

FISCAL YEAR 2016
ANNUAL WORK PLAN



A PROGRAM OF THE TCEQ

May 2015

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LIST OF ACRONYMS

Table 1. Acronym List

Name	Acronym
Acoustic Doppler Velocity Meter	ADVDM
American Recovery and Reinvestment Act	ARRA
Association of National Estuary Programs	ANEP
Bacteria Implementation Group	BIG
Best Management Practice	BMP
Budget and Priorities	B&P
Clean Water Act	CWA
Coastal Impact and Assistance Program	CIAP
Comprehensive Conservation and Management Plan	CCMP
Conservation Assistance Program	CAP
Fats, Oils, and Grease	FOG
Fiscal Year	FY
Freshwater Inflows Action Plan	FW
Galveston Bay Council	GBC
Galveston Bay Estuary Program	GBEP
Galveston Bay Foundation	GBF
Galveston Bay Plan	The Plan
Houston Advanced Research Center	HARC
Houston-Galveston Area Council	H-GAC
Implementation Plan	I-Plan
Low Impact Development	LID
Monitoring and Research	M&R
National Broadcasting Company	NBC
National Estuary Program	NEP
National Fish and Wildlife Foundation	NFWF
National Wildlife Refuge	NWR
Natural Resource Uses	NRU
Nonpoint Source	NPS
Point Source of Pollution Action Plan	PS

Name	Acronym
Public Participation and Education	PPE
Public Service Announcement	PSA
Quality Assurance Project Plan	QAPP
Request for Grant Applications	RFGA
Research Action Plan	RSC
Spills and Dumping Action Plan	SD
Texas A&M University Galveston	TAMUG
Texas Commission on Environmental Quality	TCEQ
Texas General Land Office	GLO
Texas State Soil and Water Conservation Board	TSSWCB
Texas Water Development Board	TWDB
Total Maximum Daily Load	TMDL
U.S. Environmental Protection Agency	EPA
United States Geological Survey	USGS
Water Quality Improvement Projects	WQIP
Water and Sediment Quality	WSQ
Watershed Protection Plan	WPP

SECTION 1: PROGRAM OVERVIEW

Galveston Bay is the largest and one of the most productive estuaries in Texas and sits adjacent to one of the most heavily urban industrialized areas in the nation. The Galveston Bay Estuary Program (GBEP) service area encompasses 232 miles of estuarine shoreline along the upper Texas Coast and incorporates the 5-county area bordering Galveston Bay: Liberty, Chambers, Harris, Galveston and Brazoria counties.

GBEP was established in 1989 to provide comprehensive management of this vital resource. In 1990, GBEP began working with a diverse group of stakeholders to develop a comprehensive plan that would receive broad based support from and involvement by federal and state agencies with jurisdiction in Galveston Bay, industries and businesses, local government officials, commercial and recreational fisherman, conservation organizations, and citizens. In 1994, The Galveston Bay Plan (The Plan), the Comprehensive Conservation and Management Plan (CCMP), was complete, and in 1995 it was approved by the Governor of Texas and the U.S. Environmental Protection Agency (EPA) Administrator. This effort was jointly funded by the EPA and the Texas Commission on Environmental Quality (TCEQ).

The Plan identifies 82 action items to protect and restore the health and productivity of the estuary while supporting continued economic growth and public use of the Bay. GBEP received a grant from EPA to begin implementing The Plan in 1995. This grant ran from fiscal year (FY) 1995-1999 and is now closed. Subsequent grants have run from FY 2000 – 2003, FY 2004 - FY 2007, FY 2008 – 2010, and FY 2011-2013. Over 200 implementation projects were initiated under these grants. This work plan outlines the third year of projects to be implemented in the sixth grant that will run from FY 2014 to FY 2016.

GBEP and its partners have received fifteen national awards for its partnerships and progress in implementing The Plan and preserving Galveston Bay.

PRE 2008 AWARDS

- Four awards from Coastal America (one in 1999, Clear Creek Habitat Restoration project, for the beneficial use of dredge material, one in 2002 for Galveston Island State Park habitat restoration, one in 2003 for habitat restoration at Jumbile Cove, and one in 2005 for San Jacinto State Park for beneficial use of dredge material)
- Recognition award from the National Aeronautics and Space Administration for Galveston Bay Estuary restoration and five years of implementation of The Plan
- National Wetland Conservation Award for the Delehide Cove Protection and Restoration project from the U.S. Fish and Wildlife Service in 2006
- EPA Gulf of Mexico Program Gulf Guardian Partnership Award for the Brays Bayou Urban Wetlands project
- The Fisheries and Habitat Conservation Partnership award for the cumulative habitat conservation work on the part of the Natural Resource Uses (NRU) Subcommittee
- Two EPA Gulf of Mexico Program Gulf Guardian Awards to GBEP partners, including an award in the non-profit category to SCENIC GALVESTON for the Virginia Point Coastal Preserve; in which GBEP played an instrumental role, and an award in the individual category to Dick Benoit, a highly active local citizen

FY 2008-PRESENT AWARDS

- EPA Gulf of Mexico Program was awarded the First Place Gulf Guardian Award in the Partnership category for the East Bay Shoreline Protection Project
- Department of Interior's Collaborative Conservation award for the East Bay Shoreline Protection Project

- EPA's Gulf of Mexico Program Gulf Guardian Partnership Award for the North Deer Island Protection Project
- Coastal America Partnership Award for the North Deer Island Protection project
- Coastal America Partnership Award for the Savannah Oaks Conservation project

SECTION 2: INTRODUCTION

GBEP, a special non-regulatory program of the TCEQ, is a partnership of local governments, business and industry, conservation organizations, bay user groups, and resources agencies. The program is charged with implementing The Plan, the CCMP for Galveston Bay. GBEP is part of the TCEQ's Office of Water, Water Quality Planning Division. A Program Manager and staff of six located in the Houston-Galveston area directly oversee implementation of The Plan. Program staff responsibilities are as follows:

- Acquire, manage, and disburse funds to implement specific actions in The Plan;
- Provide for coordination and communication among state and federal resource agencies for the many cross jurisdictional issues;
- Coordinate, monitor and track implementation activities of Plan partners;
- Identify and communicate bay improvements to agencies, stakeholders, and the public;
- Conduct public outreach and education to increase awareness of Galveston Bay (see Figure 1);
- Advocate conservation of the estuary; and,
- Maintain stakeholder involvement in the decision-making process through the Galveston Bay Council (GBC) and its subcommittees.



Figure 1. Pearland Wetland Awareness Day volunteers help create a stormwater wetland by dropping “wetland plant balls” into the water. March 2015.

SECTION 2.1: GALVESTON BAY ESTUARY PROGRAM ORGANIZATIONAL STRUCTURE

The TCEQ's GBEP has the primary responsibility for coordinating and administering the work plan. Program staff and job descriptions are provided below.

Sarah P. Bernhardt, M.S., Ph.D., Program Manager, is responsible for overall implementation of The Plan, including: securing and managing funds to support operations, staff, and projects; fostering stakeholder involvement to facilitate Plan implementation; managing program staff and operations to ensure efficient use of resources; and representing GBEP on national, state, and local boards and committees and at national and state conferences/events to garner federal and state support. The Program Manager also provides coordination for the GBC.

Lindsey Lippert, NRU Coordinator, is responsible for coordinating implementation of Habitat, Species, Freshwater Inflows, Shoreline Management, and Spills and Dumping (SD) actions in The Plan; coordination of Invasive Species Workgroup and NRU Subcommittee of the GBC; implementing specific projects to restore and protect habitat and manage and control invasive species; maintaining Government Performance and Report Act and EPA reporting.

Lisa Marshall, M.S., Monitoring and Research (M&R) Coordinator and Water and Sediment Quality (WSQ) Coordinator, is responsible for coordinating implementation of Stormwater, Wastewater, Septic Systems, Seafood Safety, and Research actions in The Plan; coordinating the Regional Monitoring Program, including data management/reporting, and development and application of environmental indicators; facilitating the M&R and WSQ subcommittees of the GBC; and researching, evaluating and reporting findings concerning scientific and technical issues impacting Plan implementation.

Cynthia Clevenger, Public Participation and Education (PPE) coordinator and Community Relations Specialist, is responsible for building relationships and developing communication channels and dialogue with local government officials, private sector, and other outside organizations key to implementing The Plan. This position facilitates cross-sectoral learning of public relations and marketing activities for the Galveston Bay watershed; organizes and manages community relations events and the State of the Bay symposium; tracks emerging stakeholder community concerns/issues. Ms. Clevenger also coordinates the PPE subcommittee; provides information to stakeholders, the general public and media; oversees the Galveston Bay Public Awareness campaign; promotes special events and projects; and website maintenance.

Michelle M. Krause, M.S., Technical Programs Coordinator, is responsible for serving as the quality assurance officer and as the contracts specialist, budget liaison and grants coordinator for GBEP. Ms. Krause also coordinates development and submission of federal reports, identifies and tracks the evolution of issues affecting bay management, and researches policy, technical and management results that pertain to Galveston Bay in collaboration with the NRU and WSQ coordinators.

Mary Stiles, Education and Outreach Support, handles GBEP exhibiting events, maintains Program contacts database, handles timekeeping, conducts K-12 presentations, and supports general activities of the PPE team and subcommittee. Ms. Stiles manages the annual Trash Bash contract and Spanish language community outreach.

Doretta G. Thomas, Administrative Assistant, is responsible for travel coordination, vehicle and equipment maintenance and repairs, mail, correspondence, office safety, and general administrative support for the Program.

PROGRAM COMPETENCY DEMONSTRATION

The following statements demonstrate GBEP's competency as a Continuing Environmental Program:

- Competency is demonstrated by the TCEQ Quality Systems Audit conducted annually by Sharon Coleman, Agency Quality Assurance officer.
- Competency is demonstrated through EPA Quality Project and Program Management training taken by Sarah Bernhardt, Lisa Marshall, and Michelle Krause on 4/8/14-4/10/14. Lindsey Lippert completed EPA Quality Assurance Management training on 3/21/2007. Certificates are available upon request.
- Competency is demonstrated through the EPA approved TCEQ Quality Management Plan (Revision 20 approved January 2015) that GBEP operates under, which provides descriptions of the quality policies, including all the requirements described in EPA QA/R2.

FY 2015 LEVERAGING, TRAVEL, AND TECH TRANSFER AMOUNTS

Figures reported in Table 2 provide a mid-year estimate of leveraged funding reported by partners and grantees from September 2014-March 2015. Number is subject to change as additional funding may be reported for the period.

Table 2. FY 2015 Leveraging

EPA Funds to Program (Section 320)	Other Federal Funds (Role - Primary)	State Funds to Program (Role - Primary)	Local Government Funds to Program and In-Kind (Role-Primary)	Private to GBEP Projects & In-kind (Role - Significant)
\$538,000	\$0	\$822,613	\$0	\$6,062,800

Table 3 depicts the travel expenses and tech transfer descriptions from the last year.

Table 3. FY 2015 Travel and Tech Transfer

EVENT, LOCATION, & PURPOSE	STAFF PERSON	EPA §320 FUNDS	TCEQ 100% STATE FUNDS
Applied Environmental Statistics Class College Station, TX, May 2014 -Refresher statistics course to help review contracts involving environmental data and Quality Assurance Project Plans (QAPP).	Lisa	\$0	\$1,000
Watershed Coordination Steering Committee Columbus TX, June 2014 -To get updates about projects in our watershed and watersheds in the area; also to network with other project managers and watershed coordinators.	Lisa	\$0	\$0
Stormwater Conference Forth Worth, TX, July 2014 -Learn the most current trends in stormwater management.	Lisa	\$0	\$1,025

EVENT, LOCATION, & PURPOSE	STAFF PERSON	EPA §320 FUNDS	TCEQ 100% STATE FUNDS
Watershed Coordination Steering Committee Wharton, TX, September 2014 -To get updates about projects in our watershed and watersheds in the area; also to network with other project managers and watershed coordinators.	Lisa	\$0	\$0
Estuary Program efficiency meeting with Coastal Bend Bays & Estuaries Program and TCEQ Corpus Christi, TX, September 2014 -Discuss programmatic efficiencies between estuary programs and TCEQ.	Sarah Michelle	\$0	\$300
Bayou Preservation Symposium Houston TX, October 2014 -Learn about local partners' watershed priorities and learn about most current issues in our region.	Sarah Lisa	\$0	\$0
How Sustainable is the Texas Coast Workshop Houston TX, October 2014 -Learn about the state of Texas regarding coastal community planning and coastal resiliency.	Sarah Lisa Michelle	\$0	\$105
Fall Association of National Estuary Programs (ANEP) Tech-Transfer meeting/Restore America's Estuaries/The Coastal Society meeting Washington, D.C., November 2014 -Technology transfer, education, training, and sharing of lessons learned between NEPs and communication with EPA's NEP program.	Sarah Lisa	\$4,578	\$300
International Low Impact Development (LID) Conference Houston, TX, January 2015 -The LID Conference highlighted new and continuing work including research developments and community adoption of LID throughout the United States and internationally.	Lisa	\$0	\$815

EVENT, LOCATION, & PURPOSE	STAFF PERSON	EPA §320 FUNDS	TCEQ 100% STATE FUNDS
Gulf Coast Joint Venture-Texas Mid-coast Meeting Lake Jackson TX, February 2015 -Discuss potential projects for North American Wetland Conservation Act grants.	Lindsey Michelle	\$0	\$0
Urban Riparian Symposium Austin, TX, February 2015 -Connect with other natural resource managers regarding urban riparians.	Michelle	\$0	\$793
Spring ANEP Tech-Transfer meeting Washington, D.C., February 2015 -Training, information transfer, and updates from EPA.	Sarah	\$2,427	\$200
United States Army Corps of Engineers Partnership Forum Galveston, TX, February 2015 -Facilitating coordination between Corps of Engineers and partners.	Lindsey	\$0	\$0
Gulf Coast Joint Venture-Texas Mid-coast Meeting Lake Jackson TX, February 2015 -Discuss potential projects for North American Wetland Conservation Act grants.	Lindsey Michelle	\$0	\$0
EPA Restoration Listening Session Galveston, TX, February 2015 -For EPA to hear from coastal stakeholders regarding restoration priorities in order to provide guidance to the EPA Resources and Ecosystem Sustainability, Tourist Opportunity and Revived Economies Council member.	Sarah	\$0	\$0
2015 Greater Houston Environmental Summit Houston, TX, March 2015 -Learn about the priority issues of concern to the greater Houston region environmental community and stakeholder groups, all of which exist within the Galveston Bay watershed.	Sarah Lisa Michelle	\$0	\$113

EVENT, LOCATION, & PURPOSE	STAFF PERSON	EPA §320 FUNDS	TCEQ 100% STATE FUNDS
Watershed Coordination Steering Committee Wharton, TX, March 2015 -To get updates about projects in our watershed and watersheds in the area; also to network with other project managers and watershed coordinators.	Lisa	\$0	\$25
TCEQ Trade Fair Austin, TX, May 2015 -Presenting information about GBEP, Back the Bay Campaign, and Cease the Grease Campaign to the Trade Fair audience. Attending presentations about water related issues that affect the watershed.	Sarah Lisa Cynthia	\$0	\$150
Total		\$7,005	\$4,826

SECTION 2.2: FY 2015 GOALS AND ACCOMPLISHMENTS

GBEP partners made notable achievements in improving water quality, restoring wetlands, protecting unique habitats and educating the public in 2015. These achievements are highlighted in the following sections.

HABITAT AND LANDSCAPE-LEVEL CONSERVATION: CREATING, RESTORING, & PROTECTING COASTAL HABITAT

The Texas coast features a wealth of coastal habitats that support a tremendous abundance and diversity of fish and wildlife. Although the habitat conservation efforts of the GBEP and its partners are bay-wide, particular attention has been given to West Bay. Preserving wetlands and natural areas is critical to maintaining the water quality in this relatively pristine region, and to protecting valuable fish and wildlife habitat.

Since 2000, GBEP and its partners created, protected, and enhanced 25,183 acres of important coastal habitats, leveraging approximately \$86,056,000 in local, industry, state, and federal contributions.

In the past year, GBEP protected and restored 2,201 acres of wetlands and coastal habitats, and leveraged \$9,145,274 in local, industry, state, and federal contributions. Through projects currently in progress, GBEP and partners will protect or restore an additional 5,000 acres of coastal habitat.

Since the start of FY 2015 an additional 1,100 acres of coastal habitat have been permanently protected through conservation efforts of the NRU Subcommittee, including the Conservation Assistance Program (CAP).

CAP

The goal of the CAP is to support regional efforts to preserve wetlands and important coastal habitats that protect the long-term health and productivity of Galveston Bay. With the help and consensus of conservation partners, a collaborative effort between GBEP, Galveston Bay Foundation (GBF) and Texas Coastal Partners identifies conservation projects, develops funding strategies, works with landowners to negotiate conservation transactions, carries out due diligence, and finalizes purchase and transfers of title to the appropriate land conservation entity.

To date, five projects have closed under this partnership, including the Bolivar Flats Sanctuary Johnson Tract and Anahuac National Wildlife Refuge (NWR) Coastal Prairie, permanently protecting 3,222 acres and leveraging \$8,678,471. Many additional projects are ongoing, including Hitchcock Prairie (3,200 acres) and Gordy Marsh (1,800 acres).

In 2008, GBEP secured \$2,000,000 from Coastal Impact and Assistance Program (CIAP) funding to permanently protect properties in the West Bay Watershed. In 2012, project partners permanently protected Savannah Oaks Ranch, a 700-acre rice farm near the Brazoria NWR, situated at the convergence of Austin and Flores Bayous. The property provides much needed habitat for the declining mottled duck population, which thrives on rice fields. Under this land agreement (conservation easement), the family will continue to maintain the property's current use as a working farm while preserving its wildlife values in perpetuity. Additional properties are being identified through the CAP for funding under this initiative, including the Hitchcock Prairie Project in Galveston County (3,200 acres).

Settegast Coastal Heritage Preserve

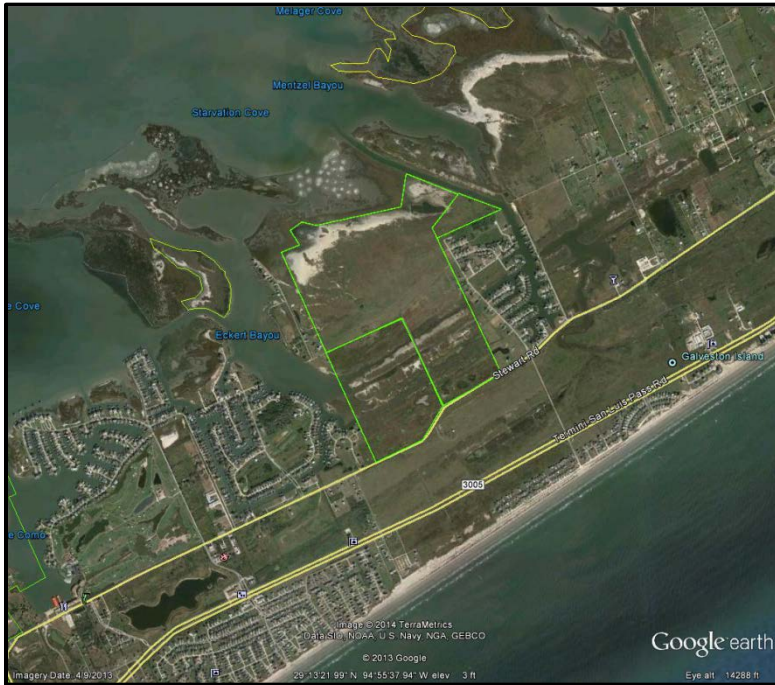


Figure 2. Settegast Coastal Heritage Preserve is located in West Bay, Galveston County. Map indicating parcel boundaries was created using Google Earth.

The Settegast conservation project area contains 360 acres of coastal prairie and freshwater depressional wetlands along the northern shoreline of West Bay (see Figure 2), and is part of the West Bay Conservation Initiative. The West Bay Conservation Initiative is a concentrated effort in West Bay comprised of numerous conservation, restoration, and habitat protection projects being undertaken and supported by non-profit organizations, state and federal agencies, as well as private partners. The objective of the initiative is to protect and restore habitat and associated biological communities critical to the Galveston Bay ecosystem including fringing intertidal and high marsh, tidal flats, freshwater wetlands and coastal prairie. Acquiring for permanent conservation the parcels within the Settegast project area will contribute to ongoing efforts to maintain the physical and biological integrity of Galveston Island and the productivity of West Galveston Bay.

To date, project partners have permanently protected 170 acres of the targeted parcels, with another 99 acres to be purchased through the Gulf Environmental Benefit Fund, and leveraged over \$7,275,000.

Gulf Environmental Benefit Fund

National Fish and Wildlife Foundation's (NFWF) Gulf Environmental Benefit Fund was established in early 2013 as a result of two plea agreements resolving the criminal cases against BP and Transocean after the 2010 Deepwater Horizon oil spill. The agreements direct a total of \$2.544 billion to NFWF over a five-year period. Funding will be used to support projects that remedy harm to natural resources (habitats, species). The Texas projects have been selected for funding after extensive consultation with Texas Parks and Wildlife Department, TCEQ, Texas General Land Office (GLO), U.S. Fish & Wildlife Service and the National Oceanic and Atmospheric Administration. GBEP has been successful in working closely with partners to build collaborative projects for potential funding from NFWF and other Gulf spill restoration funds.

In November 2013, the Hitchcock Prairie Project (West Galveston Bay Conservation Corridor Habitat Preservation) was selected as one of five Phase I projects in Texas. The project was awarded \$4,075,000, and will leverage an additional \$1,000,000 of GBEP's West Bay CIAP funding. This project proposes to acquire a permanent conservation easement on a contiguous 3,200 acre tract(s) of estuarine emergent marsh, open water, prairie depressional wetlands and upland prairie habitat. This tract is located within the West Bay

Conservation Corridor in close proximity to 6,500 acres of conserved habitat.

In November 2014, NFWF awarded \$8.45 million in funding for six projects in the Lower Galveston Bay Watershed. Several of the projects leverage GBEP state funding, including the Settegast Coastal Heritage Preserve, shoreline protection projects at Virginia Point and Oyster Lake, and engineering and design projects at Greens Lake and Dollar Bay.

IMPROVING & PROTECTING WATER QUALITY: SUPPORTING CORE CLEAN WATER ACT (CWA) PROGRAMS

In support of EPA's core CWA goals GBEP has worked to build capacity of local stakeholders through watershed protection planning and implementation of water quality improvement projects (WQIPs). Through this effort in coordination with other water programs of TCEQ and local stakeholders, 90% of impaired waters in the five county region surrounding Galveston Bay have some level of watershed protection or improvement being enacted.

Watershed Protection Plans (WPPs)

Bastrop Bayou

The Bastrop Bayou WPP is in final review with TCEQ and EPA. The GBEP provided initial funding to complete a risk assessment of the watershed and supplied local match for the CWA §319 grant and staff support during the development of the WPP. Planning efforts have led to local support for the annual Trash Bash clean up; seeking of additional funds by the county and the local community of Demi John to resolve the community's chronically failing septic systems. Houston-Galveston Area Council (H-GAC) began an implementation project with TCEQ in FY 2014 to initiate addressing bacteria sources in the watershed through targeted on-site sewage facilities remediation, education and outreach, and pet waste station installations. This project will run through FY 2015.

Highland Bayou

The Watershed Characterization Report was completed in FY 2011 using \$275,000 of American Recovery and Reinvestment Act (ARRA) funds. Additional environmental data has been collected for this impaired water body in conjunction with the Clean Rivers Program. The information collection included the completion of a landscape analysis of nonpoint sources (NPS) of pollution; identification of potentially failing septic systems; and one-on-one meetings with local planners and decision makers. In January 2014, the project received \$100,000 in GBEP funding to complete the 9-element WPP for Highland Bayou. A draft of sections A – E of the WPP and stakeholder outreach and education will take place through FY 2015.

Dickinson Bayou

Stakeholders have determined a Bridge Document is the best option for creating an approved Watershed Based Plan for the Dickinson Bayou watershed. This document will integrate appropriate pieces of the draft WPP and the approved Implementation Plan (I-Plan) for the Total Maximum Daily Load (TMDL) for Bacteria in Dickinson Bayou using the EPA 9 element guidance. Extension staff from Texas AgriLife is working with TCEQ staff to determine a plan to begin work on the Bridge Document in FY 2015/2016. The Bacteria I-Plan was approved by TCEQ in January, 2014. GBEP supported the development of the WPP and provided staff support to develop the I-Plan. In 2015, watershed representatives continued to meet with GBEP to determine any GBEP resources needed to implement the WPP.

Bacteria I-Plan

In 2013 the I-Plan to address bacteria in the Houston-Galveston Region was completed. The Bacteria Implementation Group (BIG) anticipates implementation activities over the next 25 years, 2013-2036, with periodic reviews to track success and make necessary course corrections to improve the program's success.

While most activities in the I-Plan are to be funded using existing funding sources, such as public works

department budgets, grant funding opportunities through TCEQ and other entities, other sources will be needed to (1) help sustain regional coordination efforts; (2) advance the use of new or novel technology and best management practices (BMPs); and (3) expedite implementation.

Cedar Bayou

With suggestion from the GBEP, the H-GAC and Texas State Soil and Water Conservation Board (TSSWCB), continued development of a WPP on Cedar Bayou that was started in FY 2011. GBEP provided matching funds and staff support for development of the WPP. The Cedar Bayou Watershed Partnership was formed from a diverse group of local stakeholders, and has met over the course of the intervening years to discuss the challenges and potential solutions in the watershed. Modeling and monitoring activities are ongoing, and the WPP will be completed by the end of 2015. In the meantime, project partners have already begun to implement BMPs, including signage for Polychlorinated biphenyls/Dioxins, large scale marine debris removal, and education and outreach efforts.

Double Bayou

The Double Bayou Watershed Characterization Report was completed in early FY 2012 using \$206,322 in ARRA funds, \$50,000 from the TMDL Program and \$12,000 from the GBEP. Accomplishments include additional environmental data collected for this 5(c) water body; completion of the watershed characterization report including water quality and land use analyses; and completed one on one meetings with local planners and decision makers. The project later received funding from TSSWCB's CWA §319 program for completing a WPP starting in FY 2012. Since the §319 funding began, larger stakeholder and focused workgroup meetings have been held, targeted water quality monitoring has begun, land use has been analyzed focusing on water quality impairments through discussions with stakeholders and several topic-specific workshops have been held or scheduled in the watershed (Watershed Stewards Training, Riparian Workshop, Feral Hog Workshops, etc.). SELECT modeling analyzing land use and potential bacterial source load contributions has been completed; stakeholders contributed to initial model data inputs as well as model run results through small workgroup meetings and a stakeholder meeting. Targeted water quality monitoring has included both routine and ambient weather events as well as a series of 24 hour DO event. For FY 2015, GBEP approved \$129,126 to provide state funding to be used as matching funds required under the grant to complete work on the WPP.

WQIPs

Dickinson Bayou

Initial implementation of the Dickinson Bayou WPP was begun with a TCEQ CWA §319 Program grant and support from the GBEP. A rain garden was completed on June 4, 2011 at Dickinson City Library. The garden handles run-off from the 10,000 square foot roof. A ten acre stormwater wetland was created within the Clear Falls Clear Creek Independent School District detention basin and completed on December 31, 2011. In FY 2015 the contractor continued to monitor the site, remove non-indigenous species, and plant additional species. Implementation of Cease the Grease, a regional fats, oils, and grease (FOG) campaign, began in 2014 and was continued during 2015. Educational workshops about OSSF maintenance and Riparian Function for the watershed were held in the area. Efforts to implement measures from the Bacteria I-Plan will continue as funding is available.

Clear Creek

The City of League City with encouragement from the GBEP, sought and received a 2011 TCEQ §319 Program grant to control NPS pollution within the city limits. The million dollar grant and match from GBEP funded the construction of the Ghirardi Family WaterSmart Park, a 3.75 acre park that features NPS best management green infrastructure features including rain gardens, pervious pavement, bios-wales, rain water harvesting and a green room. This award winning facility, depicted below in Figure 3, serves as a demonstration for residents, city staff and local developers as to how these practices can be implemented into landscapes and

developments around League City and Galveston County. Additional tasks in FY 2015 include reviewing and re-writing existing city ordinances, completing a report on BMPs retrofit recommendations for the Creekside District to control NPS run-off, and completing modeling of runoff quantity and quality for areas of new developments, including how BMPs can best be utilized to reduce both. Monitoring of the BMPs is ongoing and will continue with an additional grant from GBEP for FY 2016.



Figure 3. Ghirardi WaterSmart Park facility demonstration project.

Armand Bayou I-Plan

The Armand Bayou I-Plan coordination committee and work groups were formed in early 2013. The committee reviewed the bacteria I-Plan developed by the BIG and determined they were interested in joining the BIG I-Plan instead of writing their own I-Plan, once the TMDL for Armand Bayou was completed. In May 2014, the stakeholders approved the addition of the Armand Bayou TMDL to the BIG TMDL. Currently the group is waiting on approval from TCEQ and EPA to accept this proposal.

Harris, Galveston and Brazoria Counties Stormwater Wetland

In FY 2013, the GBEP began to establish a stormwater wetland program in three counties which expect to double in population size by 2030. The program is working in concert with city and county governments to establish a stormwater wetland program and technology transfer. In addition to introducing and facilitating stormwater wetlands projects in Pearland, Clear Lake City and at the MD Anderson Facilities in the Medical Center of Houston, the program continues to work through one-on-one meetings, technical workshops, establishment of a task force and funding assistance to create demonstration projects. An additional component is outreach to school districts where the educational capacity of stormwater wetlands as outdoor classrooms has been recognized. The work will continue through FY 2015.

Galveston Bay FOG Campaign

Starting in FY 2014, the FOG campaign is a joint project with the WSQ and the PPE subcommittees. In an effort to coordinate outreach and education efforts to the upper Galveston Bay Watershed in the Dallas area, GBEP is funding a project with the City of Nassau Bay to implement the City of Dallas Water Utilities FOG outreach campaign called Cease the Grease. This project supports the CWA core program of addressing diffuse, nonpoint sources of pollution. The Dallas campaign not only shows measureable success in reducing FOG-related SSOs, but the City of Dallas is also willing to allow the City of Nassau Bay to use their materials. The campaign will be implemented in the Galveston Bay region through the City of Nassau Bay and outreach materials and efforts will be tailored for the Galveston Bay region. City of Nassau Bay in partnership with the

GBF will track the progress of the campaign based on the number of impressions achieved through marketing and outreach activities, knowledge change throughout the campaign based on pre and post test data in outreach programs and other indicators developed by the campaign workgroup. Additionally, GBF will request sanitary sewer overflow reports from TCEQ and municipalities in order to track whether or not a bacteria reduction results from campaign implementation. Tracking results will be shared with campaign partners, the City of Dallas as well as potential future partners and other regions looking for examples of a successful FOG reduction campaign. Funding for Phase III of this project is proposed for FY 2016.

IMPROVING RESOURCE MANAGEMENT THROUGH TARGETED RESEARCH THAT INCREASES ECOSYSTEM UNDERSTANDING

The GBEP continues to focus on providing ecosystem based M&R and encourage new information to inform resource managers through maintaining and updating a prioritized project spreadsheet. From this work projects such as the role of freshwater inflows on the bays plankton and sediment and nutrient loadings from the bay's major rivers have been funded.

The M&R Subcommittee initiated a Request for Grant Applications (RFGA) in 2014 to solicit project proposals addressing any of the following research topics:

- Galveston Bay: Water Quality, Quantity, and Patterns.
- Fauna of Galveston Bay: Benthic, Nekton, and Colonial Water Birds.
- Wetland Habitat Management in the Galveston Bay Watershed.
- Economic and Social Valuation of Galveston Bay Habitats.

After following the solicitation and ranking process, two projects were selected:

Mangrove Restoration in Galveston Bay: Ecological Benefits and Effective Restoration Techniques with Dr. Anna Armitage, Texas A&M University Galveston (TAMUG), for \$138,518.00

The overall objective of this project is to determine if, when, and where mangrove restoration should be implemented in Galveston Bay. Data will be collected from at least three sites of each of four habitat types: mature and restored salt marshes, and mature and restored mangrove stands. This data will be used to inform the following questions: which mangrove planting techniques yield near- and long-term mangrove restoration success at sites throughout Galveston Bay, are there specific ecosystem functions between existing mangrove stands and salt marshes in Galveston Bay, and how do these restoration sites compare to other Texas Estuaries? In addition to the research component of this project, there is an outreach piece that educates the public on the importance of wetland restoration for NPS management and integrates research findings into outreach and stewardship programs.

Galveston Bay: Changing Land Use Patterns and Nutrient Loading. Causal or Casual Relationship with Dr. Antonietta Quigg, TAMUG, for \$135,722.00

The objective of this project is to continue monitoring the Bay at monthly intervals using the Dataflow system to measure water quality parameters, collect nutrient and other data at fixed stations in the Bay which can then be used to explain patterns in water quality such as chlorophyll data, and measure phytoplankton productivity, community composition, and the presence of harmful algal blooms, if present.

Both projects are currently in the process of developing contracts and the QAPPs for both projects will be initiated once the contracts have been approved.

CONTINUE BUILDING REGIONAL SUPPORT FOR PPE

The PPE Subcommittee continued supporting the Galveston Bay Public Awareness campaign in FY 2015. Stakeholders identified fostering public support and building public stewardship on a large scale as the second

highest priority for GBEP's [Charting the Course to 2015: Galveston Bay Strategic Action Plan](#). To address this priority and to strategically build regional support for sustaining a healthy Galveston Bay, GBEP collaborated on bay-related, community-based initiatives; expanded partnerships with local governments; led discussions on bay-related and Gulf-related issues and concerns; and executed the only regional, partner-supported campaign to increase awareness of Galveston Bay. Examples of these activities include:

- Supported community-based events such as Boy Scouts, Learn to Fish, Jane Long Festival, Trash Bash, Bay Day (outreach booth depicted below in Figure 4) and Houston Water Festival
- Garnered support for the campaign with Houston-area businesses and conservation groups, and local governments in key watersheds: Dickinson, Cedar Bayou, and Armand Bayou
- Partnered with a local news station and newspaper
- Increased awareness of Galveston Bay and its value and actions that help protect the bay through a coordinated, regionally implemented campaign
- Updated the Galveston Bay Drive and Discover mobile app.

Galveston Bay Public Awareness Campaign



Figure 4. Outreach booth at Bay Day.

GBEP implemented a public awareness campaign, involving key stakeholders, to reinforce implementation of The Plan's priorities. The goals of the Galveston Bay Public Awareness and Education Campaign—called *Back the Bay*—are to build awareness of the value of Galveston Bay, and encourage and motivate actions that support habitat conservation, water conservation, and water quality improvement.

In FY 2012 the campaign had a total of 14.4 million impressions, or the number of times people may have seen or heard about the campaign through web, television, print and outdoor advertising. Since the launch of the campaign, the GBEP has had an advertising partnership with the local Houston area National Broadcasting Company (NBC) television station KPRC Channel 2. The partnership has achieved the following: over 10 million impressions on Justweather.com (KPRC Channel 2 website); and 4,150 click-thrus to BacktheBay.org. The fixed widget on the weather home page delivered 55 percent of all the impressions, yet delivered 65 percent of all the click-thrus. Also, an estimated 1.8 million viewers ages 18 and older have seen the television ads since March 26, 2012 through August 31, 2012.

In FY 2013, the campaign was implemented on a regional level in all five counties adjacent to Galveston Bay including Brazoria, Chambers, Galveston, Harris and Liberty counties. Implementation initiatives include: continued partnerships with KPRC Channel 2, local governments, the H-GAC, GBF, Armand Bayou Watershed Partnership, Artist Boat; and increasing awareness of Galveston Bay, its recreational activities, and positive behavior changes citizens can do at home.

The awareness campaign was awarded a \$1 million CIAP grant to implement the habitat conservation module of the campaign. Initiatives for this module include developing a new print ad, television spot and online presence focusing more on habitat conservation of Galveston Bay.

In April 2013, GBEP launched its 2013 partnership with KPRC Channel 2 and Click2Houston.com. GBEP began airing 7-second and 15-second television ads during weekly newscasts promoting resident's connection to Galveston Bay—a key campaign message—and the campaign brand, *Back the Bay*. GBEP also placed online advertisements on the weather page of Click2Houston.com (KPRC Channel 2's website). These ads showcase the value of Galveston Bay as well as residents' connection to the bay. Additionally, KPRC Channel 2 contributed a television banner called a snipe that runs during specific NBC broadcast programs such as the *Today Show*, *Tonight Show*, and *Saturday Night Live*.

For the FY 2013 media campaign implementation, GBEP created new 60- and 30-second radio spots. The public service announcement (PSA) ran on four of Houston's popular radio stations from April 1, 2013 through August 2013.

The FY 2013 campaign delivered a total of 41 million impressions, including more than 2 million added value impressions. Added value includes media placements provided to a campaign at no cost. Through PSA distribution, the partnership with KPRC and free radio placements, *Back the Bay* received free media valued at \$127,976.

The FY 2014 campaign began with a fall media buy that ran from September to October 2013. The fall media buy targeted hunters and fishers in the Galveston Bay area – a key target audience for the campaign. The buy included print ad placements in the Houston Chronicle's "Hunt Texas" publication and several community newspapers. The Houston Chronicle sponsorship also included online banners on Chron.com. Overall, the fall campaign generated more than 1.5 million impressions.

In October 2014, GBEP also launched a Hunter Channel "takeover" on Chron.com. A "takeover" is an exclusive advertising and branding opportunity on the homepage or popular interior page of a website. The *Back the Bay* takeover included custom background and online banners that ran through March 2014 on the hunting/fishing section of the site.

The FY 2015 campaign was launched in April 2015. Media includes: radio spots, Houston Chronicle print insertions and online digital, web banners, pre-roll video, broadcast video, and mobile banner shown below in Figure 5. The campaign continues to emphasize the connection between residents' storm drains and Galveston Bay habitats with the second chalk art ad highlighting birds. The FY 2015 campaign is expected to generate 45 million total impressions.

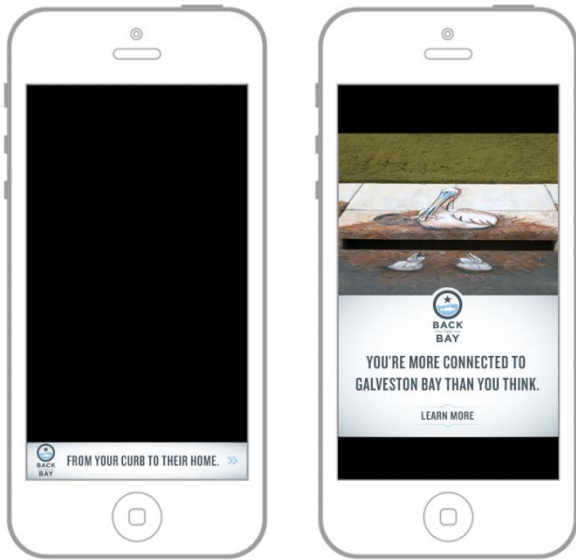


Figure 5. Back the Bay mobile ad – Image provided by EnviroMedia.

Trash Bash

In March 2014, GBEP coordinated the 21st Annual Trash Bash cleanup at Mason Park along Brays Bayou and one of 17 clean-up sites across the Houston-Galveston area. The event promotes environmental stewardship and encourages volunteers to do their part at home by properly disposing of trash, household chemicals, and pet waste. Trash Bash supports two of EPA's FY 2014-2018 *Strategic Plan* goals which include: 1) cleaning up our communities and advancing sustainable development; and 2) protecting America's waters.

250 volunteers collected an estimated 2,800 lbs. of trash at Mason Park. Their efforts enabled 20 lbs. of materials to be recycled. Each year, Trash Bash meets or surpasses volunteer goals. In 2013, volunteers from all over the Houston-Galveston area cleaned 163 miles of shoreline, collected approximately 98,745 lbs. of trash—including 477 tires—and recycled 5,700 lbs. of trash.

In March 2015 GBEP will again coordinate the Trash Bash cleanup at Mason Park along Brays Bayou.

SECTION 2.3: STRATEGIC ACTION PLAN GOALS TO FOCUS ON IN FY 2016

- Create, restore, and protect important coastal habitats.
- Reduce NPS pollutant loads through coordination with local watershed initiatives and implementing WQIPs.
- Create a sense of personal ownership and shared responsibility among all cultural components of the community, including the public, industry and government.
- Ensure that stakeholders receive the knowledge necessary to act on GBEP's priorities in ways that benefit the bay and the entire community.
- Increase understanding of the Galveston Bay ecosystem.
- Make available information needed by the public, GBC Members, and GBEP subcommittee members to support implementation of The Plan.

FY 2016 EXPECTED OUTCOMES

- Create, restore, and protect important coastal habitats.
- Increased coordination and more strategic implementation of water quality improvement activities in Galveston Bay oyster waters, Armand Bayou, Bastrop Bayou, Brays Bayou, Double Bayou, Cedar Bayou, Highland Bayou, Clear Creek, and Dickinson Bayou watersheds.
- Increase technical transfer from demonstration projects with local governments for improving storm water and assisting implementation of their National Pollutant Discharge Elimination System permits.
- Inform and educate adults and children through presentations, exhibiting events, voluntary events, and the *Back the Bay* campaign for a total of approximately 25 million impressions.
- Continue to build a brand for Galveston Bay across the Houston-Galveston region through the implementation of *Back the Bay* campaign.
- Continue to elevate the prominence of Galveston Bay issues in the local media and the general public's ability to recall Galveston Bay issues through a targeted media blitz (PSAs, paid advertisements, and increased media coverage) in Brazoria, Chambers, Galveston, Harris and Liberty counties.

FY 2016 EXPECTED OUTPUTS

- Conserve and protect 500 acres of habitat.
- Restore and enhance 500 acres of habitat.
- Complete two draft WPPs.
- Begin one water quality I-Plan in Chambers County.
- Begin one water quality monitoring project.
- Transfer and verify Status and Trends Maintenance dataset.
- Complete six presentations to bay user groups, civic groups, non-profit organizations and schools and provide exhibits at ten local events.
- Continue implementing the Galveston Bay Awareness and Education campaign.
- Develop and deliver one televised and web-based environmental story concerning Galveston Bay.

FY 2016 STATE AND FEDERAL FUNDING

The total cost of the FY 2016 work plan is \$1,200,000. Fifty percent (\$600,000) of the project cost is provided by federal funds; fifty percent (\$600,000) in match is being provided by TCEQ through a waste water treatment inspection fee, as described in Table 4 and Table 5. These tables exclude additional state and local funding.

Table 4. FY 2016 Funding

PROGRAM	AMOUNT (\$)	% OF TOTAL
GBEP	\$1,200,000	100%
Total	\$1,200,000	100%

Table 5. FY 2016 Budget Detail

BUDGET DETAIL- See Also Budget Worksheets (Table 6)	AMOUNT (\$)
Salaries (Includes Fringe and Indirect)	\$546,217
Travel	\$7,500
Capital	\$0
Supplies	\$5,921
Contracts	\$231,604
Other	\$408,758
Total	\$1,200,000

PROJECT SCHEDULE

The execution of the tasks associated with this work plan will occur over a 36-month period, which is anticipated to begin September 1, 2015, and end August 31, 2018. The exact start date of the work plan and all due dates for deliverables are contingent upon the actual date the grant funds are awarded and contracts executed.

The projects outlined in this work plan were developed by the NRU Subcommittee, WSQ Subcommittee, Monitoring Subcommittee, PPE Subcommittee, and the M&R Subcommittees, ranked by the Budget and Priorities (B&P) Subcommittee, and submitted to the GBC for approval in October, 2014. The GBC approved projects listed in this work plan at the October 22, 2014 quarterly meeting.

The project work plans will be submitted to the TCEQ Quality Assurance Officer and EPA Project Officer for review to determine which projects in the work plan will require a QAPP. Under the authority granted by EPA to TCEQ to approve QAPPs for GBEP, GBEP staff and their project partners will develop QAPPs for projects determined by TCEQ and EPA to require QAPPs. QAPPs will be developed in accordance with EPA requirements for QA Project Plans, QA/R-5.

SECTION 3: FY 2016 PROJECTS

SECTION 3.1: FY 2016 FEDERAL PROJECTS BY PROGRAM ELEMENT

Table 6 depicts the FY 2016 federal projects, broken out by program element.

Table 6. FY 2016 Federal Projects by Program Element (CTRL+CLICK Project Names)

PROJECT NAME	ALLOCATION YEARS	FEDERAL	STATE MATCH	TOTAL 2016 GBEP BUDGET	STATUS
Program Administration (Includes supplies, travel, salary, printing, fringe & indirect, intern)	2016	\$284,048	\$284,048	\$568,096	Annual
GBEP Website	2016	\$802	\$802	\$1,604	Annual
Admin Total				\$569,700	
1. CAP	2011-2016	\$50,000	\$50,000	\$100,000	Ongoing
NRU Total				\$100,000	
2. Top Five, Least Five Priority Bacteria Impaired Assessment Units	2015-2016	\$20,000	\$20,000	\$40,000	Ongoing
3. Galveston Bay FOG Campaign – Phase III	2014-2016	\$30,000	\$30,000	\$60,000	Ongoing
4. Stormwater BMP Testing at the Ghirardi Family WaterSmart Park	2016	\$28,650	\$28,650	\$57,300	New Project
WSQ Total				\$157,300	
5. Galveston Bay Public Awareness and Education Campaign	2010-2016	\$115,000	\$115,000	\$230,000	Ongoing
6. Trash Bash 2016	2016	\$2,500	\$2,500	\$5,000	Annual
PPE Total				\$235,000	
7. The Impacts of Assimilative Capacity of Reservoirs on Coastal Inflows	2016	\$40,000	\$40,000	\$80,000	New Project
8. Status and Trends	2014-2016	\$29,000	\$29,000	\$58,000	Ongoing
M&R Total				\$138,000	
FUNDING REQUEST GRANT TOTAL				\$1,200,000	

SECTION 3.2: FY 2016 FEDERAL PROJECT DESCRIPTIONS

3.2A - NRU PROJECTS FOR FY 2016

1. CAP

CCMP Actions Implemented: HP-1, HP-5, SP-1, SM-5, PPE-1

Grantee/Contractor: GBF

FY 2016 Budget: \$100,000

Total Project Budget: \$2,300,000

Milestones: Upon signature to August 2016

Project period: September 2015–August 2016

Status: Ongoing. To date, GBF and partners have permanently protected 1,889 acres of coastal habitat, leveraging an additional \$2,580,200 from outside sources. An additional 6,835 acres are in various stages of implementation, with \$8,675,000 in outside funding secured.

Objective(s): The goal of this project is to place 1,000 acres of coastal habitat in the Galveston Bay area in permanent conservation.

Description: The CAP is intended to provide financial assistance to coordinate with conservation partners in the region to identify priority habitat areas; build funding strategies through grant identification and grant writing; work with willing sellers to negotiate price for fee simple acquisitions or easement rights; and carry-out legal and title transaction support to finalize sale and transfer title of property to a third party conservation/land trust organization or government entity. Milestone dates for individual tasks are not applicable as project identification is a continuous task, and specific project support is applied for on an as-needed basis.

Partners and Their Role(s): While GBF leads the efforts, the CAP workgroup is comprised of a diverse group of federal, state, local, and non-governmental organization resource managers.

Outputs/Products:

1. Quarterly progress reports until contract expiration
2. Final Report due August 2016

Outcomes

Short-term: Development of prioritized list of conservation projects and funding strategies.

Intermediate: Completion of 1-3 conservation projects in the lower Galveston Bay watershed through fee-simple acquisition, easement, or purchase of development rights.

Long Term: The permanent conservation of coastal habitat and preservation of important hydrologic and water quality functions in West Bay;

Pressures (+/-): Decreasing pressure on West Bay due to increased protection of coastal habitat from development.

3.2B - WSQ PROJECTS FOR FY 2016

2. Top Five, Least Five Priority Bacteria Impaired Assessment Units

CCMP Actions Implemented: WSQ-1; NPS-3; PPE-3

Grantee/Contractor: H-GAC

FY 2016 Budget: \$40,000

Project Total: \$100,000

Milestones: Upon signature to May 2017

Project Period: Predicted execution August 2015–May 2017

Status: Not yet executed.

Objective(s): The goal of this project is to target 10 specific watersheds to conduct supplemental sampling and evaluation to identify specific sources of bacteria and reduce bacteria loading. This project aligns with one of the EPA’s areas of special interest regarding nutrient management and control activities.

Description: H-GAC tracked bacteria levels in the BIG project area to determine the Top Five Most/Top Five Least Lists. The top five or “Most Wanted” are those streams with the highest geometric means relative to the state standards for bacteria and require the most improvement to reach those standards. The top five least or “Most Likely to Succeed” are those stream locations with the lowest geometric means relative to the state standards for bacteria and are most likely to reach the water quality standards with minor improvements. Through this proposal, H-GAC seeks funding to address these 10 targeted watersheds to identify sources of bacteria pollution through targeted monitoring. Once the sources are identified, report those sources to the appropriate entity for correction, demonstrate improved water quality, and document the project to demonstrate the value of a prioritized watershed approach through outreach materials and workshops. For FY 2015 the project was funded at \$50,000 to cover the cost of QAPP development and initial desktop and ground truth analysis. The rest of the project funding will be added in FY 2016 to begin wet and dry weather sampling and analysis.

Because of unforeseen delays, the Contract has not been executed. Once the Contract is executed, the contractor will develop a QAPP. The next steps that will take place in FY 2016 will be to perform the ground truth analysis and desk review to refine the Top 5/Least 5 watersheds. Part of the analysis will be to develop a Geospatial database to further refine the watersheds and develop the prioritization strategy for wet and dry weather data collection. Wet and dry weather sampling that will help identify bacteria sources may begin by the end of FY 2016.

Partners and Their Role(s): Members of the BIG provide resources when requested.

Outputs/Products: QAPP; Ambient Monitoring; Land Use/Land Cover QAPP; and Wet and Dry Weather QAPP. Once QAPPS are completed and approved, the project will include a desk review/ground truth preliminary action report, wet/dry weather data report, source identification report, and outreach and education report.

1. Draft QAPP due within 60 days of contract execution, final QAPP 30 days following TCEQ review of draft
2. Quarterly progress reports until contract expiration
3. Desk Review/Ground Truth Preliminary Action Report due December 2015
4. Source Identification Report due December 2016
5. Outreach and Education Report due December 2017
6. Final Report due May 2017

Outcomes

Short-term: Data. Sources identified.

Intermediate: On the ground fixing of impairment by jurisdictions.

Long Term: Improved water quality

Pressures (+/-): Older infrastructure. Continued population growth in watershed.

3. Galveston Bay FOG Campaign – Phase III

CCMP Actions Implemented: WSQ-1,5,6; Point Sources of Pollution (PS)-2; PPE-3

Grantee/Contractor: City of Nassau Bay

FY 2016 Budget: \$60,000

Project Total: \$156,000

Milestones: Upon signature to August 2017

Project Period: July 2014–August 2017

Status: Ongoing.

Objective(s): The goal of this project is to reduce, via public education, bacteria loading into Galveston Bay caused by the release of FOG into sewer systems. This project aligns with one of the EPA's areas of special interest regarding nutrient management and control activities.

Description: Continuation of the Cease the Grease Campaign to reduce sanitary sewer overflows from FOG by: 1) working in cooperation with a stakeholder workgroup, 2) developing marketing and outreach materials, 3) creating a distribution plan, and 4) tracking campaign progress. The proposal includes refining and maintaining these campaign efforts based on lessons learned, in addition to partnering with cities and grocery stores to pilot local grease recycling stations.

The third phase of the FOG project will focus on designing, launching, and promoting a cooking oil recycling pilot program. The contractor will target a minimum of two recycling stations in the Lower Galveston Bay watershed. The receptacles will be installed by January 31, 2017. Once installed, a map will be developed with all existing recycling stations as well as new stations. The success of the recycling program will be tracked using data retrieved from the oil haulers and pilot partners. Other deliverables that will be included in the quarterly reports are photos of the stations and outreach promotion materials.

Partners and Their Role(s): GBF is coordinating and facilitating the effort between partners, City of Nassau Bay is serving as the pass-thru entity, City of Dallas is providing the Cease the Grease program materials free of charge, League City, City of La Porte, and City of Pasadena are contributing to brand development, and KPRC Channel 2 is providing in-kind media and creating the website.

Outputs/Products: Public outreach campaign, materials, and implementation tracking.

1. Quarterly progress reports until contract expiration
2. Installation of recycling receptacles, January 2017
3. Final Report due 30 days before contract expiration

Outcomes

Short-term: FOG marketing and outreach materials.

Intermediate: Voluntary compliance tracking on the number of households the campaign reaches.

Long Term: Fewer overflow reports, increase in number of grease recycling stations.

Pressures (+/-): Decrease in the number of overflow reports and fewer impaired water bodies.

4. Stormwater BMP Testing at the Ghirardi Family WaterSmart Park

CCMP Actions Implemented: WSQ-1, 6; NPS-2,4,6

Grantee/Contractor: Texas A&M/AgriLife Extension

FY 2016 Budget: \$57,300

Project Total: \$57,300

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Galveston Bay Estuary Program

Milestones: Upon signature to May 2018

Project Period: September 2016 - May 2018

Status: New project

Objective(s): To create a long term data set for stormwater BMP effectiveness and the use of green infrastructure. This project aligns with one of the EPA's areas of special interest regarding nutrient management and control activities.

Description: Continuation of data collection of green infrastructure elements at five existing sites within the park: pervious pavers, impervious pavers, green roof, cistern, and rain garden. The two types of pavers create a paired data set and the green roof and cistern both treat runoff from the pavilion roof, creating a second paired set. Finally, a rain garden (bio-retention cell) that collects water off of the parking lot through a curb cut will be sampled. Each site is sampled during qualifying rain fall events (storms producing at least 0.29 inches of rain). Measured parameters for each practice are: nitrate/ nitrite, total phosphorus, total suspended solids and E. coli.

The initial design and construction of the Ghirardi Family WaterSmart Park was funded through a 319 (h) grant from TCEQ. It also included a BMP monitoring plan, QAPP, and monitoring equipment purchases. This new contract with GBEP is the continuation of data collection for an additional 18 months in order to provide much needed long term data of stormwater BMPs and their continued ability to improve water quality.

Partners and Their Role(s): League City is coordinating with AgriLife Extension to allow the use of their parkland.

Outputs/Products: Long term dataset for stormwater BMPs and white paper outlining the water quality data collected from the stormwater BMPs and the conclusions that can be drawn from this data.

1. Quarterly progress reports until contract expiration
2. Draft QAPP due 60 days of contract execution, final QAPP due within 45 days of draft
3. Draft white paper due within 60 days of contract expiration, final white paper due no later than two weeks of contract expiration
4. Final report due no later than two weeks prior to contract completion

Outcomes

Short-term: Storm samples from five BMPs in the park.

Intermediate: Example BMPs for use by homeowners and businesses.

Long Term: Long term data set that provides results demonstrating the effectiveness of the stormwater BMPs and design criteria.

Pressures (+/-): Effective use of stormwater BMPs for use by individual homeowners; enough storms to qualify to retrieve representative data.

3.2C - PPE PROJECTS FOR FY 2016

5. Galveston Bay Public Awareness and Education Campaign

CCMP Actions Implemented: All

Grantee/Contractor: To be determined through TCEQ preapproved vendor list.

FY 2016 Budget: \$230,000

Total Budget: To be determined.

Milestones: Upon signature through August 2016

Project Period: December 2015–August 2016

Status: This project was initially approved by TCEQ and EPA for the FY 2008 work plan. Implementation is scalable and was designed to be carried out over several years with funding being added as it became available. The original contract was signed 2/3/10, and requires annual renewal amendments. Funding for bay-wide implementation (i.e., Brazoria, Galveston, Harris, Chambers and Liberty counties) began in September 2011 (FY 2012).

The contract with EnviroMedia ends August 31, 2015. A new Request for Proposal will be initiated in FY 2016.

Objective(s): The objective of *Back the Bay* is to raise regional awareness and value of Galveston Bay, and promote environmentally-conscious actions—those that help preserve habitat, conserve water, and improve water quality.

Description: GBEP developed a regional public stewardship campaign, called *Back the Bay*, to increase public awareness and education about Galveston Bay. The campaign offers a fun and interactive way for residents to learn about the benefits of, and their connection to, our region's most valuable natural resource. The campaign also features conservation tips that benefit the bay. The campaign will be used to reinforce implementation of The Plan's priorities. This specifically includes: watershed-based, water-quality-improvement initiatives; habitat conservation; and freshwater inflows.

The campaign is being implemented in a phased rollout through August 2015. The campaign is comprehensive in nature and includes two phases. The first phase started with a pre-research project (Summer 2010), a pilot program project in a limited geographical region (Summer 2011), and post-pilot research (Summer 2011). These projects developed and tested campaign messages, creative and other tactics, and a campaign plan. The second phase began in the spring of 2012, and expanded to the entire five-county region. In order to maximize awareness and effectiveness, the campaign will expand as quickly as the budget allows both geographically and in terms of the media mix.

Partners and Their Role(s): The following partners have provided campaign exposure by using the campaign messaging and materials: GBF, Take Care of Texas, Houston Audubon, Audubon Texas, City of Pasadena, City of Baytown, and Houston Parks Board. Funding partners: TCEQ, US EPA (\$320 Grant), and US Fish and Wildlife Service, GLO (CIAP award).

Outputs/Products: In FY 2016, the campaign will continue to focus on the three pillars of the campaign: habitat conservation, water quality, and water conservation.

Outcomes

Short-term: Increase awareness of the bay's value among target audiences through a branding of Galveston Bay and targeting media outlets to increase news coverage on the bay and its challenges

Intermediate: Identify desired actions for habitat preservation, increase in water quality, increased awareness of water consumption, identify barriers to desired actions in target audiences; continue to increase awareness of the bay's value among target audiences through a branding Galveston Bay, target media outlets to increase news coverage on the bay and its challenges.

Long Term: Change behaviors of audiences that are associated with habitat loss, degraded water quality, and water consumption in appropriate-identified percentage of the Houston-Galveston area targeted audiences—those whose behavior change will affect the most positive change. (Percentage of behavior change—as well as type—and target audiences was determined through extensive preliminary research before campaign implementation and reassess throughout campaign implementation.)

Pressures (+/-): Ability to raise funds beyond FY 2021—the project end date and competing management priorities.

6. Trash Bash 2016

CCMP Actions Implemented: PPE-1, PPE-3, PPE-5, SD-5

Grantee/Contractor: H-GAC

FY 2016 Budget: \$5,000

Total Budget: \$6,500

Milestones: Upon approval thru May 2016

Project Period: March 2015– May 2016

Status: Ongoing.

Objective(s): The goal of Trash Bash is to "promote environmental stewardship of our watershed through public education by utilizing hands-on educational tools and by developing partnerships between environmental, governmental and private organizations."

Description: Trash Bash is a successful volunteer-based litter cleanup event that has been held at multiple sites in the Houston-Galveston area on an annual basis since 1994. This grant's funds help promote and implement the Trash Bash 2015 by paying for items such as, but not limited to, supporting staff to coordinate activities with site leads and collect and share results, printing and postage of promotional materials and for acquiring supplies for the participating sites.

In 2015, \$1,500 was provided by GBEP to pay for printing, laminating and procuring education posters. GBEP continues to support Trash Bash in 2016 by providing funds at the \$5,000 sponsorship level to fund print, lamination, and procurement education posters.

Partners and Their Role(s): Partners for this project include H-GAC which organizes and coordinates the event, Texas Conservation Fund which manages the funding, TCEQ's \$319 grant program which provides funding, City of Houston provides site coordinators and outreach materials, as well as private and corporate sponsorships.

Outputs/Products: Final report including a copy of the press release, number of trash bash sites, number of volunteers and hours, number of exhibitors, number of partners organizing the event, and number of save-the-date cards mailed to potential participants.

1. 2016 Trash Bash event will be held on April 2, 2016
2. Final report is due no later than July 31, 2016

Outcomes

Short-term: Increase number of new participants by 10%; increase pounds of trash collected by 1%; increase pounds of materials recycled by 10%; increase awareness level of the connection between littering, how litter enters into our waterways, and the negative impacts it has on neighboring communities, fish and wildlife by 10% at one Trash Bash location (Mason Park); increase news coverage of the Trash Bash event and the harmful environmental impacts of littering on our area waterways by 10%; increase the dollar value of free publicity from the news coverage by 10%.

Intermediate: Increase awareness of actions associated with litter prevention in a neighborhood located next to Mason Park.

Long Term: Increase awareness level of the connection between littering, how litter enters into our waterways, and the negative impacts it has on neighboring communities, fish and wildlife by 10% at all Trash Bash locations. Decrease the amount of trash flowing into area waterways through educating citizens on appropriate actions i.e. do not litter in your neighborhood, along the roads, etc.

Pressures (+/-): Continued increase in the amount of trash flowing into area waterways from influxes in

populations not familiar with the harmful environmental impacts of littering and insufficient community pride associated with litter-free neighborhoods.

3.2D - M&R PROJECTS FOR FY 2016

7. The Impacts of Assimilative Capacity of Reservoirs on Coastal Inflows

CCMP Actions Implemented: Freshwater Inflows (FW) -1-5; RSC - 2

Grantee/Contractor: Houston Advanced Research Center (HARC)/ Geotechnology Research Institute

FY 2016 Budget: \$80,000

Total Project Budget: \$80,000

Milestones: Upon signature to May 2018

Project period: September 2015–May 2018

Status: New project.

Objective(s): The goal for the proposed project is to assess the assimilative capacity of the Lake Livingston reservoir and related impacts on coastal inflows.

Description: More than half of the inflow into Galveston Bay comes from the Trinity River. The Lake Livingston reservoir feeds into the Trinity and the goal of the project will be to assess the assimilative capacity of Lake Livingston and the related impacts on coastal inflows. The United States Geological Survey (USGS), in cooperation with the Texas Water Development Board (TWDB), has evaluated a number of high flow events on the Trinity River in order to evaluate the variability of nutrient and sediment concentrations entering Texas bays and estuaries during a variety of flow conditions. Initial results from this study indicate that releases in the Lake Livingston reservoir may play an important role in controlling sediment and nutrient load variability to the coastal ecosystem. The effect Lake Livingston has in sequestering sediments and nutrients is not well understood; therefore quantifying the assimilative capacity of Lake Livingston is critical in understanding the impacts of reservoirs on the health of the Galveston Bay ecosystem.

Partners and Their Role(s): The USGS will assist with the development of the QAPP and the monitoring plan, and will also conduct the monitoring; TWDB will contribute sampling data from the Trinity River.

Outputs: QAPP, monitoring plan, monitoring data, and baseline dataset for the area.

1. Quarterly progress reports until contract expiration
2. Draft QAPP due 60 days of contract execution, final QAPP due within 45 days of draft
3. Monitoring plan due 30 days after QAPP execution
4. Final report due 30 days prior to contract execution date

Outcomes

Short-term: Monitoring data

Intermediate: A baseline dataset of measurements from surface water quality samples and methodologies capable of identifying spatial and temporal changes in water quality.

Long Term: Insight into assimilative capacity of reservoirs and impacts to inflows for Galveston Bay.

Pressures (+/-): Not enough funding to provide a full set of data.

8. Status and Trends

CCMP Actions Implemented: All (Indirectly RSC-2)

Grantee/Contractor: TAMUG

FY 2016 Budget: \$58,000

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Galveston Bay Estuary Program

Total Project Budget: \$173,228

Milestones: Upon signature to May 2017

Project period: September 2014– May 2016

Status: Ongoing.

Objective(s): The objective of this project is to update the current Status and Trends data and to create a publically accessible web interface that includes interactive data mapping. This project also serves as a tool to provide summary analysis of status and trends in Galveston Bay to the program.

Description: TAMUG will continue GBEP's Status and Trends project. The organization will develop a QAPP; house and maintain the necessary infrastructure according to quality assurance protocols; update the databases with the latest high quality data concerning water quality and quantity, habitat, wildlife, and other Galveston Bay related environmental, economic and social data; develop a new database and web interface accessible to the public, complete with interactive data mapping features; provide summary analysis for GBEP, GBC, GBC subcommittees, resource managers, local governments, universities, schools and the general public; and make presentations to interested organizations and associations.

The QAPP was approved on March 3, 2015. Since the approval of the QAPP, the contractor has acquired the data from HARC and is in the process of following quality assurance protocols to validate the data. They are actively meeting with different entities to assess the data needs. They have also begun incorporating the data into the Texas Coastal Planning Atlas. On 6/15/15 the Data Collection Report was submitted. On 6/30/15 the Database Development Report was submitted.

Partners and Their Role(s): (No official partners although HARC will provide the historical data.)

Outputs: Agency data acquired; databases updated; QAPP; website developed, updated and maintained; presentations; and final report.

1. Quarterly progress reports until contract expiration
2. Draft QAPP due 60 days of contract execution, final QAPP due within 45 days of draft
3. Coordination meeting due annually in January
4. Draft and final data collection report due April 15 and May 15 of each year
5. Draft and final database development report due April 15 and May 15 of each year
6. Digital hard copy of data files, metadata and final database due within 30 days after contract expiration
7. Draft and final database maintenance and delivery report due April 15 and May 15 of each year
8. Draft and final query and analysis report due April 15 and May 15 of each year
9. Final report due 14 days before contract expiration

Outcomes

Short-term: Annual update of relevant state and federal environmental, economical, and social data.

Intermediate: Website developed and maintained, improved, updated, and users tracked.

Long Term: Use of data and website by GBEP, stakeholders, researchers, decision makers, and the public.

Pressures (+/-): Loss of data and ability of access has been a long term concern that is eliminated by maintaining an annual Status and Trends project.

SECTION 3.3: FY 2016 GRANT BUDGET SPREADSHEET

Figure 6 depicts the Grant Budget Spreadsheet for FY 2016. Table 7 provides a summary of the FY 2016 budget.

FY 2016						
	Total Costs	Natural Resources	Water Sediment	PPE	Mon & Research	Administration
Project #	-	978000	978200	978400	978600	978800
PCA	-	97850	97852	97854	97856	97858
Salaries	\$ 335,865	\$ -	\$ -	\$ -	\$ -	\$ 335,865
Contracts	\$ 231,604	\$ -	\$ -	\$ 230,000	\$ -	\$ 1,604
Travel	\$ 7,500	\$ -	\$ -	\$ -	\$ -	\$ 7,500
Other	\$ 408,758	\$ 100,000	\$ 157,300	\$ 5,000	\$ 138,000	\$ 8,458
Supplies	\$ 5,921	\$ -	\$ -	\$ -	\$ -	\$ 5,921
Equipment	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Construction	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Sub-Total	\$ 989,648	\$ 100,000	\$ 157,300	\$ 235,000	\$ 138,000	\$ 359,348
Fringe 30.18%	\$ 101,364	\$ -	\$ -	\$ -	\$ -	\$ 101,364
Indirect 32.45%	\$ 108,988	\$ -	\$ -	\$ -	\$ -	\$ 108,988
TOTAL FY16	\$ 1,200,000	\$ 100,000	\$ 157,300	\$ 235,000	\$ 138,000	\$ 569,700

Figure 6. FY 2016 Grant Budget Spreadsheet

Table 7. 2016 GBEP Budget Summary (CTRL+ CLICK Project Names)

2016 GBEP Budget Summary	Program Element	Amount
Salaries		\$ 335,865
Salaries for staff members of GBEP	5	\$ 335,865
Contracts		\$ 230,000
5. Galveston Bay Public Awareness and Education Campaign	3	\$ 230,000
Travel		\$ 7,500
Travel for Program Manager to attend applicable NEP conference (to be determined)	5	\$ 2,500
Travel for Staff to attend applicable NEP conference (to be determined)	5	\$ 2,500
Travel for Staff to attend ANEP Spring Meeting	5	\$ 2,500
Other		\$ 410,362
1. CAP	1	\$ 100,000
2. Top Five, Least Five Priority Bacteria Impaired Assessment Units	4	\$ 40,000
3. Galveston Bay FOG Campaign – Phase III	2	\$ 60,000
4. Stormwater BMP Testing at the Ghirardi Family WaterSmart Park	3	\$ 57,300
6. Trash Bash 2016	3	\$ 5,000
7. The Impacts of Assimilative Capacity of Reservoirs on Coastal Inflows	4	\$ 80,000
8. Status and Trends	4	\$ 58,000
GBEP Website	5	\$ 1,604
Mickey Leland Intern	5	\$ 8,458
Supplies		\$ 5,921
Toner Cartridges for Printers	5	\$ 721
Supplies for Outreach and Education	5	\$ 200
Plan Printing	5	\$ 5,000
Fringe and Indirect		\$ 210,352
2016 GRANT TOTAL		\$ 1,200,000

Table 8. Travel Summary by Trip

Travel Summary	Amount
NEP Applicable out-of-state conference (1 person travel, 4 days)	\$2,500
Airfare	\$1,300
Lodging (\$183/night)	\$732
Hotel Tax (14.5%)	\$106
Taxi/transport	\$80
Parking	\$98
Per diem (\$46/day)	\$184
NEP Applicable out-of-state conference (1 person travel, 4 days)	\$2,500
Airfare	\$1,300
Lodging (\$183/night)	\$732
Hotel Tax (14.5%)	\$106
Taxi/transport	\$80
Parking	\$98
Per diem (\$46/day)	\$184
ANEP Spring Meeting in DC (1 person travel, 4 days)	\$2,500
Airfare	\$1,300
Lodging (\$183/night)	\$732
Hotel Tax (14.5%)	\$106
Taxi/transport	\$80
Parking	\$98
Per diem (\$46/day)	\$184
2016 Travel Estimate Total*	\$7,500

*All out of state travel is dependent on management review and approval. Rates for FY 2016 are subject to change and estimates are based on previous trips from FY 2015 as well as federal and state per diem rates.

SECTION 4: ONGOING PROJECTS

SECTION 4.1: ONGOING FEDERAL PROJECTS BY PROGRAM ELEMENT

The projects outlined in this work plan were developed by the NRU Subcommittee, WSQ Subcommittee, Monitoring Subcommittee, PPE Subcommittee, and the M&R Subcommittees, ranked by the B&P Subcommittee, and submitted to the GBC for approval in April 2013 and 2014. The GBC approved projects listed in Table 9 are for projects described in the FY 2014 and FY 2015 GBEP work plans.

Table 9. Ongoing Federal Projects by Program Element for CWA §320 EPA Grant #CE-00F20801 FY 2014-2015 (CTRL+CLICK Project Names)

PROJECT NAME	WORK PLAN REQUEST	ADJUSTMENTS	STATUS
Salaries	\$625,798	\$625,798	
Travel	\$11,283	\$11,283	
Supplies	\$7,558	\$2,558	\$5000 for printing moved to FY16 work plan request
Website	\$3,209	\$3,209	
Mickey Leland Intern	\$3,000	\$3,000	
Administration Total	\$650,848	\$645,848	
1. CAP	\$100,000	\$100,000	
NRU Total	\$100,000	\$100,000	
2. Top Five, Least Five Priority Bacteria Impaired Assessment Units	\$20,000	\$50,000	Increased funding level by \$30,000 from reallocated planning and symposium
3. Galveston Bay FOG Campaign – Phases I & II	\$96,000	\$96,000	
4. Highland Bayou WPP	\$100,000	\$100,000	
WSQ Total	\$216,000	\$246,000	
5. Galveston Bay Public Awareness and Education Campaign	\$338,059	\$338,059	
6. Trash Bash 2014	\$5,000	\$5,000	
7. Trash Bash 2015	\$1,500	\$1,500	
8. State of the Bay Symposium	\$25,000	\$-	Not being funded
To be determined	\$46,972	\$46,972	
PPE Total	\$416,531	\$391,531	
9. Status and Trends	\$115,228	\$115,228	
10. M&R RFGA	\$274,240	\$274,240	
M&R Total	\$389,468	\$389,468	
SUB-TOTAL	\$1,772,847	\$1,772,847	
Fringe	\$149,792	\$149,792	
Indirect	\$177,362	\$177,362	
GRANT TOTAL	\$2,100,000	\$2,100,000	

SECTION 4.2 ONGOING FEDERAL PROJECT DESCRIPTIONS

4.2A – ONGOING NRU PROJECTS

1. CAP

CCMP Actions Implemented: HP-1, HP-5, SP-1, SM-5, PPE-1

Grantee/Contractor: GBF

FY 2014 Budget: \$100,000

FY 2015 Budget: N/A

Total Project Budget: \$2,300,000

Milestones: 08/24/11 – 08/31/16

Project period: 2011-2017

Status: Ongoing. See page 21 for project details.

4.2B – ONGOING WSQ PROJECTS

2. Top Five, Least Five Priority Bacteria Impaired Assessment Units

CCMP Actions Implemented: WSQ-1; NPS-3; PPE-3

Grantee/Contractor: H-GAC

FY 2014 Budget: N/A

FY 2015 Budget: \$50,000

Project Total: \$100,000

Milestones: Upon signature to 05/31/2017

Project Period: 2015-2017

Status: Ongoing. See page 21 for project details.

3. Galveston Bay FOG Campaign – Phases I & II

CCMP Actions Implemented: WSQ-1,5,6; PS-2; PPE-3

Grantee/Contractor: GBF

FY 2014 Budget: \$50,000

FY 2015 Budget: \$46,000

Project Total: \$156,000

Milestones: Upon signature to 05/31/2015

Project Period: 2014-2016

Status: Ongoing. See page 23 for project details.

4. Highland Bayou WPP

CCMP Actions Implemented: WSQ-1,2,6,7; NPS-1,2,3,4,5,6,10,11,12,13,14; PS-1,2,5

Grantee/Contractor: TX AgriLife Extension

FY 2014 Budget: \$100,000

FY 2015 Budget: N/A

Project Total: \$100,000

Milestones: Upon signature to 05/31/2015

Project Period: 2012-2015

Status: This is the third and final phase of the project which will complete the final four elements of the WPP. The first five elements were completed under the ARRA grant (\$275,000) and an additional \$100,000 grant from GBEP. The contract has been executed with Texas AgriLife, and the grantee is currently developing the QAPP.

Objective(s): Complete the final four elements of the Highland Bayou WPP.

Description: This phase will result in the completion of the Highland/Marchand Bayou nine element WPP. The watershed covers five municipalities although Hitchcock, La Marque, and Bayou Vista together cover approximately 85% of the watershed. The grant funding opportunities opened by a WPP are motivating the communities to participate in the WPP process. One or more grant proposals will be identified and developed concurrently with the WPP, with the goal of having a workable application ready for submission. Potential ideas discussed by stakeholders include collection system repairs and upgrades, which are sorely needed in some neighborhoods and would likely having an impact on bacteria levels in the bayou. The communities may qualify for State Revolving Fund loans. This project phase would also entail the implementation of programmatic efforts, like education and outreach.

Outputs/Products: Increase local stakeholder support and involvement; support core EPA Clean Water Act Programs; build capacity for areas to secure federal funding; identify conservation areas and priorities in support of future watershed based habitat conservation.

Outcomes

Short-term: WPP.

Intermediate: Implementation of WPP.

Long Term: Improved water quality

Pressures (+/-): Decreased pollutant loads.

4.2C – ONGOING PPE PROJECTS

5. Galveston Bay Public Awareness and Education Campaign

CCMP Actions Implemented: All

Grantee/Contractor: EnviroMedia Social Marketing

FY 2014 Budget: \$86,424

FY 2015 Budget: \$317,000

Total Budget: \$5,000,000

Milestones: Upon signature to 08/31/2015

Project Period: 2011-2015

Status: Ongoing. See page 24 for project details.

6. Trash Bash 2014

CCMP Actions Implemented: PPE-1, PPE-3, PPE-5, SD-5

Grantee/Contractor: H-GAC

FY 2014 Budget: \$5,000

FY 2015 Budget: N/A

Total Budget: \$5,000

Milestones: Upon approval thru 5/31/14

Project Period: 2014

Status: Completed. See page 38 for project details.

7. Trash Bash 2015

CCMP Actions Implemented: PPE-1, PPE-3, PPE-5, SD-5

Grantee/Contractor: H-GAC

FY 2014 Budget: N/A

FY 2015 Budget: \$1,500

Total Budget: \$6,500

Milestones: Upon approval thru 5/31/15

Project Period: 2015

Status: Ongoing. See page 26 for project details.

8. State of the Bay Symposium

CCMP Actions Implemented: PPE-1, 2, 3, 4, 5, 6, 7, 8; RSC-3

Grantee/Contractor: To be determined.

FY 2014 Budget: N/A

FY 2015 Budget: \$0

Total Budget: To be determined.

Milestones: Upon approval thru 8/31/2016

Project Period: 2016

Status: No longer requesting funding through the work plan.

4.2D – ONGOING M&R PROJECTS

9. Status and Trends

CCMP Actions Implemented: All

Grantee/Contractor: TAMUG

FY 2014 Budget: \$57,228

FY 2015 Budget: \$58,000

Total Project Budget: \$173,228

Milestones: Upon signature to 5/31/2016

Project Period: 2014-2016

Status: Ongoing. See page 27 for project details.

10. M&R RFGA

CCMP Actions Implemented: RSC-2, 4

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Grantee/Contractor: To be determined

FY 2014 Budget: \$182,394

FY 2015 Budget: \$91,846

Total Project Budget: \$274,240

Milestones: Upon signature to 5/31/2016

Project period: 2014-2015

Status: Ongoing. The top two ranked projects were selected and award letters were sent to the chosen applicants on 10/31/2014. GBEP project managers are working with the grantees to develop scopes of work and contracts. The projects chosen are entitled, "Mangrove Restoration in Galveston Bay: Ecological Benefits and Effective Restoration Techniques" submitted by Dr. Anna Armitage of TAMUG which received \$138,518 and "Galveston Bay: Changing Land Use Patterns and Nutrient Loading. Causal or Casual Relationship with Water Quality, Quantity, and Patterns" submitted by Dr. Antonietta Quigg of TAMUG which received \$135,722. Contracts are currently under review to be signed.

Objective(s): The objective of this project is to fund research in four predetermined areas that were identified and prioritized by the Research and Monitoring Subcommittee.

Description: The M&R RFGA will seek projects addressing the top four project areas identified and prioritized by the Research and Monitoring Subcommittee. One to three projects will be selected this fiscal year for funding based on the quality of submitted grant applications. Selected projects could use funds across multiple fiscal years. The top four project areas are: Beneficial Flows in Galveston Bay: Quality, Quantity, and Patterns; Fauna of Galveston Bay: Benthic, Nekton, and Colonial Waterbirds; Wetland Habitat Management in Galveston Bay; and Economic and Social Valuation of Galveston Bay Habitats.

Outputs: Data collected; peer reviewed articles; bibliography; analysis; presentations; and final report.

Outcomes

Short-term: One to three Galveston Bay ecosystem based research and monitoring projects being conducted.

Intermediate: Available data and supportable conclusions to be used by resource managers and future CCMP implementation and planning.

Long Term: Improved CCMP management of Galveston Bay.

Pressures (+/-): RFGA provides an incentive for universities and research organizations to increase their efforts on researching Galveston Bay and supplementing Estuary Program funding with other sources, e.g. Coastal Management Program and Texas Sea Grant.

SECTION 5: COMPLETED MAJOR PROJECTS

SECTION 5.1: MAJOR PROJECTS COMPLETED IN FY 2015

The following are major projects that were completed during FY 2015.

COMPLETED MAJOR PROJECTS

1. Evaluating the Variability of Sediment and Nutrient Concentrations and Loads from Freshwater Inflows into Galveston Bay

CCMP Actions Implemented: FW-1, FW-4, WSQ-6, RSC-2, RSC-4

Lead Implementer: USGS

Partners and Their Role(s): TWDB will continue to collaborate with USGS on this research.

Status: Complete.

Objective(s): The goal of this project was to evaluate variability of sediment and nutrient characteristics in the lower reaches of the Trinity and San Jacinto Rivers during a variety of hydrologic conditions.

Description: This study aimed to help characterize the sediment and nutrient load transported into Galveston Bay. The flow, sediment, and nutrient data can be used for descriptive purposes as well as serving as input to hydrodynamic and water quality models that aid the understanding of the general Galveston Bay ecosystem.

Accomplishments and Deliverable(s): An Acoustic Doppler Velocity Meter (ADVM) was installed at the USGS streamflow gaging station 08067252 Trinity River at Wallisville, TX. This transmitting ADVM will increase collection of velocity and backscatter data and serve as a decision support tool for sample collection. Additionally discharge measurements collected during the time of water sampling would potentially allow for the development of an index velocity rating to the measurement of discharge in the lower reaches of the Trinity River in future studies.

§320 Funds: \$135,000

Long-term Outcomes The installation of the index velocity gage should prove to be a useful tool in future assessment of discharge and sediment/nutrient loading into the Galveston Bay system.

CWA Core Program(s): N/A

2. Trash Bash 2014

CCMP Actions Implemented: PPE-1, PPE-3, PPE-5, SD-5

Lead Implementer: H-GAC

Partners and Their Role(s): Partners for this project include H-GAC which organizes and coordinates the event, Texas Conservation Fund which manages the funding, TCEQ's §319 grant program which provides funding, as well as private and corporate sponsorships.

Status: Complete.

Objective(s): The goal of Trash Bash is to "promote environmental stewardship of our watershed through public education by utilizing hands-on educational tools and by developing partnerships between environmental, governmental and private organizations."

Description: Trash Bash is a successful volunteer-based litter cleanup event that has been held at multiple sites in the Houston-Galveston area on an annual basis since 1994. This grant's funds help promote and implement the Trash Bash 2014 by paying for items such as, but not limited to, supporting staff to coordinate activities with site leads and collect and share results, printing and postage of promotional materials and for

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acquiring supplies for the participating sites.

Accomplishments and Deliverable(s): As a result of this project, a total of 4,622 individuals volunteered for the event, of which 1,926 were under 18 years of age. Approximately 37 tons of trash was collected and 369 tires were gathered for recycling. Volunteers cleaned 157 miles of shoreline and 2,858 pounds of material was recycled. As a deliverable, a final report was published which included results summary by site, save-the-date cards, copy of the press release, and other project details.

§320 Funds: \$5,000

Long-term Outcomes: Increase awareness level of the connection between littering, how litter enters into our waterways, and the negative impacts it has on neighboring communities, fish and wildlife by 10% at all Trash Bash locations. Decrease the amount of trash flowing into area waterways through educating citizens on appropriate actions i.e. do not litter in your neighborhood, along the roads, etc.

CWA Core Program(s): Addressing diffuse, nonpoint sources of pollution