populations are actions to increase nest success and brood survival. Recommendations to improve nest success include improving nesting grassland conditions proximal to wetlands suitable for brood rearing, minimizing interactions with predators, and maintaining optimal habitat sizes. Improving brood survival incorporates management of shallow wetlands that have low salinities April through July, and provide a vegetation community that support invertebrate duckling food, and connectivity to nesting habitat.

This project is to work with public and private land managers within the CBBEP boundary to enhance habitat for mottled ducks that directly address the highest priority needs as outlined in the conservation plan. A team will assist in developing project specific criteria, monitoring objectives and project selection. It is anticipated that most work will involve brush management around existing wetlands, developing shallow wetlands adjacent to existing grasslands and coastal marsh, and providing water at the appropriate time for mottled duck nesting and brood rearing.

Objectives:

- Develop a Project Advisory Team
- Use the Team to develop selection criteria and monitoring objectives
- Select and implement projects on public or private lands that meet the selection criteria.
- Monitor the implemented projects for mottled duck use.

Performing Organization: South Texas Botanical Gardens
Total Project Funding: \$ 18,000
CBBEP: \$18,000
USFWS: additional \$11,000 match to STBG
CBBEP Bays Plan Action Items: HLR-2

Background:

The Botanical Gardens is operated by the Corpus Christi Botanical Society through a 60-yr lease with the City of Corpus Christi. In 1998, the Botanical Gardens in cooperation with several partners (including the U.S. Fish and Wildlife Service) constructed a 70-acre wetland. This wetland has been maintained in relatively good shape for years. However, a recent engineering review indicated the wetland is in need of maintenance and repairs (as described in the below objectives).

Restoration of this area will provide quality wetland habitat for resident and migratory birds, as well as dozens of other wetland-dependent species. The restoration will benefit 110 acres of wetlands and adjacent uplands.

Objectives:

- Repair 780 yards of the main levee that retains freshwater within the wetland.
- Remove invasive species throughout the wetland and adjacent uplands.
- Repair and/or replace signage, pathways, and viewing stations as needed to help manage public access in the project area.

Performing Organization: CBBEP
Total Project Funding: \$30,000
CBBEP Bays Plan Actions: HLR-1

The CBBEP is responsible for several properties including over 5,400 acres along the Nueces River and Nueces River Delta, 35 acres along Nueces Bay (HWY 181) and 53 acres on Mustang Island.

The CBBEP Nueces Delta Preserve is located 3 miles from the City of Odem and 20 miles from downtown Corpus Christi. The CBBEP Nueces Delta Preserve consists of approximately 5,400 acres in San Patricio and Nueces Counties that are owned and managed by the CBBEP as a conservation site for the purpose preserving natural habitat, function and species diversity in the Nueces River delta. The preserve is rich in diversity that can be characterized by Tamaulipan thorn scrub, grasslands, lomas, freshwater wetlands, riparian habitat, brackish wetlands, coastal wetlands mud flats and shoreline. The CBBEP's secondary goal for the preserve is for the property to be used for a variety of educational and research opportunities.

The funds provided by the project support the necessary management and routine maintenance of the properties, including but not limited to road maintenance, fencing maintenance, gates, brush control, equipment purchases, habitat and predator management (as appropriate and necessary), and property taxes.

Past project accomplishments include dike repair to a 50 acre created wetland, management equipment purchases, nest box construction, building maintenance, volunteer projects, aerial application of herbicide to invasive *huisache*, road repairs, construction of a parking area for school buses, creation of a wildlife observation area and water sampling station, establishing routine mowing of common areas, portable toilet and trash collection service.

Objective:

Provide for the ongoing maintenance and management of the Nueces Delta Preserve and other CBBEP properties.

Performing Organization: CBBEP
Total Project Funding: \$125,000
CBBEP Bays Plan Actions: HLR-1, BTR-2

Background:

The San Antonio Bay/Guadalupe Estuary System, located at the terminus of the San Antonio River and the Guadalupe River basins, is one of the seven major estuaries along the Texas. This large (205 mi²) estuarine complex is extremely unique in that wetlands associated with large portions of the surrounding shoreline provide critical wintering habitat for the endangered Whooping Crane (*Grus americana*).

While there are active watershed planning programs within portions of the San Antonio River and Guadalupe River basins, there have been, until recently, no watershed planning programs focusing on the San Antonio Bay/Guadalupe Estuary System itself. However, in January 2010, a meeting was held in Victoria, Texas to convene individuals and agency representatives with interests in the San Antonio Bay/Guadalupe Estuary System for the purpose of initiating a stakeholder-driven watershed planning process to address concerns regarding water quality, freshwater inflows, wetlands protection and the myriad of other issues affecting the ecological health of this important estuary.

This project is intended to support the continued *San Antonio Bay Partnership* (SABP) efforts of “a working partnership of committed stakeholders in order to protect, restore, and enhance the natural resources of the San Antonio Bay/Guadalupe Estuary System for the benefit of the ecosystem and its human uses” (SABP Purpose Statement, adopted 06/14/2010).

Objectives:

- To facilitate the efforts of the SABP to develop a stakeholder-driven, watershed-based estuary management plan for the San Antonio Bay/Guadalupe Estuary System,
- To coordinate, via the SABP, the various organizations and agencies involved in research, data collection, assessment, implementation and education activities
- To develop characterization data on water quality, ecosystem functions, hydrodynamic processes, human uses and other key indicators of the health of the bay system
- To use education and outreach activities to increase the awareness of the general public regarding NPS pollution and other potential impacts to water quality which may be avoided through implementation of appropriate BMPs

Performing Organization: CBBEP
Total Project Funding: \$100,000 (plus additional \$67,000 SABP Match required)
CBBEP Bays Plan Actions: HLR-1, BTR-2

Background:

The San Antonio Bay Partnership (SABP) was formed as a stakeholder-driven effort to protect, restore, and enhance the bay and surrounding habitats. CBBEP was approached by SABP, which includes businesses, conservation organizations, local governments, and resource agencies, to help guide early development of the San Antonio Bay Plan while the partnership forms a Section 501(c)(3) nonprofit organization. Once SABP obtains its nonprofit status, CBBEP will remain an active participant, providing technical and administrative assistance to help ensure the long-term success of the effort.

San Antonio Bay and surrounding habitats support significant natural resource dependent economic activities including commercial and recreational fisheries, ecotourism, and boating. It is home to critical habitat for the last wild flock of the endangered Whooping Crane (*Grus americana*). However, the San Antonio Bay/Guadalupe Estuary is under increasing pressure from the loss of freshwater inflow, recreational development, nonpoint source pollution, and habitat loss to other uses.

Objective

CBBEP and the SABP, under the guidance of stakeholder committees, will: 1) review available scientific/technical information; 2) identify data gap; 3) establish goals for habitat conservation and coastal public access; 4) map existing conservation and public access sites; 5) identify potential conservation and public access sites (in coordination with Calhoun County's existing CMP-funded bay access project); 6) describe implementation activities that could take place at each potential conservation or public access site; and 7) develop separate implementation rankings for habitat conservation and public access.

Upon completion of the actions identified above, CBBEP and SABP will draft both a habitat conservation plan and coastal access plan for public review and comment, and then finalize the plans. Although, the habitat conservation plan and the coastal access plan will be standalone documents, they will be written and structured in parallel so they can be included into the larger *San Antonio Bay Plan* once plans for all watershed programmatic areas are completed.

Project 1225

Habitat Use by Red Knots and Piping Plovers in the Padre Island/Upper Laguna Madre Area

Performing Organization:

CBBEP

Total Project Funding:

\$ 79,340 (year 1)

USFWS/TPWD Section 6: \$155,080 (year 1 and 2)

CBBEP: \$65,762 (in-kind and volunteer match)

CBBEP Bays Plan Action Items:

HLR-1, HLR-4

Background:

The central and southern coast of Texas provides wintering habitat for substantial proportions (~50% or more) of Piping Plover during the nonbreeding season. Red Knots are present on area beaches especially in fall and spring but until recently very little was known about the breeding or wintering area for this species. Recent research indicates that this population of birds spends the winter in Texas, probably in the Laguna Madre, and migrates through the mid-continent to Arctic breeding grounds, independently from the population that migrates along the Atlantic coast. The Piping Plover is a Threatened species under the Endangered Species Act, and the Red Knot is currently a candidate for listing and will likely be listed as Endangered within the coming years.

Building on results from recent research, CBBEP staff is undertaking a project to conduct radiotelemetry on Piping Plovers and Red Knots on North Padre Island and the Laguna Madre to determine patterns of usage of both species throughout the nonbreeding phase of their life history. Developing this understanding of habitat needs and threats will be critical in development of a Recovery Plan if the Red Knot is listed as Endangered, and will help address critical data gaps identified in the Recovery Plans for the Piping Plover.

This is a two-year project. CBBEP will provide match to the project in the form of volunteer time in assisting with trapping efforts, and use of equipment provided by an academic institution.

Objectives:

- Trap and attach radiotransmitters to enough of both species to maintain ~20 active radios from October through May.
- Use ground-based and aerial telemetry to track seasonal and daily movements.
- Assess habitat variables such as substrate type, feeding resources, predator threats.
- Provide USFWS and public land managers (NPS, NWR) with GIS products to facilitate decision-making.

Performing Organization: CBBEP
Total Project Funding: \$ 16,000
CBBEP Bays Plan Action Items: HLR-1, HLR-4

Background:

Shorelines and tidal flats of the central and southern coasts of Texas host a large proportion of the population of Piping Plovers (currently listed Threatened) and a unique population of Red Knots (pending listing as Endangered). In recent years, an increasing amount of research effort has resulted in a greater number of individually-marked birds of both species. The purpose of banding/marketing efforts is to provide data to develop population models to provide estimates of population size, as well as survival rates. By understanding annual survival and factors that affect both annual and seasonal survival, resource managers can make more effective conservation decisions.

This project will enhance several existing efforts that result in observations of individually-marked birds using Texas shorelines. Expanding this effort will provide for far more reliable estimates of population parameters, and allow for more detailed analysis of factors affecting distributions of these shorebirds.

Objectives:

- Conduct weekly beach surveys of beaches using comparable protocols from other complementary survey efforts.
- Gather data on bird abundance, distribution, human presence and activities that may affect shorebirds.
- Provide USFWS and public land managers (NPS, NWR) with data to enhance analysis of existing and ongoing datasets.

Performing Organization:	To Be Determined
Total Project Funding:	\$51,600
CBBEP Bays Plan Actions:	HLR-1, HLR-2

Background:

The Coastal Bend is comprised of diverse habitat types essential to native living resources and a productive ecosystem. Tidally-influenced habitats include freshwater marshes, coastal salt marshes, wind tidal flats, sand beaches, sea grass meadows, oyster and serpulid worm reefs, and open bays. Adjacent upland habitats include riparian corridors, prairie grasslands, and Tamaulipan thornscrub and brushlands, and live oak and red bay woodlands.

The Coastal Bend Bays Plan calls for efforts to identify habitats that are most at risk and work to protect and enhance significant functional acreage of those habitats: "The development and implementation of site-specific plans for habitat creation or restoration will be pursued, again through cooperative efforts of landowners, local governments, and resource agencies with available technical and/or financial assistance."

Since the creation of the *Bays Plan*, CBBEP has worked with landowners, local governments, resource agencies, and other stakeholders to identify at-risk habitats and has successfully implemented many projects of varying scales to protect and/or restore 14,000+ acres of critical marine, coastal, and adjacent upland habitat. Technical and financial assistance from project partners has been crucial to the success of these projects.

Many additional potential habitat protection and restoration opportunities have been identified. As before, technical and financial assistance from project partners will be crucial to the successful implementation of future projects. This project will 1) develop a base-map for use in identifying and planning habitat projects, and 2) conduct planning and scoping activities for select projects to assess project feasibility and assist in identifying potential project partners (including the development of grant proposals).

Objectives:

- Develop a base-map covering the CBBEP project area. The base map will identify:
 - Priority habitat types and/or focus areas.
 - Completed habitat protection and restoration project sites.
 - Potential habitat protection and restoration project sites.
- Conduct planning and scoping activities for select project sites in order to identify implementation strategies, methodologies, feasibility, and preliminary cost estimates.

Project 1228 Oso Bay Wetlands Preserve Habitat Restoration

Performing Organization: City of Corpus Christi
Total Project Funding: \$20,000
CBBEP Bays Plan Actions: BTR-2, HLR-1, HLR-2, WSQ-1, PEO-1

Background:

The City of Corpus Christi has received a grant from the Coastal Management Program (CMP) to begin habitat restoration at the City of Corpus Christi owned Oso Bay Nature Preserve (Preserve). The Preserve comprises of 162 acres along Oso Bay in a rapidly developing portion of Corpus Christi. The CBBEP has been involved in assisting the City with the acquisition of the tracts of land that make up the Preserve. CBBEP holds conservation easements on the city-owned tracts and serves on a planning committee for the development of the Preserve.

CBBEP will provide a portion of the necessary local match required for the city to receive the full \$100,000 grant from CMP.

This project will develop and implement a restoration and monitoring plan for the 162 acre Preserve. The City will contract with a qualified organization (contractor) to develop the restoration plan and monitoring strategy. A community advisory committee, including individuals from the natural resource agencies, will be developed to guide plan development, implementation, and public outreach. The plan will be executed over a five-year period which will allow the city to fund each restoration and monitoring project incrementally. As part of the public education/outreach component of the plan the City will host four on-the-ground restoration events.

Objectives:

- Develop a *Habitat Restoration and Monitoring Plan*
- Undertake restoration activities identified in the first-year implementation of the *Restoration and Monitoring Plan*.
- Monitor and report first year results to project partners, including CMP.
- Develop and implement a public education and outreach strategy, including onsite interpretation of ongoing restoration efforts, press releases, and presentations to public interest groups.

Performing Organization: CBBEP
Total Project Funding: \$27,340
CBBEP Bays Plan Actions: PEO-3

Background:

During the 2010-2011 school year more than 7,000 students visited CBBEP's Nueces Delta preserve on field trips. On some days there are more than 200 students on-site. Current restroom facilities consist of 4 rented port-a-potties. A significant amount of time delay occurs in order for the students to use the limited facilities. The construction of a larger restroom facility will help meet the after-lunch needs of the students and increase the amount of time available for learning.

Objectives:

- Develop design for restroom that meets ADA requirements.
- Construct the facility including septic tanks and lateral lines.

Performing Organization: CBBEP
Total Project Funding: \$45,000
CBBEP Bays Plan Actions: PEO-3

Background:

CBBEP currently owns one crewcab pickup and is using a loaned pickup from Texas Audubon. The Audubon truck is becoming unreliable. Realistically the program needs 3 or 4 vehicles to undertake the projects and management of CBBEP properties. Recently CBBEP has received funding for projects that requires off-road accessibility (4-wheeled drive). While that funding can't be used directly for the purchase of a truck, those funds can be used to pay for the daily/monthly use of 4-wheeled drive truck.

After assessing vehicle usage, it was determined that one truck was needed for use at the Nueces Delta Preserve (NDP) to be able to tow the field trip tram and to access the NDP during field trips. Two trucks are needed for the Coastal Water Bird Program, and an additional truck for CBBEP property management.

Objectives:

- Purchase one 4x4 pick-up, primarily for the Coastal Waterbird program.
- Purchase one 4x2 crewcab pickup for CBBEP property management.
- Relocate one of the existing trucks to the Nueces Delta Preserve.

Performing Organization: To Be Determined
Total Project Funding: \$50,000
CBBEP Bays Plan Action Items: HLR-1, HLR-4

Background:

Matagorda Island's western marsh consists of approximately 15,000 acres located on state and federal land. Many state and federally listed species of concern (see the below list) inhabit the marsh, including the Whooping Crane (*Grus Americana*).

State- and/or federally-listed species of concern (* = species outside of its normal range): American Alligator, Aplomado Falcon, Arctic Peregrine Falcon, Bald Eagle, Botteri's Sparrow*, Brown Pelican, Green Sea Turtle, Hawksbill Sea Turtle, Kemp's Ridley Sea Turtle, Least Tern, Leatherback Sea Turtle, Loggerhead Sea Turtle, Mountain Plover, Peregrine Falcon, Piping Plover, Reddish Egret, Roseate Tern*, Sooty Tern*, Southern Yellow Bat, Swallow-tailed Kite, Texas Diamondback Terrapin, Texas Horned Lizard, West Indian Manatee*, White-faced Ibis, White-tailed Hawk, Whooping Crane, Wood Stork, Zone-tailed Hawk

The marsh was negatively impacted when, from the early 1960s to the late 1970s, large portions were sectioned off, blocked with levees, drained, and utilized for cattle grazing. The levee system remains largely intact, resulting in muted tidal exchange with the surrounding bay system, altered circulation patterns, restricted flows, and impaired water quality in remote reaches.

Since 2007, CBBEP has been working with U.S. Fish and Wildlife Service to assess the health of marsh and adjacent habitat, identify and prioritize Action Item locations, develop an *Adaptive Management Plan* (AMP), and implement on-the-ground restoration actions as recommend by the AMP. AMP Action Items are designed to restore water flow and circulation, improve water quality, and increase wildlife abundance and diversity. At least 20 Action Item locations still need to be addressed. When completed, this restoration effort will have restored approximately 15,000 acres of wetland and adjacent upland habitat (90% wetlands, 10% adjacent uplands) on federal- and state-owned lands.

This project will provide support for engineering and construction services associated with CBBEP FY 2011 Project #1116.

Objective:

Provide engineering and construction services in support of CBBEP FY 2011 Project #1116.

VIII. Program Administration

CBBEP administrative staff (3 FTE's) will provide organizational and logistical support for Estuary Council and subcommittee meetings, and coordinate/communicate as necessary with appropriate groups, including stakeholder groups, state and federal agencies, local governments, and professional groups relevant to CCMP implementation. Staff will:

1. Acquire, manage, and disperse funds to implement the *Bays Plan*;
2. Monitor, track, and report on implementation performance by implementing partners, and work to maintain implementation commitments;
3. Develop a prioritized biennial work plan and budget for Estuary Council review and approval;
4. Coordinate the periodic update of the *Bays Plan*, the *State of the Bay* report, the *Implementation Strategy*, and other key documents of the program;
5. Provide logistical support for all meetings, workshops, symposia, and special events related to program mission;
6. Provide for overall program coordination with EPA Region 6 and TCEQ.
7. Participate in regional, state, and national conferences and meetings relevant to estuarine management.
8. Develop and implement policies and procedures for an emergency contingency plan which will include: protecting financial records, office equipment, computers, and other vital records and equipment; employee responsibilities; backup and storage of data; and recovery actions.
9. Continued implement a management system to track and assess Quality Assurance Project Plans (QAPPs) and determine required corrective actions and follow-up to be completed on date determined by TCEQ.

IX. Project Management and Implementation

CBBEP Project Management staff (10 FTE's) will coordinate/communicate as necessary with appropriate groups, including stakeholder groups, state and federal agencies, local governments, and professional groups relevant to *Bays Plan* implementation. Staff will:

1. Develop and implement partnership projects with local governments, state, and federal agencies, and private organizations;
2. Monitor, track, and report on implementation performance by implementing partners, and work to maintain implementation commitments;
3. Provide communication and coordination with the Texas Coastal Management Program and the Coastal Coordination Council, the Gulf of Mexico Program, the Texas Commission for Environmental Quality (TCEQ), and other relevant coastal/watershed programs;
4. Coordinate the review of proposed actions of federal, state, and local projects in an open process for consistency with the *Bays Plan*;
5. Develop a prioritized biennial work plan and budget for Estuary Council review and approval;
6. Provide for overall program coordination, including quality control/quality assurance procedures with EPA Region 6 and TCEQ.
7. Participate in regional, state, and national conferences and meetings relevant to estuarine management.

X. Program Expenses

CBBEP funds will be used to support continued program implementation, evaluation, and reporting. Funds are also necessary to provide logistical support for the Bays Council and subcommittee meetings. Expense categories are as follows:

1. Travel – allows Program staff to attend state, regional and national meetings, workshops, and conferences;
2. Supplies – as needed, for the day-to-day operations of the Program;
3. Equipment – purchase of items over \$1,000, i.e. computers;
4. Other – copier rental, temporary staff, postage, communication services, accounting services, printing, etc.

XI. Working Capital

The CBBEP Board of Directors has established working capital out of local funding. The funds will be set aside for possible future projects, matching funds and/or emergency funding.

XII. Summary

On September 1, 2011, the Coastal Bend Bays & Estuaries Program will begin Year 14 of implementing the *Coastal Bend Bays Plan*. This FY 2012 Work Plan describes the proposed work to be initiated during FY 2012. Of the total funds identified in the Work Plan budget, \$598,800 are new (FY 2012) EPA federal funds, \$641,361 are new (FY 2012) TCEQ state funds, \$2,776,940 are new (FY 2012) project-specific funds, and \$263,500 are new (FY 2012) local partner funds. When combined with carryforward from previous unspent federal and state funds, the total budget for this FY 2012 Work Plan is \$4,551,400.

TABLE 1: FY 2012 COMPREHENSIVE ANNUAL WORK PLAN OUTLINE

PROJECT #	PROJECT TITLE	ACTION ITEM(S)	PERFORMING PARTY	EPA FY12 CWA 320 & 104(b)3	EPA CF	TCEQ FY12	TCEQ CF	LOCAL & LOCAL CF	TCEQ 604b	OTHER	TOTAL CBBEP FUNDING
1201	Seagrass/Water Quality Monitoring for CC Bay & the Upper Laguna Madre	WSQ-4, WSQ-5	University of Texas Marine Science Institute					\$35,000			\$35,000
1202	Nueces Delta Environmental Monitoring	FW-1, FW-2, FW-3, FW-4	Conrad Blucher Institute						\$61,000		\$61,000
1203	Coastal Waterbird Management	HLR-1, HLR-4	CBBEP	\$135,000							\$135,000
1204	Coastal Bend Environmental Science – Learning on the Edge	PEO-3, PEO-5	CBBEP	\$160,000							\$160,000
1205	San Antonio Bay Partnership Wetlands Assessment – Phase 2	BTR-2, HLR-2, PEO-3	TBD	\$15,000							\$15,000
1206	Water Quality Status & Trends in the CBBEP Area – Phase 2: Data Analysis & Results	WSQ-3, WSQ-4, WSQ-5	Harte Research Institute						\$40,000		\$40,000
1207	Hazel Bazemore Park Ecological Enhancements	BTR-2, BTR-3, BD-1, HLR-1, HLR-2, WSQ-1	Nueces County	\$25,000							\$25,000
1208	Public Debris Management at Public Access Sites	BD-1	CBBEP		\$5,000						\$5,000
1209	Mustang Island & Wilson's Cut Channel Boating Access Feasibility & Constraint Analysis	BTR-1, BTR-2, HLR-1	Nueces County		\$15,000						\$15,000
1210	Field Trip Funding for the Delta Preserve	PEO-3, PEO-5	CBBEP	\$25,000							\$25,000

PROJECT #	PROJECT TITLE	ACTION ITEM(S)	PERFORMING PARTY	EPA FY12 CWA 320 & 104(b)3	EPA CF	TCEQ FY12	TCEQ CF	LOCAL & LOCAL CF	TCEQ 604b	OTHER	TOTAL CBBEP FUNDING
1211	Partnering for Teacher Workshops	PEO-3, EPO-5	CBBEP		\$5,000						\$5,000
1212	CBBEP Habitat Protection Media Campaign	BTR-1, PEO-2, PEO-3, PEO-5	CBBEP		\$30,000						\$30,000
1213	CBBEP/CBBF Community Outreach Partnership	PEO-1, PEO-2, PEO-3, PEO-4, PEO-5	Coastal Bend Bays Foundation	\$25,000				\$15,000			\$40,000
1214	CBBEP Public Outreach Events & Activities	PEO-1, PEO-2, PEO-3, PEO-4, PEO-5, BTR-1	CBBEP	\$21,000				\$9,000			\$30,000
1215	Outdoor Classrooms	PEO-3, PEO-5	CBBEP & USFWS					\$5,000			\$5,000
1216	Nueces Bay Causeway Marsh Restoration	HLR-1, HLR-2	HDR Engineering & TBD		\$31,124	\$80,541	\$21,335			\$1,949,000	\$2,082,000
1217	Nueces Delta Preserve Freshwater Inflow Management	HLR-1, HLR-2	HDR Engineering & TBD					\$70,000		\$210,000	\$280,000
1218	Aransas County Wetland Restoration at Tule Creek	HRL-1, HLR-2	TBD		\$55,000						\$55,000
1219	Oso Bay Rookery Island Creation (Preliminary Assessment)	HLR-1, HLR-2, HLR-3	TBD	\$10,000							\$10,000
1220	Freshwater Habitat Enhancement	HLR-1, HLR-2, HLR-3	TBD		\$50,000					\$50,000	\$100,000
1221	Wetlands Restoration at the South Texas Botanical Gardens	HLR-2	S. TX Botanical Gardens		\$18,000						\$18,000
1222	CBBEP Property Management	HLR-1	CBBEP							\$30,000	\$30,000
1223	San Antonio Bay Partnership – Watershed/ Estuary Protection & Management Plan	HLR-1, BTR-2	CBBEP							\$125,000	\$125,000

PROJECT #	PROJECT TITLE	ACTION ITEM(S)	PERFORMING PARTY	EPA FY12 CWA 320 & 104(b)3	EPA CF	TCEQ FY12	TCEQ CF	LOCAL & LOCAL CF	TCEQ 604b	OTHER	TOTAL CBBEP FUNDING
1224	San Antonio Bay Partnership Watershed Protection Plan – Phase 1	HLR-1, BTR-2	CBBEP							\$100,000	\$100,000
1225	Habitat Use by Red Knots & Piping Plovers in the Padre Island/Upper Laguna Madre Area	HLR-1, HLR-4	CBBEP							\$79,340	\$79,340
1226	Beach Surveys of Individually-Marked Piping Plovers & Red Knots	HLR-1, HLR-4	CBBEP							\$16,000	\$16,000
1227	Habitat Atlas and Project Planning	HLR-1, HLR-2	TBD						\$51,600		\$51,600
1228	Oso Bay Wetlands Preserve Habitat Restoration	BTR-2, HLR-1, HLR-2, WSQ-1 PEO-1	City of Corpus Christi					\$20,000			\$20,000
1229	Construction of Restroom Facilities at the Nueces Delta Preserve	PEO-3	CBBEP		\$14,476			\$12,864			\$27,340
1230	Purchase of Two Trucks for CBBEP Projects & Operation	PEO-3	CBBEP					\$45,000			\$45,000
1231	Matagorda Island Marsh Restoration	HLR-1, HLR-4	TBD							\$50,000	\$50,000
	TOTAL PROJECT FUNDS			\$416,000	\$223,600	\$80,541	\$21,335	\$211,864	\$152,600	\$2,609,340	\$3,715,280
	Administrative / Travel		CBBEP	\$197,800		\$560,820		\$77,500			\$836,120
	TOTAL FUNDING			\$613,800	\$223,600	\$641,361	\$21,335	\$289,364	\$152,600	\$2,609,340	\$4,551,400