

Galveston Bay Comprehensive Conservation and Management Plan (CCMP) Revision Process

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July 13, 2016

Watershed Coordinators Roundtable

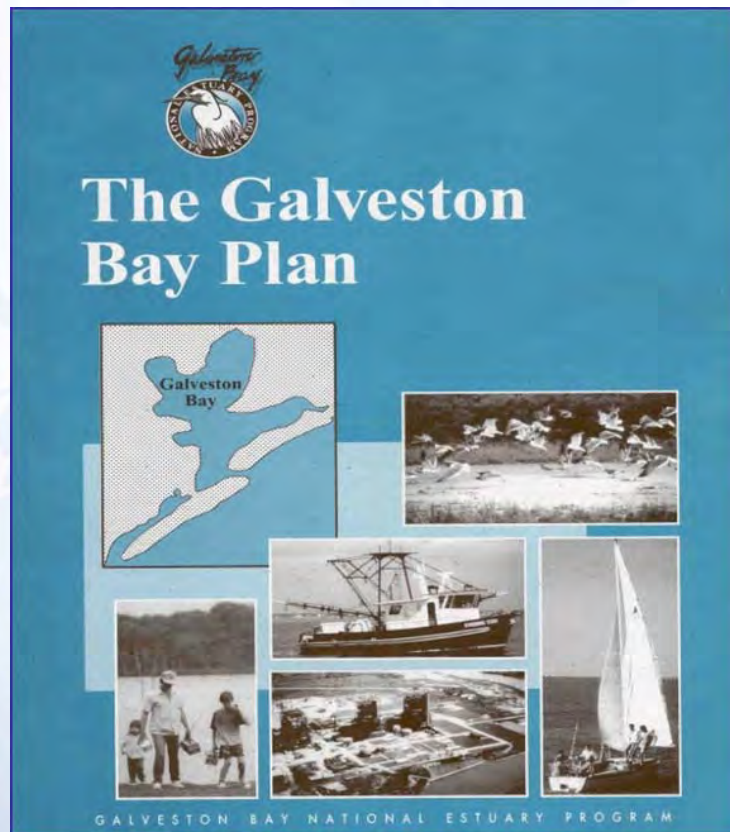
Waco, Texas



28 National Estuary Programs



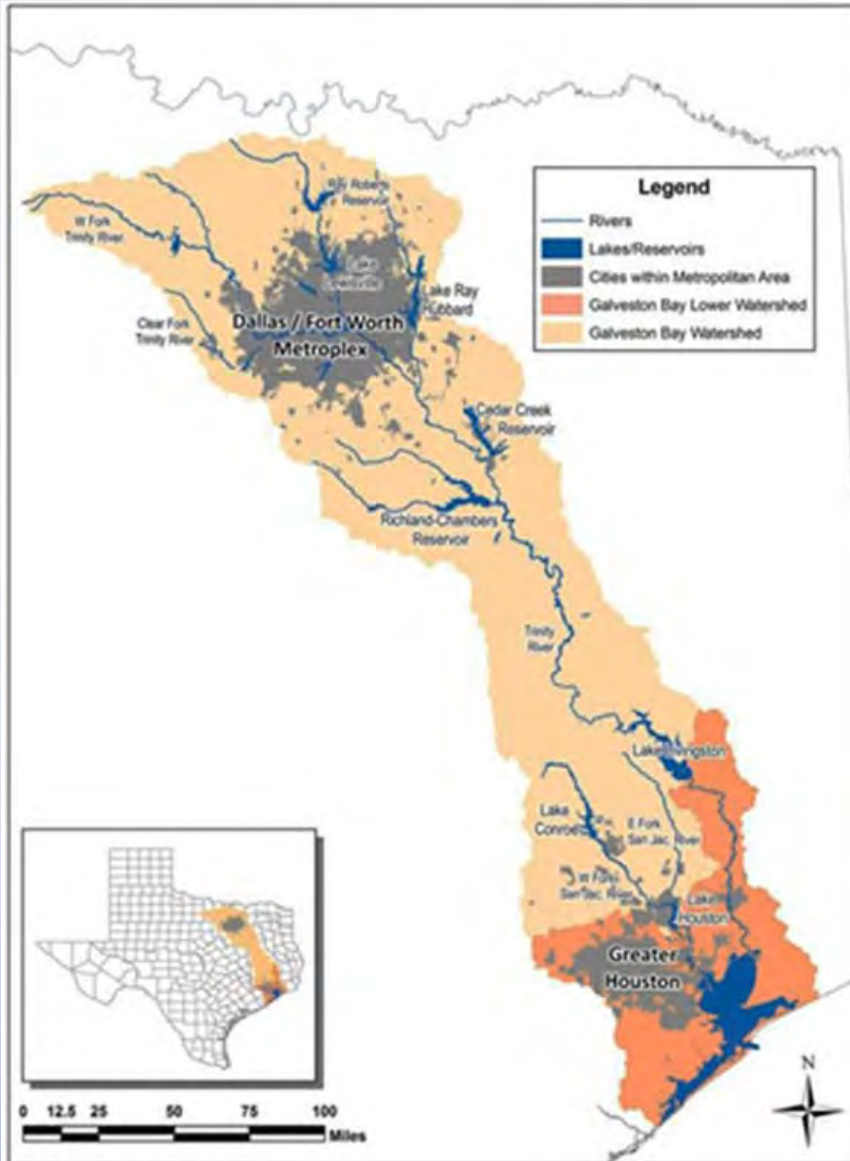
The Galveston Bay Estuary Program



Galveston Bay Plan, approved in 1995.

- **A Program of TCEQ** established in 1989 to provide comprehensive ecosystem-based management for this economically valuable resource.
- **Mission:** To preserve and protect Galveston Bay for generations to come.
- **Non-regulatory, voluntary partnership**

Galveston Bay Watershed



- About half of Texas lives within Galveston Bay watershed
- Lower watershed focus since 1989

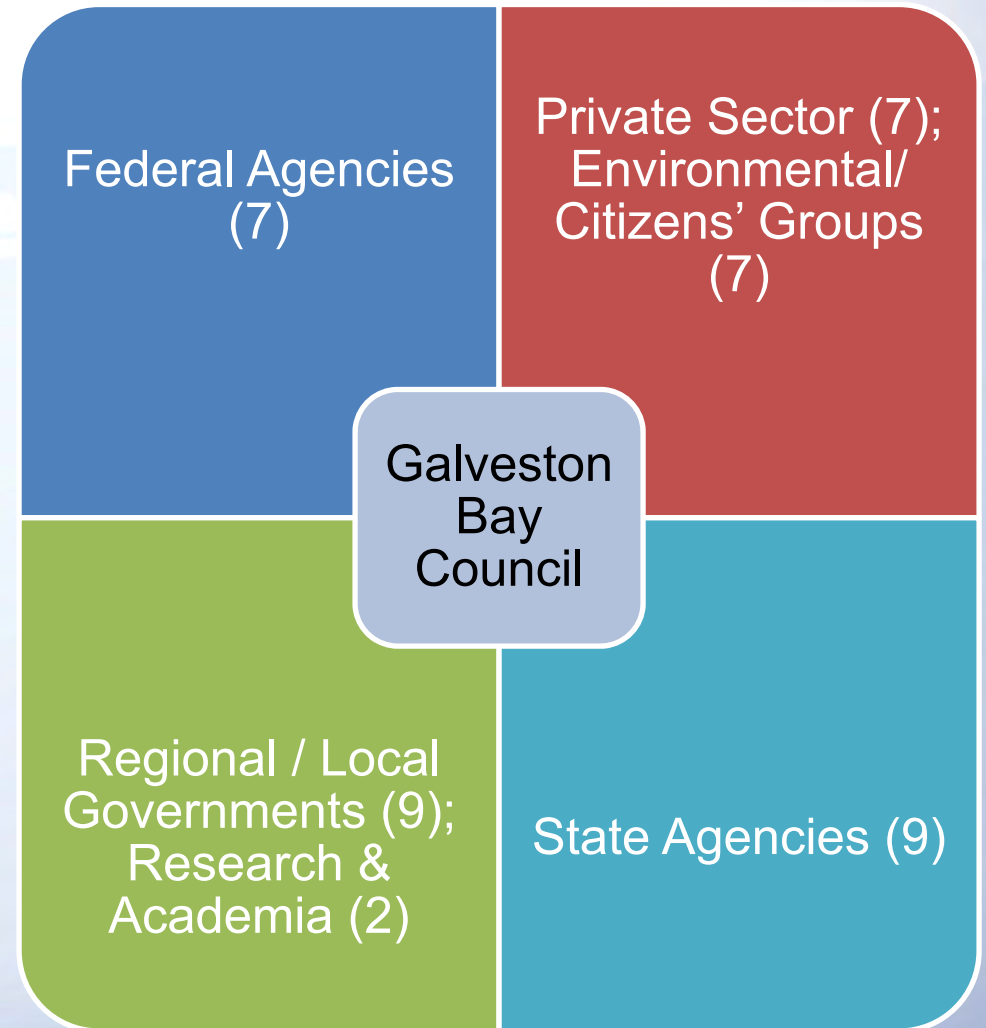
What do we do?

- Implement *The Plan*:
 - foster collaboration
 - build partnerships
 - leverage & acquire funds
 - implement priority projects
- Outreach
 - Presentations, exhibiting
 - support partner events
 - Bay Day and Trash Bash
- Information sharing
 - Status and Trends monitoring
 - State of the Bay Report
 - State of the Bay Symposium



Stakeholder Involvement

- Addressing multiple bay uses requires collaboration.
- **Council:** 41 members
 - 5 subcommittees:
 - Water & Sediment Quality - WSQ
 - Natural Resources Uses - NRU
 - Public Participation and Education - PPE
 - Monitoring and Research - M&R
 - Budget and Priorities - B&P



CCMP Revision



CCMP Revision

What is the Comprehensive Conservation and Management Plan (CCMP)?

The Galveston Bay Estuary Program (GBEP) is one of 28 National Estuary Programs designated by the U.S. Environmental Protection Agency (EPA) to protect and restore our nation's estuaries. As an established National Estuary Program, GBEP must develop and implement a Comprehensive Conservation and Management Plan (CCMP) to address priority problems in the Galveston Bay Estuary using actions designed to restore and maintain the chemical, physical, and biological integrity of the estuary. Galveston Bay Estuary's CCMP, called *The Galveston Bay Plan*, was developed in 1995 and addressed 17 priority problems. Those problems address issues including: habitat loss and degradation, water and sediment quality, freshwater inflows, species protection, and public health.

Why Revise the CCMP?

The Galveston Bay Plan has led the program and its partners through 20 years of significant conservation, restoration, and education work in the Galveston Bay watershed. One previous update, entitled *Charting the Course to 2015: Galveston Bay Strategic Action Plan (SAP)*, occurred ten years into implementation of the CCMP and reevaluated the priority goals GBEP has focused on for the past ten years. Because of the successes of these efforts and new issues that have emerged over the last decade, another update to *The Galveston Bay Plan* is now appropriate to continue protection and conservation of the estuary. The update is designed as a revision of the current plan, preserving the plan's strengths. Efforts will focus on identifying any new issues facing the estuary and watershed that were not adequately addressed by the CCMP or the SAP. It will also update actions that are out-of-date or do not reflect the best solutions now available, and make the plan easier to read and use.

What is the CCMP revision process?

The revision process is designed to generate a publicly supported, well-informed revision of the plan in a timely and efficient manner. The process includes the following steps:

Note: The Budget and Priorities Subcommittee (B&P) is made up of the chairs of the program area subcommittees of The Galveston Bay Council (GBC), the stakeholder advisory group that advises GBEP and TCEQ on the implementation of the Galveston Bay Plan. The program area subcommittees of the GBC are Natural Resources Uses (NRU), Water and Sediment Quality (WSQ), Monitoring and Research (M&R), and Public Participation and Education (PPE). The Strategic Planning Work Group (SPWG) and Characterization Work Group (CWG) are composed of members of the GBC, B&P and other subcommittees.

CCMP Revision Process Steps	Description	Tentative Timeline
SPWG identifies plan review priorities	The current CCMP is deemed relevant and comprehensive. No action plans are completed. An extensive public scoping process was completed between 2004 - 2007 resulting in the <i>Charting the Course to 2015: Galveston Bay Strategic Action Plan (SAP)</i> (GI-385 4/08). The CCMP revision will focus on identifying priorities for the next 5-10 years through public input primarily through the subcommittees of the GBC.	June 28, 2012
CWG outlines characterization needs	Identification of the issues of concern	November 29, 2012

- A revision of *The Galveston Bay Plan*
 - *The Galveston Bay Plan* is the CCMP for the Galveston Bay watershed
 - This process is currently ongoing
 - Has been called Plan Review, Strategic Action Plan, Plan Update, etc.
 - EPA is requiring that we complete a CCMP Revision
 - Updating language, goals, actions, etc. where necessary

THE PLAN

PURPOSE

“The purpose of *The Galveston Bay Plan* is to address threats to the bay resulting from pollution, development, and overuse. To address these threats, five years of work commenced in 1990, consisted of three phases: (1) identification of the specific problems facing the bay; (2) a bay-wide effort to compile data and information to describe status, trends, and probable causes related to the identified problems; and (3) creation of *The Plan* itself to enhance governance of the bay at the ecosystem level.”

The Galveston Bay Plan (p. xi)



Priority Ranking

The 17 Ranked Priority Problems from the 1995 Galveston Bay Plan

#1 Priority	Vital Galveston Bay habitat like wetlands have been lost or reduced in value by a range of human activities, threatening the bay's future sustained productivity
#2 Priority	Contaminated runoff from nonpoint sources degrades the water and sediments of the bay tributaries and some near-shore areas
#3 Priority	Raw or partially treated sewage and industrial waste enters Galveston Bay due to design and operational problems, especially during rainfall runoff
#4 Priority	Future demands for freshwater and alterations to circulation may seriously affect productivity and overall ecosystem health
#5 Priority	Certain toxic substances have contaminated water and sediment and may have a negative effect on aquatic life in contaminated areas
#6 Priority	Certain species of marine organisms and birds have shown a declining population trend
#7 Priority	Shoreline management practices frequently do not address negative environmental consequences to the bay, or the need for environmentally compatible public access to bay resources
#8 Priority	Bay habitats and living resources are impacted by spills of toxic and hazardous materials during storage, handling, and transport
#9 Priority	Seafood from some areas in Galveston Bay may pose a public-health risk to consumers of subsistence-or recreational-catch seafood as a result of the potential presence of toxic substances
#10 Priority	Illegal connections to storm sewers introduce untreated wastes directly into bay tributaries
#11 Priority	Dissolved oxygen is reduced in certain tributaries and side bays, harming marine life
#12 Priority	About half of the bay is permanently or provisionally closed to the taking of shellfish because of high levels of fecal coliform bacteria that may indicate risk to shellfish consumers
#13 Priority	Water and sediments are degraded in and around marinas from boat sewage and introduction of dockside wastes from nonpoint sources
#14 Priority	Some bay shorelines subject are subject to high rates of erosion and loss of stabilizing vegetation due to past subsidence and sea-level rise and current human impacts
#15 Priority	Illegal dumping and waterborne and shoreline debris degrade the water quality and aesthetics of Galveston Bay
#16 Priority	Some tributaries and near-shore areas of Galveston Bay are not safe for contact-recreational activities such as swimming, wade-fishing, and sailboarding due to the risk of bacterial infection
#17 Priority	Some exotic/opportunistic species (e.g. nutria and grass carp) threaten desirable native species, habitats, and ecological relationships

Plan Structure

Contents at a Glance

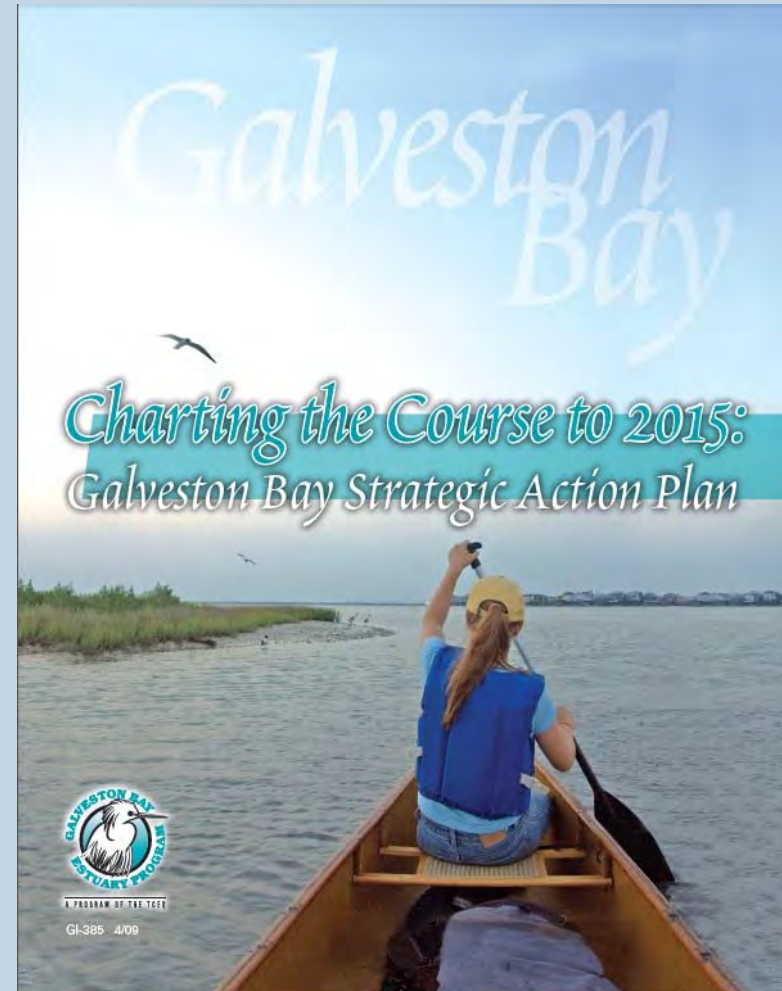
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- **Background**
 - Plan creation
 - Value of the Bay
 - Challenges and proposed solutions
- **17 Ranked Priority Problems**
 - 9 Action Plans
 - 2 Supporting Action Plans
 - 82 Action Items
- **Support Sections**
 - Regional Monitoring Program
 - Layout of the Plan's Implementation
 - Estimation of Costs and Funding Sources



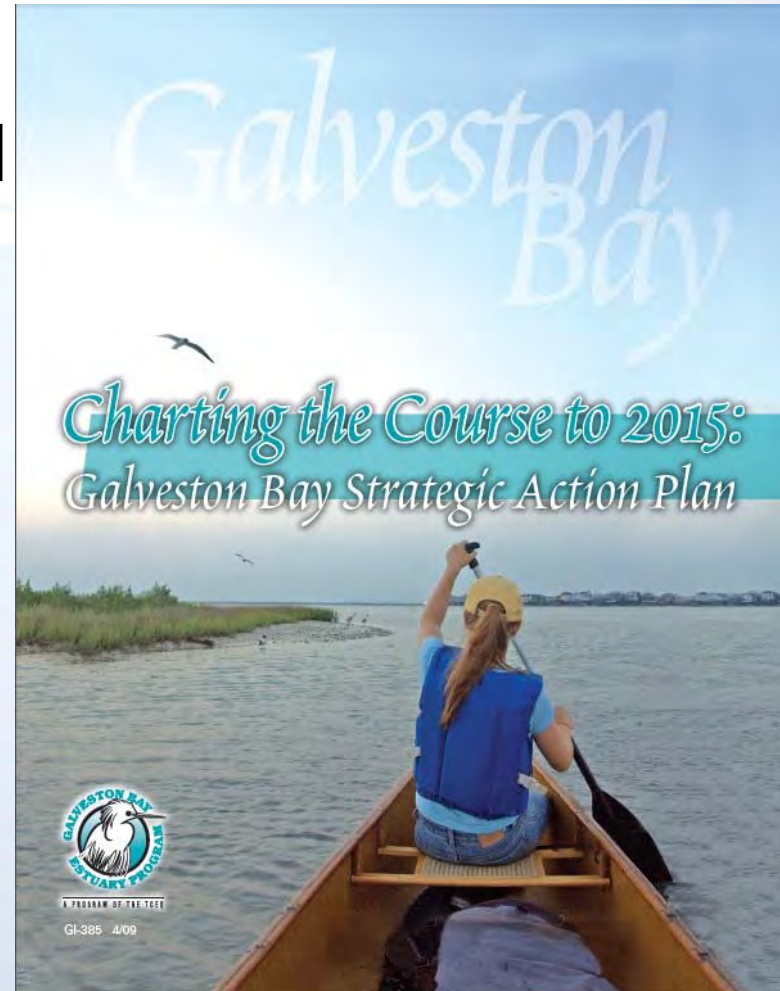
Charting the Course to 2015

- **A Galveston Bay Strategic Action Plan**
 - Developed between 2004-2007
 - An update for *the Plan*
 - A guide for *Plan* implementation
 - Accounts for changes in ecosystem demands and challenges



Galveston Bay's Challenges

- Habitat Conservation
 - No. 1 priority identified by stakeholders.
- Public stewardship and recognition of Galveston Bay's value as a natural resource.
- Water quality and water conservation



RE-EVALUATING PRIORITIES

Ranking (VHP)	Issue Area	Strategic Action Plan (SAP) Goals as Ranked in the 2009 publication <u>Charting the Course to 2015</u>
#1 Priority	HP	Protect existing coastal habitats in the Lower Galveston Bay Watershed
#2 Priority	PPE	Create a sense of personal ownership and shared responsibility for all cultural components of the community including the public, industry, and government
#3 Priority	HP	Restore and enhance coastal habitats in the Lower Galveston Bay Watershed
#4 Priority	FW	Ensure freshwater inflows necessary to maintain the balance of salinity, nutrients, and sediments required to support a productive estuary
#5 Priority	NPS	Reduce NPS pollutant loads
#6 Priority	PPE	Obtain information to develop and evaluate Estuary Program communication efforts
#7 Priority	PS	Maintain the capacity and integrity of municipal sanitary sewer collection systems to eliminate sewage bypasses and unauthorized overflows
#8 Priority	PH	Minimize the risk of waterborne illness resulting from contact recreation
#9 Priority	RSC	Supply the council and its members with the information and assessments they need to protect and manage the resources of the Galveston Bay Ecosystem

Preparing for revision

Early stages

↓

Determined continued approval of current *Plan*

↓

2013-2014: Began work within subcommittees

↓

Identified issues of concern

↓

2014: Gathered Success Stories topics and began drafts

Implementation Review

↓

2014-2015: Complete drafts of Success Stories. Share draft with B&P subcommittee.

↓

Summer 2014: Completed Blue Sheets

↓

Summer 2014: Conducted Implementation review of GBEP funded projects

↓

Summer 2015: Conducted implementation review of all goals, objectives and actions in both the CCMP and SAP

↓

Summer 2016: Share draft implementation review with partners to complete data collection

Implementation Review Tasks Completed:

Subcommittees reviewed existing Plan language and provided edits in 2013-2014

Point Sources of Pollution Action Plan Flowchart (Reference to p. 211, *The Galveston Bay Plan*)

Key: Black text is from the original *The Galveston Bay Plan* flowchart. Red text indicates changes for the plan review document. Strikethrough shows where text is being removed.

Priority Problems	Raw or Partially treated sewage and Industrial waste Enters Galveston Bay Due to Design and Operational Problems	Illegal Connections to Storm Sewers Introduce Untreated Wastes Directly into Bay Tributaries	Certain Toxic Substances Have Contaminated Water and Sediment and May Have a Negative Effect on Aquatic Life in Contaminated Areas
Goals	Eliminate SSOs Wet Weather Sewage Bypasses / Overflows	Eliminate Pollution Problems from Poorly Operated Wastewater Treatment Plants	Eliminate Harm from Produced Water Discharges industrial waste
Objectives	Develop Sufficient Overflow and Bypass Capacity to Control a Storm of Up to 5-Year Frequency	By 2013 2004 Ensure That All Wastewater Treatment Plants Operate in Accordance With Permit Requirements, Including Consolidation of Small Plants Where Feasible*	Eliminate Harm from Produced Water Discharges by 2004 2009 industrial waste
Action Items	Action PS-1: Determine Location and Extent of Bypass and Overflow Problems	Action PS-3: Regionalize Small Wastewater Treatment Systems	Action PS-5: Implement a Dry-Weather Illegal Connection Program
	Action PS-2: Eliminate or Reduce Bypass and Overflow Problems	Action PS-4: Improve Compliance Monitoring and Enforcement for Small Dischargers	Action PS-6: Issue NPDES Coastal General Permit or Eliminate Harm from Produced Water Discharge

Cross reference references to tissue contaminants (dioxins/PCBs) with the Public Health action plan.

Note: PH-6: Produced water discharges are now illegal due to a Sierra Club lawsuit. There is a new rule governing this, need to update the Action Item and note in the "box".

Implementation Review Tasks Completed: Blue-Sheet Concept

- Breakdown of the 82 actions from *The Galveston Bay Plan*
 - Changes in priority
 - Efforts between FY05-14
 - Problem and Goal addressed
 - Related actions
 - Previous revisions discussed
 - Comments about changes in policy, responsible agency, etc.
- One of several tools to assist with review of actions
- Internal exercise with GBEP intern and staff

Public Health Protection Action Items

Review Period: FY05-14

Number of Baseline Actions: 7

PH-1: Develop a seafood consumption safety program

Possible Revision:

“Coordinate with TDSHS on a Seafood Consumption Safety Program”

Rationale for Revision/Comments:

Update to reflect current conditions;

1995 Priority Ranking: Medium

2009 Priority Ranking: High

2015 Recommended Priority:

1995 Priority Problem Addressed: #9- Seafood from some areas may pose a public health risk due to the potential presence of toxic substances

SAP Goals Addressed: Reduce human-health risk resulting from consumption of seafood contaminated with toxic substances; Reduce the concentration of toxins in key species of concern

Related Actions: NPS-4, 6, 11, 13, 16; PPE-3

Number of GBEP projects addressing action in review period: 1

Implementation Review Tasks Completed: Implementation Progress Crosswalk

Point Sources of Pollution Action Plan Flowchart (Reference to p. 211, *The Galveston Bay Plan*)

Reference to *The Galveston Bay Plan*¹ (*The Plan*) p. 211, (1995) and *Charting the Course to 2015: Strategic Action Plan*² (SAP), p. 14-15 (2009). **Gray shaded cells refer to SAP. Unshaded cells refer to *The Plan*.

Priority Problems	Goals	Objectives	Objective Implementation Progress	Action Item	Comments/Suggestions
Raw or Partially treated sewage and Industrial waste Enters Galveston Bay Due to Design and Operational Problems	<p>Plan-1: Eliminate Wet Weather Sewage Bypasses/Overflows</p> <p>SAP-2: Maintain the capacity and integrity of municipal sanitary sewer collection systems to eliminate sewage bypasses and unauthorized overflows</p>	<p>Plan-A: Develop Sufficient Overflow and Bypass Capacity to Control a Storm of Up to 5-Year Frequency</p>	<p>Wastewater plants must be designed to handle a 2 hour peak flow (usually double the standard permitted flow).³</p> <p>30 TAC § 217.53 describes requirements for collection pipes⁴</p> <p>Cannot fully assess progress due to insufficient reporting and data collection.³</p>	<p>PS-1: Determine Location and Extent of Bypass and Overflow Problems</p> <p>PS-2: Eliminate or Reduce Bypass and Overflow Problems</p>	<p>Most municipalities don't report overflows. Very little data because it is self-reported. City of Houston began to update wastewater infrastructure starting in 2005, the city replaces ~33% of their collection system every 10 years.³</p> <p>Baytown has begun reporting overflows due to pressure and self-reporting of overflows by the stakeholders of the Cedar Bayou WPP.³</p> <p>TCEQ does not collect data for the number of overflows, some municipalities have this data,³ but a coordinated data collection effort is needed (See BIG goals⁵).</p>
		<p>SAP-A: Identify systems with deficiencies and promote TCEQ efforts to enter into compliance agreements with municipalities with sanitary-sewer overflows</p>	<p>TCEQ's Sanitary Sewer Overflow Initiative⁶ established a voluntary program to remove water treatment facilities from overflow enforcement as long as they meet requirements and are working to update their infrastructure.</p>		
		<p>SAP-B: Collaborate with owners and operators of Phase 1 and Phase 2 municipal separate storm sewer systems (MS4s) on development and implementation of storm water management programs to eliminate unauthorized discharges into the MS4s</p>	<p>Some progress.</p>		

CCMP Revisions and Updates

New guidance for NEPs issued by EPA in July 2015

- The CCMP is a living document, and EPA recommends that each NEP review its CCMP every three-to-five years to determine whether a revision or update is needed to keep the CCMP relevant.
 - If major changes are needed, the CCMP should be revised.
 - If minor changes are needed, the CCMP should be updated.

Timing

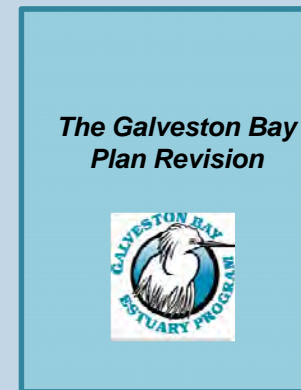
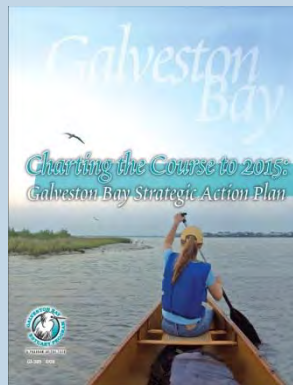
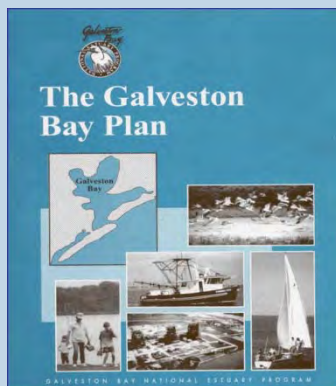
- EPA recommends that by September 30, 2015, those NEPs that have never revised their CCMPs will start to revise them. By the end of FY 2018 (September 30, 2018), each NEP is strongly encouraged to have revised its CCMP at least once.
- To ensure that CCMPs continue to be relevant, EPA recommends that each NEP revise its CCMP at least once every ten years.

CCMP Revision Guidance from EPA

- A revised CCMP should include revisions to the following sections of the original CCMP
 - monitoring plan
 - finance plan
 - education/outreach
 - public involvement strategies
 - habitat protection/restoration plan
- A revised CCMP should include the following:
 - new priorities, goals, objectives, and action plans
 - new action plans that indicate:
 - whether they replace or enhance former plans,
 - which entities will serve as lead implementers,
 - a timeline and milestones for completion, and
 - performance measures (quantitative/environmental results measures wherever possible)
- EPA expects that all CCMPs revised by the end of FY 2020 will be informed by a broad, risk-based climate change vulnerability assessment

DOCUMENTS

- CCMP Revision will:
 - Fulfill EPA requirements for CCMP revisions
 - Update the language of *The Galveston Bay Plan* to better reflect current challenges and priorities



Next Steps toward a revision

Moving Forward: *Plan Revision*



Formalize revision process

- October 2016 GBC approves H-GAC to facilitate revision



Summer 2016: Internal review of other NEP CCMP priorities.



September 2016 to Fall 2017: GBC will revise CCMP with H-GAC facilitation



Fall 2017 Final CCMP presented to GBC



2018: Final plan is submitted to TCEQ and EPA

Houston-Galveston Area Council (H-GAC)

- H-GAC will work with the Estuary Program, Galveston Bay Council, subcommittees, and public
- Timeframe: September 2016-October 2017

Plan Revision Tasks

Facilitate Stakeholder Involvement

Encourage Public Engagement

Seek Public and Agency
Comments

Secure Council and Agency
Approval

Plan Revision Document

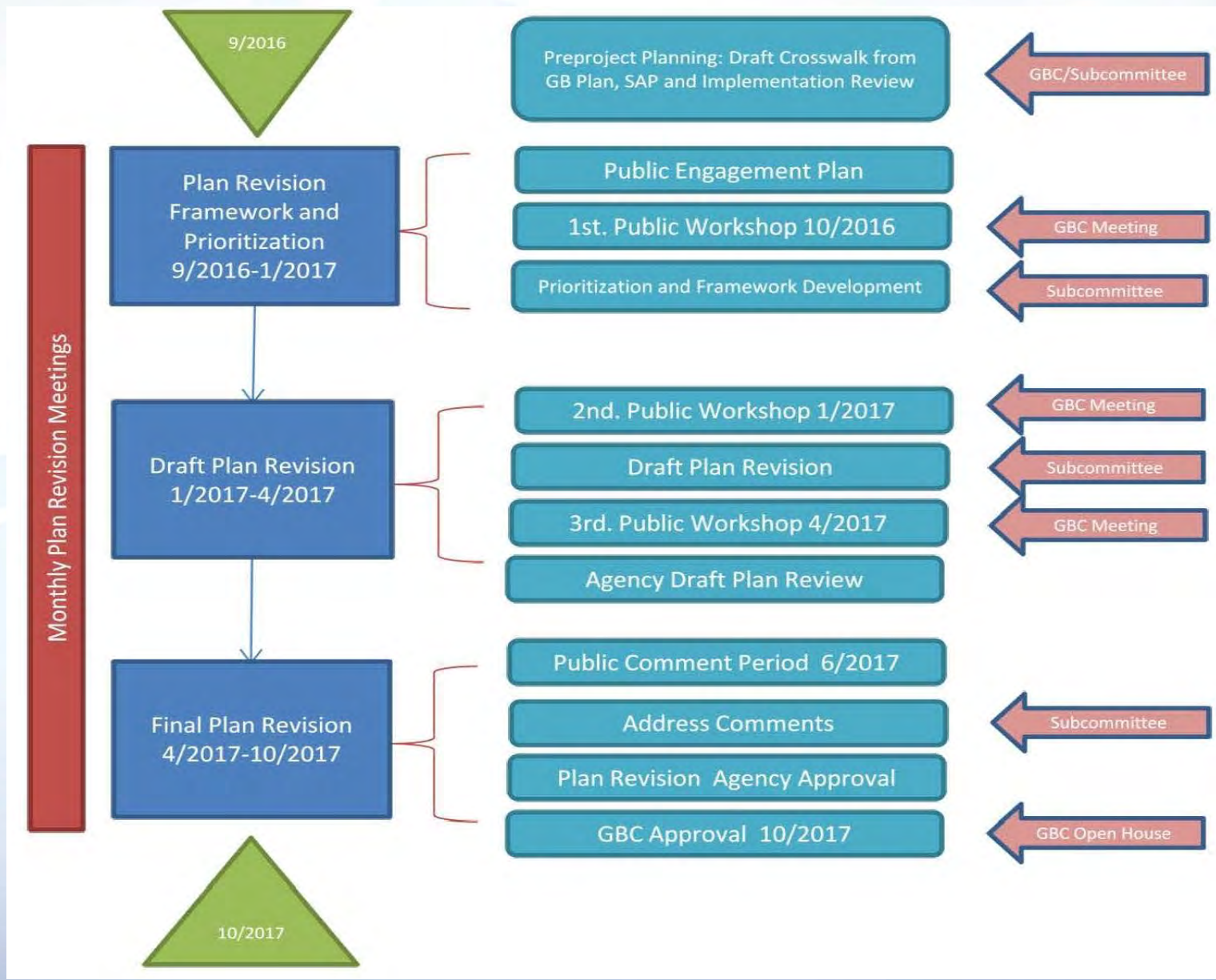
Utilize Existing Documents

Identify New and Emerging Issues

Prioritize and Track Progress

Facilitate, Coordinate and
Collaborate

Project Time Line



Website Component

Our Great Region 2040 People. Places. Prosperity.

Our Great Region 2040 is a high-level plan whose aim is for Our Region to be one of the world's greatest places to live, work, and succeed. It is based on research, analysis, and extensive public input, along with the knowledge and expertise of local leaders from the public, private, and non-profit sectors, spanning Our Region's urban, suburban, rural and coastal areas. Our Great Region 2040 is based around the foundation of People, Places, and Prosperity and organized around the framework of the following Six Big Ideas:



Additional Resources

Several supporting reports, described below, were created to lay a foundation for Our Great Region 2040. For more information, please check www.ourregion.org.



The **Fair Housing Equity Assessment** identifies baseline conditions for fair housing, equity and opportunity across our region.



The **Equity Profile** evaluates existing conditions and makes recommendations to improve equity in our region.



Six case studies that highlight ways the plan's strategies can be implemented in Our Region's communities.



The **Existing Conditions Report** provides a snapshot of what Our Region looks like today.



The **Community Resource Guide** provides information for the public on available government resources.



The **Strategy Playbook** includes funding sources, tools, and successful examples of implementation from Our Region and elsewhere.

www.ourregion.org

Non-Point Source Pollution Action Plan

Plan Goals (1995)

1. Reduce Urban NPS Pollutant Loads
2. Reduce Industrial NPS Pollutant Loads
3. Reduce Agricultural NPS Pollutant Loads
4. Reduce Construction NPS Pollutant Loads
5. Reduce Marina Water Quality Degradation Associated With Sewage
6. Reduce Marine/Dockside NPS Loads

SAP Goals (2005)

1. Reduce NPS Pollutant Loads

Non-Point Source Pollution Action Plan

Plan Goals (1995)

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6. Reduce Marine/Dockside NPS Loads

SAP Goals (2005)

1. Reduce NPS Pollutant Loads

Non-Point Source Pollution Action Plan

Plan-1 Goal Reduce Urban NPS Pollutant Loads

Objective Plan-A: Establish the regulatory framework for NPS control throughout the entire immediate Galveston Bay waters within five years

Objective Plan-B: Reduce NPS Loads from existing development

Objective Plan-C: Reduce urban NPS loads from new development Using Technology-Based Best Management Practices

SAP-1 Goal Reduce NPS Pollutant Loads

Objective SAP-A: Support development and implementation of Watershed Protection Plans and Total Maximum Daily Load (TMDL) implementation plans

Objective SAP-B: Coordinate an effective NPS campaign with the Public Participation and Education Subcommittee to foster public awareness of the consequences of human activities, including inappropriate disposal of sewage by boaters

Objective SAP-C: Support development and implementation, in coordination with the Monitoring and Research Subcommittee, of effective

Objective SAP-D: Support a regional approach to implementation of storm water management plans, including development of programmatic and numerical baselines. Coordinate with the Estuary Program Monitoring and Research Subcommittee to identify baselines in local tributaries for common pollutants to better monitor and track results

Objective SAP-E: Support and foster dialogue between registered sanitarians and other sanitary-waste specialists to encourage improvement in septic systems

Non-Point Source Pollution Action Plan

Plan-1 Goal
Reduce Urban NPS Pollutant Loads

Objective Plan-A: Establish the regulatory framework for NPS control throughout the entire immediate Galveston Bay waters within five years

Objective Plan-B: Reduce NPS Loads from existing development

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SAP-1 Goal
Reduce NPS Pollutant Loads

Objective SAP-A: Support development and implementation of Watershed Protection Plans and Total Maximum Daily Load (TMDL) implementation plans

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Non-Point Source Pollution Action Plan

Priority Problem

- Contaminated runoff from non-point sources degrades the water and sediments of the bay tributaries and some near-shore areas

Plan-1 Goal/ SAP-1 Goal

- Reduce urban NPS pollutant loads

Plan-B Objective

- Reduce NPS loads from existing development

Objective Implementation Progress

- 15 out of 19 subbays and tributaries in the Galveston Bay watershed have shown improvement in nutrient concentrations since 1970s.

Non-Point Source Pollution Action Plan

Plan-1 Goal
Reduce Urban NPS Pollutant Loads

Objective Plan-A: Establish the regulatory framework for NPS control throughout the entire immediate Galveston Bay waters within five years

Objective Plan-B: Reduce NPS Loads from existing development

Objective Plan-C: Reduce urban NPS loads from new development Using Technology-Based Best Management Practices

SAP-1 Goal
Reduce NPS Pollutant Loads

Objective SAP-A: Support development and implementation of Watershed Protection Plans and Total Maximum Daily Load (TMDL) implementation plans

Objective SAP-B: Coordinate an effective NPS campaign with the Public Participation and Education Subcommittee to foster public awareness of the consequences of human activities, including inappropriate disposal of sewage by boaters

Objective SAP-C: Support development and implementation, in coordination with the Monitoring and Research Subcommittee, of effective

Objective SAP-D: Support a regional approach to implementation of storm water management plans, including development of programmatic and numerical baselines. Coordinate with the Estuary Program Monitoring and Research Subcommittee to identify baselines in local tributaries for common pollutants to better monitor and track results

Objective SAP-E: Support and foster dialogue between registered sanitarians and other sanitary-waste specialists to encourage improvement in septic systems

Nonpoint Source Pollution Action Plan

Priority Problem

- Contaminated runoff from non-point sources degrades the water and sediments of the bay tributaries and some near-shore areas

Plan-1 Goal/ SAP-1 Goal

- Reduce urban NPS pollutant loads

Plan-A / SAP-D Objective

- **Plan-A:** Establish the regulatory framework for NPS control throughout the entire immediate Galveston Bay waters within five years
- **SAP-D:** Support a regional approach to implementation of storm water management plans, including development of programmatic and numerical baselines. Coordinate with the Estuary Program Monitoring and Research Subcommittee to identify baselines in local tributaries for common pollutants to better monitor and track results

Objective Implementation Progress

- Texas Nonpoint Source Management Program jointly administered by the TCEQ and TSSWCB. Shift from top down to bottom up approach.

Freshwater Inflow and Bay Circulation Action Plan

Plan-1 Goal

Ensure beneficial freshwater inflows necessary for a salinity, nutrient, and sediment loading regime adequate to maintain productivity of economically important and ecologically characteristic species

Objective Plan-A: Determine annual and seasonal inflow needs to the bay by 1995

Objective Plan-B: Incorporate inflow needs in regulatory authority and planning processes by the year 2000

Objective Plan-C: Increase water use efficiency within the GBP area by 10% by 2005

SAP-1 Goal

Ensure freshwater inflows necessary to maintain the balance of salinity, nutrients, and sediments required to support a productive estuary

Objective SAP-A: Support the Galveston Bay Freshwater Inflows Group to provide a forum for discussion on regional and state water management policy, and to develop and implement strategies for ensuring adequate freshwater inflows to Galveston Bay

Objective SAP-B: Support further research to understand the annual and seasonal freshwater-inflow needs for Galveston Bay, as well as information needed to develop management strategies

Objective SAP-C: Develop or support outreach initiatives that promote water conservation and educate the public on the value and importance of freshwater inflows

Freshwater Inflow and Bay Circulation Action Plan

Priority Problem

- Future demands for fresh water and alterations to circulation may seriously affect productivity and overall ecosystem health

Plan-1 Goal/ SAP-1 Goal

- Ensure beneficial freshwater inflows necessary for a salinity, nutrient, and sediment loading regime adequate to maintain productivity of economically important and ecologically characteristic species

Plan-C Objective

- Increase water use efficiency within the GBP area by 10% by 2005

Objective Implementation Progress

- Water use in Region H went from 1,835,200 acre feet in 2000 to 1,786,022 in 2010



BACK THE BAYOUS

BACK
— THE —
BAY

THANK YOU

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