

Appendices

The Galveston Bay Plan Galveston Bay National Estuary Program

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Appendix A: Ranked Problems and Goals for Galveston Bay

The Galveston Bay Plan was drafted by the Galveston Bay National Estuary Program (GBNEP). GBNEP, established as a State of Texas/U.S. Environmental Protection Agency (EPA) cooperative program, is administered under the auspices of the Texas Natural Resource Conservation Commission (TNRCC). The Management Conference of the GBNEP consists of approximately 100 individuals appointed by agreement between the Governor of Texas and the EPA Region 6 Administrator.

Environmental Impacts on the Galveston Bay Ecosystem

Development of *The Plan* involved Galveston Bay user groups, government agencies, stakeholder organizations, and the public. This appendix describes GBNEP's tasks to define the major problems facing Galveston Bay. By examining existing scientific data, consulting with experts, and talking with bay users, several important cause-and-effect relationships were identified. Some of the causes-and-effects were similar to those found in other bays around the country. Others appeared to be unique to the Galveston Bay system.

The result of this process was the Environmental Impact Matrix shown in Figure A-1. It shows GBNEP's original view of the effect different perturbations (natural and man-made disturbances) had on different parts of the bay ecosystem (labeled "valued ecosystem components"). The stars indicate the degree of influence and the shaded areas denote a possible management priority.

For example, non-point source pollution was considered a major influence on water quality to the extent that this process posed a possible management priority (see Figure A-1). On the other hand, recreational fishing has only a slight influence on oysters; therefore, this linkage was not identified for possible management.

Based on this matrix, it became apparent that Galveston Bay is a complex system that is affected by numerous human activities and natural processes. The process of developing the matrix focused attention on several key cause-and-effect relationships, such as:

- The impacts of sea level rise, shoreline modification, and dredging on important habitats such as wetlands and submerged aquatic vegetation
- The effect of runoff (non-point sources), wastewater discharges (point sources), marinas, and petroleum activity on water and sediment quality

Appendix A: Ranked Problems and Goals for Galveston Bay

Valued Ecosystem Components

Sources of Perturbation	Water Quality	Circulation	Sediment	Phytoplankton	Zooplankton	Oysters	Shellfish	Other Benthos	Finfish	Birds	Marine Mammals	Sea Turtles	Human Health	Wetlands	Submerged Plants	Shoreline	Aesthetic Appeal
Northers		**		?	?	*			**	*							
Hurricanes		**	*	?	?	*	*	**		*			?	?	***	***	
Inflow Modification	***	***	*	?	?	****	***	***	**			?		***	**		
Subsidence/Sea Level		**				*	**		*	*				****	***	****	
Shoreline Development	**	*	*	*			**		**	**				****	**	****	***
Dredging	***	****	****	?		**	*	**	**	***	?	?	?	***	**	***	**
Shipping	**		*								?			**		**	
Point Sources	****		****	***	**	***	**	**	**	**	?	?	****	*	**		**
Non-Point Sources	****		****	***	?	***	**	**	**	**	?	?	***	**	**		**
Commercial Fishing	?		?			**	****	?	***		?	?			**		
Recreational Fishing						*	*		***					?	*		
Boating/Marinas	***		***	?	?			**	*					*	*	*	?
Petroleum Activity	***		***	?	?	*	**	**	*	*	?	?	*	**	*		?
Oil/Chemical Spills	***		***	?	?	**	?	?	?	**	?	?	**	***	?		***
Marine Debris									?	*	*	**					***

NOTE: * = Slight influence *** = Significant influence ? = Unknown relationship
 ** = Moderate influence **** = Major influence [shaded] = Possible management priority

SOURCE: GBNEP Program Office

FIGURE A-1. Environmental Impact Matrix for Galveston Bay

Appendix A: Ranked Problems and Goals for Galveston Bay

Problems Addressed in *The Galveston Bay Plan*

During the process of drafting *The Galveston Bay Plan*, 17 compelling problems were distilled from the hundreds of issues affecting the bay system. The four years of scientific work carried out by the program established the importance of these issues to Galveston Bay. Once identified, these problems served as the starting point for the drafting of *Galveston Bay Plan* initiatives. These problems are presented below in order of their management importance to the bay based upon consensus reached by the Management Conference. Problems deemed most important by consensus of the GBNEP Management Conference are listed first.

1. Vital Galveston Bay habitats like wetlands have been lost or reduced in value by a range of human activities, threatening the bay's future sustained productivity.
2. Contaminated runoff from non-point sources degrades the water and sediments of bay tributaries and some near-shore areas.
3. Raw or partially treated sewage and industrial waste enters Galveston Bay due to design and operational problems, especially during rainfall runoff.
4. Future demands for freshwater and alterations to circulation may seriously affect productivity and overall ecosystem health.
5. Certain toxic substances have contaminated water and sediment and may have a negative effect on aquatic life in contaminated areas.
6. Certain species of marine organisms and birds have shown a declining population trend.
7. 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. Bay habitats and living resources are impacted by spills of toxic and hazardous materials during storage, handling, and transport.
9. Seafood from some areas in Galveston Bay may pose a public health risk to subsistence or recreational catch seafood consumers as a result of the potential presence of toxic chemicals.
10. Illegal connections to storm sewers introduce untreated wastes directly into bay tributaries.
11. Dissolved oxygen is reduced in certain tributaries and side bays, harming marine life.

Appendix A: Ranked Problems and Goals for Galveston Bay

12. About half of the bay is permanently or provisionally closed to the taking of shellfish because of high fecal coliform bacterial levels that may indicate risk to shellfish consumers.
13. Water and sediments are degraded in and around marinas from boat sewage and introduction of dockside wastes from non-point sources.
14. Some bay shorelines are subject to high rates of erosion and loss of stabilizing vegetation due to past subsidence/sea level rise and current human impacts.
15. Illegal dumping and water-borne and shoreline debris degrade water quality and aesthetics of Galveston Bay.
16. Some tributaries and near-shore areas of Galveston Bay are not safe for contact recreational activities such as swimming, wade-fishing, and sail-boarding due to risk of bacterial infection.
17. Some exotic/opportunistic species (e.g. nutria and grass carp) threaten desirable native species, habitats, and ecological relationships.

Goal Priorities in *The Galveston Bay Plan*

In *The Galveston Bay Plan*, goals are established to address each problem listed above. These goals are then the basis for more specific objectives and actions which are the heart of *The Plan*. Table A-1 describes the relative importance of *The Plan's* goals. The table subdivides the goals into three major bay management categories: 1) Water and Sediment Quality Improvement; 2) Habitat/Living Resource Conservation; and 3) Balanced Human Uses. Goals in each of these categories are classified by their priority level—that is their relative importance in comprehensive planning to solve the problems. Within each priority level in the table, individual goals are also listed in order of their priority.

Appendix A: Ranked Problems and Goals for Galveston Bay

Table A-1. Goal Priorities in *The Galveston Bay Plan*.

Priority Level	Water/Sediment Quality Improvement	Habitat/Living Resource Conservation	Balanced Human Uses
<p>Very High</p>	<p>Reduce urban NPS pollutant loads.</p> <p>Reduce toxicity and contaminant concentrations in water and sediments.</p> <p>Eliminate wet weather sewage bypasses/overflows.</p>	<p>Increase the quantity and improve the quality of wetlands for fish and wildlife.</p> <p>Eliminate or mitigate the conversion of wetlands to other uses caused by human activities.</p>	<p>Ensure beneficial freshwater inflows necessary for a salinity, nutrient, and sediment loading regime adequate to maintain productivity of economically important and ecologically characteristic species in Galveston Bay.</p>
<p>High</p>	<p>Eliminate pollution problems from poorly operated wastewater treatment plants.</p> <p>Restore and/or compensate for environmental damage (injury) resulting from discharges of oil or the release of hazardous substances.</p> <p>Eliminate illegal connections to storm sewers, which result in introduction of untreated wastes directly to bay tributaries.</p> <p>Increase dissolved oxygen in problem areas.</p>	<p>Acquire existing wetland habitats and provide economic incentives for conservation.</p> <p>Reverse the declining population trend for affected species of marine organisms and birds, and maintain the populations of other economic and ecologically important species.</p>	<p>Reduce potential health risk resulting from consumption of seafood contaminated with toxic substances.</p> <p>Reduce negative environmental consequences to the bay (i. e., human-induced erosion) from shoreline development.</p>

Appendix A: Ranked Problems and Goals for Galveston Bay

Priority Level	Water/Sediment Quality Improvement	Habitat/Living Resource Conservation	Balanced Human Uses
<p>Moderate</p>	<p>Reduce agricultural NPS pollutant loads.</p> <p>Reduce industrial NPS pollutant loads.</p> <p>Reduce marina water quality degradation associated with sewage.</p> <p>Reduce marina/dockside NPS loads.</p>	<p>Selectively moderate erosional impacts to the bay and associated shorelines.</p> <p>Increase productivity of oyster reefs in West Bay.</p> <p>Restore deteriorated colonial bird nesting islands to usefulness and create new islands for birds where nesting habitat is inadequate.</p>	<p>Reduce oyster reef harvest closures.</p> <p>Ensure that alterations to circulation do not negatively affect productivity and overall ecosystem health.</p>
<p>Low</p>	<p>Reduce construction NPS pollutant loads.</p> <p>Reduce the impact from spills on the natural environment.</p> <p>Eliminate illegal dumping.</p> <p>Eliminate waterborne debris.</p>	<p>Eradicate or reduce the populations of exotic/opportunistic species which threaten desirable native species, habitats, and ecological relationships. Prevent the introduction of additional exotic species.</p>	<p>Reduce risk of water-borne illness resulting from contact recreation.</p> <p>Increase environmentally compatible public access to bay resources.</p>



APPENDIX B:

Summary of Federal, State, and Local Costs

Appendix B: Summary of Federal, State, and Local Costs

Estimated cost figures obtained as described in the "How Much Will It Cost?" section of this document were summarized for federal, state, and local entities likely to be responsible for implementing various actions described in *The Galveston Bay Plan*. In addition, a summary of estimated costs for the new Galveston Bay Program are presented. Federal, state, and local costs are presented on Tables B-1, B-2, and B-3, respectively. Program costs are shown on Table B-4. Costs associated with the lead entities for each action are underlined.

ACTION	DESCRIPTION	USFWS	Corps	NMFS	National Park Serv.	SCS	USGS
HABITAT PROTECTION							
HP-1	Restore, create, and enhance wetlands	<u>\$750,000</u>	\$750,000	\$750,000		\$750,000	
HP-2	Beneficial uses of dredged material						
HP-3	Inventory/remediate degraded wetlands	<u>\$45,750</u>		\$45,750		\$45,750	
HP-4	Coordinate System-Wide reg. program	<u>\$11,250</u>	<u>\$11,250</u>				
HP-5	Acquire quality wetlands	<u>\$1,537,500</u>	\$1,500,000		\$1,500,000		
HP-6	Develop a tax incentive program						
HP-7	Facilitate bird nesting on existing islands	<u>\$37,500</u>					
HP-8	Build nesting islands		<u>\$37,500</u>				
HP-9	Coordinate erosion/subsidence program					<u>\$100,000</u>	
SUBTOTAL		\$2,382,000	\$2,298,750	\$795,750	\$1,500,000	\$895,750	
SPECIES POPULATION PROTECTION							
SP-1	Strengthen species management	\$84,375		\$37,500		\$37,500	
SP-2	Return oyster shell to bay						
SP-3	Develop oyster reefs	<u>\$36,000</u>	\$6,750				
SP-4	Set aside reef habitat for research	\$6,750		\$6,750			
SP-5	Reduce commercial bycatch	\$11,250		<u>\$875,000</u>			
SP-6	Catch and release programs						
SP-7	Investigate reducing impingement	\$22,500					
SP-8	Develop plans for endangered species	\$6,750		\$6,750			
SP-9	Enforce prohibitions- exotic species	<u>\$252,250</u>		\$4,500			
SP-10	Implement controls-exotic species	\$4,500		\$4,500		\$4,500	
SUBTOTAL		\$424,375	\$6,750	\$935,000		\$42,000	
PUBLIC HEALTH PROTECTION							
PH-1	Seafood Consumption Safety Program						
PH-2	Enhance TDH Shellfish Program						
PH-3	Contact Recreation Advisory Program						
SUBTOTAL							
FRESHWATER INFLOW							
FW-1	Determine freshwater inflow needs						
FW-2	Expand monitoring						<u>\$450,000</u>
FW-3	Meet freshwater inflow needs						
FW-4	Establish inflow regulations						
FW-5	Provide sediment to the bay						
FW-6	Reduce water consumption						
FW-7	Evaluate freshwater inflow needs						
SUBTOTAL							\$450,000
SPILLS/DUMPING							
SD-1	Damage assessment pre-screening						
SD-2	Establish compensation for small oil spills						
SD-3	Coordinate Restoration						
SD-4	Spill cleanup-shoreline characterization						
SD-5	Improve trash management		\$6,750				
SD-6	Screen trash from stormwater discharge						
SD-7	Publicize harm caused by illegal dumping						
SUBTOTAL			\$6,750				
SHORELINE MANAGEMENT							
SM-1	Establish shoreline development planning						
SM-2	Establish residential shoreline standards						
SM-3	Establish industrial shoreline standards						
SM-4	Minimize negative effects of structures						
SM-5	Improve shoreline access						
SUBTOTAL							

Notes: Lead entity is underlined. More actions are included on following page.

New 5-Year Costs

Appendix B-1: Estimated FEDERAL Costs (Page 2 of 4)

ACTION	DESCRIPTION	USFWS	Corps	NMFS	National Park Serv.	SCS	USGS
WATER/SEDIMENT QUALITY STANDARDS							
WSQ-1	Reduce contaminant concentrations						
WSQ-2	Determine sources of ambient toxicity	\$100,000					
WSQ-3	Establish sediment quality criteria						
WSQ-4	Perform TMDL loading studies-toxics						
WSQ-5	Support Clean Texas 2000						
WSQ-6	Reduce Nutrient and BOD Loadings						
WSQ-7	Perform TMDL loading studies-BOD						
SUBTOTAL		\$100,000					
NONPOINT SOURCES OF POLLUTION							
NPS-1	Implement NPDES Stormwater						
NPS-2	Perform pilot projects for BMPs						
NPS-3	Identify pollutant reduction						
NPS-4	Establish residential NPS programs						
NPS-5	Correct malfunctioning septic tanks						
NPS-6	Implement CZM NPS Reduction Plan						
NPS-7	Establish roadway planning for NPS						
NPS-8	NPDES Stormwater-industries						
NPS-9	Implement groundwater plume control						
NPS-10	Develop inventory of agricultural NPS						
NPS-11	Implement ag. NPS programs						
NPS-12	Adopt NPS construction standards						
NPS-13	Construction toxics/ nutrient control						
NPS-14	Require sewage pumpout, storage, tmt.						
NPS-15	Use of WWTP-treatable marine chemicals						
NPS-16	Implement wash down controls						
SUBTOTAL							
POINT SOURCES OF POLLUTION							
PS-1	Locate and delineate bypass/overflows						
PS-2	Eliminate/reduce bypasses-overflows						
PS-3	Regionalize small wastewater systems						
PS-4	Improve compliance monitoring						
PS-5	Implement illegal connection program						
PS-6	Issue NPDES Coastal General Permit						
SUBTOTAL							
RESEARCH ACTION PLAN							
RSC-1	Establish research coordination board						
RSC-2	Identify research needs						
RSC-3	Continue State of the Bay process						
RSC-4	Increase funding for Bay research						
SUBTOTAL							
PUBLIC PARTICIPATION/EDUCATION							
PPE-1	Establish a Citizen Advisory Committee						
PPE-2	Continue State of the Bay Symposia						
PPE-3	Adult education and outreach program						
PPE-4	Curricula for school districts						
PPE-5	Develop volunteer opportunities						
PPE-6	Citizen Pollution Reporting System						
PPE-7	Support for local governments						
PPE-8	Assist user groups affected by Plan						
SUBTOTAL							
5-YEAR TOTAL BY ORGANIZATION		\$2,906,375	\$2,312,250	\$1,730,750	\$1,500,000	\$937,750	\$450,000

ACTION	DESCRIPTION	NBS	EPA	NOAA	USCG	TOTAL FEDERAL
HABITAT PROTECTION						
HP-1	Restore, create, and enhance wetlands					\$3,000,000
HP-2	Beneficial uses of dredged material					
HP-3	Inventory/remediate degraded wetlands	<u>\$45,750</u>				\$183,000
HP-4	Coordinate System-Wide reg. program		<u>\$27,000</u>	\$11,250		\$60,750
HP-5	Acquire quality wetlands					\$4,537,500
HP-6	Develop a tax incentive program					
HP-7	Facilitate bird nesting on existing islands					\$37,500
HP-8	Build nesting islands					\$37,500
HP-9	Coordinate erosion/subsidence program					\$100,000
SUBTOTAL		\$45,750	\$27,000	\$11,250		\$7,956,250
SPECIES POPULATION PROTECTION						
SP-1	Strengthen species management					\$159,375
SP-2	Return oyster shell to bay					
SP-3	Develop oyster reefs					\$42,750
SP-4	Set aside reef habitat for research					\$13,500
SP-5	Reduce commercial bycatch					\$886,250
SP-6	Catch and release programs					
SP-7	Investigate reducing impingement					\$22,500
SP-8	Develop plans for endangered species					\$13,500
SP-9	Enforce prohibitions- exotic species				\$4,500	\$261,250
SP-10	Implement controls-exotic species					\$13,500
SUBTOTAL					\$4,500	\$1,412,625
PUBLIC HEALTH PROTECTION						
PH-1	Seafood Consumption Safety Program					
PH-2	Enhance TDH Shellfish Program					
PH-3	Contact Recreation Advisory Program					
SUBTOTAL						
FRESHWATER INFLOW						
FW-1	Determine freshwater inflow needs					
FW-2	Expand monitoring					\$450,000
FW-3	Meet freshwater inflow needs					
FW-4	Establish inflow regulations					
FW-5	Provide sediment to the bay					
FW-6	Reduce water consumption					
FW-7	Evaluate freshwater inflow needs					
SUBTOTAL						\$450,000
SPILLS/DUMPING						
SD-1	Damage assessment pre-screening					
SD-2	Establish compensation for small oil spills					
SD-3	Coordinate Restoration					
SD-4	Spill cleanup-shoreline characterization					
SD-5	Improve trash management					\$6,750
SD-6	Screen trash from stormwater discharge					
SD-7	Publicize harm caused by illegal dumping					
SUBTOTAL						\$6,750
SHORELINE MANAGEMENT						
SM-1	Establish shoreline development planning					
SM-2	Establish residential shoreline standards					
SM-3	Establish industrial shoreline standards					
SM-4	Minimize negative effects of structures					
SM-5	Improve shoreline access					
SUBTOTAL						

Notes: Lead entity is underlined. More actions are included on following page.

ACTION	DESCRIPTION	NBS	EPA	NOAA	USCG	TOTAL FEDERAL
WATER/SEDIMENT QUALITY STANDARDS						
WSQ-1	Reduce contaminant concentrations					\$100,000
WSQ-2	Determine sources of ambient toxicity					
WSQ-3	Establish sediment quality criteria					
WSQ-4	Perform TMDL loading studies-toxics					
WSQ-5	Support Clean Texas 2000					
WSQ-6	Reduce Nutrient and BOD Loadings					
WSQ-7	Perform TMDL loading studies-BOD					
SUBTOTAL						\$100,000
NONPOINT SOURCES OF POLLUTION						
NPS-1	Implement NPDES Stormwater					
NPS-2	Perform pilot projects for BMPs					
NPS-3	Identify pollutant reduction					
NPS-4	Establish residential NPS programs					
NPS-5	Correct malfunctioning septic tanks					
NPS-6	Implement CZM NPS Reduction Plan					
NPS-7	Establish roadway planning for NPS					
NPS-8	NPDES Stormwater-industries					
NPS-9	Implement groundwater plume control					
NPS-10	Develop inventory of agricultural NPS					
NPS-11	Implement ag. NPS programs					
NPS-12	Adopt NPS construction standards					
NPS-13	Construction toxics/ nutrient control					
NPS-14	Require sewage pumpout, storage, tmt.					
NPS-15	Use of WWTP-treatable marine chemicals					
NPS-16	Implement wash down controls					
SUBTOTAL						
POINT SOURCES OF POLLUTION						
PS-1	Locate and delineate bypass/overflows					
PS-2	Eliminate/reduce bypasses-overflows					
PS-3	Regionalize small wastewater systems					
PS-4	Improve compliance monitoring					
PS-5	Implement illegal connection program					
PS-6	Issue NPDES Coastal General Permit					
SUBTOTAL						
RESEARCH ACTION PLAN						
RSC-1	Establish research coordination board					
RSC-2	Identify research needs					
RSC-3	Continue State of the Bay process					
RSC-4	Increase funding for Bay research					
SUBTOTAL						
PUBLIC PARTICIPATION/EDUCATION						
PPE-1	Establish a Citizen Advisory Committee					
PPE-2	Continue State of the Bay Symposia					
PPE-3	Adult education and outreach program					
PPE-4	Curricula for school districts					
PPE-5	Develop volunteer opportunities					
PPE-6	Citizen Pollution Reporting System					
PPE-7	Support for local governments					
PPE-8	Assist user groups affected by Plan					
SUBTOTAL						
5-YEAR TOTAL BY ORGANIZATION		\$45,750	\$27,000	\$11,250	\$4,500	\$9,925,625

ACTION	DESCRIPTION	TNRCC	TPWD	TXDOT	GLO	TDH
HABITAT PROTECTION						
HP-1	Restore, create, and enhance wetlands		<u>\$1,133,750</u>		\$125,000	
HP-2	Beneficial uses of dredged material	\$37,500	\$37,500		\$37,500	
HP-3	Inventory/remediate degraded wetlands		\$45,750		\$45,750	
HP-4	Coordinate System-Wide reg. program	<u>\$123,750</u>	<u>\$11,250</u>		<u>\$86,250</u>	
HP-5	Acquire quality wetlands		<u>\$1,584,375</u>		\$46,875	
HP-6	Develop a tax incentive program		<u>\$50,000</u>		<u>\$30,000</u>	
HP-7	Facilitate bird nesting on existing islands		<u>\$143,500</u>			
HP-8	Build nesting islands		\$17,500			
HP-9	Coordinate erosion/subsidence program		\$25,250		<u>\$200,250</u>	
SUBTOTAL		\$161,250	\$3,048,875		\$571,625	
SPECIES POPULATION PROTECTION						
SP-1	Strengthen species management		<u>\$294,000</u>		\$46,875	\$46,875
SP-2	Return oyster shell to bay		<u>\$423,000</u>			
SP-3	Develop oyster reefs		<u>\$73,500</u>		\$6,750	\$6,750
SP-4	Set aside reef habitat for research		<u>\$30,000</u>		\$6,750	\$6,750
SP-5	Reduce commercial bycatch		\$11,250			
SP-6	Catch and release programs		<u>\$90,000</u>			
SP-7	Investigate reducing impingement		\$22,500			
SP-8	Develop plans for endangered species		<u>\$182,250</u>			
SP-9	Enforce prohibitions- exotic species		\$4,500			
SP-10	Implement controls-exotic species		<u>\$150,000</u>			
SUBTOTAL			\$1,281,000		\$60,375	\$60,375
PUBLIC HEALTH PROTECTION						
PH-1	Seafood Consumption Safety Program					\$2,400,000
PH-2	Enhance TDH Shellfish Program					\$217,500
PH-3	Contact Recreation Advisory Program					<u>\$810,000</u>
SUBTOTAL						\$3,427,500
FRESHWATER INFLOW						
FW-1	Determine freshwater inflow needs					
FW-2	Expand monitoring					
FW-3	Meet freshwater inflow needs	<u>\$116,250</u>	\$30,000		\$22,500	
FW-4	Establish inflow regulations	<u>\$30,000</u>				
FW-5	Provide sediment to the bay	<u>\$22,500</u>				
FW-6	Reduce water consumption					
FW-7	Evaluate freshwater inflow needs	<u>\$187,500</u>				
SUBTOTAL		\$356,250	\$30,000		\$22,500	
SPILLS/DUMPING						
SD-1	Damage assessment pre-screening					
SD-2	Establish compensation for small oil spills					
SD-3	Coordinate Restoration					
SD-4	Spill cleanup-shoreline characterization					
SD-5	Improve trash management		\$15,750		\$6,750	
SD-6	Screen trash from stormwater discharge					
SD-7	Publicize harm caused by illegal dumping					
SUBTOTAL			\$15,750		\$6,750	
SHORELINE MANAGEMENT						
SM-1	Establish shoreline development planning				<u>\$96,000</u>	
SM-2	Establish residential shoreline standards				\$15,000	
SM-3	Establish industrial shoreline standards				\$60,750	
SM-4	Minimize negative effects of structures				<u>\$153,500</u>	
SM-5	Improve shoreline access				\$15,750	
SUBTOTAL					\$341,000	

Notes: Lead entity is underlined. More actions are included on following page.

ACTION	DESCRIPTION	TNRCC	TPWD	TXDOT	GLO	TDH
WATER/SEDIMENT QUALITY STANDARDS						
WSQ-1	Reduce contaminant concentrations	<u>\$45,000</u>				
WSQ-2	Determine sources of ambient toxicity	<u>\$60,000</u>				
WSQ-3	Establish sediment quality criteria	<u>\$126,750</u>	\$22,500		\$22,500	
WSQ-4	Perform TMDL loading studies-toxics	<u>\$295,750</u>				
WSQ-5	Support Clean Texas 2000					
WSQ-6	Reduce Nutrient and BOD Loadings	<u>\$897,500</u>	\$22,500			
WSQ-7	Perform TMDL loading studies-BOD	<u>\$1,437,500</u>				
SUBTOTAL		\$2,862,500	\$45,000		\$22,500	
NONPOINT SOURCES OF POLLUTION						
NPS-1	Implement NPDES Stormwater	<u>\$97,500</u>			\$37,500	
NPS-2	Perform pilot projects for BMPs	<u>\$1,328,750</u>			\$15,000	
NPS-3	Identify pollutant reduction					
NPS-4	Establish residential NPS programs					
NPS-5	Correct malfunctioning septic tanks					
NPS-6	Implement CZM NPS Reduction Plan					
NPS-7	Establish roadway planning for NPS			\$111,250		
NPS-8	NPDES Stormwater-industries					
NPS-9	Implement groundwater plume control	<u>\$315,000</u>				
NPS-10	Develop inventory of agricultural NPS	<u>\$312,500</u>				
NPS-11	Implement ag. NPS programs					
NPS-12	Adopt NPS construction standards	\$15,000				
NPS-13	Construction toxics/ nutrient control					
NPS-14	Require sewage pumpout, storage, tmt.		\$28,750		\$42,500	
NPS-15	Use of WWTP-treatable marine chemicals	<u>\$90,750</u>			\$7,500	
NPS-16	Implement wash down controls	<u>\$63,000</u>				
SUBTOTAL		\$2,222,500	\$28,750	\$111,250	\$102,500	
POINT SOURCES OF POLLUTION						
PS-1	Locate and delineate bypass/overflows					
PS-2	Eliminate/reduce bypasses-overflows					
PS-3	Regionalize small wastewater systems					
PS-4	Improve compliance monitoring	<u>\$75,000</u>				
PS-5	Implement illegal connection program	<u>\$1,537,500</u>			\$15,000	
PS-6	Issue NPDES Coastal General Permit	<u>\$37,500</u>			\$22,500	
SUBTOTAL		\$1,650,000			\$37,500	
RESEARCH ACTION PLAN						
RSC-1	Establish research coordination board	\$37,500	\$37,500		\$37,500	
RSC-2	Identify research needs					
RSC-3	Continue State of the Bay process					
RSC-4	Increase funding for Bay research					
SUBTOTAL		\$37,500	\$37,500		\$37,500	
PUBLIC PARTICIPATION/EDUCATION						
PPE-1	Establish a Citizen Advisory Committee					
PPE-2	Continue State of the Bay Symposia					
PPE-3	Adult education and outreach program					
PPE-4	Curricula for school districts					
PPE-5	Develop volunteer opportunities					
PPE-6	Citizen Pollution Reporting System	<u>\$240,000</u>			\$220,500	
PPE-7	Support for local governments					
PPE-8	Assist user groups affected by Plan					
SUBTOTAL		\$240,000			\$220,500	
5-YEAR TOTAL BY ORGANIZATION		\$7,530,000	\$4,486,875	\$111,250	\$1,422,750	\$3,487,875

ACTION	DESCRIPTION	TWDB	TSSWCB	Shellfish Committee	CCC	RRC
HABITAT PROTECTION						
HP-1	Restore, create, and enhance wetlands					
HP-2	Beneficial uses of dredged material	\$37,500				
HP-3	Inventory/remediate degraded wetlands					
HP-4	Coordinate System-Wide reg. program					
HP-5	Acquire quality wetlands					
HP-6	Develop a tax incentive program					
HP-7	Facilitate bird nesting on existing islands					
HP-8	Build nesting islands					
HP-9	Coordinate erosion/subsidence program					
SUBTOTAL		\$37,500				
SPECIES POPULATION PROTECTION						
SP-1	Strengthen species management	\$46,875		\$50,000	\$37,500	
SP-2	Return oyster shell to bay			\$30,000		
SP-3	Develop oyster reefs					
SP-4	Set aside reef habitat for research					
SP-5	Reduce commercial bycatch					
SP-6	Catch and release programs					
SP-7	Investigate reducing impingement					
SP-8	Develop plans for endangered species					
SP-9	Enforce prohibitions- exotic species					
SP-10	Implement controls-exotic species					
SUBTOTAL		\$46,875		\$80,000	\$37,500	
PUBLIC HEALTH PROTECTION						
PH-1	Seafood Consumption Safety Program					
PH-2	Enhance TDH Shellfish Program					
PH-3	Contact Recreation Advisory Program					
SUBTOTAL						
FRESHWATER INFLOW						
FW-1	Determine freshwater inflow needs					
FW-2	Expand monitoring	<u>\$81,555</u>				
FW-3	Meet freshwater inflow needs	\$37,500			\$30,000	
FW-4	Establish inflow regulations					
FW-5	Provide sediment to the bay					
FW-6	Reduce water consumption	<u>\$37,500</u>				
FW-7	Evaluate freshwater inflow needs					
SUBTOTAL		\$156,555			\$30,000	
SPILLS/DUMPING						
SD-1	Damage assessment pre-screening					
SD-2	Establish compensation for small oil spills					
SD-3	Coordinate Restoration					
SD-4	Spill cleanup-shoreline characterization					
SD-5	Improve trash management					
SD-6	Screen trash from stormwater discharge					
SD-7	Publicize harm caused by illegal dumping					
SUBTOTAL						
SHORELINE MANAGEMENT						
SM-1	Establish shoreline development planning					
SM-2	Establish residential shoreline standards					
SM-3	Establish industrial shoreline standards					
SM-4	Minimize negative effects of structures					
SM-5	Improve shoreline access					
SUBTOTAL						

Notes: Lead entity is underlined. More actions are included on following page.

New 5-Year Costs

Appendix B-2: Estimated STATE Costs (Page 4 of 6)

ACTION	DESCRIPTION	TWDB	TSSWCB	Shellfish Committee	CCC	RRC
WATER/SEDIMENT QUALITY STANDARDS						
WSQ-1	Reduce contaminant concentrations					
WSQ-2	Determine sources of ambient toxicity					
WSQ-3	Establish sediment quality criteria					
WSQ-4	Perform TMDL loading studies-toxics					
WSQ-5	Support Clean Texas 2000					
WSQ-6	Reduce Nutrient and BOD Loadings					\$22,500
WSQ-7	Perform TMDL loading studies-BOD					
SUBTOTAL						\$22,500
NONPOINT SOURCES OF POLLUTION						
NPS-1	Implement NPDES Stormwater					
NPS-2	Perform pilot projects for BMPs					
NPS-3	Identify pollutant reduction					
NPS-4	Establish residential NPS programs					
NPS-5	Correct malfunctioning septic tanks					
NPS-6	Implement CZM NPS Reduction Plan					
NPS-7	Establish roadway planning for NPS					
NPS-8	NPDES Stormwater-industries					
NPS-9	Implement groundwater plume control					
NPS-10	Develop inventory of agricultural NPS		\$75,000			
NPS-11	Implement ag. NPS programs		\$36,000			
NPS-12	Adopt NPS construction standards					
NPS-13	Construction toxics/ nutrient control					
NPS-14	Require sewage pumpout, storage, tmt.					
NPS-15	Use of WWTP-treatable marine chemicals					
NPS-16	Implement wash down controls					
SUBTOTAL						\$111,000
POINT SOURCES OF POLLUTION						
PS-1	Locate and delineate bypass/overflows					
PS-2	Eliminate/reduce bypasses-overflows					
PS-3	Regionalize small wastewater systems					
PS-4	Improve compliance monitoring					
PS-5	Implement illegal connection program					
PS-6	Issue NPDES Coastal General Permit					\$33,750
SUBTOTAL						\$33,750
RESEARCH ACTION PLAN						
RSC-1	Establish research coordination board					
RSC-2	Identify research needs					
RSC-3	Continue State of the Bay process					
RSC-4	Increase funding for Bay research					
SUBTOTAL						
PUBLIC PARTICIPATION/EDUCATION						
PPE-1	Establish a Citizen Advisory Committee					
PPE-2	Continue State of the Bay Symposia					
PPE-3	Adult education and outreach program					
PPE-4	Curricula for school districts					
PPE-5	Develop volunteer opportunities					
PPE-6	Citizen Pollution Reporting System					
PPE-7	Support for local governments					
PPE-8	Assist user groups affected by Plan					
SUBTOTAL						
5-YEAR TOTAL BY ORGANIZATION		\$240,930	\$111,000	\$80,000	\$67,500	\$56,250

ACTION	DESCRIPTION	Texas A&M	Seagrant	Texas A&M Galveston	TIO	TOTAL STATE
HABITAT PROTECTION						
HP-1	Restore, create, and enhance wetlands					\$1,258,750
HP-2	Beneficial uses of dredged material					\$150,000
HP-3	Inventory/remediate degraded wetlands					\$91,500
HP-4	Coordinate System-Wide reg. program					\$221,250
HP-5	Acquire quality wetlands					\$1,631,250
HP-6	Develop a tax incentive program					\$80,000
HP-7	Facilitate bird nesting on existing islands					\$143,500
HP-8	Build nesting islands					\$17,500
HP-9	Coordinate erosion/subsidence program					\$225,500
SUBTOTAL						\$3,819,250
SPECIES POPULATION PROTECTION						
SP-1	Strengthen species management					\$522,125
SP-2	Return oyster shell to bay					\$453,000
SP-3	Develop oyster reefs	\$6,750				\$93,750
SP-4	Set aside reef habitat for research					\$43,500
SP-5	Reduce commercial bycatch					\$11,250
SP-6	Catch and release programs					\$90,000
SP-7	Investigate reducing impingement	\$6,750				\$29,250
SP-8	Develop plans for endangered species					\$182,250
SP-9	Enforce prohibitions- exotic species					\$4,500
SP-10	Implement controls-exotic species					\$150,000
SUBTOTAL						\$1,579,625
PUBLIC HEALTH PROTECTION						
PH-1	Seafood Consumption Safety Program					\$2,400,000
PH-2	Enhance TDH Shellfish Program					\$217,500
PH-3	Contact Recreation Advisory Program					\$810,000
SUBTOTAL						\$3,427,500
FRESHWATER INFLOW						
FW-1	Determine freshwater inflow needs					\$81,555
FW-2	Expand monitoring					\$236,250
FW-3	Meet freshwater inflow needs					\$30,000
FW-4	Establish inflow regulations					\$22,500
FW-5	Provide sediment to the bay					\$37,500
FW-6	Reduce water consumption					\$187,500
FW-7	Evaluate freshwater inflow needs					\$595,305
SUBTOTAL						\$595,305
SPILLS/DUMPING						
SD-1	Damage assessment pre-screening					
SD-2	Establish compensation for small oil spills					
SD-3	Coordinate Restoration					
SD-4	Spill cleanup-shoreline characterization					
SD-5	Improve trash management					\$22,500
SD-6	Screen trash from stormwater discharge					
SD-7	Publicize harm caused by illegal dumping					
SUBTOTAL						\$22,500
SHORELINE MANAGEMENT						
SM-1	Establish shoreline development planning					\$96,000
SM-2	Establish residential shoreline standards					\$15,000
SM-3	Establish industrial shoreline standards					\$60,750
SM-4	Minimize negative effects of structures					\$153,500
SM-5	Improve shoreline access					\$15,750
SUBTOTAL						\$341,000

Notes: Lead entity is underlined. More actions are included on following page.

New 5-Year Costs

Appendix B-2: Estimated STATE Costs (Page 6 of 6)

ACTION	DESCRIPTION	Texas A&M	Seagrant	Texas A&M Galveston	TIO	TOTAL STATE
WATER/SEDIMENT QUALITY STANDARDS						
WSQ-1	Reduce contaminant concentrations					\$45,000
WSQ-2	Determine sources of ambient toxicity					\$60,000
WSQ-3	Establish sediment quality criteria					\$171,750
WSQ-4	Perform TMDL loading studies-toxics					\$295,750
WSQ-5	Support Clean Texas 2000					
WSQ-6	Reduce Nutrient and BOD Loadings					\$942,500
WSQ-7	Perform TMDL loading studies-BOD					\$1,437,500
SUBTOTAL						\$2,952,500
NONPOINT SOURCES OF POLLUTION						
NPS-1	Implement NPDES Stormwater					\$135,000
NPS-2	Perform pilot projects for BMPs					\$1,343,750
NPS-3	Identify pollutant reduction					
NPS-4	Establish residential NPS programs					
NPS-5	Correct malfunctioning septic tanks					
NPS-6	Implement CZM NPS Reduction Plan					
NPS-7	Establish roadway planning for NPS					\$111,250
NPS-8	NPDES Stormwater-industries					
NPS-9	Implement groundwater plume control					\$315,000
NPS-10	Develop inventory of agricultural NPS					\$387,500
NPS-11	Implement ag. NPS programs					\$36,000
NPS-12	Adopt NPS construction standards					\$15,000
NPS-13	Construction toxics/ nutrient control					
NPS-14	Require sewage pumpout, storage, tmt.					\$71,250
NPS-15	Use of WWTP-treatable marine chemicals					\$98,250
NPS-16	Implement wash down controls					\$63,000
SUBTOTAL						\$2,576,000
POINT SOURCES OF POLLUTION						
PS-1	Locate and delineate bypass/overflows					
PS-2	Eliminate/reduce bypasses-overflows					
PS-3	Regionalize small wastewater systems					
PS-4	Improve compliance monitoring					\$75,000
PS-5	Implement illegal connection program					\$1,552,500
PS-6	Issue NPDES Coastal General Permit					\$93,750
SUBTOTAL						\$1,721,250
RESEARCH ACTION PLAN						
RSC-1	Establish research coordination board	\$37,500	\$37,500	\$37,500	\$37,500	\$262,500
RSC-2	Identify research needs					
RSC-3	Continue State of the Bay process					
RSC-4	Increase funding for Bay research					
SUBTOTAL						\$262,500
PUBLIC PARTICIPATION/EDUCATION						
PPE-1	Establish a Citizen Advisory Committee					
PPE-2	Continue State of the Bay Symposia					
PPE-3	Adult education and outreach program					
PPE-4	Curricula for school districts					
PPE-5	Develop volunteer opportunities					
PPE-6	Citizen Pollution Reporting System					\$460,500
PPE-7	Support for local governments					
PPE-8	Assist user groups affected by Plan					
SUBTOTAL						\$460,500
5-YEAR TOTAL BY ORGANIZATION		\$51,000	\$37,500	\$37,500	\$37,500	\$17,757,930

ACTION	DESCRIPTION	Municipalities (other than Houston)	Five Counties	GBF	GCWDA	HGAC	ICC
HABITAT PROTECTION							
HP-1	Restore, create, and enhance wetlands						
HP-2	Beneficial uses of dredged material					\$37,500	\$150,000
HP-3	Inventory/remediate degraded wetlands						
HP-4	Coordinate System-Wide reg. program						
HP-5	Acquire quality wetlands						
HP-6	Develop a tax incentive program						
HP-7	Facilitate bird nesting on existing islands						
HP-8	Build nesting islands						
HP-9	Coordinate erosion/subsidence program						
SUBTOTAL						\$37,500	\$150,000
SPECIES POPULATION PROTECTION							
SP-1	Strengthen species management		\$150,000				
SP-2	Return oyster shell to bay						
SP-3	Develop oyster reefs						
SP-4	Set aside reef habitat for research						
SP-5	Reduce commercial bycatch						
SP-6	Catch and release programs						
SP-7	Investigate reducing impingement						
SP-8	Develop plans for endangered species						
SP-9	Enforce prohibitions- exotic species						
SP-10	Implement controls-exotic species						
SUBTOTAL						\$150,000	
PUBLIC HEALTH PROTECTION							
PH-1	Seafood Consumption Safety Program						
PH-2	Enhance TDH Shellfish Program						
PH-3	Contact Recreation Advisory Program						
SUBTOTAL							
FRESHWATER INFLOW							
FW-1	Determine freshwater inflow needs						
FW-2	Expand monitoring		\$14,055				
FW-3	Meet freshwater inflow needs						
FW-4	Establish inflow regulations						
FW-5	Provide sediment to the bay						
FW-6	Reduce water consumption						
FW-7	Evaluate freshwater inflow needs						
SUBTOTAL						\$14,055	
SPILLS/DUMPING							
SD-1	Damage assessment pre-screening						
SD-2	Establish compensation for small oil spills						
SD-3	Coordinate Restoration						
SD-4	Spill cleanup-shoreline characterization						
SD-5	Improve trash management		\$27,000			\$15,000	
SD-6	Screen trash from stormwater discharge						
SD-7	Publicize harm caused by illegal dumping						
SUBTOTAL						\$27,000	\$15,000
SHORELINE MANAGEMENT							
SM-1	Establish shoreline development planning		\$37,500			\$15,000	
SM-2	Establish residential shoreline standards	\$132,000	\$187,500				
SM-3	Establish industrial shoreline standards	\$132,000					
SM-4	Minimize negative effects of structures						
SM-5	Improve shoreline access						
SUBTOTAL						\$264,000	\$225,000

Notes: Lead entity is underlined. More actions are included on following page.

ACTION	DESCRIPTION	Munis	Five Counties	GBF	GCWDA	HGAC	ICC
WATER/SEDIMENT QUALITY STANDARDS							
WSQ-1	Reduce contaminant concentrations						
WSQ-2	Determine sources of ambient toxicity						
WSQ-3	Establish sediment quality criteria						
WSQ-4	Perform TMDL loading studies-toxics						
WSQ-5	Support Clean Texas 2000						
WSQ-6	Reduce Nutrient and BOD Loadings						
WSQ-7	Perform TMDL loading studies-BOD	\$424,149					
SUBTOTAL		\$424,149					
NONPOINT SOURCES OF POLLUTION							
NPS-1	Implement NPDES Stormwater						
NPS-2	Perform pilot projects for BMPs		\$75,000			\$15,000	
NPS-3	Identify pollutant reduction	\$775,000					
NPS-4	Establish residential NPS programs	\$132,000	\$582,600			\$24,000	
NPS-5	Correct malfunctioning septic tanks	\$75,000					
NPS-6	Implement CZM NPS Reduction Plan						
NPS-7	Establish roadway planning for NPS		\$47,250				
NPS-8	NPDES Stormwater-industries						
NPS-9	Implement groundwater plume control					\$15,000	
NPS-10	Develop inventory of agricultural NPS		\$33,750				
NPS-11	Implement ag. NPS programs						
NPS-12	Adopt NPS construction standards					\$37,500	
NPS-13	Construction toxics/ nutrient control						
NPS-14	Require sewage pumpout, storage, tmt.						
NPS-15	Use of WWTP-treatable marine chemicals						
NPS-16	Implement wash down controls						
SUBTOTAL		\$982,000	\$738,600			\$91,500	
POINT SOURCES OF POLLUTION							
PS-1	Locate and delineate bypass/overflows						
PS-2	Eliminate/reduce bypasses-overflows						
PS-3	Regionalize small wastewater systems				\$315,000		
PS-4	Improve compliance monitoring						
PS-5	Implement illegal connection program						
PS-6	Issue NPDES Coastal General Permit						
SUBTOTAL					\$315,000		
RESEARCH ACTION PLAN							
RSC-1	Establish research coordination board						
RSC-2	Identify research needs						
RSC-3	Continue State of the Bay process						
RSC-4	Increase funding for Bay research						
SUBTOTAL							
PUBLIC PARTICIPATION/EDUCATION							
PPE-1	Establish a Citizen Advisory Committee						
PPE-2	Continue State of the Bay Symposia						
PPE-3	Adult education and outreach program						
PPE-4	Curricula for school districts						
PPE-5	Develop volunteer opportunities			\$398,750			
PPE-6	Citizen Pollution Reporting System						
PPE-7	Support for local governments					\$100,000	
PPE-8	Assist user groups affected by Plan						
SUBTOTAL				\$398,750		\$100,000	
5-YEAR TOTAL BY ORGANIZATION		\$1,697,149	\$1,127,655	\$398,750	\$315,000	\$259,000	\$150,000

ACTION	DESCRIPTION	City of Houston	SJRA	TRA	Port of Galveston	Port of Houston	Rice
HABITAT PROTECTION							
HP-1	Restore, create, and enhance wetlands						
HP-2	Beneficial uses of dredged material				\$37,500	\$37,500	
HP-3	Inventory/remediate degraded wetlands						
HP-4	Coordinate System-Wide reg. program						
HP-5	Acquire quality wetlands						
HP-6	Develop a tax incentive program						
HP-7	Facilitate bird nesting on existing islands						
HP-8	Build nesting islands						
HP-9	Coordinate erosion/subsidence program						
SUBTOTAL					\$37,500	\$37,500	
SPECIES POPULATION PROTECTION							
SP-1	Strengthen species management	\$37,500					
SP-2	Return oyster shell to bay						
SP-3	Develop oyster reefs						
SP-4	Set aside reef habitat for research						
SP-5	Reduce commercial bycatch						
SP-6	Catch and release programs						
SP-7	Investigate reducing impingement						
SP-8	Develop plans for endangered species						
SP-9	Enforce prohibitions-exotic species						
SP-10	Implement controls-exotic species						
SUBTOTAL		\$37,500					
PUBLIC HEALTH PROTECTION							
PH-1	Seafood Consumption Safety Program						
PH-2	Enhance TDH Shellfish Program						
PH-3	Contact Recreation Advisory Program						
SUBTOTAL							
FRESHWATER INFLOW							
FW-1	Determine freshwater inflow needs						
FW-2	Expand monitoring	\$45,000	\$14,055	\$14,055			
FW-3	Meet freshwater inflow needs	\$22,500	\$22,500	\$22,500			
FW-4	Establish inflow regulations						
FW-5	Provide sediment to the bay						
FW-6	Reduce water consumption	\$13,750	\$13,750	\$13,750			
FW-7	Evaluate freshwater inflow needs						
SUBTOTAL		\$81,250	\$50,305	\$50,305			
SPILLS/DUMPING							
SD-1	Damage assessment pre-screening						
SD-2	Establish compensation for small oil spills						
SD-3	Coordinate Restoration						
SD-4	Spill cleanup-shoreline characterization						
SD-5	Improve trash management						
SD-6	Screen trash from stormwater discharge						
SD-7	Publicize harm caused by illegal dumping						
SUBTOTAL							
SHORELINE MANAGEMENT							
SM-1	Establish shoreline development planning						
SM-2	Establish residential shoreline standards						
SM-3	Establish industrial shoreline standards						
SM-4	Minimize negative effects of structures						
SM-5	Improve shoreline access						
SUBTOTAL							

Notes: Lead entity is underlined. More actions are included on following page.

New 5-Year Costs

Appendix B-3: Estimated LOCAL Costs (Page 4 of 6)

ACTION	DESCRIPTION	City of Houston	SJRA	TRA	Port of Galveston	Port of Houston	Rice
WATER/SEDIMENT QUALITY STANDARDS							
WSQ-1	Reduce contaminant concentrations						
WSQ-2	Determine sources of ambient toxicity						
WSQ-3	Establish sediment quality criteria						
WSQ-4	Perform TMDL loading studies-toxics						
WSQ-5	Support Clean Texas 2000						
WSQ-6	Reduce Nutrient and BOD Loadings						
WSQ-7	Perform TMDL loading studies-BOD						
SUBTOTAL							
NONPOINT SOURCES OF POLLUTION							
NPS-1	Implement NPDES Stormwater						
NPS-2	Perform pilot projects for BMPs	\$15,000					
NPS-3	Identify pollutant reduction						
NPS-4	Establish residential NPS programs						
NPS-5	Correct malfunctioning septic tanks						
NPS-6	Implement CZM NPS Reduction Plan						
NPS-7	Establish roadway planning for NPS						
NPS-8	NPDES Stormwater-industries						
NPS-9	Implement groundwater plume control		\$15,000	\$15,000			
NPS-10	Develop inventory of agricultural NPS						
NPS-11	Implement ag. NPS programs						
NPS-12	Adopt NPS construction standards						
NPS-13	Construction toxics/ nutrient control						
NPS-14	Require sewage pumpout, storage, tmt.						
NPS-15	Use of WWTP-treatable marine chemicals						
NPS-16	Implement wash down controls						
SUBTOTAL		\$15,000	\$15,000	\$15,000			
POINT SOURCES OF POLLUTION							
PS-1	Locate and delineate bypass/overflows						
PS-2	Eliminate/reduce bypasses-overflows						
PS-3	Regionalize small wastewater systems						
PS-4	Improve compliance monitoring						
PS-5	Implement illegal connection program						
PS-6	Issue NPDES Coastal General Permit						
SUBTOTAL							
RESEARCH ACTION PLAN							
RSC-1	Establish research coordination board		\$37,500	\$37,500			\$37,500
RSC-2	Identify research needs						
RSC-3	Continue State of the Bay process						
RSC-4	Increase funding for Bay research						
SUBTOTAL			\$37,500	\$37,500			\$37,500
PUBLIC PARTICIPATION/EDUCATION							
PPE-1	Establish a Citizen Advisory Committee						
PPE-2	Continue State of the Bay Symposia						
PPE-3	Adult education and outreach program						
PPE-4	Curricula for school districts						
PPE-5	Develop volunteer opportunities						
PPE-6	Citizen Pollution Reporting System						
PPE-7	Support for local governments						
PPE-8	Assist user groups affected by Plan						
SUBTOTAL							
5-YEAR TOTAL BY ORGANIZATION		\$133,750	\$102,805	\$102,805	\$37,500	\$37,500	\$37,500

ACTION	DESCRIPTION	
HABITAT PROTECTION		
HP-1	Restore, create, and enhance wetlands	\$37,500
HP-2	Beneficial uses of dredged material	\$6,750
HP-3	Inventory/remediate degraded wetlands	\$11,250
HP-4	Coordinate System-Wide reg. program	\$37,500
HP-5	Acquire quality wetlands	\$99,750
HP-6	Develop a tax incentive program	\$22,500
HP-7	Facilitate bird nesting on existing islands	\$11,250
HP-8	Build nesting islands	\$11,250
HP-9	Coordinate erosion/subsidence program	\$11,250
SUBTOTAL		\$249,000
SPECIES POPULATION PROTECTION		
SP-1	Strengthen species management	\$48,750
SP-2	Return oyster shell to bay	\$9,000
SP-3	Develop oyster reefs	\$11,250
SP-4	Set aside reef habitat for research	\$6,750
SP-5	Reduce commercial bycatch	\$11,250
SP-6	Catch and release programs	\$6,750
SP-7	Investigate reducing impingement	\$6,750
SP-8	Develop plans for endangered species	\$6,750
SP-9	Enforce prohibitions- exotic species	\$6,750
SP-10	Implement controls-exotic species	\$4,500
SUBTOTAL		\$118,500
PUBLIC HEALTH PROTECTION		
PH-1	Seafood Consumption Safety Program	\$11,250
PH-2	Enhance TDH Shellfish Program	\$11,250
PH-3	Contact Recreation Advisory Program	\$11,250
SUBTOTAL		\$33,750
FRESHWATER INFLOW		
FW-1	Determine freshwater inflow needs	
FW-2	Expand monitoring	\$11,250
FW-3	Meet freshwater inflow needs	\$11,250
FW-4	Establish inflow regulations	\$4,500
FW-5	Provide sediment to the bay	\$2,250
FW-6	Reduce water consumption	\$48,750
FW-7	Evaluate freshwater inflow needs	\$6,750
SUBTOTAL		\$84,750
SPILLS/DUMPING		
SD-1	Damage assessment pre-screening	\$2,250
SD-2	Establish compensation for small oil spills	\$2,250
SD-3	Coordinate Restoration	\$30,000
SD-4	Spill cleanup-shoreline characterization	\$11,250
SD-5	Improve trash management	\$66,000
SD-6	Screen trash from stormwater discharge	\$15,000
SD-7	Publicize harm caused by illegal dumping	\$30,000
SUBTOTAL		\$156,750
SHORELINE MANAGEMENT		
SM-1	Establish shoreline development planning	\$53,250
SM-2	Establish residential shoreline standards	\$37,500
SM-3	Establish industrial shoreline standards	
SM-4	Minimize negative effects of structures	\$37,500
SM-5	Improve shoreline access	\$40,000
SUBTOTAL		\$168,250

Notes: Lead entity is underlined. More actions are included on following page.

ACTION	DESCRIPTION	
WATER/SEDIMENT QUALITY STANDARDS		
WSQ-1	Reduce contaminant concentrations	\$126,000
WSQ-2	Determine sources of ambient toxicity	\$15,000
WSQ-3	Establish sediment quality criteria	\$22,500
WSQ-4	Perform TMDL loading studies-toxics	\$81,000
WSQ-5	Support Clean Texas 2000	\$22,500
WSQ-6	Reduce Nutrient and BOD Loadings	\$107,250
WSQ-7	Perform TMDL loading studies-BOD	\$99,750
SUBTOTAL		\$474,000
NONPOINT SOURCES OF POLLUTION		
NPS-1	Implement NPDES Stormwater	\$11,250
NPS-2	Perform pilot projects for BMPs	\$37,500
NPS-3	Identify pollutant reduction	\$50,000
NPS-4	Establish residential NPS programs	\$93,750
NPS-5	Correct malfunctioning septic tanks	\$25,000
NPS-6	Implement CZM NPS Reduction Plan	
NPS-7	Establish roadway planning for NPS	\$7,500
NPS-8	NPDES Stormwater-industries	\$21,750
NPS-9	Implement groundwater plume control	\$4,500
NPS-10	Develop inventory of agricultural NPS	\$42,500
NPS-11	Implement ag. NPS programs	\$22,500
NPS-12	Adopt NPS construction standards	\$37,500
NPS-13	Construction toxics/ nutrient control	\$7,500
NPS-14	Require sewage pumpout, storage, tmt.	\$30,000
NPS-15	Use of WWTP-treatable marine chemicals	\$7,500
NPS-16	Implement wash down controls	\$24,000
SUBTOTAL		\$422,750
POINT SOURCES OF POLLUTION		
PS-1	Locate and delineate bypass/overflows	\$37,500
PS-2	Eliminate/reduce bypasses-overflows	\$11,250
PS-3	Regionalize small wastewater systems	\$11,250
PS-4	Improve compliance monitoring	\$68,500
PS-5	Implement illegal connection program	\$37,500
PS-6	Issue NPDES Coastal General Permit	\$59,000
SUBTOTAL		\$225,000
RESEARCH ACTION PLAN		
RSC-1	Establish research coordination board	\$50,000
RSC-2	Identify research needs	
RSC-3	Continue State of the Bay process	\$30,000
RSC-4	Increase funding for Bay research	\$37,500
SUBTOTAL		\$117,500
PUBLIC PARTICIPATION/EDUCATION		
PPE-1	Establish a Citizen Advisory Committee	\$580,250
PPE-2	Continue State of the Bay Symposia	\$45,000
PPE-3	Adult education and outreach program	\$835,000
PPE-4	Curricula for school districts	\$99,750
PPE-5	Develop volunteer opportunities	\$37,500
PPE-6	Citizen Pollution Reporting System	\$471,750
PPE-7	Support for local governments	\$37,500
PPE-8	Assist user groups affected by Plan	\$68,000
SUBTOTAL		\$2,174,750
5-YEAR TOTAL BY ORGANIZATION		\$4,225,000

APPENDIX C:

**Estimated Costs of Galveston Bay Plan
Compared to Costs of Other Programs**

**Appendix C: Estimated Costs of Galveston Bay Plan Compared to
Costs of Other Programs (Page 1 of 2)**

ACTION	DESCRIPTION	TOTAL 5-YEAR COSTS OF NEW ACTIONS IN GBP	5-YEAR COSTS ASSOCIATED WITH OTHER PROGRAMS			
			EXISTING PROGRAMS		PROPOSED PROGRAMS	
			IMPLEMENTING AGENCIES	COST	IMPLEMENTING AGENCIES	COST
WETLAND HABITAT PROTECTION						
W-1	Restore, create, and enhance wetlands	\$4,296,250				
W-2	Beneficial uses of dredged material	\$419,250				
W-3	Inventory/remediate degraded wetlands	\$285,750				
W-4	Coordinate System-Wide reg. program	\$319,500				
W-5	Acquire quality wetlands	\$6,268,500				
W-6	Develop a tax incentive program	\$102,500				
W-7	Facilitate bird nesting on existing islands	\$192,250	USFWS, TPWD	\$225,000		
W-8	Build nesting islands	\$66,250				
W-9	Coordinate erosion/subsidence program	\$336,750			GLO, SCS	\$100,000
WBTOTAL		\$12,287,000		\$225,000		\$100,000
SPECIES POPULATION PROTECTION						
P-1	Strengthen species management	\$917,750				
P-2	Return oyster shell to bay	\$462,000				
P-3	Develop oyster reefs	\$147,750	USFWS, TPWD	\$48,000		
P-4	Set aside reef habitat for research	\$63,750				
P-5	Reduce commercial bycatch	\$908,750				
P-6	Catch and release programs	\$96,750	TPWD	\$33,000		
P-7	Investigate reducing impingement	\$58,500				
P-8	Develop plans for endangered species	\$202,500				
P-9	Enforce prohibitions- exotic species	\$272,500			USFWS	\$15,000
P-10	Implement controls-exotic species	\$168,000				
PBTOTAL		\$3,298,250		\$81,000		\$15,000
PUBLIC HEALTH PROTECTION						
H-1	Seafood Consumption Safety Program	\$2,411,250			TDH	\$2,400,000
H-2	Enhance TDH Shellfish Program	\$228,750			TDH	\$217,500
H-3	Contact Recreation Advisory Program	\$821,250				
HBTOTAL		\$3,461,250				\$2,617,500
FRESHWATER INFLOW						
W-1	Determine freshwater inflow needs	\$0				
W-2	Expand monitoring	\$629,970	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> TWDB River Authorities Harris County </div> →	\$1,280,000		
W-3	Meet freshwater inflow needs	\$315,000				
W-4	Establish inflow regulations	\$34,500				
W-5	Provide sediment to the bay	\$24,750				
W-6	Reduce water consumption	\$141,250				
W-7	Evaluate freshwater inflow needs	\$194,250				
WBTOTAL		\$1,339,720			\$1,280,000	
PILLS/DUMPING						
D-1	Damage assessment pre-screening	\$2,250			Nat'l Res. Trustees	\$56,250
D-2	Establish compensation for small oil spills	\$2,250			Nat'l Res. Trustees	\$56,250
D-3	Coordinate Restoration	\$30,000			GLO, TNRCC, TPWD	\$47,250
D-4	Spill cleanup-shoreline characterization	\$11,250			Nat'l Res. Trustees, USCG	\$210,500
D-5	Improve trash management	\$137,250				
D-6	Screen trash from stormwater discharge	\$15,000			EPA, Munis	\$202,500
D-7	Publicize harm caused by illegal dumping	\$30,000				
DBTOTAL		\$228,000				\$572,750
SHORELINE MANAGEMENT						
M-1	Establish shoreline development planning	\$201,750			SCS	\$1,385,250
M-2	Establish residential shoreline standards	\$372,000				
M-3	Establish industrial shoreline standards	\$192,750				
M-4	Minimize negative effects of structures	\$191,000	USCG, TDH, TPWD	\$112,500		
M-5	Improve shoreline access	\$55,750				
MBTOTAL		\$1,013,250		\$112,500		\$1,385,250

Note: More actions are included on the following page.

**Appendix C: Estimated Costs of Galveston Bay Plan Compared to
Costs of Other Programs (Page 2 of 2)**

ACTION	DESCRIPTION	TOTAL 5-YEAR COSTS OF NEW ACTIONS IN GBP	5-YEAR COSTS ASSOCIATED WITH OTHER PROGRAMS			
			EXISTING PROGRAMS		PROPOSED PROGRAMS	
			IMPLEMENTING AGENCIES	COST	IMPLEMENTING AGENCIES	COST
WATER/SEDIMENT QUALITY STANDARDS						
WSQ-1	Reduce contaminant concentrations	\$171,000				
WSQ-2	Determine sources of ambient toxicity	\$175,000				
WSQ-3	Establish sediment quality criteria	\$194,250			TNRCC	\$32,250
WSQ-4	Perform TMDL loading studies-toxics	\$376,750	TNRCC	\$600,000		
WSQ-5	Support Clean Texas 2000	\$22,500				
WSQ-6	Reduce Nutrient and BOD Loadings	\$1,049,750	TNRCC	\$115,000		
WSQ-7	Perform TMDL loading studies-BOD	\$1,961,399				
SUBTOTAL		\$3,950,649		\$715,000		\$32,250
NONPOINT SOURCES OF POLLUTION						
NPS-1	Implement NPDES Stormwater	\$146,250	Houston	\$27,803,750		
NPS-2	Perform pilot projects for BMPs	\$1,486,250	Harris County			
NPS-3	Identify pollutant reduction	\$825,000				
NPS-4	Establish residential NPS programs	\$832,350			TNRCC	\$60,000
NPS-5	Correct malfunctioning septic tanks	\$100,000			GLO	
NPS-6	Implement CZM NPS Reduction Plan	\$0				
NPS-7	Establish roadway planning for NPS	\$166,000				
NPS-8	NPDES Stormwater-industries	\$21,750				
NPS-9	Implement groundwater plume control	\$364,500			TNRCC, HGAC	\$100,000
NPS-10	Develop inventory of agricultural NPS	\$463,750			HGAC	\$300,000
NPS-11	Implement ag. NPS programs	\$58,500	TSSWCB	\$67,500	River Authorities	
NPS-12	Adopt NPS construction standards	\$90,000	GLO			
NPS-13	Construction toxics/ nutrient control	\$7,500	TNRCC			
NPS-14	Require sewage pumpout, storage, tmt.	\$101,250				
NPS-15	Use of WWTP-treatable marine chemicals	\$105,750				
NPS-16	Implement wash down controls	\$87,000				
SUBTOTAL		\$4,853,850		\$27,871,250		\$460,000
POINT SOURCES OF POLLUTION						
PS-1	Locate and delineate bypass/overflows	\$37,500	Houston	\$250,000,000	Other Munis	\$266,400,000
PS-2	Eliminate/reduce bypasses-overflows	\$11,250	Houston	\$950,000,000	Other Munis	\$163,185,976
PS-3	Regionalize small wastewater systems	\$326,250				
PS-4	Improve compliance monitoring	\$143,500				
PS-5	Implement illegal connection program	\$1,590,000				
PS-6	Issue NPDES Coastal General Permit	\$152,750				
SUBTOTAL		\$2,261,250		\$1,200,000,000		\$429,585,976
RESEARCH ACTION PLAN						
RSC-1	Establish research coordination board	\$575,000				
RSC-2	Identify research needs	\$0				
RSC-3	Continue State of the Bay process	\$30,000				
RSC-4	Increase funding for Bay research	\$37,500				
SUBTOTAL		\$642,500				
PUBLIC PARTICIPATION/EDUCATION						
PPE-1	Establish a Citizen Advisory Committee	\$580,250				
PPE-2	Continue State of the Bay Symposia	\$45,000				
PPE-3	Adult education and outreach program	\$835,000				
PPE-4	Curricula for school districts	\$99,750				
PPE-5	Develop volunteer opportunities	\$436,250	GBF	\$141,250	GBF	\$37,500
PPE-6	Citizen Pollution Reporting System	\$932,250	GBF	\$375,000		
PPE-7	Support for local governments	\$137,500				
PPE-8	Assist user groups affected by Plan	\$68,000				
SUBTOTAL		\$3,134,000		\$516,250		\$37,500
5-YEAR TOTAL		\$36,471,719		\$1,230,801,000		\$434,806,226



APPENDIX D:
Summary of Regulatory Needs

Appendix D: Summary of Regulatory Needs

A summary of the needs for new legislation and regulations that may be required to implement the actions recommended by *The Galveston Bay Plan* is presented in Table I-7. Each action proposed by *The Plan* is listed in the table along with a corresponding regulatory need. Some actions do not require additional regulatory measures beyond those already in place and are described in Table I-7 as "none" or "none identified."

Appendix D: Summary of Regulatory Needs

Action	Regulatory Needs
HP-1: Restore, Create, and Protect Wetlands	Review and change existing federal, state, and local regulations which discourage habitat creation and restoration initiatives (e.g., liabilities).
HP-2: Promote Beneficial Uses of Dredged Material to Restore and Create Wetlands	Dredging activities of Corps will be subject to the consistency review process.
HP-3: Inventory Degraded Wetlands and Fund Remedial Measures	Review and change existing state, and local regulations which discourage habitat creation and restoration initiatives.
HP-4: Implement a Coordinated System-Wide Wetland Regulatory Strategy	Generate an MOU as described .
HP-5: Acquire and Protect Quality Wetlands	Congressional authorization and appropriation will be required for federal funding appropriations to acquire wetlands.
HP-6: Develop Economic and Tax Incentive Programs to Protect Wetlands	New tax incentives may require legislation or regulation. The Federal Assistance Program (Water Bank Program) will reward the property owner for preserving wetlands.
HP-7: Facilitate Bird Nesting on Existing Sites	No new regulatory needs were identified for this action.
HP-8: Build Nesting Islands Using Dredged Material	Appropriate permits will be necessary for dredging activities necessary to complete this action. Houston Ship Channel project requires congressional authorization and appropriation.
HP-9: Reduce Erosional Impacts on Wetlands and Habitats	Standards for erosion may be appropriate for inclusion in General Permits.
SP-1: Implement a Bay-Wide Effort to Strengthen Species Management	Potential establishment of additional management plans or regulatory action by TPWD or other entities. No current legislation needed.
SP-2: Return Oyster Shell to Designated Locations Within the Bay	Funding for this program will require an appropriation from the Texas Legislature.
SP-3: Promote the Development of Oyster Reefs Using Alternate Materials	The current leasing process required for the placement of reef substrate needs to be streamlined.

Appendix D: Summary of Regulatory Needs

Action	Regulatory Needs
SP-4: Set Aside a Portion of Reef Habitat as Scientific Research Areas or Preserves	May require action by the Texas Legislature or other entities in addition to TPWD.
SP-5: Encourage Continued Development of Gear to Reduce Commercial By-Catch	NMFS has already mandated the use of Turtle Excluder Devices (TEDs).
SP-6: Conduct Educational Programs About Catch and Release	None.
SP-7: Investigate Potential Measures to Reduce Impingement and Entrainment	None.
SP-8: Develop Management Plans for Endangered or Threatened Species	None.
SP-9: Improve Enforcement of Prohibitions Against the Introduction of Exotic Species	Clarification of the scope of enforcement authority will be required.
SP-10: Identify and Implement Techniques for the Control of Problem Exotic Species	None.
PH-1: Develop a Seafood Consumption Safety Program	None.
PH-2: Enhance the TDH Shellfish Sanitation Program	Continue coordination with emerging federal actions and the NSSP program. Support the completion of the National Indicator Study and the development of an improved indicator parameter for the determination of molluscan shell fish closures.
PH 3: Develop a Contact Recreation Advisory Program	None.
FW-1: Complete Current Studies to Determine Freshwater Inflow Needs for the Bay	These studies have been mandated by Texas statute.
FW-2: Expand Streamflow, Sediment Loading, and Rainfall Monitoring	None.
FW-3: Establish Management Strategies for Meeting Freshwater Inflow Needs	Implementation of the strategies developed by this action may require additional regulations and/or statutes. See Action FW-4.
FW-4: Establish Inflow Regulations to Protect the Ecological Needs of the Estuary	At the state level, Sec. 11.147 of the Texas Water Code requires that the TNRCC include in the conditions for a permit to store, take or divert state water, specific requirements to maintain beneficial inflows to any affected bays and estuary systems. If necessary, the TNRCC could expand the scope of this authority and could, by a legislative change, include all of a watershed in the area in which conditions could be imposed in permits.

Appendix D: Summary of Regulatory Needs

Action	Regulatory Needs
FW-5: Explore Means of Providing Sediment to the Estuary	None.
FW-6: Reduce Water Consumption	None.
FW-7: Evaluate the Effects of Channels and Structures on Bay Circulation, Habitats, and Species	None.
SD-1: Promote Planning to Facilitate Natural Resource Damage Assessments	Damage assessments for spills of oil and hazardous substances should be conducted in accordance with provisions of applicable federal regulations issued subsequent to the CWA and CERCLA. NOAA is in the process of developing regulations to address damage assessments for oil spills as directed by the OPA. Additionally, Texas Senate Bill 1049, effective September 1, 1993, requires the state to develop a damage assessment process for oil spills in coastal waters, and Galveston Bay is specifically named to be surveyed for the Natural Resource Inventory.
SD-2: Identify Simplified Damage Assessment Procedures for Small Oil Spills	Damage assessments for spills of oil and hazardous substances should be conducted in accordance with provisions of applicable federal regulations issued subsequent to the Clean Water Act and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA or Superfund). NOAA is in the process of developing regulations to address damages assessments for oil spills as directed by OPA. Additionally, Texas SB 1049/HB 2188, effective September 1, 1993, requires the state to develop a damage assessment process for oil spills in coastal waters, and Galveston Bay is specifically named to be surveyed for the Natural Resource Inventory.
SD-3: Facilitate Effective Restoration of Natural Resources Damaged by Spills	Existing legislation has established sufficient authority for these actions.
SD-4: Facilitate Spill Cleanup by Advance Shoreline Characterization	SB 1059/HB 2188, effective September 1, 1993, generally authorizes the use of a GIS to identify bay features helpful to cleanup activities, and the expenditure of Coastal Protection Fund moneys for such activities.
SD-5: Improve Trash Management Near the Shoreline	MARPOL Annex V establishes that facilities with more than 10 vessels supply shoreside trash handling facilities, and this addresses most marinas in the Galveston Bay system. A model ordinance is needed for incorporated areas encompassing shoreline parks and boat ramps, etc. Authority to require these actions is problematic for unincorporated areas such as county parks, where implementation would be voluntary and coordinated through county commissions and anti-littering campaigns.
SD-6: Remove Trash from Storm Water Discharges	This action would be implemented under NPDES storm water permits and provisions of the EPA/NOAA agreement for non-point source pollution control in coastal areas.

Appendix D: Summary of Regulatory Needs

Action	Regulatory Needs
SD-7: Publicize Environmental Harm Caused by Illegal Dumping	This action can be accomplished under existing programs, and requires no new regulations.
SM-1: Establish a Planning Program for Shoreline Development	County ordinance-making power would facilitate local participation in shoreline planning and attaining consistency with the developing CMP.
SM-2: Identify Appropriate Residential Shoreline Development Guidelines	County ordinance-making power would enable more local participation in shoreline planning.
SM-3: Identify Appropriate Commercial and Industrial Shoreline Development Guidelines	County ordinance-making power would enable more local participation in shoreline planning. Standards are already a part of the RCRA facility siting process.
SM-4: Minimize Negative Effects of Structures and Dredging on Publicly Owned Lands	1) Escrow funds at time of construction permit application; 2) increase fines for abandonment; 3) provide for specific and cumulative impact assessment and mitigation against unavoidable impacts when permitting; 4) prohibit future cabin lease transfers; application renewals, new cabins on state lands; or rebuilding after damage to greater than half the cabin value; 5) obtain state authority to regulate houseboats.
SM-5: Improve Access to Publicly Owned Shorelines WSQ-1: Reduce Contaminant Concentrations to Meet Standards and Criteria	None. Need to conduct enforcement based on results of monitoring. Consistency review of applications for NPDES and NPS implementation grants can be used to encourage TNRCC to implement.
WSQ-2: Determine Sources of Ambient Toxicity in Water and Sediment	None identified.
WSQ-3: Establish and Adopt Sediment Quality Criteria	Need to add sediment criteria to state water quality standards.
WSQ-4: Perform TMDL Loading Studies for Toxics	TMDLs should be added to the state's Water Quality Management Plan. Permits need to be revised when they come up for renewal based on results of TMDLs. Local storm water management plans might be required to meet pollutant loading goals. TNRCC must modify the TMDL process to account for point and non-point sources.
WSQ-5: Support Clean Texas 2000 Pollution Prevention Program	None identified.
WSQ-6: Reduce Nutrient and BOD Loadings to Problem Areas	No new legislation is required. Permit criteria may need to be revised based on results of this action. Thorough consistency reviews encourage reduction of discharge of nutrients by federally assisted or conducted actions. Consistency review of application for implementation grants from EPA can be used as a tool to encourage TNRCC to implement this action.

Appendix D: Summary of Regulatory Needs

Action	Regulatory Needs
WSQ-7: Perform TMDL Loading Studies for Oxygen Demand and Nutrients	No new legislation is required. Permit criteria may need to be revised based on results of this action. TNRCC must modify the TMDL process to account for point and non-point sources.
NPS-1: Implement Storm Water Programs for Local Municipalities	Implementation of non-point source control measures may require significant changes in local drainage regulations, building codes, zoning plans, etc.
NPS-2: Perform Pilot Projects to Develop NPS Best Management Practices for the Galveston Bay Watershed	None identified.
NPS-3: Identify and Correct Priority Watershed Pollutant Problems	None identified.
NPS-4: Establish Residential Load Reduction Programs	May lead to new local ordinances aimed at curbing non-point source pollutants from various residential sources, such as fertilizer application, herbicide application, and pet waste. Through consistency review of implementation grants for TNRCC programs, the enhancement of existing or development of new TNRCC ordinances and education programs can be encouraged.
NPS-5 Correct Malfunctioning Shoreline Septic Tanks	Stronger local ordinances will be required to curb fecal coliform pollution from septic tanks. These ordinances will require some type of certification and upgrades upon sale or transfer of property in problem areas.
NPS-6 Implement NPS Reduction Plan Program for New Development	Texas NPS Reduction Plan Program will need to be approved by EPA and NOAA.
NPS-7: Establish Roadway Planning to Minimize NPS Effects	Need to change management priorities within roadway planning agencies. Consistency review of highway research, planning, and construction grants provided by DOT can encourage use of best available technology and practices to reduce TSS, non-point source loading from new highway developments.
NPS-8: Implement NPDES Storm Water Program for Area Industries	Consistency review of application for NPDES implementation grants can be used to encourage efforts toward goals of <i>The Plan</i> once TNRCC has NPDES delegation.
NPS-9: Prevent Degradation of Bay Waters by Known Industrial Groundwater Plumes	Change TNRCC's management emphasis to increase resources devoted to identifying groundwater plumes with substantial discharges to surface water. Consistency review of application for NPS implementation grants can be used to encourage TNRCC to move toward implementation of such programs.
NPS-10: Develop Inventory of Agricultural Non-Point Sources	Consistency review of application for implementation grants for NPS program can be used to encourage TNRCC to develop this inventory.

Appendix D: Summary of Regulatory Needs

Action

Regulatory Needs

NPS-11: Coordinate and Implement Existing Agricultural NPS Control Programs

Some change in management decision-making process needed to increase coordination between various programs in different agencies.

NPS-12: Adopt Regional Construction Standards for NPS Reduction

No new regulatory authority needed for existing NPDES storm water programs. Other municipalities need to adopt ordinances to implement these measures. Counties have no ordinance-making powers. Regulation would have to occur based on local ordinance-making powers. This action may require changes in local drainage regulations, codes, and zoning plans.

NPS-13: Implement Toxics, Nutrient Control Practices at Construction Sites

No new regulatory authority needed under existing NPDES permits (including Houston/Pasadena/unincorporated areas of Harris County). Other municipalities need to adopt ordinances to implement these measures at construction sites. At county level, however, adoption of construction practice regulation is problematic, since no ordinance-making powers exist at the county level. Regulation would have to occur based on local ordinance-making powers.

NPS-14: Require Sewage Pumpout, Storage, and Provisions for Treatment

May need new local or state regulations to implement.

NPS-15: Require Use of Marine Sanitary Chemicals That Can Be Treated in POTWs

Will need new local or state regulations to implement product bans.

NPS-16: Implement Washdown Controls and Containment Measures

May need new local or state regulations to implement and enforce.

PS-1: Determine Location and Extent of Bypass and Overflow Problems

EPA and TNRCC will need to issue administrative orders as needed.

PS-2: Eliminate or Reduce Bypass or Overflow Problems

The TNRCC will need to issue administrative orders to implement this action.

PS-3: Regionalize Small Wastewater Treatment Systems

May require local and state legislation to give GCWDA the authority to implement regional treatment. A possible approach to encouraging regionalization is to require that new permit holders with small systems pay a fee or post a bond prior to construction to ensure that funds are available for system maintenance and operation, or to ensure funding for potential future regionalization effort. Consistency review of any federal assistance to these small systems can be used as a tool to encourage these systems to regionalize.

PS-4: Improve Compliance Monitoring and Enforcement for Small Dischargers

May require additional funding from state or the collection of inspection fees.

PS-5: Implement a Dry-Weather Illegal Connection Program

Initially the program will be voluntary. Rulemaking by the TNRCC under the Pollution Abatement for Municipalities rules might be required in two years if voluntary implementation is insufficient.

Appendix D: Summary of Regulatory Needs

Action	Regulatory Needs
PS-6: Issue NPDES Coastal General Permit or Reduce Oil Field Brine Discharge	Need to issue NPDES permit or implement new RRC program.
RSC-1: Establish a Research Coordination Board	None.
RSC-2: Identify Research Needs From an Ecosystem Perspective	None.
RSC-3: Continue State of the Bay Process	None.
RSC-4: Increase Funding for Galveston Bay Research	None.
PPE-1: Establish Citizen Involvement as an Integral Part of the Program	None.
PPE-2: Continue and Expand the State of the Bay Symposia	None.
PPE-3: Develop and Implement a Long-Range Adult Education and Outreach Program	None.
PPE-4: Develop Specific Curricula for Use in Galveston Bay Watershed School Districts	Legislative note: Chapter 361, Section 11.53 of the Texas Health and Safety Code, as established by SB. 1340, mandates environmental education programs in Texas public schools. However, this mandate has not been funded to date. A bill to fund this measure through a license plate fee was introduced in the 1993 Texas Legislature, but failed.
PPE-5: Continue to Develop Effective Volunteer Opportunities for Citizens	None.
PPE-6: Maintain a Citizen Pollution Reporting System	None.
PPE-7: Develop and Implement a Strategy for Informing, Educating, and Providing Support for Local Government Involvement	None.
PPE-8: Provide Assistance for User Groups Affected by Implementation of <i>The Galveston Bay Plan</i>	None.



APPENDIX E:
Summary of Research Needs

Appendix E: Summary of Research Needs

This appendix describes additional information required for some actions prior to effective implementation as part of *The Galveston Bay Plan*. The table below presents those actions for which further research or study is needed along with a summary of appropriate projects to provide the desired information. The Research Action Plan provides further details for using the tools of basic and applied research to make informed management decisions concerning Galveston Bay.

Appendix E: Summary of Research Needs

No.	Research Need	Who	Research or Technical Study
HP-1	Restore, Create, and Protect Wetlands	TPWD NMFS Nat'l Biol. Survey	Research causes of seagrass loss and techniques to restore submerged aquatics. Evaluate effectiveness of various marsh creation and enhancement techniques, such as thin layer disposal on subsiding marshes.
HP-2	Promote Beneficial Uses of Dredged Material to Restore and Create Wetlands	ICC	Conduct comprehensive bay-wide beneficial uses inventory.
HP-2	Promote Beneficial Uses of Dredged Material to Restore and Create Wetlands	ICC	Develop and verify predictive models to assess impacts of circulation and salinity changes (e.g. effects of Texas City Dike).
HP-2	Promote Beneficial Uses of Dredged Material to Restore and Create Wetlands	ICC	Develop advanced testing program to determine existence of geographic distribution of contaminants for project-by-project dredging/filling in order to manage contaminated sediments safely.
HP-3	Inventory Degraded Wetlands and Fund Remedial Measures	USFWS	Develop a definition of a degraded wetland for use in inventory and ranking.
HP-3	Inventory Degraded Wetlands and Fund Remedial Measures	USFWS TPWD NMFS	Complete estuary-wide inventory of habitat, and rank degraded habitats in order of increasing need for remediation.
HP-3	Inventory Degraded Wetlands and Fund Remedial Measures	USFWS SCS NBS, NMFS TPWD GLO	Evaluate the effectiveness of various marsh creation and enhancement techniques and prepare a descriptive list of the relative effectiveness of each.
HP-5	Acquire and Protect Quality Wetlands	USFWS TPWD	Complete detailed inventory and ranking of habitats and an accompanying quality assessment
HP-6	Develop Economic and Tax Incentive Programs to Protect Wetlands	TPWD	Study to explore use of ad valorem tax incentive and other existing economic incentives that would encourage habitat protection.
HP-9	Reduce Erosional Impacts on Wetlands and Habitats	GLO TPWD	Research effects of reservoir or surface impoundment construction on erosion.
HP-9	Reduce Erosional Impacts on Wetlands and Habitats	GLO TPWD	Study effects of sand and gravel mining on erosion.

Appendix E: Summary of Research Needs

No.	Research Need	Who	Research or Technical Study
HP-9	Reduce Erosional Impacts on Wetlands and Habitats	GLO	Study means to reduce erosion and restore eroded fringing marsh in sensitive areas of the bay such as Christmas Bay where the width of the GIWW has been increased by erosion. Research the correlation between magnitude and rate of shoreline erosion to hull configuration, draft, speed, and other appropriate factors for vessels commonly using the bay. Perform a wind wave analysis to distinguish between a ship wake and wind wave erosion problem.
SP-1	Implement a Bay-Wide Effort to Strengthen Species Management	TPWD, Advisory Com.	Research causes of identified declines in species populations. Investigate possible reintroduction of reduced/extirpated species, with appropriate species/habitat management plans. Identify areas where additional research is required, including time/trend analysis on factors affecting blue crab population and population of other affected species.
SP-3	Promote the Development of Oyster Reefs Using Alternate Materials	HL&P, USFWS, TPWD	Continue current HL&P experimental project to create five acres of reef substrate using coal combustion by-products.
SP-4	Set Aside a Portion of Reef Habitat as Scientific Research Areas or Preserves	TPWD	Designate areas of reef habitat as preserves or research areas by the TPWD. Select sites based on input from scientists, commercial oyster harvesters, and the general public. Investigate reef ecology and compare natural and new oyster reefs established using alternate materials.
SP-5	Encourage Continued Development of Gear to Reduce Commercial By-Catch	NMFS	Research to optimize design of gear and devices, and assess practicality of implementation under existing conditions. Study the survival rates of by-catch organisms.
SP-7	Investigate Potential Measures to Reduce Impingement and Entrainment	HL&P	Conduct research and pilot projects on feasible impingement reduction methods to measure changes in quantity, total biomass, and distribution of impinged and entrained organisms.
SP-10	Identify and Implement Techniques for the Control of Problem Exotic Species	TPWD	Identify effective techniques for the control of problem exotic species (i.e., nutria, grass carp, and fire ants). Conduct pilot test to determine effectiveness of species control techniques.
PH-1	Develop a Seafood Consumption Safety Program	TDH	Establish applicable standards, a risk assessment methodology, and a risk management process for seafood advisories. Establish standards for selected metals and organic compounds, including PCBs, PAHs, heavy metals, pesticides, and dioxins. Apply standards to seafood harvested from the Galveston Bay Estuary, including molluscan shellfish.

Appendix E: Summary of Research Needs

No.	Research Need	Who	Research or Technical Study
PH-2	Enhance the TDH Shellfish Sanitation Program	TDH	Increase the frequency of water sampling to more precisely determine the area and period of required molluscan shellfish closures.
FW-1	Complete Current Studies to Determine Freshwater Inflow Needs for the Bay	TWDB	Continue TWDB evaluation of the freshwater inflow needs for Galveston Bay utilizing the State of Texas modeling methodology. This evaluation, scheduled for completion during 1994, will provide target inflow numbers for use in future management of freshwater inflow to the bay.
FW-5	Explore Means of Providing Sediment to the Estuary	TNRCC USGS Corps GLO, BR Riv. Auth.	Determine the net quantity of sediment which has been prevented from reaching the estuary, and explore the feasibility of remobilizing sediment impounded behind watershed dams and transporting it to the estuary.
FW-7	Evaluate the Effects of Channels and Structures on Bay Circulation, Habitats, and Species	TNRCC	Perform a study to 1) evaluate the effect of existing bay structures (such as navigation channels and the Texas City Dike) and practices (such as cooling water intake) on circulation, and the effect of circulation alterations on bay habitats and species, 2) develop a methodology to evaluate the effect of proposed structures (such as tidal and near-tidal dikes, levees, impoundments, channels, disposal sites, etc.) on bay circulation patterns, habitats, and species, and 3) evaluate the feasibility and cost effectiveness of making alterations to existing structures and practices which have harmful effects on bay circulation.
SD-4	Facilitate Spill Cleanup by Advance Shoreline Characterization	GLO	Complete an initial GIS-based survey of Galveston Bay shoreline features which could help or hinder spill response and cleanup activities.
SD-4	Facilitate Spill Cleanup by Advance Shoreline Characterization	GLO	Assess existing state and federal response planning and equipment siting activities to determine if adjustments are needed in spill response preparedness strategies.
SD-6	Remove Trash from Storm Water Discharges	Local gov.	Conduct pilot projects and technical reviews to evaluate the flooding potential of EPA-mandated storm water screening methods. Address concerns regarding adverse impacts of captured floatables on the efficiency of storm water drainage during intense storm events common in the bay area.
SM-3	Identify Appropriate Commercial and Industrial Shoreline Development Guidelines	CCC	Compile a list of appropriate actions (e.g., dike specifications, alternative waste storage locations) to prevent existing facilities and abandoned pits from adversely affecting the bay during severe weather conditions.

Appendix E: Summary of Research Needs

No.	Research Need	Who	Research or Technical Study
SM-3	Identify Appropriate Commercial and Industrial Shoreline Development Guidelines	GLO	Inventory all existing hazardous material/waste facilities in the Galveston Bay Special Management Area and assess their hurricane damage potential.
SM-4	Minimize Negative Effects of Structures and Dredging on Publicly Owned Lands	GLO	Inventory and assign removal priority to all derelict structures and pipelines on state-owned lands based on aesthetics, submerged habitat value, threat to shorelines, habitats, water quality, or safety.
SM-5	Improve Access to Publicly Owned Shorelines	Program	Inventory and map existing public recreational facilities and assess public use needs. Research environmental impacts resulting from recreational uses of the shoreline, especially near submerged aquatic vegetation.
WSQ-2	Determine Sources of Ambient Toxicity in Water and Sediment	TNRCC, USFWS	Perform loading studies on continuing sources of PCBs and DDT (if any) and identify potential sources of toxicity. The studies will 1) include detailed toxicity studies to resolve conflicting results from different methods; 2) include research to address the role of surface microlayer in ambient toxicity; 3) address the influence of pH, salinity, etc. on ambient toxicity; 4) determine the organisms and life stages affected by ambient toxicity focusing on the critical and most susceptible life stages; and 5) include assessment of biological community structure.
WSQ-4	Perform TMDL Loading Studies for Toxics	TNRCC	Develop methods to integrate both point source and non-point sources into TMDL process. Perform additional research to quantify transport and fate of toxics in bay.
WSQ-6	Reduce Nutrient and BOD Loadings to Problem Areas	TNRCC	Conduct an engineering study (and/or attainability analysis) to determine if it is feasible to increase dissolved oxygen levels in the Houston Ship Channel. The study will use monitoring, engineering analysis, and computer modeling. The study will include 1) sediment demand monitoring to determine sink effects of sediment; 2) determine change in dissolved oxygen concentrations in the Ship Channel during and after storm events (using existing or expanded USGS network); 3) develop cost vs. dissolved oxygen/frequency relationships; 4) determine relative contributions of nutrients and oxygen-demanding materials to problem; 5) determine limitations caused by the existing hydrodynamic regime of the channel; and 6) estimate benefits to aquatic life in channel and to the entire bay system from increased dissolved oxygen concentrations.

Appendix E: Summary of Research Needs

No.	Research Need	Who	Research or Technical Study
NPS-2	Perform Pilot Projects to Develop NPS Best Management Practices for the Galveston Bay Watershed	Program, TNRCC, Houston/Harris County	Conduct specific pilot projects to demonstrate viability of various best management practices for new development in Galveston Bay area. For example, some engineering practices related to detention and particularly infiltration technology are inappropriate for local topography, rainfall regimes, and soil types. Compile a single bay-wide BMP performance document based on performance data from the area and data that is transferable from other areas.
NPS-3	Identify and Correct Priority Watershed Pollutant Problems	Program	Publish an inventory of NPS concerns in the bay watershed. Various entities and researchers, through ongoing and new water quality initiatives, will continue to identify NPS source areas in the Galveston Bay watershed. Possible sources of information include 1) biennial basin assessment reports prepared under the Texas Clean Rivers Program will include a comprehensive inventory of NPS concerns in the watershed; 2) the GBNEP non-point source study's loading maps and land use maps; 3) 305b reports; and 4) monitoring data showing areas with stream erosion problems, problem areas identified from agricultural non-point source programs, sources of continual PCB and PAH releases (if any). If necessary, perform special studies to locate and confirm the presence of non-point source areas. Carry out research to determine the extent and severity of atmospheric deposition of air pollutants and subsequent runoff to Galveston Bay and its tributaries.
NPS-5	Correct Malfunctioning Septic Tanks	Program, Counties	Conduct a bay-wide septic system and geologic survey for use in regulation and management. Identify problem areas where septic tanks are degrading water quality through bacterial pollution.
NPS-7	Establish Roadway Planning to Minimize NPS Effects	Program TXDOT	Incorporate into the 1996 State of the Bay Symposium any research findings and activities on NPS management issues related to roadway planning and design. Continue to present results of NPS control research and demonstration projects at biennial State of the bay symposia.
NPS-8	Implement NPDES Storm Water Program for Area Industries	Program EPA Industry	Compile industrial non-point source monitoring data to update Galveston Bay NPS loading estimates and to assess industrial contributions to overall loadings.

Appendix E: Summary of Research Needs

No.	Research Need	Who	Research or Technical Study
NPS-9	Prevent Degradation of Bay Waters by Known Industrial Groundwater Plumes	TNRCC Industry	Use existing groundwater monitoring data to inventory potential impacts on the estuarine ecosystem from affected groundwater associated with industrial sources. Include existing sites regulated under CERCLA, RCRA, the Petroleum Storage Tank Program, the Texas Risk Reduction Rules, OPA, and CWA which currently have confirmed groundwater plumes that may discharge into surface waters of the Galveston Bay watershed. Estimate the overall pollutant loading from groundwater sources to Galveston Bay.
NPS-10	Develop Inventory of Agricultural Non-Point Sources.	SWCB SCS HGAC	Assess agricultural non-point source loadings to and impacts on Galveston Bay. Special studies will be performed to 1) refine current pesticide loadings from agricultural areas; 2) develop detailed loading estimates from the upper San Jacinto watershed (upstream of Lake Houston dam) and the upper Trinity watershed (upstream of Lake Livingston dam); 3) determine overall contribution of rice farming vs. low-till vs. conventional farming techniques; 4) assess seasonal effects to identify periods when high pollutant loads would be expected, such as when rice fields overflow or are drained, tilling periods, and periods when pesticide and fertilizer applications are heavy; 5) evaluate effectiveness of agricultural BMPs to reduce non-point source erosion loadings, 6) determine contribution of agricultural activities on fecal coliform levels in waters of Galveston Bay.
PS-1	Determine Location and Extent of Bypass and Overflow Problems	TNRCC Munis	Conduct research to support bypass and overflow corrective action plans prepared by POTWs for submission to the TNRCC. Determine the costs and environmental benefits associated with different levels of control, such as what return frequency to design controls for. Determine if elimination of these pollutant sources will allow inshore areas of Galveston Bay to be open for oystering.
PS-3	Regionalize Small Wastewater Treatment Systems	GCWDA	Identify potential management options for more effective oversight of small treatment systems.

APPENDIX F:

**Priority Ranking of Management Actions
for *The Galveston Bay Plan***

Appendix F: Priority Ranking of Management Actions for The Galveston Bay Plan

Action	Overall Priority Ranking
1 HP-1: Restore, Create, and Protect Wetlands	2.0
2 HP-2: Promote Beneficial Uses of Dredged Material to Restore and Create Wetlands	2.0
3 HP-3: Inventory Degraded Wetlands and Fund Remedial Measures	2.0
4 HP-4: Implement a Coordinated System-Wide Wetland Regulatory Strategy	2.5
5 HP-5: Acquire and Protect Quality Wetlands	3.0
6 HP-6: Develop Economic and Tax Incentive Programs to Protect Wetlands	3.0
7 NPS-1: Implement Stormwater Programs for Local Municipalities	3.0
8 NPS-2: Perform Pilot Projects to Develop NPS Best Management Practices for the Galveston Bay Watershed	3.0
9 NPS-3: Identify and Correct Priority Watershed Pollutant Problems	3.0
10 NPS-4: Establish Residential Load Reduction Programs	3.0
11 NPS-5: Correct Malfunctioning Shoreline Septic Tanks	3.0
12 NPS-6: Implement NPS Reduction Plan Program for New Development	3.0
13 NPS-7: Establish Roadway Planning to Minimize NPS Effects	3.0
14 HP-7: Facilitate Bird Nesting on Existing Sites	4.7
15 HP-8: Build Nesting Islands Using Dredged Material	4.7
16 PS-1: Determine Location and Extent of Bypass and Overflow Problems	4.7
17 PS-2: Eliminate or Reduce Bypass and Overflow Problems	4.7
18 FW-1: Complete Current Studies to Determine Freshwater Inflow Needs for the Bay	5.0
19 FW-2: Expand Streamflow, Sediment Loading, and Rainfall Monitoring	5.0
20 FW-3: Establish Management Strategies for Meeting Freshwater Inflow Needs	5.0
21 FW-4: Establish Inflow Regulations to Protect the Ecological Needs of the Estuary	5.0
22 FW-5: Explore Means of Providing Sediment to the Estuary	5.0
23 FW-6: Reduce Water Consumption	5.0
24 NPS-10: Develop Inventory of Agricultural Non-Point Sources	5.0
25 NPS-11: Coordinate and Implement Existing Agricultural NPS Control Programs	5.0
26 PS-3: Regionalize Small Wastewater Treatment Systems	5.0
27 PS-4: Improve Compliance Monitoring and Enforcement	5.0
28 NPS-8: Implement NPDES Stormwater Program for Area Industries	5.3
29 NPS-9: Prevent Degradation of Bay Waters by Groundwater Plumes	5.3
30 NPS-12: Adopt Regional Construction Standards for NPS Reduction	6.0
31 NPS-13: Implement Toxics and Nutrient Control Practices at Construction Sites	6.0
32 WSQ-1: Reduce Contaminant Concentrations to Meet Standards and Criteria	6.3
33 WSQ-2: Determine Sources of Ambient Toxicity in Water and Sediment	6.3
34 WSQ-3: Establish Sediment Quality Criteria	6.3
35 WSQ-4: Perform TMDL Loading Studies for Toxics	6.3
36 WSQ-5: Support Clean Texas 2000 Pollution Prevention Program	6.3
37 PS-6: Issue NPDES Coastal General Permit or Eliminate Harm From Oil Field Produced Water Discharge	7.3
38 FW-7: Evaluate the Effects of Channels and Structures on Bay Circulation, Habitats, and Species	7.5
39 SP-1: Implement a Bay-Wide Effort to Strengthen Species Management	8.5
40 SP-2: Return Oyster Shell to Designated Locations Within the Bay	8.5
41 SP-3: Promote the Development of Oyster Reefs Using Alternate Materials	8.5
42 SP-4: Set Aside a Portion of Reef Habitat as Scientific Research Areas or Preserves	8.5
43 SP-5: Encourage Continued Development of Gear to Reduce Commercial By-Catch	8.5
44 SP-6: Conduct Educational Programs About Catch and Release	8.5
45 SP-7: Investigate Potential Measures to Reduce Impingement and Entrainment	8.5
46 SP-8: Develop Management Plans for Endangered or Threatened Species	8.5
47 SM-1: Establish a Planning Program for Shoreline Development	9.5
48 SM-2: Identify Appropriate Residential Shoreline Development Guidelines	9.5
49 SM-3: Identify Appropriate Commercial and Industrial Shoreline Development Guidelines	9.5

Appendix F: Priority Ranking of Management Actions for *The Galveston Bay Plan*

Action	Overall Priority Ranking
50 SM-4: Minimize Negative Effects of Structures on Publicly Owned Lands	9.5
51 SD-1: Promote Planning to Facilitate Natural Resource Damage Assessments	10.3
52 SD-2: Identify Simplified Damage Assessment Procedures for Small Oil Spills	10.3
53 SD-3: Facilitate Effective Restoration of Galveston Bay's Natural Resources Damaged by Spills	10.3
54 PH-1: Develop a Seafood Consumption Safety Program	11.0
55 SM-5: Improve Access to Publicly Owned Shorelines	11.5
56 SD-4: Facilitate Spill Cleanup by Advance Shoreline Characterization	12.3
57 PS-5: Implement a Dry-Weather Illegal Connection Program	12.5
58 WSQ-6: Reduce Nutrient and BOD Loadings to Problem Areas	13.8
59 WSQ-7: Perform TMDL Loading Studies for Oxygen Demand and Nutrients	13.8
60 PH-2: Enhance the TDH Shellfish Sanitation Program	15.0
61 NPS-14: Require Sewage Pumpout, Storage, and Provisions for Treatment	16.5
62 NPS-15: Require Use of Marine Sanitary Chemicals That Can Be Treated in POTWs	16.5
63 NPS-16: Implement Washdown Controls and Containment Measures	16.8
64 HP-9: Reduce Erosional Impacts on Wetlands and Habitats	17.0
65 SD-7: Publicize Environmental Harm Caused by Illegal Dumping	19.5
66 SD-5: Improve Trash Management Near the Shoreline	19.8
67 SD-6: Screen Trash from Stormwater Discharges	19.8
68 PH-3: Develop a Contact Recreation Advisory Program	20.0
69 SP-10: Identify and Implement Techniques for the Control of Problem Exotic Species	21.0
70 SP-9: Improve Enforcement of Prohibitions Against the Introduction of Exotic Species	21.0

Note: The above actions are listed according to their overall priority ranking. The highest priority actions are listed first.

Key: FW = Freshwater Inflow and Bay Circulation SD = Spills/Dumping
 HP = Habitat Protection SM = Shoreline Management
 NPS = Non-Point Sources of Pollution SP = Species Population Protection
 PH = Public Health Protection WSQ = Water and Sediment Quality Improvement
 PS = Point Sources of Pollution

Ranking Procedure:

The priority problem and goals associated with each action, excluding the support actions, were used to develop the overall priority ranking system. For each action, a number between 1 and 17 was assigned, representing the importance of the **priority problem**. For example, for Action NPS-1, the **priority problem** was contaminated runoff from nonpoint sources (see page 182). This priority ranking received a value of "2" based on the ranking developed by GBNEP (see page 337).

The goal of Action NPS-1 was to reduce urban nonpoint source loads (see page 182). As shown on page 339, this was ranked as a "very high" priority goal by GBNEP out of total of four possible rankings (very high, high, moderate, and low). Therefore this action received a goal ranking of "1".

The problem ranking and goal ranking were then added together to provide the overall priority ranking of "3.0", which in the table was ranked as the 7th highest priority action (note that lower numbers correspond to higher priority rankings). Ties were settled by using the priority problem as the first tie-breaker, and then the position of an action plan in each chapter.

APPENDIX G:

**Galveston Bay National Estuary Program
Management Conference
Directory**

Appendix G: GBNEP Management Conference Directory

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Appendix G: GBNEP Management Conference Directory**SCIENTIFIC/TECHNICAL ADVISORY COMMITTEE *continued*****Dr. Robert McFarlane, Chair****Ms. Teresa Battenfield, Vice-Chair**

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Appendix G: GBNEP Management Conference Directory

SCIENTIFIC/TECHNICAL ADVISORY COMMITTEE *continued*

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Appendix G: GBNEP Management Conference Directory**CITIZEN'S ADVISORY STEERING COMMITTEE *continued*****Ms. Sharron Stewart, Chair****Mr. Ron Embry, Vice-Chair**

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Appendix G: GBNEP Management Conference Directory

CITIZEN'S ADVISORY STEERING COMMITTEE *continued*

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APPENDIX H:
Projects Sponsored by GBNEP

Appendix H: Projects Sponsored by GBNEP

PROJECT TITLE	CONTRACTOR
Bay-Wide Management Survey	University of Texas at Austin
Bay-Wide Management Evaluation	University of Texas at Austin
Segmentation of Galveston Bay	Jones and Neuse, Inc.
History of Resource Utilization I	University of Houston-Clear Lake
History of Resource Utilization II	Margaret Henson
Socioeconomics of Bay Utilization	University of Houston-Clear Lake
Natural Resource Economics	University of North Carolina
Funding Source Inventory	University of Texas at Austin
<i>The Galveston Bay Plan</i> Action Plan Costing	Apogee Research, Inc.
<i>The Galveston Bay Plan</i> Federal Consistency Survey	Shiner, Moseley and Associates
<i>The Galveston Bay Plan</i> Funding Strategy	Resource Analytics, Inc.
<i>The Galveston Bay Plan</i> Implementation Strategy	Houston-Galveston Area Council
CCMP Participation by Local Governments	Houston-Galveston Area Council
Bay Characterization Support	Groundwater Services, Inc.
CCMP Support	Groundwater Services, Inc.
Point Source Loading Study	University of Texas at Austin
Shoreline Survey for Unpermitted Point Sources	Texas A&M University, GERG
Non-Point Source Loading Study	Groundwater Services, Inc.
Treated/Untreated Effluent Loadings	Texas Natural Resource Conservation Commission
Ambient Water/Sediment Quality	University of Texas at Austin
Dredge/Fill Impacts	University of Texas at Austin
Toxicants in Sediment and Benthos	U. S. Fish and Wildlife Service
Oyster Survey	Texas A&M University
Living Resources Status and Trends	Texas Parks and Wildlife Department
Trawling By-Catch	National Marine Fisheries Service
Recreational By-Catch	FTN Associates, LTD
Non-Fishing Incidental Mortality	Jones and Neuse, Inc.
Wetland Habitat Survey	Bureau of Economic Geology
Ecosystem Conceptual Model	McFarlane & Associates
Bay Debris Survey	Texas Parks and Wildlife Department
Toxicants in Seafood Organisms	Texas A&M University, GERG

Appendix H: Projects Sponsored by GBNEP

PROJECT TITLE	CONTRACTOR
Public Health Synopsis	Espey, Huston & Associates
Regional Monitoring/Data Management Strategy Development	Tetra Tech, Inc.
Regional Monitoring Methods Standardization	Tetra Tech, Inc.
Data Base Inventory	University of Texas at Austin
Galveston Bay Information Center	Texas A&M at Galveston; TIO
Galveston Bay Bibliography	Texas A&M at Galveston; TIO
Acquisition of 1930 Aerial Photo Set	TOBIN Research, Inc.
State of the Bay Symposia	GBNEP Program Office
Nomination for Preserve Status	Bureau of Economic Geology
Tide Gauge Recon/Purchase	Texas General Land Office
Tide Gauge Installation	Texas General Land Office
Environmental Inventory of Armand Bayou	Galveston Bay Foundation
Environmental Inventory of Christmas Bay	Galveston Bay Foundation
Regulatory Survey and Evaluation of Armand Bayou	Houston-Galveston Area Council
Regulatory Survey and Evaluation of Christmas Bay	Houston-Galveston Area Council
Phase I Management Plans and Implementation	Texas Parks and Wildlife Department
Phase II Management Plans and Implementation	Texas Parks and Wildlife Department
Public Participation for Preserves	GBNEP Program Office
Citizens' Monitoring I and II	Texas Water Commission
Citizens' Monitoring III	Galveston Bay Foundation
BayLine Newsletter	GBNEP Program Office
Portable Information Display	GBNEP Program Office
GBNEP Publication Series	GBNEP Program Office
Balancing Act Video (Armand Bayou and Christmas Bay Coastal Preserves)	SeaGrant
Oil Spills Video	Texas Water Commission
Public Service Announcement Video	Texas Water Commission
User Conflicts Video	University of Houston
Oyster Conservation Video	University of Houston
Galveston Bay Ecosystem Video	Texas Water Commission
3-4 Minute Promotional Video	Texas Water Commission

Appendix H: Projects Sponsored by GBNEP

PROJECT TITLE	CONTRACTOR
Bay Day	Galveston Bay Foundation
Public Education/Outreach	GBNEP Program Office
Pollution Awareness/Reporting	GBNEP Program Office
Media Relations	GBNEP Program Office
Special Kick-off Events	GBNEP Program Office
Consensus-Building Survey/Training	University of Houston-Clear Lake
Local Government Advisory Committee Support	GBNEP Program Office
Speakers Bureau/Public Meetings	GBNEP Program Office
Promotions	GBNEP Program Office
Management Conference Workshops	GBNEP Program Office
Shoreline Erosion/Habitat Creation	U.S. Soil Conservation Service
Houston Ship Channel Pollution Prevention	Texas Natural Resource Conservation Commission
Citizens' Pollution Reporting and Response System (Hotline) Development	Galveston Bay Foundation
Citizens' Pollution Reporting and Response System (Hotline) Promotions	Texas Water Commission
Citizens' Pollution Reporting and Response System (Hotline) Implementation	GBNEP Program Office
Oyster Reef Creation from Coal Combustion Byproducts	Port of Houston

APPENDIX I:
GBNEP Publications

Appendix I: GBNEP Publications

-
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Appendix I: GBNEP Publications

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- Green, A., M. Osborn, P. Chai, J. Lin, C. Loeffler, A. Morgan, P. Rubec, S. Spanyers, A. Walton, R.D. Slack, D. Gawlik, D. Harpole, J. Thomas, E. Buskey, K. Schmidt, R. Zimmerman, D. Harper, D. Hinkley, T. Sager, and A. Walton. 1992. Status and Trends of Selected Living Resources in the Galveston Bay System. Galveston Bay National Estuary Program publication GBNEP-19. Webster, Texas.
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APPENDIX J:
Summary of Public Comments

Summary of Public Comments and Management Conference Responses Concerning the Draft *Galveston Bay Plan*

GENERAL COMMENTS

Summary of Comment	Summary of Response
(VERBAL) Who coordinated the development of <i>The Galveston Bay Plan</i> ?	The Management Conference of the Galveston Bay National Estuary Program (GBNEP), a group of approximately 100 individuals appointed by the Governor of Texas and the Regional Administrator of EPA Region 6 to represent state and federal resource agencies, local governments, stakeholder organizations, and citizens.
(VERBAL) States that there are numerous economic benefits associated with a clean bay.	The Management Conference concurs.
Recommends priority ranking of the many recommendations of <i>The Plan</i> , including a weighing of the costs and benefits.	Priorities are now established for Plan actions. These were determined by deliberations which included both cost and benefit elements.
(VERBAL) Recommends setting priority recommendations to address our most serious problems.	See above.
(VERBAL) Concerned that much of the effort in the plan will not have any positive effects due to the bay being in overall good health.	<i>The Plan</i> emphasizes those issues which jeopardize bay resources, and geographic regions with specific problems. <i>The Plan</i> de-emphasizes issues and regions already in good shape.
(VERBAL) States we need to move forward in our process of protecting the bay.	No revision necessary.
Requests that Management Conference members and other state leaders be cognizant of the various programs currently underway to protect Galveston Bay: Galveston Bay NEP, Coastal Coordination Council, Gulf of Mexico Program, and Texas Clean Rivers Program. Urges review of implications of these programs individually and collectively.	Revisions were made to improve the descriptions of inter-agency coordination. The Management Conference seeks to coordinate to the maximum degree possible with other programs, to avoid duplications, overlaps, or conflicting actions.
States that we are creating too many programs to accomplish the same ends. Need to assure that Galveston Bay Program, Coastal Management Plan, Clean Rivers Program, and Gulf of Mexico Program are not duplicative, and are channeled through one effort and program office.	See above.
(VERBAL) States that too many programs exist, trying to accomplish the same thing	See above.
Concerned that coordination and volunteerism supported in the Galveston Bay Plan will be affected by inclusion as Special Area Management Plan by Coastal Coordination Council; asks about public comment on enforceable policies, and rights of affected parties under a Special Area Management Plan.	Revisions have been made to improve and update the discussion of the possibility of adoption as a Special Area under the Texas Coastal Management Plan. By rule, only the Policy Committee of the Management Conference can nominate Galveston Bay for this purpose. Status as a special area of the Texas Coastal Management Plan would be based upon Coastal Coordination Council adoption of enforceable policies proposed by the Galveston Bay Council (not the entire plan). Development of enforceable policies (if any) for special area management of Galveston Bay will occur in an open public forum through the Galveston Bay Council. The Management Conference believes these policies should be considered by the body to be involved with consistency review (the Council) and that final decisions should await implementation of the Coastal Management Plan. The Management Conference intends that The Galveston Bay Plan be implemented with or without the Coastal Management Plan, as described in the Implementation and Funding chapter.

Request that <i>The Plan</i> rely less on the future Texas Coastal Management Plan, particularly the Special Area Management Plan Provision, and place greater emphasis on how the plan would function relying on existing regulations and authority.	See above.
States that <i>The Plan</i> should become Special Area Management Plan under the proposed Coastal Management Plan, but need to clarify differences and relationships between two programs.	See above.
States that <i>The Plan</i> needs to clearly and explicitly define the relationship between the Galveston Bay Program (and Plan) and the developing Coastal Management Plan, particularly for the definition and use of "enforceable policies."	See above.
Recommends that, as a Special Area Management Plan under the Texas Coastal Management Plan, enforceable policies should be developed by consensus under the Management Conference.	See above.
Recommends better definition of how <i>The Plan</i> will be adopted as a Special Area Management Plan of the Texas Coastal Management Plan; what if the statewide program is delayed?	See above.
States the program needs to add discussion of how the Plan implementation success will be affected if there is no adoption of the Plan as a Special Area Management Plan under a federally approved CZM Plan, thus eliminating federal permit consistency review. Address this topic on page xx, page 18, and in Chapter VIII.	See above.
(VERBAL) Will the findings of the Galveston Bay Plan be incorporated into or cross-referenced into the Coastal Management Plan?	See above.
(VERBAL) What is the relationship between <i>The Galveston Bay Plan</i> and the Coastal Management Plan?	See above.
(VERBAL) Can the Coastal Coordinating Council use part of <i>The Galveston Bay Plan</i> as a Special Area Management Plan or will they use the whole Plan?	See above.
(VERBAL) States that <i>The Plan</i> will jeopardize local autonomy, create micro-management of regional affairs by state, and could result in disrespect of private property rights	A previous proposal for greater local representation in implementing <i>The Plan</i> was turned down due to local opposition. The current version represents a consensus of entities with an interest in the bay.
(VERBAL) Is <i>The Plan</i> going to overpower every agency we have in this state?	<i>The Plan</i> has no power over state agencies; rather the state agencies and other entities drafted <i>The Plan</i> together to improve the effectiveness of their joint management of Galveston Bay.
States that important and non-renewable archeological and historical resources of the Galveston Bay system were largely overlooked in <i>The Plan</i> ; more than 350 archeological resources are known and likely many undiscovered. Some areas are identified by the Commission as Critical Resource Zones; therefore some federally-funded actions under <i>The Plan</i> will likely fall under the jurisdiction of the National Historic Preservation Act, under which federal funding or approving agency must consult with State Historic Preservation Office (Texas Historical Commission). Urges the program to consider impacts of proposed program actions on cultural resources, as well as address pertinent consultation needs under state and federal historic preservation laws for actions within bay.	<i>The Plan</i> now includes language to accomplish this recommendation. All activities of the Galveston Bay Program will be undertaken in compliance with cultural and archeological resource requirements. The Management Conference intends that no archeological or historical resources be needlessly impacted by human activity related to <i>The Plan</i> .
Requests <i>The Plan</i> include language acknowledging the values of non-renewable archeological and historical resources, and assurance of compliance with National Historic Preservation Act and Antiquities Code of Texas.	Done; see above.
States that <i>The Plan's</i> heavy emphasis on regulatory actions seems out of character with the project technical findings as well as what would seem to be good policy. Believes that reality is complex and necessary knowledge only obtained slowly over time. States that <i>The Plan</i> should recognize substantial uncertainty associated with proposed nutrient and stormwater control initiatives, and emphasize research.	While The Management Conference recognizes the high importance of research (and has drafted a research action plan), much of the information needed for better management of this ecosystem is already available. Many places in <i>The Plan</i> recommend improvements in the current regulatory system based on our understanding (in some cases for the first time) of issues at the ecosystem level.

<p>Requests discussion of the role of demonstration projects in assisting in the choice of options in <i>The Plan</i>.</p>	<p>Done; discussion of demonstration projects was added to the Introduction.</p>
<p>States that time schedule for proposed actions is too long; all should be in full operation before year 2000.</p>	<p>The schedules in <i>The Plan</i> were based upon projected resources available and are geared for permanent, long-term change. However, the Management Conference intends that actions be undertaken ahead of schedules presented in <i>The Plan</i>, wherever possible. Some actions are already being accomplished ahead of schedule.</p>
<p>Requests a focus on programs and initiatives which can have a significant impact on Galveston bay at reasonable cost.</p>	<p>Actions have now been ranked for their importance to bay improvements, with these criteria in mind. In cases where management resources are limited, the Management Conference intends that the most important actions be undertaken first, with cost as an additional element in decision-making.</p>
<p>States that <i>The Plan</i> should take a position on important permits, such as Wallisville Reservoir, Houston Ship Channel deepening and widening, Gulf Intracoastal Waterway dredged material disposal, and finger canal projects.</p>	<p><i>The Plan</i> establishes consistency review for future federal projects, to assure projects do not conflict with Plan recommendations for wise management of the bay system. During creation of <i>The Plan</i>, the Policy Committee determined that the Management Conference should not become involved in permit applications for individual projects, therefore, <i>The Plan</i> itself does not take positions on individual permits.</p>
<p>Points out apparent inconsistencies in <i>The Plan</i>:</p> <ul style="list-style-type: none"> • Oyster reefs are closed due to fecal coliforms, but Plan proposes building bird islands, a source of fecals. • Reduced Phytoplankton from lower nutrient loadings may be causing species declines, but some elements of Plan propose further nutrient reductions. 	<ul style="list-style-type: none"> • Birds are not generally a source of human pathogens, but unfortunately, current technology does not distinguish between contamination from humans and from birds. <i>The Plan</i> recommends adoption of an improved bacterial indicator organism as technology improves. • Several decades of point source controls have reduced nutrients to a level closer to the natural condition of the bay, a management success causing no documented species declines.
<p>States that the introductory sections of the action plans should better match and support the actions themselves.</p>	<p><i>The Plan</i> was revised to improve the descriptions in the introductory sections.</p>
<p>Concerned that the overall flavor of <i>The Plan</i> is regulatory, while the basic findings of the studies reflected in The State of the Bay report revealed many unanswered questions.</p>	<p>The Management Conference acknowledges many unanswered questions about the bay, and proposes continued research. However, numerous clear problems were also revealed, which the Management Conference believes management actions can address. Throughout <i>The Plan</i>, the Management Conference has attempted to utilize existing regulatory programs, rather than creating new requirements.</p>
<p>States that The Plan has two major needs for success: local government involvement for implementation; and participation of all bay interests to continue the cooperative problem-solving process.</p>	<p>The Management Conference concurs and seeks to establish continued involvement of local governments and stakeholders as <i>The Plan</i> is implemented. <i>The Plan</i> establishes a Galveston Bay Council as one means of broad involvement in problem-solving.</p>
<p>States that there is a need to use ecotourism to generate more interest in conservation.</p>	<p>The Management Conference concurs. Ecotourism is the fastest-growing segment of the tourism industry and as bay management under <i>The Plan</i> proceeds, this issue will become increasingly important.</p>
<p>States that EPA is out of control; we don't need any more bureaucracies to rape our pocketbooks.</p>	<p><i>The Galveston Bay Plan</i> was not drafted by the EPA, nor will it be implemented by the EPA.</p>
<p>Opposes <i>The Plan</i>; states that stormwater treatment is expensive and will aggravate flooding; cost of identifying small point sources may exceed harm they are causing; better to spend \$ 35 million for police, better teacher salaries, transit; <i>Plan</i> is only tip of iceberg for costs.</p>	<p><i>The Plan</i> reflects a strong consensus among the Stakeholders of Galveston Bay that proactive management is necessary to conserve valued resources, including water quality. The Management Conference seeks to accomplish management through existing programs to the maximum extent possible, and previously revised <i>The Plan</i> to avoid creation of any new agency or authority.</p>

<p>States that <i>The Plan</i> and the Coastal Management Plan will jeopardize local autonomy, create micro-management of regional affairs by state, and could result in disrespect of private property rights by Coastal Coordination Council or the Galveston Bay Authority, possibly resulting in taking of property. Object to unfunded mandates, new taxing authority, and any fees leveled on local governments. Request economic impact statement or cost-benefit analysis at the program's expense, and funding for any new treatment required by local governments. Remove southern and western Brazoria County from <i>The Plan</i>.</p>	<p>The Management Conference has carefully considered the issues of a regional authority and fee structure, and based upon communication with numerous groups, eliminated these from a previous draft. <i>The Plan</i> proposes no taxing authority, no fees, and no actions in disrespect of property rights. All guidelines for impact and other studies are being met, and regions outside the watershed, such as Western Brazoria County, are not subject to <i>The Plan</i>. By rule, only the Policy Committee can nominate <i>The Plan</i> for adoption as Special Area Management Plan under the Texas Coastal Management Plan.</p>
<p>(VERBAL) Remove southern and western Brazoria County from <i>The Plan</i>.</p>	<p>Revised to clarify that regions outside the watershed, such as Western Brazoria County, are not subject to <i>The Plan</i>.</p>
<p>States that there should be a separate Galveston Bay Authority established to implement <i>The Plan</i>; there should be more hard-line mandates in <i>The Plan</i>, to give it teeth.</p>	<p>The Management Conference is appreciative of the need to take decisive action on bay problems, but seeks to do so utilizing existing mandates and a program under the TNRCC. This is a consensus reached in public deliberation involving numerous bay stakeholders, leading to a decision not to propose the Galveston Bay Authority.</p>
<p>(VERBAL) States that there should be a separate Galveston Bay Authority established to implement <i>The Plan</i>.</p>	<p>See above.</p>
<p>Opposed to plan because same people are behind it who have failed to address the McGinnis Facility. These people are under the control of the Chemical Council; I intend to sue the Army Corps of Engineers, EPA, and Texas State government.</p>	<p>The Management Conference has no authority to address the McGinnis Facility. The Management Conference consists of representatives from many, diverse organizations.</p>
<p>(VERBAL) Opposes <i>The Plan</i> because same people are behind it who have failed to address the McGinnis Facility.</p>	<p>See above.</p>
<p>Submitted 14-page letter generally urging actions be mandated through regulation instead of voluntary, done sooner than the time schedule proposes, and not represent a balanced approach among uses, but a strictly protective approach that puts the bay first. Objects to the description of progress in point source controls as too positive. Points out lack of action on atmospheric deposition. Plan should be explicitly against Wallisville Dam project or it is a farce.</p>	<p>The Management Conference seeks to address bay issues via voluntary, rather than mandatory approaches wherever possible. Improvements to the bay from point sources controls are fully documented by scientific studies. Atmospheric deposition is recognized in <i>The Plan</i> as an issue needing increased emphasis in the future. As a matter of policy, <i>The Plan</i> does not support or oppose any individual projects such as the Wallisville Dam Project.</p>
<p>(VERBAL) States that there should be more hard-line mandates in <i>The Plan</i></p>	<p>While the Management Conference appreciates the need for improved environmental management, the program has sought to solve bay problems without additional mandates or layers of government wherever possible.</p>
<p>EPA Office of Water states that the program's <i>State of the Bay: A Characterization of the Galveston Bay Ecosystem</i> satisfies the plain English summary requirement for CCMPs, and may be included in the final federal submittal.</p>	<p><i>The State of the Bay</i> will be submitted in the final package to fulfill this requirement.</p>
<p>States that a need exists to better describe "Why" actions are being undertaken.</p>	<p>New information has been added at the beginning of each action plan in a section entitled "The Issues" in order to clarify why proposed actions are being undertaken.</p>
<p>(VERBAL) Expresses approval for <i>The Plan</i>, and excitement about its implementation.</p>	<p>No revision necessary.</p>
<p>(VERBAL) Suggests it's time to quit studying and do something.</p>	<p>The Management Conference agrees on the need for action. <i>The Plan</i> describes numerous actions for protection of Galveston Bay's resources.</p>
<p>(VERBAL) States there is a lack of enforcement of environmental laws.</p>	<p><i>The Plan</i> calls for improved enforcement in several action plans where enforcement has been traditionally weak.</p>
<p>(VERBAL) Impressed with the results of the GBNEP effort.</p>	<p>No revision necessary.</p>
<p>(VERBAL) States that if the Houston Chamber of Commerce, City of Houston, Houston Endowment, the Gulf Coast, if they like <i>The Plan</i>, the rest of us had better be leery of it</p>	<p>The Management Conference has sought consensus among all the agencies, organization, and stakeholders with concerns for Galveston Bay. Numerous environmental organizations support <i>The Plan</i> as well.</p>
<p>The large number of tasks will require large commitment.</p>	<p>The Management Conference concurs.</p>

IMPLEMENTING AND FUNDING THE GALVESTON BAY PLAN

Summary of Comment	Summary of Response
Requests inclusion of more detailed funding information (could cite financial report and include by reference). Fund sources and key options could be better summarized.	Revised as suggested. The Galveston Bay NEP's Funding Strategy Report provides additional detail.
Requests clarification of the membership of the Galveston Bay Council (agencies represented, size of committee and roles and responsibilities).	Revised as suggested.
Requests clarification of the relationship between the Galveston Bay Council and the Galveston Bay Program. For example, the Galveston Bay Council, as the implementation committee, is serving a similar function to the current management conference, and has the authority to carry out purposes 6 and 7 of the Management Conference.	Revised as suggested. A refined description is provided in the introduction.
States that activities and functions of the Galveston Bay Program on page 267 should be tied together, perhaps in an outline format to show which activities follow under which functions.	The descriptions of activities and functions have now been improved.
Suggests that the Galveston Bay Program may want to consider reducing the number and frequency of post-CCMP reports, for example by consolidating reporting periods to several years.	The Management Conference intends to establish a "State of the Bay" symposium and report every two years, with major evaluation and redirection of <i>The Plan</i> every five years. This is a reduction in reporting in comparison to the five years of <i>Plan</i> development.
Suggests the need for a caveat to long-term financial commitments to this plan on the part of agencies; no one knows their budget five years in advance.	Revised as suggested.
Strongly urges involvement of all user groups during process of identifying enforceable policies for adoption of Galveston Bay Plan as Special Area Management Plan under Texas Coastal Management Plan.	The Galveston Bay Plan will be completed prior to implementation of the Coastal Management Plan, so all details are not yet worked out. However, identifying enforceable policies for consistency review is a key element. The Management Conference has determined that enforceable policies (if any) will be determined during full public deliberation by the stakeholder and agency members of the Galveston Bay Council.
Concerned about hidden powers of consistency review, that program is just the tip of the iceberg for future costs, and that non-elected people are put in positions of power.	Federal consistency is a statutory element of the Water Quality Act of 1987. The Management Conference seeks to establish an open and public consistency process. For all elements of <i>Plan</i> implementation, a Galveston Bay Council is established to assure balanced decision-making and sharing of power.
(VERBAL) Concerned about the hidden powers of consistency review.	See above.
States that <i>The Plan</i> needs more concise use of "consistency review" terminology to delineate among Water Quality Act, Coastal Zone Management Act, and state programs. For CZMA Section 307, note that states with federally approved coastal management programs may review direct federal activities, federally licensed or permitted activities, OCS permits, and federally supported projects, within or outside of the states coastal program that affect any land or water uses or natural resources of the coastal zone for consistency with the enforceable policies of the State management program.	Revised as suggested.
Suggests that CMP and Galveston Bay Program agree to review federal activities for consistency with enforceable policies only under the CZMA consistency review.	Adoption of a CZMA consistency review process depends upon adoption enforceable policies of <i>The Plan</i> as a Special Area Management Plan of the Coastal Management Plan. By statute, this adoption will be a decision of the Coastal Coordination Council, outside the purview of the Galveston Bay Management Conference, and will be considered following approval of <i>The Galveston Bay Plan</i> . Both the Coastal Coordination Council and the Policy Committee of the Management Conference are committed to use of a unified consistency process by both programs.
States that consistency is very important; suggests need for extra effort to assure rule/regulation consistency of implementing agencies.	See above.

<p>(VERBAL) States that consistency is very important; suggests need for extra effort to assure rule/regulation consistency of implementing agencies.</p>	<p>See above.</p>
<p>Suggests enforceable policies be developed under existing state authorities which meet one of the acceptable management techniques pursuant to CZMA.</p>	<p>Enforceable policies (if any) will be considered by The Galveston Bay Council following approval of The Galveston Bay Plan. This process will be consistent with the rules of the Texas Coastal Management Plan, which has not yet been accepted into the federal Coastal Zone Management Program.</p>
<p>(VERBAL) What are the enforceable policies in <i>The Plan</i>? Resolution stating entity "supports the intent of the Draft Galveston Bay Plan; however, it does not endorse the establishment of a new taxing entity and oversight organization for Galveston Bay or the recommendations of the Draft Plan without a more comprehensive, systems approach to the issues addressed in the plan."</p>	<p>See above. This comment resulted from focus group review of a previous draft by local governments, and has already been addressed in <i>The Plan</i>. No new taxing entity or authority is proposed.</p>
<p>Expresses opposition to the creation of a new taxing authority to implement The Galveston Bay Plan; recommends the program eliminate the creation of any new authority or governmental entity to implement this program; and eliminate any proposal for new taxes or fees to be collected by or imposed on local governments to fund the plan.</p>	<p>See above.</p>
<p>Expresses appreciation for removing the language calling for the creation of a separate authority and collection of fees by local governments.</p>	<p>This comment pertains to previous versions of <i>The Plan</i>.</p>
<p>Supports creation of TNRCC Galveston Bay Program and supports many specific actions. Urges director be appropriately placed in TNRCC to have access to policy makers and top level managers in outside agencies.</p>	<p>Language was added to the plan to emphasize the Management Conference intent that the Program Director be placed appropriately within the TNRCC as suggested.</p>
<p>States that the Galveston Bay Program Office should report directly to the Executive Director of TNRCC, not a lower office.</p>	<p>New wording has been added to assure the Program Director is appropriately placed within the TNRCC.</p>
<p>States the Galveston Bay Plan does not adequately address costs and realistic potential for funding; cumulative public cost is unrealistic. Recommends limiting new actions to only the most cost-effective and high priority projects, and better clarify the anticipated sources of funding. Recommends the number of proposals in <i>The Plan</i> be reduced to top priority projects with high benefits and funding potential.</p>	<p>The Management Conference estimated costs as an element of planning and anticipates that cost estimates will improve as steps to implement <i>The Plan</i> actually occur. More detailed description of various funding sources are now available in the Finance Strategy, a separate program report. As a means of assuring expenditures accomplish as much benefit to the bay as possible, priorities have now been established for Plan actions, and implementation is expected to proceed with both benefits and costs in mind.</p>
<p>Urges Galveston Bay Council be given a major role in guiding implementation; urges costs be kept minimal and resources be used for implementation, not administration. Urges that EPA/TNRCC improve existing regulations, rather than add new ones.</p>	<p>The Management Conference has proposed that the Galveston Bay Council be fully involved with all issues arising under <i>The Plan</i> and advise the TNRCC at every step of implementation. The administrative costs of maintaining a program office were established as the minimal costs possible for full implementation; fewer resources would necessitate fewer actions implemented.. The basis of <i>The Plan</i> is reliance on existing programs and regulations wherever possible.</p>
<p>Recommends the Galveston Bay Plan focus on habitat protection and balanced human uses actions, due to management gaps and low costs.</p>	<p>Habitat protection is identified in <i>The Plan</i> as the number one priority issue for the bay system. Many actions in the "Balanced Human Uses" sections are also high priority, based on the priority rankings now included in <i>The Plan</i>.</p>
<p>Expresses disappointment that the Galveston Bay Plan does not establish a free-standing organization to implement the Plan, but believes that having a local office which reports directly to the Executive Director of the TNRCC is a workable solution. Would like to see the League of Women Voters on Galveston Bay Council.</p>	<p>As noted in <i>The Plan</i>, a free-standing Galveston Bay Authority was not adopted since agreement on this concept among partners in <i>The Plan</i> was not possible. The Management Conference believes the TNRCC and Galveston Bay Council can assure effective implementation. The League of Women Voters is proposed as a representative on the Galveston Bay Council.</p>

<p>States that the Galveston Bay Council should report directly to the Commission of the TNRCC (and Regional Administrator of EPA if EPA funding for the program continues). Suggests development of a mechanism within the Council to encourage resolution of inter-agency disputes. Urges complete stakeholder representation, including citizens, and the means for anyone to make a nomination to the Council for approval by the Commission (and possibly EPA)</p>	<p>The Management Conference recommends that inter-agency disagreements occurring on the Galveston Bay Council during consistency review be elevated to the Executive Director of the TNRCC if necessary. Concerning representation, the Management Conference considers the membership on the Galveston Bay Council recommended in <i>The Plan</i> as a starting point, and future changes may need to occur to assure continuing complete stakeholder representation.</p>
<p>Recommends the program clearly establish that the Program Office and Galveston Bay Council will conduct consistency reviews. Better delineate the relationship between <i>The Plan</i> and the Texas CMP, with emphasis on enforceable policies.</p>	<p>Revised as suggested. Enforceable policies for consistency review will be determined through deliberation of the Galveston Bay Council. The description of these two programs in <i>The Plan</i> has been improved.</p>
<p>Avoid duplicative consistency review by both proposed GLO consistency review team and Galveston Bay Program.</p>	<p>See above.</p>
<p>Recommends that state funding be doubled to \$ 3 million.</p>	<p>While the Management Conference is sympathetic to the need for implementation funds, it seeks to keep public expenditures to a minimum, and believes an effective program can be attained with at a \$ 1.5 million per year expenditure for the Galveston Bay Program.</p>
<p>States that two needs exist for success: local government involvement for implementation, and participation of all bay interests to continue the cooperative problem-solving process</p>	<p>The Management Conference concurs.</p>
<p>Requests that <i>The Plan</i> not contain actions or enforceable policies that go beyond the current requirements of state and federal laws and rules. City of Houston costs should be reexamined to determine their accuracy, since they appear to be underestimated at a total of \$133,750. Requests Galveston Bay Council representatives for City of Houston water, wastewater, and stormwater departments.</p>	<p>By law, enforceable policies must be based on extant rules or statutes. Similarly, the Management Conference intends that actions in <i>The Plan</i> make full use of existing programs and rules, rather than proposing new authority. The City of Houston funding total may appear low because major programs which contribute to implementation, but which <i>are not incremental costs of the Plan, per se</i>, are not included. While the City of Houston is granted one slot on the Galveston Bay Council, both the Houston-Galveston Area Council, and "local governments over 500,000" are also recommended, increasing the presence of the City of Houston.</p>
<p>Suggests specifically referencing the Finance Plan and the Implementation Plan produced by the Galveston Bay NEP.</p>	<p>Revised as suggested.</p>
<p>Suggests: on page xxi under "Sources of Funds" include a statement that EPA supports implementation of the Plan, but does not commit any funds.</p>	<p>A statement related to agency commitments in general is now included (other agencies are in the same position as EPA)</p>
<p>Recommends that the Program acknowledge that the funds to implement are not in place and that funding all actions is not assured, nor essential, to the overall success of the Plan.</p>	<p>The Management Conference notes that Plan recommendations precede formal funding commitments on the part of partner organizations and agencies. The Management Conference believes that final agreement on <i>The Plan</i> is a positive step toward these commitments, but has also attached priorities to Plan actions to assure success even if funding falls short of 100 percent. Limitations on agency commitments are now noted in the Executive Summary.</p>
<p>States that inordinate funds appear allocated for wetlands acquisitions; would favor more expenditures on research.</p>	<p>The \$ 12.3 million allocated for wetlands protection is for all wetlands programs, not merely acquisition. Specifics are given in the cost appendix to <i>The Plan</i>.</p>
<p>States that costs appear to be underestimated and private sector costs should be included. Cost/Benefit analyses should be utilized to determine where and when the implementation of a management practice is cost effective.</p>	<p>In deliberating to draft The Galveston Bay Plan, private sector costs were considered by the action plan task forces. Priority ranking of actions now in the plan should also aid in decisions about future expenditures. Under the Clean Water Act, National Estuary Programs are directed to establish comprehensive plans on criteria other than cost-benefit ratios.</p>
<p>(VERBAL) States that the program is just the tip of the iceberg for future costs.</p>	<p>The costs in <i>The Plan</i> are calculated for a five-year period, with a review and re-direction of the plan to occur after five years. The Management Conference seeks to improve the effectiveness of existing expenditures by agencies involved in bay management, by guiding programs toward to issues identified by scientific studies.</p>

<p>Strongly urges involvement of the industry focus group through the Greater Houston Partnership in the process of identifying enforceable goals and policies for inclusion of the Galveston Bay Plan as a Special Area Management Plan under the Texas Coastal Management Plan.</p>	<p>The Management Conference concurs and anticipates full participation by the Greater Houston Partnership, a designated representative on the Galveston Bay Council.</p>
<p>Urges strong role for Galveston Bay Council with advisory role that is not merely perfunctory. Better define substance of their work; consistency review process; and best organizational structure.</p>	<p>The Management Conference intends that the Galveston Bay Council be fully involved in all steps of implementation, and has revised <i>The Plan</i> to provide a better description of the substance of their work. The Council's role in consistency review is detailed in the program's Federal Consistency Report, and its representation is defined in the Galveston Bay Plan itself.</p>
<p>Suggests: shorten and simplify implementation by starting small with a focus on major issues that can be readily implemented, demonstrate early results, and bring together the diverse interests. However, also select one or two tough issues as well. Get a program adopted and let it grow from there.</p>	<p>The Management Conference has now ranked Plan actions for priority, for use by the Galveston Bay Council in making implementation as effective as possible. Demonstration projects have been, and will continue to be an important element.</p>
<p>Recommends that the consensus process that proved so effective during Plan development continue under the Galveston Bay Council, with judicious use of any direct enforcement authority. TNRCC implementation is endorsed; Plan will succeed if the relationship between the TNRCC and the Galveston Bay council is comparable to that which has existed between the Galveston Bay Program Office and the Management Conference. The Galveston Bay Council should provide direction and advice, while TNRCC provides administration and empowerment. Redirection or significant revisions of the plan should be initiated by the Galveston Bay Council</p>	<p>The Management Conference generally concurs with these comments. It will be the Galveston Bay Council (essentially a continuation of the Management Conference) which takes up the issue of enforceable policies. Further details are provided in the Federal Consistency Report prepared by the Galveston Bay Program.</p>
<p>(VERBAL) What's the trade-off between having a local taxing authority and having funding from the Texas Natural Resources Conservation Commission?</p>	<p>A local authority would have created stronger local control, but was opposed due to the need for new locally-based revenue.</p>
<p>Recommends that, due to comprehensive nature of Plan, clarification should be given that funding realities may dictate that actions will be performed based on the identified priorities and that adjustment to some actions could be required in the future. Success in coordination and acquiring funding will be keys to successful implementation.</p>	<p>Revised as suggested.</p>
<p>(VERBAL) Conveys doubt the program will receive any funds to implement <i>The Plan</i>.</p>	<p>No revision necessary.</p>
<p>(VERBAL) Objects to unfunded mandates, new taxing authority, and any fees leveled on local governments.</p>	<p>These elements are not included in <i>The Plan</i>.</p>
<p>(VERBAL) Requests economic impact statement or cost-benefit analysis at the program's expense, and funding for any new wastewater treatment required by local governments.</p>	<p>The Management Conference has fulfilled all requirements of the Clean Water Act and EPA guidance in drafting <i>The Plan</i>. Included in this process was a ranking of priorities, in which costs were considered an important factor. <i>The Plan</i> mandates no new wastewater treatment.</p>
<p>States that there should be some regionally-based tax or other funding to increase the buy-in to the process.</p>	<p>Buy-in to The Galveston Bay Plan dramatically decreased when taxes or fees were considered as funding alternatives in previous versions. No revision was undertaken.</p>
<p>(VERBAL) States that there should be some regionally-based tax or other funding to increase the buy-in to the process.</p>	<p>See above.</p>
<p>Recommends utilization of tax abatements currently granted to big industry to fund program.</p>	<p>The Management Conference is appreciative of this idea, but based on substantial public deliberation, has elected not to utilize regionally-based taxes to implement <i>The Plan</i>.</p>
<p>(VERBAL) Recommends utilization of tax abatements currently granted to big industry to fund program.</p>	<p>See above.</p>
<p>(VERBAL) Expresses concern about funding for <i>The Plan</i>.</p>	<p>No revision necessary.</p>

(VERBAL) States that non-elected people should not be put in positions of power.	The Management Conference appreciates the need for strong accountability, and has built into the design for the Galveston Bay Council slots for government entities with elected leaders. Equally significant is a continuation of the open, public process utilized in creation of <i>The Plan</i> .
(VERBAL) States that <i>The Plan</i> is not going to be successful if the board running it is appointed by the Governor	Under <i>The Plan</i> , the program will be carried out by the TNRCC.
Requests the Trinity Bay Soil and Water Conservation District have a slot on Galveston Bay Council.	The Management Conference invites conservation district participation on the Council through representation by the Texas Soil and Water Conservation Board.
(VERBAL) Requests that Trinity Bay Soil and Water Conservation District be represented on the Galveston Bay council.	See above.
States that the Galveston Bay Council should have equal representation for each interest (e.g. double representation from H-GAC and local governments) and TNRCC should not be represented, as the implementing agency.	The Management Conference has carefully considered representation on The Galveston Bay Council with respect to population base, bay impacts, the identity of implementing entities for action plans, and other factors. Each representative currently listed has a vital role in Plan implementation, and could not be eliminated without sacrificing implementation of one or more Plan elements.

EXECUTIVE SUMMARY AND INTRODUCTION

Page	Summary of Comment	Summary of Response
xix	Suggests the following additions to the Galveston Bay Council's responsibilities: to revise <i>The Plan</i> and redirect implementation strategies; to assess the success of the action plans; to address legislative issues and make recommendations to the legislature; and to set annual priorities for the implementation of the action plans.	Revised as suggested.
11	Points out that the 1986 figures for overflows were based on 1.7 billion gallons, compared to more recent estimates of 200-700 million gallons per year. Present this information appropriately.	Revised as suggested.
18	Recommends the program identify projects subject to consistency review.	This section now refers to the program's Federal Consistency report, which provides greater detail.

HABITAT PROTECTION

Note: The actions in this section have been reordered as a result of public comment to better reflect the priority ranking of actions and other revisions. The actions and page numbers reflect the public review draft organization, but new action numbers (for this document) are given in parentheses.

Action	Page	Summary of Comment	Summary of Response
		(VERBAL) Is pleased that habitat loss is given high priority in <i>The Plan</i>	No revision necessary.
		Recommends prohibition of dredging, except to maintain existing channels.	Under the Clean Water Act, federal dredging projects will be reviewed for consistency with <i>The Plan</i> on a case by case basis.
		States that damage to sea grasses from shrimp trawls should be evaluated and possibly regulated. Most pristine areas of bay should be set aside as refuges to protect them from future dredging, trawling, over harvesting, etc.	Most remaining seagrasses occur in Christmas Bay, now a Texas Coastal Preserve as a result of program actions. Trawls generally do not operate in Christmas Bay. Several actions in <i>The Plan</i> will enable additional protection in the future.
		Recommends evaluation of alternative shrimp and oyster harvesting practices which do not disrupt large areas of bay bottom ecosystem.	There is no scientific evidence to indicate oyster harvesting causes damage to reefs. Regulation of shrimping activity by the TPWD is considered by the Management Conference as appropriate for this industry.

		(VERBAL) areas of the Bay need to be protected from shrimp trawling	See above two responses.
		How does one rate wetlands for degradation (quality; function.)?	The Regional Monitoring Strategy identifies a particular methodology as a useful tool. The Management Conference has also identified this topic as a research need in <i>The Plan</i> .
		Recommends that the program address the need for water quality protection for submerged vegetation, for example adoption of protective water quality criteria.	The Management Conference has identified this topic as a research need in <i>The Plan</i> , since (unlike the eastern Gulf) water quality influences on seagrasses are not well established for Texas Seagrasses.
		Recommends inclusion of actions designed to avoid the future impoundment of wetlands.	The Management Conference agrees this is an important consideration. Review of any future impoundment projects for consistency with <i>The Plan</i> will be utilized to avoid wetland losses or degradation.
		(VERBAL) What do I have to look forward to as land owner?	The Management Conference recognizes the importance of private land ownership in wetlands protection. While <i>The Plan</i> sets out no new regulatory requirements for landowners, it encourages (through tax breaks and other means) the good management of wetlands in private ownership.
Intro	36	States that <i>The Plan</i> implies that all conversion of wetlands to agricultural land has contributed to decreased wildlife habitat. Urges consideration of habitat value of rice fields to waterfowl.	<i>The Plan</i> has been revised to reflect the benefits of rice fields to waterfowl.
Intro	29-42	Suggests modifying all uses of "habitat" by inserting "aquatic." States that, in an effort to potentially have future enforceable policies via the Texas Coastal Management Plan, <i>The Plan</i> should clarify its focus on aquatic systems only.	Habitats discussed are now generally qualified as "aquatic" or "estuarine."
HP-1 (Now HP-5)	44	Recommends <i>The Plan</i> not include acquisition of wetlands, since the government can't manage wetlands as well as private landowners.	The Management Conference recognizes that public ownership of wetlands (e.g. wildlife refuges) plays a key role in habitat conservation. Acquisition is just one tool available, and in some cases acquisition by a private group is preferable to action by the state or federal government. The Management Conference advocates improved stewardship of both public and private wetlands.
HP-1 (Now HP-5)	44	Recommends that the bay be sold in one mile blocks to private citizens for \$ 32,000 to \$ 40,000 in order to fund the program and improve the management that comes with private ownership of resources like oysters, etc. Set guidelines for the benefit of the bay. States that the only people who are going to do anything about the problems are the owners.	The Management Conference has neither the authority nor inclination to sell publicly-held resources. <i>The Plan</i> , however, does seek to set guidelines for the benefit of the bay; indeed that is its purpose.
HP-1 (Now HP-5)	44	(VERBAL) Recommends that the bay be sold in one mile by one mile blocks charging \$32,000 to \$40,000 a block, since private owners would take care of the bay better than the government.	See above.
HP-1 (Now HP-5)	44	Recommends inclusion of NMFS in any activities to acquire and protect wetlands, to help evaluate marine habitat values.	Revised as suggested.
HP-1 (Now HP-5)	44	States that <i>The Plan</i> implies that government acquisition of wetlands is the ultimate answer to all problems in Galveston Bay. Our view is that voluntary, economic incentive based programs will work far superior to government acquisition, and could be less expensive.	The Management Conference intends for <i>The Plan</i> to present a balanced approach to wetlands protection including economic incentives (HP-6), wetlands creation (HP-1,2), acquisitions (including by private entities) (HP-5) and other management tools.
HP-1 (Now HP-5)	44	(VERBAL) States opposition to acquiring wetlands.	See above.

HP-1	44	Recommends inclusion of additional upland and other coastal habitats in addition to wetlands. Recommends that Corps buy land in Trinity basin.	The scope of The Plan encompasses those wetlands which directly influence the bay system. Corps purchase of lands would be a decision of the Corps.
HP-1 (Now HP-5)	44	Suggests the program Plan to clarify the definition of wetlands; USFWS and CORPS classifications differ. Will those involved in wetlands inventory be certified (e.g. proposed CORPS certification)?	<i>The Plan</i> makes no recommendation concerning the <i>jurisdictional</i> definition of wetlands, since this is an issue being addressed at the federal level. However, a better means of defining wetland condition is addressed by <i>The Plan</i> .
HP-2 (Now HP-6)	45	Suggests that state agencies should not be lead entities for tax incentives; suggests replacement of TPWD and GLO as lead entities with local governments, with support from state agencies. Suggests deletion of reference to new regulation in Step 2; incentives and disincentives are not mandatory.	Revised to indicate that any new legislation would be local-government initiated.
HP-2 (Now HP-6)	45	Suggests <i>The Plan</i> indicate what types of wetlands are indicated for this action. How will a wetlands determination be made if data are not available?	This action was revised to reflect the need for development of a suitable definition of wetlands for purposes of providing economic or tax incentives.
HP-2 (Now HP-6)	45	Recommends the program mention Proposition 2, which is an <i>ad valorem</i> tax relief measure currently in regulation development. Wetlands are on current draft list of qualifying properties.	Revised as suggested.
HP-2 (Now HP-6)	45	Concerned about increases in tax assessments for private wetlands; appraisals to be based on average land values, resulting in doubling the appraisal for wetlands.	The Management Conference appreciates this concern and has proposed tax breaks to help maintain privately held wetlands, as opposed to increases in appraised value.
HP-2 (Now HP-6)	45	(VERBAL) Expresses concern that tax assessments for private wetlands could increase, providing a disincentive to landowners seeking to preserve wetlands.	See above.
HP-2 (Now HP-6)	45	How will local governments be reimbursed for tax losses from wetland tax breaks?	<i>The Plan</i> was revised to recognize local governments as the lead entity for this action (rather than state agencies). This would allow them flexibility to determine how to best implement this action.
HP-3 (Now HP-4)	46	States that we need uncertainty in the permit process to get developer and industry attention.	The Management Conference disagrees with this statement and no revision was made.
HP-3 (Now HP-4)	46	Strongly supports coordinated habitat management, but urges a go-slow approach to water quality standards for wetlands under the TNRCC.	The Management Conference and TNRCC agree on the need for a careful and measured approach to wetlands standards.
HP-3 (Now HP-4)	46	States that "Regulatory Needs" should include use of water quality standards and 401 certification to assure minimal protection of wetlands, including RRC as well as TNRCC. Suggests ranking of wetlands for their potential for restoration/enhancement. Favors protection of degraded or other wetlands from further conversion, until funds are available for restoration. Recommends a better definition of consistency review in this section.	<i>The Plan</i> is now revised to clarify use of water quality standards for wetlands protection. <i>The Plan</i> includes ranking of habitats in order of increasing need for remediation. Consistency review under CZRA is still being developed, since Texas does not yet have an approved coastal zone program.
HP-4 (Now HP-1)	47	Suggests the program consider including this step within HP-3. States that restoration and enhancement should apply to the full range of wetland functions: marine, estuarine, and shoreline species habitat values; flood protection; shoreline protection, water quality protection, etc.	The Management Conference concurs that habitats should be managed for their full range of values. The Habitat Protection section of <i>The Plan</i> was revised and reordered to better reflect this intent.
HP-4 (Now HP-1)	47	States that GLO should be lead entity for this action due to significant responsibility for wetland restoration, creation, and protection on state-owned land.	The Management Conference has revised the discussion of lead entity to provide for GLO lead with coordination by other appropriate agencies.
HP-4 (Now HP-1)	47	States that no new wetlands should be created if they are low quality replacements for better destroyed habitat.	The Management Conference intends to establish a bay-wide habitat management program that will better account for the condition of managed wetlands. <i>The Plan</i> proposes both monitoring of wetland quality and additional research to measure and define quality.

HP-4,5 (Now HP-1,2)	47-48	Recommends the use of inmates for labor-intensive work of replanting cordgrass.	Inmates, as well as those required or willing to perform community service, are considered by the Management Conference to be an excellent source for labor, and are now included in <i>The Plan</i> .
HP-4,6 (Now HP-1,3)	47,49	Questions investment of significant amounts of money in attempting to restore lost wetlands and remediate "degraded" wetlands, as high risk and poor investment. Encourages acquisitions, tax incentives, and beneficial uses of dredged material.	The Management Conference considers the wetlands problems to require a balanced approach using diverse management tools. For example, degraded (e.g. drowned) wetlands could represent some of the best locations for remediation involving beneficial use of dredged material.
HP-5 (Now HP-2)	48	States that the proposal to eliminate non-beneficial use of dredged material is not realistic. The words "encourage the beneficial use" should be substituted for "eliminate the non-beneficial use".	This wording has been revised to reflect that <i>The Plan</i> does not propose complete elimination of non-beneficial uses of dredged material.
HP-5 (Now HP-2)	48	States that elimination of non-beneficial disposal of dredged material may not be desirable; suggest revising to: "eliminate non-beneficial disposal of dredged materials where test data show that contaminants are not a concern."	See above.
HP-5 (Now HP-2)	48	States that the proposal to eliminate non-beneficial use of dredged material is not realistic. Do not extend ban to a complete ban on traditional disposal.	See above.
HP-5 (Now HP-2)	48	Suggests a need to consider all contributing factors, e.g. wind, waves, tide, depth, weather, vessel draft, etc., for created wetlands.	The Management Conference concurs on the need for valid engineering and biological design elements for created wetlands; these would be necessary elements of each individual project.
HP-5 (Now HP-2)	48	Recommends that all possible materials be used to rebuild reefs in shallow bay areas affected by shell dredging.	Creation of reefs using alternate material are elements of <i>The Plan</i> (see action SP-3). The range of materials used could be further expanded in the future if necessary.
HP-5 (Now HP-2)	48	Recommends expansion of wetlands dredge material restoration activities in <i>The Plan</i> .	Currently Wetlands protection is the most emphasized initiative in <i>The Plan</i> , and the Management Conference intends expanded activity for habitat protection.
HP-5 (Now HP-2)	48	Recommends adoption of a dredge management plan and develop enforceable policies for inclusion in CMP.	The Coastal Management Plan will not be implemented until after the Galveston Bay Plan must be submitted, therefore enforceable policies will not be considered until later deliberation by the Galveston Bay Council. Any enforceable policies pertaining to dredge material will be considered at that time.
HP-6 (Now HP-3)	49	How will the need for habitat remediation be determined?	<i>The Plan</i> calls for development of a definition of degraded wetlands for use in an overall bay-wide inventory and remediation strategy.
HP-6 (Now HP-3)	49	Suggests the program make the definitions for wetlands consistent and focus on higher-quality types like coastal marshes, as opposed to stormwater ditches and treatment impoundments with wetland vegetation.	<i>The Plan</i> was revised to clarify this point; <i>The Plan</i> makes no recommendation concerning the <i>jurisdictional</i> definition of wetlands, since this is an issue being addressed at the federal level. A better means of measuring wetlands condition is addressed by <i>The Plan</i> .
HP-7	50	States that GLO should be lead entity.	The Management Conference has revised the discussion of lead entity to provide for GLO lead with coordination by other appropriate agencies.
HP-7	50	Recommends policing of bird nesting islands and fines against those who harass birds. States that island creation is excuse to allow Corps to avoid disposing spoil in disposal area.	Improved protection of existing islands is an initiative of <i>The Plan</i> (HP-7). Under <i>The Plan</i> , the decision to construct a new island would not be the Corps alone, but would be based on biological information and deliberation by an Interagency Coordinating Committee.
HP-7	50	Recommends the undertaking of better efforts to post bird rookeries.	This initiative is included in <i>The Plan</i> .
HP-8	51	States that GLO should be lead entity.	The Management Conference has revised the discussion of lead entity to provide for GLO lead with coordination by other appropriate agencies.

HP-8	51	Recommends the program state who will fund transportation of dredged material for bird island construction.	<i>The Plan</i> makes no recommendation for changing the negotiation mechanism between the Corps and the local project sponsor concerning costs of dredge material disposal.
HP-9	52	Recommends that the Intracoastal Waterway be shut down due to its severe erosional impacts.	This suggestion was not adopted by the Management Conference.
HP-9	52	(VERBAL) States that bird habitat needs protection from boat wakes.	This would be an engineering element of any project to create or restore bird nesting islands.
HP-9	52	Recommends the program identify which "general permits" are appropriate to include erosion standards.	Identification of specific permits subject to erosion standards would necessarily await a definition of criteria and other elements of program development. <i>The Plan</i> indicates that such standards "may be" appropriate for inclusion.
HP-1 thru 9	44-52	Expresses support for all actions, and request that local governments be made an active partner in habitat programs.	The Management Conference concurs and actively seeks local government involvement as partners in the habitat initiatives.

SPECIES POPULATION PROTECTION

Action	Page	Summary of Comment	Summary of Response
		Recommends that <i>The Plan</i> include rebuilding the north jetty at Bolivar Roads to allow for movements of marine organisms moving along the shoreline , to improve their access to the bay and increase productivity.	The Management Conference appreciates this comment, however, the technical studies carried out by the program do not indicate biological access to the bay is a substantial issue affecting bay productivity.
		(VERBAL) Recommends that <i>The Plan</i> call for the rebuilding of the north jetty at Bolivar Roads to allow for movements of marine organisms moving along the shoreline.	See above.
		States that <i>The Plan</i> should contain actions for identifying and eliminating the factors causing the premature deaths of seals, dolphins, and other aquatic mammals in the bay area.	The Management Conference acknowledges marine mammal deaths are a concern, however seals do not utilize Galveston Bay, and dolphin strandings or deaths have been rare in this bay system.
		States that <i>The Plan</i> needs to include monitoring of bycatch reduction goal in monitoring strategy.	The monitoring strategy has been substantially revised, including monitoring of bycatch.
		Suggests inclusion of an action to raise and release Penaeid shrimp, similar to redfish releases.	The Management Conference appreciates this suggestion, however (for a number of years) Galveston Bay has been at the maximum sustainable yield for shrimp, with adjustment of harvest intensity the most cost-effective tool for shrimp population management.
		Proposes that, during extremely cold periods, shut down the Houston Ship Channel to allow fish to have a deep water refuge to escape being frozen in shallow areas.	The Management Conference has declined to adopt this suggestion.
		(VERBAL) Proposes that, during extremely cold periods, shut down the Houston Ship Channel to allow fish to have a deep water refuge to escape being frozen in shallow areas.	See above.
Intro	55	Suggests that: the fourth sentence inferring that survivorship may be significantly lower than the range of 10 to 90 percent should be deleted. The cited range characterizes the observed variability under various operating conditions.	Wording was revised to more accurately reflect the findings of the study cited.
SP-1	64	Suggests addition of language to promote multi-species and biodiversity protection, in additional to single species plans.	Revised as suggested.
SP-1	64	Proposes that <i>The Plan</i> reduce fishing pressure by limited access. Suggests working through and amending the Magnuson Act to extend control to nearshore fisheries. States that the Galveston Bay Council should introduce incentive-based system to price and distribute fishery rights, for example through individual transferable Quotas.	Nearshore fisheries, while posing substantial management challenges, are not within the scope of <i>The Plan</i> , which includes the Galveston Bay estuarine system and its lower watershed.

SP-1	64	Proposes that <i>The Plan</i> include an element to reintroduce species, e.g. Gulf Salt Marsh Snake.	This could be a possible recommendation of the species management plans called for in <i>The Plan</i> .
SP-2	65	Proposes protection of small shoreline oyster reefs, the cleaning up of pollution, and guarantees for fresh water inflows.	These are important issues supported by the Management Conference, with pollution and inflow addressed in separate sections of <i>The Plan</i> .
SP-3	66	Proposes that <i>The Plan</i> address the streamlining of state leasing procedures (e.g. for oyster reef creation) as an action step.	Revised as suggested.
SP-3	66	Suggests deletion of the reference to cumbersome process under Regulatory Needs. States that, if necessary, keep recommendation to streamline as an action step.	Wording was revised, and streamlining was added as an action step.
SP-3	66	Concerned about long-term contamination from fly ash reefs.	The Management Conference was also concerned about contamination, and raised this issue in its deliberations. A scientific work group was established to review all data and to design an ongoing monitoring program to assure safe implementation of artificial reef projects using this material. The Management Conference is now satisfied that project monitoring and state land lease provisions are protective.
SP-4	67	Suggests that the program consider National Estuarine Research Reserve System in connection with the action to set aside reef habitats.	Revised as suggested.
SP-5	68	(VERBAL) States that commercial bycatch is a big problem for the Bay.	The Management conference is also concerned about this issue, since the program's technical study showed that for each pound of shrimp caught, about three pounds of other fish and shellfish were included in the catch.
SP-5	68	Suggests that the program conduct an educational program for commercial fishermen (bycatch reduction).	Done; an educational initiative has already begun and is showing good success.
SP-5	68	(VERBAL) Suggests that the program conduct an educational program for commercial fishermen (bycatch reduction).	See above.
SP-5	68	States that The Program should not merely encourage, but instead require bycatch reductions.	The Management Conference seeks non-regulatory solutions for bay problems wherever possible. Because shrimpers themselves seek to avoid bycatch, improving bycatch reduction technology and coordination with commercial interests has been adopted in <i>The Plan</i> .
SP-6	69	States that catch and release needs more research so we know how many fish die and how to stop it.	More detailed information on this topic is available in publication GBNEP-25, which also addresses research needs.
SP-6	69	Suggests the program consider Sea Grant as a potential fund source for catch and release education programs.	Revised as suggested.
SP-7	70	Suggests that <i>The Plan</i> be revised to reflect that HL & P will investigate impingement/entrainment reduction methods and regulatory compliance rather than undertake research to characterize this problem or its effects on bay populations. Does not agree that FW-7 is a related action.	This action was revised to reflect compliance with forthcoming EPA regulatory requirements, and less emphasis on population impacts in the bay from impingement/entrainment. The Management Conference concludes that the volume of water pumped is germane to both this issue and FW-7 concerning freshwater inflow.
SP-7	70	Suggests that the program not merely investigate, but instead require reduction of impingement/entrainment.	EPA regulations are forthcoming, and <i>The Plan</i> was revised to include this requirement.
SP-8	71	States that <i>The Plan</i> needs specific population increase goals for each threatened/endangered species; make Chinese Tallow reduction 30 percent instead of 10.	Plans are already in place for endangered species, but <i>The Plan</i> calls for better emphasis on management actions to address these species. The Management Conference has adopted the recommendation of a task force of scientists and managers for Chinese Tallow.
SP-8	71	States that <i>The Plan</i> needs specific plans for each listed species.	See above. The creation of such specific plans is the next step called for by <i>The Plan</i> .
SP-9	72	Opposed to regulation of exotic species at Galveston Bay level; must be addressed by EPA and Coast Guard at national and international level.	Action was revised to reflect the appropriate level of regulation.

SP-9	72	States that there is a need for stronger enforcement and eradication programs for exotic species like grass carp and nutria.	The Management Conference concurs and has included such actions in <i>The Plan</i> , but has determined that this is a relatively low priority in comparison to some other issues addressed by <i>The Plan</i> .
SP-9	72	States that laws and regulations are needed to prohibit ridiculous introductions of exotics.	This need is addressed by <i>The Plan</i> for bilge water releases, which could introduce exotics. For some species, <i>The Plan</i> recognizes that regulations are present and enforcement needs improvement.
SP-10	73	(VERBAL) Suggests more enforcement and eradication programs for exotic species.	<i>The Plan</i> calls for a number of actions concerning exotics, some of which are regulatory in nature, and some of which are not.
SP-10	73	States that exotic species actions should be backed by strong new regulations.	See above.
SP-10	73	(VERBAL) States that the program should do something about the grass carp.	Grass carp are included in action SP-10; however, eradication may not be a biologically feasible goal.

PUBLIC HEALTH PROTECTION

Action	Page	Summary of Comment	Summary of Response
		Suggests <i>The Plan</i> should implement public health actions much sooner than indicated.	The implementation schedule set in <i>The Plan</i> in part reflects the need for additional revenue, dependent upon the schedule of the Texas Legislature.
Intro	80-81	Points out use of term "polluted areas" is a legislative definition and is technically incorrect.	This point has now been clarified.
PH-1	88	Suggests <i>The Plan</i> call for action to start now to analyze for organic chemicals and communicate to the public.	The Management Conference also recognizes the need for a seafood safety program, dependent upon additional funding to the Texas Department of Health. Toxic organic contaminants would be included.
PH-1	88	States that there should be regular, at least weekly columns to inform public of important monitoring details such as which areas are safe or unsafe for seafood harvest.	The Management Conference concurs with the need for a routine risk communication program for seafood. The frequency of reporting will be affected by the sampling frequency, which is in turn dependent upon funds available and logistical sampling constraints.
PH-1	88	Indicates there is a need to constantly monitor fish/shellfish pollutant levels using accredited labs, and make findings public in the form of advisories.	These elements are included in <i>The Plan</i> .
PH-1	88	(VERBAL) States that there is a need to communicate risks of seafood consumption more effectively.	The Management Conference concurs; this is an element of <i>The Plan</i> .
PH-1	88	States that a seafood safety program should be implemented in less than six months and that no part of the bay's seafood should be a health hazard after December, 1996.	The implementation schedule set in <i>The Plan</i> in part reflects the need for additional revenue, dependent upon the schedule of the Texas Legislature. Some contamination problems result from banned substances which have been in the Bay for years, and for which short-term solutions are difficult to achieve.
PH-1	88	(VERBAL) States that the few fish toxicity studies that have been done are too negative.	Studies carried out by the Management Conference do indicate some contamination of fish and shellfish in Galveston Bay, and the need for a seafood safety program to communicate risk to the public.
PH-1	88	States that there is no real concern for seafood safety, in light of the heavy level of regulation we already have. Recommends reduction in the level of effort for this action.	The Management Conference believes that decisions about eating seafood should be based upon individual personal assessment of risk. Currently no public information exists to determine and communicate these risks, therefore this initiative is proposed to provide enhanced information.

PH-2	89	Questions whether the opening of additional areas to shellfish harvesting as a result of increased monitoring would produce enough benefits to be worthwhile.	Currently, about half the bay is subject to shellfish closure due to bacterial loadings. The Texas Department of Health, under this action would seek additional funds to monitor and open new areas where possible. The Management Conference encourages the TDH to also consider the benefits of is work under this action.
PH-3	90	States that the western tributaries including Clear Creek and Dickinson Bayou will always have high fecal coliform levels, and points out that, for practical purposes, there is no contact recreation in urban bayous or upper Houston Ship Channel during wet weather conditions. Recommends low priority for this action.	In relation to contact recreation, the principal concern of the Management Conference was TNRCC data showing bacterial levels exceeding standards in areas heavily used for contact recreation, such as Dickinson Bayou and Clear Creek. Nevertheless, this action has a low priority.
PH-3	90	Suggests that, for the contact recreational advisory program, the program consider public access to a data terminal.	The data and information management system for the proposed Galveston Bay Regional Monitoring Program will provide for ready access to these and other data.

FRESHWATER INFLOW AND BAY CIRCULATION

Action	Page	Summary of Comment	Summary of Response
		States that program is living in another world by stating there is "no documented evidence that indicates that the health of the estuary is suffering from current freshwater inflows." Suggests the program take action sooner than shown.	The Management Conference is currently awaiting the results of freshwater inflow needs analyses being carried out by the TWDB, TPWD, and TNRCC. Findings of these analyses will, for the first time, provide an objective basis for management of freshwater inflow by indicating freshwater inflow needs for a series of key species. The Management Conference is committed to management improvements based on objective data.
		(VERBAL) What does controlling freshwater inflow entail?	This is an extremely complicated issue involving water rights, currently permitted withdrawals, return flows, and circulation factors in the bay itself (to list just a few of the issues). The first step, proposed in <i>The Plan</i> , is to better determine the freshwater needs of the estuary by considering several key estuarine species and habitats.
		States that <i>The Plan</i> should allow no new additional stream water withdrawals or obstructions, in order to maintain inflow.	See above. The Management Conference does not have the authority to prevent some additional withdrawals, for example for diversions which are already permitted but not fully utilized.
		States that <i>The Plan</i> should focus on findings and follow-up related to the joint agency study on inflow needs, instead of the actions now in <i>The Plan</i> , which are sidelights.	The Management Conference concurs that the joint TWDB, TPWD, TNRCC study is of central importance to this issue. The intent is to base the contained initiatives on the findings of that study.
		Indicates that <i>The Plan</i> should allow no actions which restrict "fan-type" water dispersal, and account for the benefits of river and low-area estuarine flooding.	The Management Conference appreciates the value of delta sedimentation and intends to address this issue through action FW-5.
		Suggests that, in light of the estuary's need for sediment, that non-point programs may end up removing pollutants like nutrients and sediment in conflict to this need. States that EPA should consider an EIS in the impact of their stormwater program.	The Management Conference notes that concerns about reduction of sediment is based mainly on the issue of delta nourishment, not the urban bayous most heavily impacted by non-point loadings. For nutrients, the open bay has no serious nutrient problems, while developed tributaries do.
		Suggests revision of <i>The Plan</i> to consider a breach in the Texas City Dike.	Consideration of alterations to existing structures such as the Texas City Dike is included in action FW-7.
		States that <i>The Plan</i> should discuss how alterations to circulation are currently addressed, under "Management Status" in the introduction.	Revised as suggested.

		States that <i>The Plan</i> should address the negative effects of salt water intrusion, for example with deepening the Houston Ship Channel.	The Management Conference concurs, and supports Corps studies overseen by the Interagency Coordinating Team to determine impacts of Houston Ship Channel enlargement. Additional information on this topic is contained in publication GBNEP-44.
		(VERBAL) States that <i>The Plan</i> should include a section that describes the effects of salt water intrusion on this bay.	A more detailed discussion of this topic is found in publications GBNEP-22, 28, and 44.
		(VERBAL) States that <i>The Plan</i> should initiate action to dredge the Trinity River to reduce flooding of flood plain lands.	The Management Conference did not adopt this recommendation.
FW-2	101	States that <i>The Plan</i> should identify source and amount of funds for sediment measuring stations, and cost to City of Houston to implement flow measurement as recommended.	Sediment measuring stations are identified as a USGS initiative, while flow measuring would be part of planned programs (e.g. reservoir monitoring). The Management Conference understands that agencies and cities are not able to commit or budget funds for future years as a part of The Galveston Bay Plan, and this is explained in the Plan's executive summary.
FW-2	101	Recommends less emphasis on this action since inflow is very well monitored now. Would rather see money spent on improved technology rather than more local stream gages.	Work by the TWDB, TPWD, and TNRCC to determine bay inflow needs, as well as GBNEP studies, have indicated a need for critical information concerning accurate inflow from Lake Houston and sediment inputs to the system. The threat of further cutbacks on existing gaging work also hampers the ability of agencies to accurately model and manage flow.
FW-2	101	Offers to coordinate needed monitoring (e.g. Lake Houston spillway flow) with upcoming City of Houston program to monitor reservoir systems.	Revised to include City of Houston participation.
FW-3	102	Suggests better coordination with Trans-Texas Water Program; proposal to work through Clean Rivers appears to be duplicative.	Revised to reflect improved coordination with other programs.
FW-3	102	Suggests the program delete the second bullet reference to Coastal Coordination Council adopting any new programs on freshwater inflow, and any other references to the Coastal Coordination Council adopting any new programs or policies.	Revised as suggested. The Management Conference recognizes that rules adopted by the Coastal Coordination Council since publication of the draft Galveston Bay Plan have established that the Coastal Coordination Council will not seek to impose additional regulatory programs beyond agency programs which currently exist.
FW-4	103	What is the cost to upstream water users as a result of protecting inflow to estuary?	This question cannot be addressed until estuarine inflow needs are determined, the first step in this action plan.
FW-4	103	Suggests the need for water conservation elements and protection of Buffalo Bayou from diversions (like golf course watering).	Action FW-6 provides for water conservation actions.
FW-5	104	States that costs of increasing the sediment load to the bay (if dredged material is used) should be balanced with the benefits; consider state, local, and private sponsors in case the federal funding is inadequate.	This action was revised to include these elements.
FW-5	104	States that, in researching sediment for the estuary, the program should not ignore potential impacts on maintenance dredging requirements.	The Management Conference intends for any future sediment management initiatives to be developed with the participation of all bay interests, including navigational.
FW-6	105	Suggests the need for significant industrial, agricultural, and municipal water conservation to result in saving at least 50 percent of water used in each of these categories.	The Management Conference appreciates the need for water conservation, and intends for any use reduction targets developed to be based on objective analyses of estuarine freshwater needs, currently underway.
FW-6	105	Suggests the need to make distinction between per capita water reduction (possible) and overall reduction (not likely due to economic/population projections). States that Step 3 to develop regional conservation plan seems duplicative of work by City of Houston and Trans Texas Project.	Revised to include suggested distinction and participation by and coordination with City of Houston.

FW-6	105	States that the regional water conservation plan should have stakeholder involvement and be consistent with City of Houston and Subsidence District plans.	The Management Conference concurs, and has now included both these entities where appropriate.
FW-6	105	States that <i>The Plan</i> should discourage use of existing surface water supplies, delete support for the Trans-Texas Project, and live within the bounds of local resources. Favors promotion of conservation through retrofits of plumbing fixtures, lining of water transfer and storage facilities, leveling of agricultural fields, and use of xeric plants. Suggests the program adopt municipal pricing strategies that promote conservation by allocation. Encourages consumer water collection and reuse by consumers via rainwater collection and gray water recycling. Suggests that <i>The Plan</i> should penalize peak time demand and reward off-peak use. Suggests use of recycled water for watering, irrigation, and cooling. States <i>The Plan</i> should enforce water right forfeiture law to discourage hoarding of rights, with positive incentives including tax deductions or payments for permanent dedication of rights to instream flow. Suggests an element to develop water markets.	The Management Conference supports water conservation in <i>The Plan</i> , but realizes that surface waters will continue to be utilized (for example to prevent subsidence through increased use of groundwater). The specific suggestions offered are all tools that the Management Conference recommends be considered when estuarine freshwater needs are better determined and conservation plans are formulated.
FW-7	106	States that <i>The Plan</i> should not treat circulation, habitat, and species protection together, since circulation is a physical parameter. Requests reference to "cooling water intake" be deleted.	The Management Conference recognizes that, through physical and biological ecosystem linkages, circulation, habitat, and species are all affected by human structures and navigation channels. <i>The Plan</i> was revised to refer to all water extractions, rather than specifying cooling water intakes.

SPILLS/DUMPING

Action	Page	Summary of Comment	Summary of Response
		States: instead of deepening/widening the Houston Ship Channel, build an alternative shallow draft (15 feet or so) channel to allow the barges and other shallow draft traffic to get off the main channel and decrease risk of collision.	This alternative has been evaluated previously by the Corps and rejected. Currently, the Corps has not yet sought congressional authorization to proceed with Houston Ship Channel enlargement.
		Recommends the program discuss the problem of underwater pipeline leaks, and if such discharges occur, prescribe actions.	This issue was addressed by the Spills and Dumping Task Force, which concluded that pressure monitoring technology and Railroad Commission rules were adequately protective, and such incidents were relatively rare.
		Proposes a mandate requiring double walls for tankers and barges; requirement for potential spillers to post performance bonds, redeemable upon satisfactory performance.	While appreciative of these suggestions, the Management Conference determined they exceeded the scope of <i>The Plan</i> . Tanker and barge design is addressed at the national/international level and spill response and cleanup are addressed by new programs resulting from recent federal and state statutes.
		States that the emphasis on compensation for environmental injuries seems targeted merely to make environmental lawyers richer. Supports only the trash management issue.	No revisions were made.
Intro	110-111	Recommends clarification of wording about spills, to clarify jurisdictions of various agencies.	Revised as suggested.
SD-3	119	Urges analysis of timing and weather conditions for spill cleanup and review of effectiveness of various methods and effects such as toxicity of dispersants. Suggests a requirement for analysis of low-risk transport alternatives such as trucks, ocean-going barges, or pipelines.	The review of response and cleanup technology was not included in <i>The Plan</i> in order to avoid duplication of recently initiated efforts in Galveston Bay by state and federal agencies and private spill response cooperatives. These efforts are the result of new federal and state laws concerning spills.

SD-5	121	Recommends adoption of actions outlined in EPA document "Plastic Pellets in the Aquatic Environment: Sources and Recommendations."	Revised as suggested.
SD-6	122	States that CMP does not grant any entity new authority, and local governments cannot therefore adopt trash screening under CMP authority. Recommends revision of "Who" section.	Revised as suggested. The Management Conference recognizes that rules adopted by the Coastal Coordination Council since publication of the draft Galveston Bay Plan have established that the Coastal Coordination Council will not seek to impose additional regulatory programs beyond agency programs which currently exist.
SD-6	122	Recommends this action be deleted; there are numerous other means to control floatables (e.g. trash pickup), and screening will pose a significant flooding potential.	Revised to indicate that screening is not the only method available. This action now takes the approach of developing best management practices for this problem.

SHORELINE MANAGEMENT

Action	Page	Summary of Comment	Summary of Response
		Points out limited staff and other resources to undertake major planning efforts, encourages program to seek commitment from Coastal Coordination Council to earmark CZMA funds for shoreline management initiatives. Against inclusion of additional local development standards (beyond dune/beach access) under CMP consistency review.	The Management Conference appreciates the limited funds currently available for shoreline planning and supports the possibility of CZMA funds being earmarked in the future (Texas does not at this time have a federally approved program). Enforceable policies for consistency review (including any development standards) will be addressed by the Galveston Bay Council in public deliberation at a later time.
		States that the planning in this action plan is premature and unsound, and that there should be more emphasis on understanding such issues as habitats, nutrients, and inflows (research) before we consider management.	The Management Conference, while recognizing the need for continued research, believes that some actions can be taken to prevent habitat loss and water quality degradation. These actions would entail management on a case-by-case basis at the local level.
		Suggests, in general, delete references to Coastal Coordination Council adopting new programs or policies and steps that state that the Coastal Coordination Council will require consistency of local actions with the CMP. States that enforceable policies of the CMP are all to be based on existing statutory authorities. States that the Coastal Coordination Council has no intention of broadening the scope of actions subject to the CMP. States that all shoreline management actions should have local government focus, not state-driven mandates.	Revised as suggested. The Management Conference recognizes that rules adopted by the Coastal Coordination Council since publication of the draft Galveston Bay Plan have established that the Coastal Coordination Council will not seek to impose additional regulatory programs beyond agency programs which currently exist. This resulted in some substantial changes to this section of <i>The Plan</i> .
		Proposes the program take action to eliminate subsidies to coastal development, e.g. federally subsidized flood insurance and disaster relief loans. States that if private property owners had to individually absorb the cost of damage, there would be much less construction and less non-point source pollution in coastal areas. Recommends the roll back of subsidies for existing structures, and elimination of subsidies for new construction.	The Management Conference appreciates these suggestions, but does not have authority to alter nationwide federal programs or policy. However, federal consistency review will allow the TNRCC and Galveston Bay Council to review federal assistance and development projects for consistency with <i>The Plan</i> , on a case-by-case basis. Details are provided in the program's Federal Consistency Report.
		(VERBAL) How does <i>The Plan</i> affect the process of obtaining a bulkhead permit?	The existing permit process will remain in effect.
		States that Gulf beach erosion is a terrible problem; when Bolivar Peninsula is gone, there will be no East Bay. Recommends the program look into this problem.	The Management Conference appreciates this concern, but does not address issues concerning beaches of the Gulf of Mexico, since they are not part of the estuary.
		Recommends control of land use and limitation of development. Recommends that subdivisions not be allowed to be established in upstream flood plains; the restriction of road construction, and the revocation of the authority of population centers to give tax abatements to entice new industry and development.	The Management Conference appreciates the need for improved land use planning adjacent to the bay, but seeks to accomplish the goals of <i>The Plan</i> without creating new regulatory mandates.

		(VERBAL) Opposed to habitat protection and shoreline development planning via the land use controls as the tool.	See above.
		Recommends action to impose speed limits in the Houston Ship Channel due to wake erosion of upper bay shores.	In investigating this issue, the Management Conference determined that human safety and spill prevention were also important considerations hinging on navigability and vessel speed. The Management Conference believes that, while existing limits should be enforced, no new limits in the Houston Ship Channel should be imposed.
		(VERBAL) Recommends a speed limit be imposed in the Houston Ship Channel.	See above.
		Voices a need to address wake damage by recreational vessels in enclosed areas like Clear Lake. States that large boats traveling fast in tributary waters are a danger to people, wildlife (e.g. broods of ducks), and create severe erosion.	In recreational areas such as Clear Lake, exceedance of vessel speed guidelines is a problem. <i>The Plan</i> calls for a better definition of resulting environmental impacts, better enforcement of existing speed limits, and improved education of boaters to address this issue (see action HP-9).
		(VERBAL) Voices concern about damage from high speed boating in the bayous.	See above.
		Recommends the program use boater education and enforcement to prevent the erosion of shorelines from irresponsible boaters.	See above.
		States that wake erosion from barge traffic on the Intracoastal Waterway is a serious problem. Need to have a vessel toll or some other way to address this issue.	The Management Conference recognizes wake erosion as a problem. <i>The Plan</i> calls for initiatives under HP-9 to better define and solve this problem. Additional actions will then be incorporated in the planning process as implementation of <i>The Plan</i> proceeds.
		(VERBAL) Concerned that wake erosion from barge traffic on the Intracoastal Waterway is a serious problem. Need to have a vessel toll or some other way to address this issue.	See above.
		(VERBAL) Concerned about shoreline erosional effects.	See above.
Intro		States that the program should better develop the concept of water dependency and non-water dependent uses, and state public trust responsibilities	The Management Conference notes that the concept of water dependency is more applicable for Coastal Zone Management planning than for NEPs, and is being addressed by the GLO in the developing Texas Coastal Management Plan.
SM-1	133	Consider using defined "water-dependent" activities for shoreline management, as done in the Coastal Management Plan.	See above.
Intro		States that the program should include RRC in its authority (along with TNRCC) for issuance of 401 certifications for oil and gas related activities.	Section 401 certifications are addressed as a management tool for wetlands management in the Habitat Protection chapter, where the RRC is included (this would address shoreline wetlands).
Intro		States that <i>The Plan</i> should more clearly identify the management objectives for shoreline development guidelines (suggestions provided).	Actions SM-1-3 will result in creation of more specific goals of the type suggested, and those suggested will be considered during this process.
Intro	131	Suggests shoreline management action area be defined as those areas within 100 feet of the mean high tide, called "coastal shore areas" in the CMP and designated as a Coastal Natural Resource Area. States that the currently-proposed "Coastal Wetlands Boundary" has no factual basis for this purpose, and would include inappropriate areas.	Revised as suggested.
SM-1	133	Suggests <i>The Plan</i> not include GLO as lead entity since it has no authority to govern local land use beyond dunes and beach access on the Gulf. States that lead entity should be Galveston Bay Program or Local Governments.	Revised as suggested.
SM-1	133	States that the program should consider development of greenways as a comprehensive management tool (suggestions provided).	The Management Conference appreciates the value of greenways as a management tool and has included this approach under action SM-1.

SM-1	133	States that the rationale for area within 100 ft of mean high tide needs better emphasis and definition. Recommends the program consider 100 ft from inland extent of coastal wetlands. Recommends <i>The Plan</i> include steps to adopt enabling legislation for local governments to address shoreline development, and develop shoreline development guidelines for adoption as CMP policies for Galveston Bay Special Area Management Plan.	The rationale is based on the state definition of “coastal shore areas” in the developing Coastal Management Plan and is being retained for the sake of effective coordination with that program. Enforceable policies for adoption by the Coastal Coordination Council as a Special Area Management Plan (if any) will be developed at a later time by the Galveston Bay Council.
SM-1	133	Suggests that this action needs regulations instead of just guidelines.	The Management Conference proposes non-regulatory approaches to achieving the goals of <i>The Plan</i> , wherever possible.
SM-1	133	States that the program should integrate into plan the requirement of formal permission by Port for any structure or pipeline at or below mean low tide in navigable streams.	While the Management Conference recognizes the validity of the permission requirement, the myriad of regulatory requirements at this level of detail (there are many other examples) are not generally mentioned in <i>The Plan</i> , which serves as a comprehensive planning document.
SM-1-3	133-135	States that <i>The Plan</i> needs definition of the shoreline to be affected by this action.	The Management Conference has determined that, because these actions are not being proposed as a regulatory program, the areas potentially considered by local municipalities for shoreline management should be determined by local definition. The Management Conference does not wish to be over-prescriptive.
SM-2	134	Recommends that H-GAC not be allowed to set standards, since they are handmaidens of industry, developers, transportation interests, and local government officials who want growth at any cost.	The Management Conference favors inclusion of industry, developers, and transportation interests in the planning process (among other interests), but has involved H-GAC in this action because of their local government representation.
SM-2	134	Suggests development of regional residential guidelines that local governments can use to develop their own specific guidelines. Recommends clarifying discussion of consistency review (suggestions provided).	This approach is now adopted in <i>The Plan</i> .
SM-2	134	Recommends that the program delete discussion of GLO authority under Regulatory Needs. Notes that CMP is based solely on existing authorities.	Revised as suggested.
SM-2,3	134-135	Recommends amending the description of residential and commercial shoreline management guideline projects to clarify the limits on state-level land use planning authority, by noting the advisory nature of the proposals and clarifying the references to Coastal Coordination Council requirements, which are now also better defined and largely advisory.	Revised as suggested.
SM-3	135	Recommends deletion of the GLO as lead entity in favor of TNRCC or perhaps DPS. Recommends deleting discussion of GLO authority under Regulatory Needs. Notes that CMP is based solely on existing authorities.	Revised as suggested.
SM-3	135	Recommends that the program change Step 2 from “hazardous material/waste facilities” to “solid waste and sludge management facilities” to better define issue.	Revised as suggested.
SM-4	136	Recommends that the program clarify that dredging is addressed by inserting “and Dredging” after the word “Structures” in the title.	Revised as suggested.
SM-4	136	Recommends inserting “and Dredging” after the word “Structures” in the title.	See above.
SM-4	136	Proposes that rules against structure abandonment not apply to structures representing an environmental benefit (e.g. artificial reefs).	Revised as suggested.
SM-4	136	Recommends inclusion of the RRC as an agency to revise rules to address structures on submerged lands, to account for oil and gas structures.	Revised as suggested.

SM-4	136	Recommends removal of all cabins from the bay.	Action SM-4 proposes a phasing out of cabins on state-owned lands.
SM-4	136	States that the GLO does not have authority to impose fines for abandoned structures. Recommends revision of Step 2 to read: "GLO will consider adopting rules to require at the time of permit application, where practical, the deposit of funds..." Recommends revision of Regulatory Needs section appropriately.	Revised as suggested.
SM-5	137	States that first step to improve access should be inventory of existing public access sites. Recommends clarification of consistency review.	An access inventory is included in action SM-5.
SM-5	137	Recommends <i>The Plan</i> highlight the voluntary nature of land dedications for public access, to ensure they will not be challenged as unconstitutional takings.	Revised as suggested.
SM-5	137	Recommends that TPWD pursue purchase of park land around bay to improve access.	Revised as suggested.
SM-5	137	States that Step 1 should strongly emphasize acquisition of public lands for shoreline access.	Revised as suggested.

WATER AND SEDIMENT QUALITY

Action	Page	Summary of Comment	Summary of Response
		Recommends that the program establish a new goal with objectives and actions which address excessive fecal coliforms.	The Management Conference has added steps under existing actions in <i>The Plan</i> to emphasize reduction of bacterial loading.
		Recommends that the program establish subwatershed planning groups for ambient, non-point, and point source elements.	This suggestion was considered by the Management Conference, and rather than create any new organizations, this role will become a function of the Galveston Bay Council (which can establish planning groups if necessary).
		States the record shows no real concern with toxics. PAHs, PCBs, and DDT have no real sources, and any concern for metals is completely bogus.	The Management Conference, in response to data concerning human consumption risk levels, and natural community degradation based on toxicity testing and other approaches, believes toxicants are a concern in portions of Galveston Bay.
Intro	145	States that <i>The Plan</i> should clarify difference between point source and non-point source pollution and the effects each has on the bay.	Done; for additional information, see also publication GBNEP-44: <i>The State of the Bay, A Characterization of the Galveston Bay Ecosystem</i> .
Intro	149	States <i>The Plan</i> needs to qualify NPS loading comparison in table and text. States that the incremental non-point source loading difference (increase) from urban and agricultural sources vs. an undeveloped area provides better information than total NPS load. Revision language suggested.	Revised as suggested.
Intro		States that <i>The Plan</i> implies that non-point source pollution is as large a concern as point source pollution even though 60 percent of all permitted wastewater discharges occur into the Galveston Bay system.	Studies carried out by the GBNEP confirm that non-point source loadings for many parameters are greater than point source loadings. Point source discharges are treated, while non-point sources are not.
Goal	153	Recommends that, due to toxic contamination of only isolated areas, the program should change the goals statement to "Reduce Toxicity Areas".	The Management Conference agrees that much of Galveston Bay is not subject to toxic contamination. However, the current language accounts for the common situation in which unmeasurable (or less than toxic) concentrations of pollutants in water contribute to a toxic "hotspot" via transport and concentrating mechanisms in sediment or at the water-sediment interface.

Goal	153	States that <i>The Plan's</i> assertion that these toxic substances may have a negative impact on aquatic life is speculative, not supported by text, and should be eliminated.	A substantial number of scientific studies, including those of the program, have demonstrated negative toxic impacts on aquatic life. See <i>The State of the Bay, A Characterization of the Galveston Bay Ecosystem</i> for a summary and appropriate citations.
WSQ-1	156	Questions why Step 5 is included. Believes that, with the possible exception of dioxin, these are not point source issues. Recommends renaming this action to reflect study only, with no management action.	The Management Conference concurs with the need for additional survey data, particularly related to defining the source of contaminants (step 5). Based on these findings, permit actions can then specifically address sources.
WSQ-3	158	Urges adoption of EPA sediment criteria only, with no independent development by the state. Appropriate revisions are suggested.	The Management Conference acknowledges the expertise and jurisdiction of the TNRCC concerning this issue, and proposes no criteria development apart from TNRCC action. It is anticipated that TNRCC will rely heavily or exclusively upon criteria development efforts by EPA. This action was revised to better reflect criteria adoption as opposed to criteria development.
WSQ-3	158	Urges adoption of EPA sediment criteria only, no independent development by state. Revise appropriately.	See above.
WSQ-3	158	Opposed to any sediment quality criteria approach not consistent with federal guidance and standards; urges utilization of effects-based testing included in EPA "Green Book" and "Gold Book".	See above.
WSQ-3	158	Questions cost-effectiveness of establishing sediment quality criteria when pollutant loadings are principally the function of past point source discharges currently being controlled. Should not try to address this issue when others have failed.	GBNEP scientific studies indicate that current non-point sources are a likely a source of some sediment contamination; particular areas continue to have contaminated sediments, some so severely that the benthic community is severely affected.
WSQ-3	158	Urges that <i>The Plan</i> be re-written to assure that sediment criteria will be established and put in place. States that if we don't even know if there is a problem with toxics, why would we want to spend time and almost \$200 K developing a regulatory conformation of our conclusion?	This is the intent of this action; some revisions have been made to clarify. The Management Conference believes sufficient information about toxicity exists for Galveston Bay to warrant development of sediment criteria for use as a management tool. <i>The Plan</i> has been revised to encourage a careful approach by the TNRCC that accounts for all the EPA work in this area.
WSQ-3	158	States that reference to pesticides in the "What" statement should be dropped or changed to DDT, the only elevated compound in characterization studies.	Revised as suggested.
WSQ-4	159	States that non-point loadings should not be included in a Total Maximum Daily Load process, due to differences between point and non-point loading conditions. States that loading cannot be used as a sole indicator of ambient hotspots.	The Management Conference recognizes the technical challenge of addressing both wet and dry weather loading conditions in the Total Maximum Daily Loading process. However, studies show that toxicants from both sources are of concern. Transport and ambient conditions must also be considered to determine the true relationships of loadings to ambient impacts. The action was revised to better reflect these issues.
WSQ-4	159	Does not support the action and believes there is insufficient evidence to demonstrate a toxics problem. Has concerns about the TMDL methodology.	No revisions made; see above concerning methodology.
WSQ-5	160	States that Clean Cities 2000 goals concerning solid waste reduction and water conservation will not improve water/sediment quality of the bay; remove this from action.	Revised as suggested.

WSQ-5	160	Recommends mandating industry to reduce their pollution by 50 percent, rather than to merely encourage.	Technical studies indicate the greatest loading for many pollutants results from contaminated, non-treated runoff. Highly regulated and treated effluents from industry are at a point of diminishing returns in terms of load reduction per dollar spent. While supporting the ongoing point source regulatory system, <i>The Plan</i> emphasizes new initiatives in the areas where they can do the most good: non-point source reductions.
WSQ-6	161	Urges that no more studies be carried out; suggests a requirement that year-round dissolved oxygen in the Houston Ship Channel be greater than 4.0 mg/l.	The Management Conference appreciates the need to implement management actions, as opposed to merely studying problems. The proposed dissolved oxygen requirement might require stopping all discharges, and even then, there is no assurance that dissolved oxygen at depth would rise to a natural level above 4.0 mg/l. The Management Conference proposes that regulation of discharges to the Houston Ship Channel be based on objective data, and therefore supports the use of some additional loading studies, which include non-point sources, to acquire these data.
WSQ-6	161	Urges that all actions to limit both point and non-point sources be shelved until we study the questions more.	The Management Conference supports the need both for additional study and for reduction of pollution sources.
WSQ-6	161	States that the current EPA stormwater approach requires only implementation of BMPs. Does this program intend to go beyond this to performance-based management; if so, to what limit and upon what basis?	The Management Conference has adopted a technology-based approach to management initiative in <i>The Plan</i> , and has now made appropriate revisions.
WSQ-7	162	States that <i>The Plan</i> appears to go beyond EPA Stormwater regs. Shouldn't current program be implemented and monitored first?	The intent of this action is to address waters which violate standards in spite of years of point source controls. Work will be coordinated closely with developing EPA stormwater program elements to prevent duplication.

NON-POINT SOURCES OF POLLUTION

Action	Page	Summary of Comment	Summary of Response
		(VERBAL) States there is a need to control <i>non-point</i> source pollution in order to clean up the Bay.	The Management Conference concurs; this issue was ranked number two of 17 problems facing Galveston Bay.
		States that there is no need to control non-point sources until we conduct more research, especially for sediment and nutrients, which may be needed in greater amounts in the bay.	The Management Conference agrees with the need for additional research, but existing studies suggest actions to clean up the highly impacted tributaries which drain urbanized and developed areas.
		Expression of concern by local governments about the possibility of facing three different sets of stormwater regulations (NPDES, TNRCC, and Coastal NPS). Recommends that <i>The Plan</i> call for unified local government approach, taking into account our high rainfall and flat topography. Recommends emphasis on education and voluntary initiatives over burdensome regulatory programs.	The non-point source initiatives have been revised to clarify the coordination of the various programs (some of which are still evolving). The Management Conference agrees with the need for BMPs tailored to our flat topography and fine clays. Education and voluntary initiative are likewise important parts of <i>The Plan's</i> approach to reduction of polluted runoff.
		States that the various programs to control NPS should be streamlined and coordinated; control of the same sources by several different agencies is unnecessarily duplicative, time-consuming, and expensive.	See above, clarifications have been made.
		States that all the various programs addressing this issue should be coordinated and streamlined; control of the same sources by several different agencies is unnecessarily duplicative.	See above.

	States that <i>The Plan</i> should provide for close involvement of Galveston Bay Program with development of the state coastal non-point program.	During planning for all elements of the Texas CMP, close coordination has occurred with development of The Plan. Numerous recent revisions to the Non-Point Source Action Plan reflect this coordination. The nature of non-point initiatives under the states federal application (CZM) is not yet determined.
	States that <i>The Plan</i> should clearly state the intent for coordination with state CNP and Section 319 program.	Revisions have been made to better define the relationships among these programs. The nature of the Section 319 program in Texas is not yet fully defined.
	States that <i>The Plan</i> should include a requirement to retrofit all existing development to reduce NPS.	The Management Conference recognizes the value of retrofits in some situations. However, retrofits are in other cases the most expensive solution to a problem for which less expensive solutions exist. For example, <i>The Plan</i> emphasizes source reductions in residential areas, in order to improve the quality of runoff, as opposed to stormwater treatment. In general, retrofits, as the most burdensome sort of solution, would be considered only if other approaches are not available or viable.
	Recommends an increase in fines for littering and imposition of greater enforcement.	These suggestions have now been incorporated into action SD-5.
	States there is a lack of recognition or proposed actions to protect the bay from air pollution generated water pollution.	The Management Conference concurs concerning the likely high importance of atmospheric deposition of pollutants and subsequent runoff to the bay. Currently, very little information exists on this issue. In <i>The Plan</i> , atmospheric deposition is identified as a research priority, in order to acquire a basis for future management actions.
	Recommends that the program begin far up the tributaries, and work down to clean up the sources of NPS. Recommends setting strict enforcement of laws already on the books.	The Management Conference agrees with the geographical targeting of non-point sources in the watershed, and has the results of a watershed loading study to strengthen this approach.
	(VERBAL) Suggests increased fines for littering and better enforcement of existing laws.	The Management Conference concurs on the need for enforcement of existing laws.
	Requests incorporation of specific comments submitted by the Storm Water Management Joint Task Force and City of Houston Participants.	Revised as suggested.
	Requests <i>The Plan</i> not refer to NPDES Stormwater Program as non-point source; alternative language supplied by EPA.	This reference has now been qualified to acknowledge that the NPDES program is administratively a point source program.
	Concerned that <i>The Plan</i> proposes non-point source controls and other actions without knowing enough about the effects in the bay (science).	The Management Conference appreciates the lack of a true understanding of the effects of nutrient reductions and other human changes to the bay, but notes the substantial contribution of non-point loadings to the poor water quality in the bay's western and urban tributaries.
	Requests the program address nightmares like McGinnis Pits and industrial land farms that do not have permanent liners to contain leachate. Recommends testing of old injection wells for leakage. and use of polystyrene planks for bulkheading instead of treated wood.	Previously permitted facilities have generally not been individually reviewed by the program, since they are subject to existing regulatory programs. However, the Management Conference intends that future consistency review provide an improved evaluation for some projects in relation to elements of <i>The Plan</i> .
	States that <i>The Plan</i> should take actions to clean up McGinnis Pits and prohibit transporting and dumping of dangerous materials by requiring they be chemically altered to be harmless, within the smallest taxing jurisdiction where they were produced.	See above.
Intro	Requests correction of inaccuracies in Management Status section of introduction concerning Coastal Zone Management Act (wording supplied).	Revisions have now been made to clarify this section.
Intro	169 Recommends wording to clarify Coastal Zone Management Act and implications for states.	Revised as suggested.

Intro	170	Strongly recommends NPS management in Houston/Harris County should initially concentrate on technology-based measures, with performance-based action only after progress is evaluated.	Revised as suggested. This was an issue involving substantial discussions by the Management Conference with both stakeholders and regulators.
Intro	170	Strongly recommends deletion of all 6217 reference, except as a technical resource. Notes that Commissioner Mauro has expressed opposition to these requirements; they would also be strongly opposed in <i>The Plan</i> .	Revised as suggested. The Management Conference has considered this issue in detail and negotiated with the Joint Stormwater Task Force and representatives of Commissioner Mauro to arrive at acceptable language.
Intro	170	States that the use of 6217 NPS Guidance is not assured, and the management measures within that guidance should be construed as examples only, rather than mandates, since similar measures to achieve the same effect are allowed.	<i>The Plan</i> has been appropriately revised to reflect use of 6217 guidance as a technical resource only.
Intro	170	States that <i>The Plan</i> should delete any reference to the 80 percent TSS reduction from the 6217 guidance.	Revised as suggested. See above.
Intro	170	States that <i>The Plan</i> should refer to the program that states must develop pursuant to Section 6217 as "coastal non-point programs" (CNPs) and eliminate the current conflicting terminology.	Revised as suggested.
Intro	170	States that the focus of 6217 CNP is to implement minimum technology-based management measures for each non-point source identified as significantly affecting coastal waters, without making the link to specific water quality impacts. Suggests <i>The Plan</i> build on existing programs to include enforceable policies and authorities. Otherwise, risk loss of federal funds.	See above. <i>The Plan</i> , as well as the developing Texas CMP, relies on existing programs. Enforceable policies will be considered at a later date by the Galveston Bay Council.
Intro	170	Concerned that post-construction sediment load reduction of 80 percent is not in fact mandated by 6217 (is rather suggested), and should not be adopted in any case, in favor of a BMP approach without monitoring requirements. Urges adoption of Joint Task Force approach.	Revised to reflect use of 6217 guidance as a technical reference only.
Intro	170	Voices concerns that post-construction sediment load reduction of 80 percent is not in fact mandated by 6217 (is rather suggested), and should not be adopted in any case, in favor of a BMP approach without monitoring requirements.	Revised; see above.
Intro	170	Voices concerns about adoption of the EPA/NOAA 6217 guidance as a requirement, and points out that the CMP will not likely strongly emphasize 6217	Revised to reflect use of 6217 guidance as a technical reference only.
Intro	173	States that Special Area Management Planing results show that fecal coliforms from all types of land use areas including undeveloped are in similar ranges. States that there are no proven available measures to reduce fecal coliforms in runoff regardless of type of land use.	The Management Conference agrees that fecal coliforms are a difficult management issue requiring diverse actions, including initiatives related to septic systems, municipal bypasses and overflows, marinas, and other sources. However, bacteria in runoff is a substantial source to Galveston Bay, and from an engineering perspective, some control measures clearly reduce bacteria in runoff.
Intro	174	How do these goals fit in with the state's current agricultural NPS program administered by the State Soil and Water Conservation Board?	The Management Conference recognizes the SWCB as the lead entity for agricultural non-point source programs in Texas. Actions NPS-10 and NPS-11 therefore stipulate a SWCB lead, and the Management Conference supports full partnership with the SWCB and utilization of related agricultural programs that have application for Galveston Bay.
Objective	174	Recommends <i>The Plan</i> not include the 80 percent figure and that <i>The Plan</i> not attribute PCBs to new development. Rewording of objective proposed.	Revised as suggested.
Objective	174	Recommends re-working of the objective to eliminate reference to 80 percent TSS reduction (suggested wording provided).	Revised as suggested.

NPS-1	179	States that the title of NPS-1 should be changed to accurately read: Monitor/Implement Storm Water Programs for Local Municipalities. States that <i>The Plan</i> should take full advantage of the Joint Task Force Handbook (BMP approach).	Although monitoring is an element of this action, its ultimate result is implementation of programs in the region. Revisions have been made to take better advantage of the excellent management tools created by the Joint Task Force as a basis for future action..
NPS-1	179	States that the title of NPS-1 should be changed to accurately read: Monitor/Implement Storm Water Programs for Local Municipalities. <i>The Plan</i> should take full advantage of the Joint Task Force Handbook (BMP approach).	See above.
NPS-1	177	Recommend revision to reflect the level of work being accomplished by the NPDES stormwater program; clarify that duplication of effort will not be required for parties under NPDES.	See above.
NPS-1	177	Recommends changing the title to "Monitor/Implement Storm Water Programs for Local Municipalities.	See above.
NPS-1	177	Recommends <i>The Plan</i> require, rather than encourage municipalities to control stormwater pollution.	Federal mandates under the Clean Water Act are becoming increasingly stringent. The Management Conference seeks to help guide mandated programs to success under our specific local conditions, and to provide for improving voluntary efforts as well, without adding mandates which are duplicative with existing program.
NPS-1	177	Why wouldn't NPDES Stormwater actions be included in costs?	The Management Conference acknowledges the substantial costs of implementing NPDES stormwater controls. However, the costs included in <i>The Plan</i> are only those incremental costs beyond existing or future mandated programs external to <i>The Plan</i> .
NPS-1	177	States that the NPDES stormwater program is actually a point source program, and may be more appropriate if placed under the point source section.	Revisions were made to clarify this issue. While the Management Conference agrees that this program is administratively a point source program, it conceptually addresses polluted runoff, and has therefore been grouped with other initiatives for this issue.
NPS-3	179	States that loading/land use cannot be used alone to define hotspots. No verifiable data would confirm that NPS hotspots exist in the 29 subwatersheds listed.	<i>The Plan</i> is now revised to cite findings related to this issue. Substantial ambient water quality analyses by the University of Texas document regions of reduced water quality in areas of high urban runoff.
NPS-4	180	States that loading/land use cannot be used alone to define hotspots. No verifiable data would confirm that NPS hotspots exist in the 29 subwatersheds listed.	See above.
NPS-5	181	States that <i>The Plan</i> should include a ban on all septic systems on the coast in favor of composting or incinerator toilets.	<i>The Plan</i> identifies leaking septic systems as a problem, however many septic systems are legal, functional, and do not leak to the bay or its tributaries. The Management Conference does not seek to impose regulation in specific cases where there is no problem.
NPS-6	182	States that action should not rely on the development of the coastal non-point source plan. Rely only upon existing authority, e.g. TNRCC 319 program, Texas State Soil and Water Conservation Board authority, and local governments.	The Management Conference concurs and has made appropriate revisions.
NPS-6	182	Assumes new development actions reflect state's CMP. Recommends <i>The Plan</i> clarify why there are no costs shown and no regulatory needs. States that technology-based management measures must be ultimately ensured through adoption of enforceable policies or mechanisms, generally implying new regulatory authority.	This initiative does not constitute the State's approach to non-point sources under the CMP. <i>The Plan</i> is designed to be implemented whether or not Texas' CMP becomes federally approved, once it is developed. Because this initiative relies upon existing programs, there is no incremental cost due to <i>The Plan</i> .

NPS-6	182	Favors BMP approach to post-construction erosion control for TSS reductions, without requiring monitoring. Points out that 6217 does not apply anyway to municipalities under NPDES stormwater permits(City of Houston, Pasadena, Harris County). Proposes re-wording without the 80 percent reduction of TSS provision.	Revised as suggested.
NPS-6	182	Favors BMP approach to post-construction erosion control for TSS reductions, without requiring monitoring. Points out that 6217 does not apply anyway to municipalities under NPDES stormwater permits(City of Houston, Pasadena, Harris County). Proposes re-wording without the 80 percent reduction of TSS provision.	See above.
NPS-6	182	Recommends all references to Section 6217 (Coastal Zone NPS guidelines) be removed and replace with a more specific plan such as that of the Joint Task Force. Concerned about the costs of 6217 (e.g. within the municipal utility districts using public financing).	Revised to reflect use of 6217 guidance as a technical reference only.
NPS-6,7,13	183 183 189	Recommends deletion of reference to 6217 Guidance, except as a technical reference. States that reference to construction activities should be revised as "construction activities disturbing 5 or more acres or those projects which are part of a master planned development."	Revised as suggested.
NPS-7	183	Encourages program to work closely with TXDOT to be sure roadway runoff is not channeled directly to bayou or bay waters.	The Management Conference concurs and has now included TXDOT in several initiatives.
NPS-7	183	(VERBAL) Would like the Program to work with the Department of Transportation on current and future roadway plans.	See above.
NPS-7	183	Urges requirement of NPS control on all roads now; states that this is not difficult or expensive.	The Management Conference appreciates concern related to this issue and agrees on the need for improved management of roadway runoff. Some controls for polluted runoff from roadways are quite expensive.
NPS-9	185	States that the word "known" should be inserted before the word "Groundwater" in the title to better reflect the intent of this action.	Revised as suggested.
NPS-9	185	States that the program should consider incorporating information from the <i>State of the Bay</i> report (e.g. page 132) to show why this groundwater plume action does not address nutrients, bacteria, or other such issues typically addressed in some other estuaries.	Information has now been included in the introductory section describing environmental status.
NPS-10	186	States that the source of funding for the projected expenditures attributed to the State Soil and Water Conservation Board is unclear.	In spite of high level of agency involvement in creation of The Plan, partner agencies do not have the ability to commit their budgets over the planning period being considered. This fact is now recognized in the Executive Summary. Many agencies are utilizing <i>The Plan</i> as a means to increase budgets for programs related to Galveston Bay.
NPS-11	187	(VERBAL) States that agricultural non-point source pollution is ranked too high in the priority list.	The Management Conference has previously revised the priority of this issue downward. Currently, <i>The Plan</i> calls for utilization of existing and future voluntary programs of the State Soil and Water Conservation Board as lead entity to address this issue.
NPS-11	187	(VERBAL) States that agricultural runoff is not a pollution problem.	See above.
NPS-11	187	(VERBAL) States that agricultural runoff should not be considered a "moderate" source of pollution.	See above.
NPS-11	187	States that <i>The Plan</i> should seek to reduce agricultural chemicals in runoff, utilizing an education program coordinated with chemical supply stores, garden shops, churches, schools, and flower/botanical groups.	The Management Conference appreciates this suggestion and will coordinate with the implementing entities for this action to consider this approach.

NPS-12	188	States that all the controls for construction practices should be mandatory and not voluntary.	The Management Conference anticipates increasing federal mandatory requirements in this area, and seeks to coordinate with federal and local programs rather than create new mandates at the regional level.
NPS-12	188	States that <i>The Plan</i> should disengage proposals from reliance on Texas Coastal Management Plan for NPS control; rather urge granting of county land-use control authority by Texas Legislature.	Revisions have been made to significantly reduce the reliance on the Texas Coastal Management Plan for authority for implementation of non-point actions. <i>The Plan</i> does recommend increased authority for counties.
NPS-12	188	States that the Coastal Coordination Council has no intention of broadening scope of CMP from its currently proposed rules; recommends deletion of Step 2 from this action.	Revised; Step 2 no longer calls for rule-making by the CCC.
NPS-12	188	States that Step 1 implies that implementation of NPS control measures is voluntary; recommends that EPA regulations for construction sites greater than 5 acres be noted. States that <i>The Plan</i> should utilize the Joint Task Force Handbook.	Revised as suggested.
NPS-12	188	States that Step 1 implies that implementation of NPS control measures is voluntary; recommends that EPA regulations for construction sites greater than 5 acres be noted.	See above.
NPS-13	189	States that the Coastal Coordination Council has no intention of broadening scope of CMP from its currently proposed rules; recommends deletion of Step 1 from this action and add local governments to "Who."	Revised; Step 1 no longer calls for rule-making by the CCC.
NPS-14	190	States that requiring pumpouts for all new marinas and retrofitting of all existing marinas with more than 10 slips is excessive, and that the minimum size should be increased to 25 slips, with retrofitting of smaller facilities (10-25 slips) required only if facility expands.	The Management Conference considered this suggestion but favors the widespread availability of pumpouts to boaters, as an alternative to direct discharges to waters of the bay.
NPS-14	190	Recommends revision of the marina pumpout schedule to make use of Clean Vessel Act funding available before the currently planned installation schedule.	The Management Conference supports the current initiatives noted for marina pumpouts, and intends that the published schedule in no way limit early initiatives, for any action.
NPS-14,15	190-191	Recommends <i>The Plan</i> reduce commercial/recreational boat waste discharges.	Actions to address this issue are contained in <i>The Plan</i> .
NPS-14,15	190-191	(VERBAL) How does the plan address the dumping of human waste into the bay system?	Actions NPS-14 and 15 detail the approach.
NPS-14,15	190-191	(VERBAL) States that marinas are educating their people about pumping out their holding tanks	The Management Conference appreciates the efforts of marina operators to address this issue.
NPS-16	192	(VERBAL) how does the Plan address educating marina operators about toxic runoff from boat maintenance operations?	This action will be coordinated with Step 2 of NPS-14.
NPS-16	192	Recommends the program explore different, non-toxic hull coatings for boats.	Hull coatings are effective only because they are toxic to marine fouling organisms. The Management Conference has directed its effort to ensure that coatings do not become introduced into the general environment, particularly as a result of maintenance activities.

POINT SOURCES OF POLLUTION

Action	Page	Summary of Comment	Summary of Response
		Recommends requiring greater compliance for sewage treatment plants, to a tertiary level.	The Management Conference, while appreciative of the need to continue point source regulatory programs, has emphasized more cost-effective means of pollutant reductions.

		States that text gives impression that point sources are no longer a major influence on water/sediment quality; this conflicts with matrix in Appendix A.	Water quality studies indicate that for some parameters, point source loadings are greater than non-point sources, but in general, non-point sources are emphasized in the plan because runoff is not treated nor yet adequately regulated, while point sources have well established regulatory programs which have greatly improved the quality of discharges. Specific information is presented in the program's publication: <i>The State of the Bay, A Characterization of the Galveston Bay Ecosystem</i> .
		Recommends elimination of mixing-zone exemptions in public receiving waters, which result in long-term build-up of highly contaminated sediments around the outfall.	Discharge zones of initial dilution are governed by state-wide regulations of the TNRCC, which are designed to be protective of surface waters in relation to water quality standards. An exception is oil and gas production-related discharges regulated by the Railroad Commission. Produced waters fall in this category and are addressed in <i>The Plan</i> partly for reasons cited.
		(VERBAL) Suggests that constructed wetlands be used for wastewater treatment.	This is a technique applicable to both point and non-point management, and would be supported by the Management Conference for consideration under a number of actions in <i>The Plan</i> .
		Recommends that local heavy industries have zero discharge in 10-15 years, cities somewhat longer.	No revisions made based on this comment.
Intro	200	Recommends the program change goal from "eliminate" wet weather bypasses and overflows to "control" them.	The Management Conference appreciates the fact that "eliminate" conveys an absolute meaning, however this wording appears in a goal statement only, and is consistent with other goals stated in the plan, which are intended to provide an ideal target, against which future progress can be measured.
PS-6	208	States that any discharge can cause harm, however slight; rather than "eliminate harm" from produced waters, use "substantially reduce or eliminate significant harm."	Revisions were made to clarify this action.
PS-6	208	(VERBAL) How many thousands of barrels a day of salt water produced from oil production are going into the bay?	Permitted volume in 1991 was 15.2 million gallons per day, however the actual discharge is less than that amount due to voluntary elimination of discharges, and discharges which do not discharge the full amount allowed.
PS-6	208	States that EPA intends to issue the NPDES Coastal General Permit for produced water discharges (schedule for June, 1994 was not met).	The Management Conference supports this action.

RESEARCH

Action	Page	Summary of Comment	Summary of Response
		Recommends inclusion of a statement to indicate research costs are included in the other action plans, and that universities and other research entities (while not agencies) also play role in research to support the Plan.	Revisions were made to reflect roles of universities and other research entities. Research needs were identified in the other action plans (summarized in Appendix E). Funding is to be sought through existing research funding programs, while the costs of <i>The Plan's</i> research initiative is to be funded throughout the Galveston Bay Program.
RSC-1	216	Recommends inclusion of the State Soil and Water Conservation Board on the Research Coordination Board.	This will be an action of the Galveston Bay Council, however the Management Conference advises inclusion of the SWCB.
RSC-1	216	States that the research board should have public and environmental group representation.	The proposed research board is to be a committee of technical experts appointed under the authority of the Galveston Bay Council. The board could have representatives from the groups suggested if they are qualified scientists.

RSC-1	216	Recommends revision of Step 2 so first priority of Research Coordinating Board is to rank research needs already identified.	Revised as suggested.
RSC-2	217	Recommends <i>The Plan</i> state how research will be reviewed and will provide feedback to management.	Action RSC-3 addresses this issue; the goal is dissemination of findings to the public and bay managers at regular intervals.
RSC-2	217	States that all three steps should begin in 1996 rather than 1997.	Revised as suggested.
RSC-3	218	States that <i>The Plan</i> should emphasize the importance of the State of the Bay process, which should be conducted biennially and involve public.	This is the intent of action RSC-3.

PUBLIC PARTICIPATION AND EDUCATION

Action	Page	Summary of Comment	Summary of Response
		Emphasizes the importance of citizen involvement in the programs being proposed, with a strong role in implementation.	The Management Conference concurs, and intends a continuation of the high level of stakeholder involvement, under the auspices of the Galveston Bay Council.
		(VERBAL) How much citizen involvement will there be during Plan implementation?	See above.
		(VERBAL) Commented that information about Galveston Bay is now on the Internet, urges continued use of this medium for outreach and education.	The Management Conference concurs. Currently, several key publications are being placed on Internet.
		States that <i>The Plan</i> should recommend teams of volunteers to monitor industrial and other point sources.	The Management Conference supports expansion of citizen's monitoring efforts to augment the information available about the bay. The Management Conference does not take a position on whether this should include point source monitoring.
PPE-1	227	States that <i>The Plan</i> implies that only urban citizens will be involved; rural involvement is essential.	Revised to clarify the need for public involvement of people from diverse geographic, socioeconomic, and racial backgrounds.
PPE-1	227	Urges adequate public participation in the development and implementation of any new regulatory programs to implement the CCMP, to ensure the success of the Special Area Management Plan adoption under CZMA requirements.	The Management Conference, in its PPE-1 action, intends for strong public participation to occur. Special Area Management Plan adoption, if it occurs, will happen after The Plan is federally approved, and is not a decision of the Management Conference.
PPE-1	227	Recommends evaluation of public involvement periodically, for example every 5 years.	<i>The Plan</i> currently supports this suggestion, in its recommendation to evaluate and redirect <i>The Plan</i> (if necessary) every five years.
PPE-1	227	Recommends insertion of a new step to "Hire a full-time public participation director to direct the public participation effort." Re-evaluate costs to eliminate any double-counting.	Revised as suggested.
PPE-3	229	States that there is a need for more than one public information officer; need a whole team; why is public involvement and education always poor-boyed to death?	While the Management Committee recommends only one public information officer, that officer will supervise a staff (dependent on full funding of <i>The Plan</i>).
PPE-3	229	(VERBAL) States that there needs to be some sort of publicity addressed.	The Management Conference concurs, and addresses the issue in this action.
PPE-3	229	States that the press should somehow be convinced that bay is newsworthy and vital to Houston; recommends regular (at least weekly) columns to inform public of important monitoring details such as which areas are safe or unsafe for seafood harvest.	The Management Conference supports public information/education efforts of the sort suggested, including periodic publication of a "bay barometer" to succinctly communicate the state of the bay to citizens, and periodic seafood safety advisories (see action PH-1).
PPE-3	229	Recommends insertion of a new step to "Hire a full-time public information officer (PIO) reporting to the Public Participation Director."	Revised as suggested (dependent upon Plan funding).

PPE-4	230	Recommends that <i>The Plan</i> specify that funds other than Section 320 funds be used in potential school education programs.	Unless the Clean Water Act is revised, Section 320 funds will be ineligible for National Estuary Programs to use for implementation of any Plan actions.
PPE-4	230	States that <i>The Plan</i> leaves out any mention of public education and that "the survival of this beautiful natural ecosystem depends on the education of the children."	The Management Conference fully supports educational initiatives under actions PPE-2, 3, and 4.
PPE-4	230	(VERBAL) States that the program should do more education.	Under <i>The Plan</i> , educational efforts will increase. Currently, EPA funding sources available to National Estuary Programs prohibit educational activities for children.
PPE-4	230	(VERBAL) Recommends the program include children's education in <i>The Plan</i> .	See above.
PPE-4	230	Recommend <i>The Plan</i> Keep programs for the children, and initiatives to work with schools, they are interested.	The Management Conference concurs. See action PPE-4.
PPE-5	231	Recommends that <i>The Plan</i> list all possible volunteer projects with time requirements, duties, contacts, etc.	<i>The Plan</i> was revised to include utilization of Bay Day as a means of promoting volunteer participation in bay-related activities.
PPE-5	231	(VERBAL) States that volunteerism needs to be part of <i>The Plan</i> .	The Management Conference concurs and has included this in <i>The Plan</i> .
PPE-5	231	States that in Step 2, <i>The Plan</i> should not bill itself as a volunteer opportunity clearinghouse. Recommends revision to: "Program Office should participate in and support Bay Day as a means of publicizing volunteer opportunities."	Revised as suggested.
PPE-6	232	States that in Step 1, instead of evaluating effectiveness after 2 years, TNRCC should transfer the Citizen Pollution Reporting and Response System from the Regional Office to the Galveston Bay Program Office, and hire a full-time staff person to maintain the hotline.	Revised to include transfer of the Citizen Pollution Reporting and Response System from the Region to the Program Office, and hire sufficient staff to maintain the hotline (dependent upon Plan funding).
PPE-6	232	Notes that the State Soil and Water Conservation Board investigates agricultural and silvicultural NPS complaints.	The Management Conference concurs. Currently, twenty-one agencies have responsibilities for responding to environmental complaints related to the Citizen's Pollution Reporting System. The State Soil and Water Conservation Board is recognized within the system as having responsibility for agricultural and silvicultural non-point source issues.

GALVESTON BAY REGIONAL MONITORING PROGRAM

Note: the Regional Monitoring Program was substantially revised to reflect further development by a Regional Monitoring Work Group convened to advise the Management Conference concerning this initiative. A separate report is also available to provide additional detail.

Summary of Comment	Summary of Response
States that the current version is merely a proposal; further development of the monitoring strategy is needed, to include measures by which improvements will be tracked in each priority problem. States that the CCMP must also include a monitoring plan that identifies specific institutional and programmatic actions, and should identify management decision points based on priority environmental goals and objectives for use in mid-course corrections. Recommends that the program revisit design of the Regional Monitoring Plan vis-a-vis environmental goals and objectives of the action plans.	Further development of this strategy has been completed as suggested, and the section is substantially revised to accommodate these suggestions.
How will monitoring be used as feedback for Plan revision and how will the public be involved?	These issues are now addressed by the Regional Monitoring Strategy.
States that citizen monitoring should be included as an integral part of the Regional Monitoring Plan.	Revised as suggested. Citizen monitoring is part of the strategy.

Recommends development of quality assurance plans to document changes in the bay to verify that planned efforts achieve stated goals.	This has been accomplished in the revised strategy.
Recommends that <i>The Plan</i> specifically reference the Monitoring Strategy produced by the program.	Revised as suggested.
Recommends revised description of Regional Monitoring Program Steering Committee. States that current text suggests Committee would be an independent body from the Galveston Bay Program, with a separate budget and full-time staff. States that the Committee should be a policy/technical advisory arm of the Galveston Bay Program, with budget and staff support as part of the Program.	Revised as suggested.
States that monitoring is weakest part of plan. Proposes the current multi-agency fragmented system be replaced by use of one or a few specialized professional monitoring teams, combined with citizen monitoring. Recommends use of a comprehensive strategy with buy-in from all the stakeholders, with goals of database generation and emergency response to natural and man-made disasters	The strategy was revised to reflect implementation of a unified regional monitoring program with participation by the entities which carry on monitoring activities in the bay. Sampling locations, types of parameters measured, sampling frequencies, quality assurance and control, and other strategy elements have been designed to produce a unified data set appropriate to understanding the state of the bay and the results of Plan implementation.
(VERBAL) States that monitoring is the weakest section of <i>The Plan</i> , recommends using a few specialized professional monitoring teams as well as citizen's monitoring.	See above.
States that the Data and Information Strategy is too restrictive on making information available. Recommends access to data should be improved by posting it on a bulletin board system.	The Management Conference intends that monitoring data and information be freely available, including potential computer availability.
(VERBAL) States that the Data/Information Management Proposal in the Plan is too restrictive.	See above.

THE PUBLIC ROLE IN DRAFTING THE GALVESTON BAY PLAN

Summary of Comment	Summary of Response
(VERBAL) States the process by which this plan has been developed is something that is different than what has been going on in the past.	The Management Conference concurs. The degree of stakeholder involvement in development of <i>The Plan</i> has been excellent.
(VERBAL) States that <i>The Plan</i> has had a lot of public input.	See above.
States that radio advertising for public meetings presented a "doomsday" message, was misleading, did not reflect the facts revealed by the program, and can destroy the fragile trust it has taken so long to build.	These radio spots were canceled. The Management Conference supports use of objective information about the bay, to support well-reasoned management decisions by the bay community.
(VERBAL) States opposition to the radio advertisement campaign.	See above.
(VERBAL) States that Trinity Bay Soil and Water Conservation District was ignored in <i>The Plan</i> development process.	The Trinity Bay Soil and Water Conservation District was represented on the Local Government Advisory Committee by its Chairman. Soil and water conservation districts will also be represented during implementation of <i>The Plan</i> by inclusion of the Texas State Soil and Water Conservation Board (a board of soil and water conservation districts) on the Galveston Bay Council.
Recommends that <i>The Plan</i> include a list of public meeting notifications and a summary of the responses to public comments.	Revised as suggested.

APPENDICES

Summary of Comment	Summary of Response
Recommends addition of an appendix listing Management Conference Membership/Affiliations.	Revised as suggested.

States that agricultural non-point source is ranked too high in the priority problems list.

The Management Conference previously reduced the priority category of the goal: "reduce agricultural NPS pollutant loads" from "high" to "moderate" in Appendix A. *The Plan* has been further revised to include an explicit ranking of individual actions proposed in *The Plan* (Appendix F) based upon Management Conference consensus.

LIST OF COMMENTORS

Pete Alfero (Mayor, Baytown) (VERBAL)
 Association of Consulting Municipal Engineers, Houston Chapter
 Leroy Azer (VERBAL)

Father Kevin Badeaux (VERBAL)
 Rosie Barrera (Port of Houston Authority) (VERBAL)
 Bob Bass (VERBAL)
 Don Bass (Galveston Bay Foundation) (VERBAL)
 Don Bass (GBNEP Citizen's Advisory Steering Committee) (VERBAL)
 Bob Bond (VERBAL)
 Peter Bowman (VERBAL)
 Ronnie Broadus (Commissioner, Brazoria County Precinct One)
 Ronnie Broadus (Commissioner, Brazoria County Precinct One)
 (VERBAL)
 Harry Brown
 Harry Brown (VERBAL)
 Mary Brown (VERBAL)

Glenda Callaway (Galveston Bay Foundation) (VERBAL)
 Don Carroll (City Planner, City of Texas City) (VERBAL)
 Jack Chandler (VERBAL)
 City of Texas City
 City of Dickinson
 City of LaMarque
 City of Liberty
 City of Houston (Mayor's Advisory Committee on Environment)
 City of Houston (Public Works and Engineering Department)
 Robert Cole (Lazy Bend Community Association) (VERBAL)
 George Colles (VERBAL)

Robert Dawson (VERBAL)
 Mary Decker (VERBAL)
 Louis Decker (City of Dickinson) (VERBAL)
 Charles Doyle (Mayor, Texas City)
 Barbara Duryea
 Barbara Duryea (VERBAL)

East Harris County Manufacturer's Association
 Billy Edwards (Trinity Soil Conservation Board) (VERBAL)

Sally Fish (Galveston Bay Foundation) (VERBAL)
 Steve Fitzgerald (VERBAL)
 Phil Flake
 Robin Fontenot (VERBAL)
 George Freda (VERBAL)
 Hans R. Friedli (VERBAL)
 Friendswood Development Company

Galveston Bay Foundation
 Galveston County Health Department
 Mary Gillette (League of Women Voters) (VERBAL)

Mary Gillette (Galveston Bay Foundation) (VERBAL)
 Greater Houston Partnership
 Walter G (?). (VERBAL)

Dianna Harmon (VERBAL)
 Charles Herbeck (Galveston Bay Foundation)
 Charles Herbeck (Galveston Bay Foundation) (VERBAL)
 Houston Audubon Society
 Houston-Galveston Area Council
 Houston Lighting and Power
 Eric Halverson (VERBAL)

Guy Jackson
 Guy Jackson (VERBAL)
 Jess Jackson (Trinity Bay Soil & Water Conservation District)
 Jess Jackson (Trinity Bay Soil & Water Conservation District)
 (VERBAL)
 Jesse H. Jones Park and Nature Center
 Dennis Johnson,
 Robin Jones
 Robin Jones (VERBAL)

Louis Kelly
 Louis Kelly (VERBAL)
 Marvin Krueger (VERBAL)

Bob Lanier, Mayor of Houston
 League of Women Voters of Houston
 Jim Lester
 Jim Lester (VERBAL)

Brandt Mannchen
 Ralph Marquez (City of Texas City)
 Ralph Marquez (City of Texas City) (VERBAL)
 David Marrack
 Stephen McNair (VERBAL)
 Will G. McNiel
 Gerhart Meinecke
 Gerhart Meinecke (VERBAL)
 Bobby Miles (VERBAL)
 Mitchell Energy and Development Corporation
 P. J. Mock
 P. J. Mock (VERBAL)

Barbara Neal (VERBAL)
 Doris Nelson (Galveston Bay Foundation) (VERBAL)
 Jim Neville
 Jim Neville (VERBAL)
 Fred Newton (VERBAL)

Dr. Frank Parker

Dr. Frank Parker (VERBAL)
Sandy Pickett (Councilwoman, City of Liberty) (VERBAL)
Neal Platzer (Galveston Bay Foundation) (VERBAL)
Carl Poldrack
Carl Poldrack (VERBAL)
Port of Houston Authority

Catherine Yeargan
Bill Yenne (City Manager, Lake Jackson)
Bill Yenne (City Manager, Lake Jackson) (VERBAL)

James C. Reitmeyer, Dr. P.H.
James C. Reitmeyer, Dr. P.H. (VERBAL)
Elton Robbins
Ellyn Roof (Galveston Bay Conservation and Preservation
Association) (VERBAL)
Carl Routh
Carl Routh (VERBAL)

Sandra Seale (VERBAL)
Robert Sellers (VERBAL)
Frank Simpson (City of LaMarque) (VERBAL)
Dave Smith (VERBAL)
Sharron Stewart (Galveston Bay Foundation) (VERBAL)
Storm Water Management Joint Task Force
Johnnie Strimple
Johnnie Strimple (VERBAL)

Phyllis Taylor (Clear Lake Marina Operators Association) (VERBAL)
Texas Chemical Council
Texas General Land Office
Texas Historical Commission
Texas Railroad Commission
Texas Sea Grant College Program
Texas State Soil and Water Conservation Board
Lial F. Tischler
David A. Todd
Ed P. Trudell
Ed P. Trudell (VERBAL)
John Tunks (Galveston Bay Foundation) (VERBAL)

U. S. EPA Region 6
U. S. EPA, Office of Wetlands, Oceans, and Watersheds
U. S. EPA, Office of Wetlands, Oceans, and Watersheds, Ocean
Dumping Section
U. S. EPA, Office of Wetlands, Oceans, and Watersheds, Permits
Division
U. S. Department of Commerce, National Oceanic and Atmospheric
Administration, National Marine Fisheries Service
U. S. Department of Commerce, National Oceanic and Atmospheric
Administration, Office of Ocean and Coastal Mangement

Shiela Wheeler (Harris County Pollution Control) (VERBAL)
Dick White (VERBAL)
Melanie Wiggins
Melanie Wiggins (VERBAL)
Floyd Wilcox (Trinity Bay Conservation District) (VERBAL)
Floyd Williams (VERBAL)
Page Williams (Houston Audubon Society) (VERBAL)
John Wilson (VERBAL)
Peter H. Wilson
Peter H. Wilson (VERBAL)
Jerry Wooster (Saltwater Anglers of Texas)
Jerry Wooster (Saltwater Anglers of Texas) (VERBAL)