
**APPENDIX 1:
FEDERAL STRUCTURE FOR ENVIRONMENTAL PROTECTION
OF GALVESTON BAY**

This appendix describes the federal structure for environmental protection of Galveston Bay. It begins with a review of about 20 major federal laws and a few important Executive Orders. Part 2 of the appendix describes the federal agencies involved in environmental protection. Full citations to the U.S. Code for each law are provided in the bibliography. Readers are also referred to the electronic information system, which includes full texts of relevant laws and associated regulations. This appendix does not use the boldface and underlining keys to cross-referencing that were employed in the main text.

FEDERAL LEGISLATION

Following is a listing of major federal laws that have some effect on the environment of Galveston Bay. They are arranged in alphabetical order except when an act amends another; in that case they are treated together and only the name of the amending act appears in alphabetical order. The name of the implementing agency is provided in bold letters the first time it is mentioned; descriptions of the agencies are provided in the second part of the appendix. Following the list of statutes is a list of Executive Orders of importance to the environment of Galveston Bay. These Executive Orders were issued by presidents to guide agencies in implementing statutes.

Clean Air Act

Although initially states were primarily responsible for air pollution control, the federal role gradually increased and was consolidated by laws passed in 1963, 1965, and 1967. The Clean Air Act was passed in 1970 and significantly amended in 1977; then, despite a schedule calling for regular review, it was not amended again until 1990. The general purpose of the act was to limit pollution of the air by "conventional pollutants"—primarily sulfur and nitrogen compounds resulting from burning of fuels—whose presence in the air affected human health. The law established a set of air quality goals that depended upon the amount of air pollution and level of manufacturing in the area. Many areas failed to meet the goals within the required time.

The 1990 amendments classify areas of nonattainment of the National Ambient Air Quality Standards (NAAQS) according to the extent to which the standard is exceeded. The new legislation also tightens emission standards of automobiles by 35 percent for hydrocarbons and 60 percent for nitrogen oxides, and focuses on cleaner gasolines for cars in the dirtiest cities. Emissions of sulfur dioxides are required to be about 10 million tons less than in 1980

and nitrous oxides are to be reduced as well. A cap is placed on future emissions and clean coal technology is encouraged. The legislation establishes a program of technology-based standards for EPA-listed sources of 189 hazardous air pollutants and addresses the prevention of sudden, catastrophic releases of air toxics and establishes a national policy of ending the production and use of chloroflourocarbons and carbon tetrachloride by the year 2000 and provides for the recovery, recycling and disposal of ozone-depleting substances. Permits and fees will be required under a state-run program for the operation of many sources of air pollutants. New enforcement procedures are also included with the increase of certain penalties.

Clean Water Act

(see Federal Water Pollution Control Act)

Coastal Barrier Resources Act

The Coastal Barrier Resources Act of 1982 is intended to limit federal financial assistance that would have encouraged development in undeveloped coastal barrier areas and generally to prevent or slow development in those areas. The act requires the Department of the Interior to develop a series of maps of undeveloped coastal barriers along the Atlantic and Gulf Coasts and establishes these areas as the Coastal Barrier Resource System. The state coastal zone management agency (established under the Coastal Zone Management Act) or, in the case of Texas, the governor, is directed to prepare a report and coordinate federal and state activities. The act does not prohibit development, only reduces federal subsidies, and applies only to undeveloped coastal barriers. In 1988, the Department of the Interior identified 790,000 acres of coastal barriers that qualified as undeveloped and were not already included under the purview of the law. During the 1990 reauthorization of the act, Congress protected some of this area, primarily in the Florida Kays and the Texas Boca Chica wetlands.

Coastal Zone Management Act

The Coastal Zone Management Act of 1972 authorized a national program to limit unwise use of coastal land and water resources and to protect them. The act provides funds, policy guidance, and technical assistance to states and territorial governments to help establish and maintain coastal management plans that meet federal regulations. In the 1980 amendments to the act, Congress added more goals: to provide for management of coastal development and to minimize loss of life and property caused by improper development in flood prone areas, areas of subsidence and salt water intrusion and by destruction of natural protective features such as beaches, dunes, wetlands and barrier islands. The 1990 reauthorization of the law added management of nonpoint source pollution to the goals. Under the law, states receive assistance from the National Oceanic and Atmospheric Administration (NOAA) to

develop plans for managing coastal development. If the plan meets national standards, the coastal zone management office approves the state plan and provides some funding. Once a state plan is adopted, all federal activities in the plan area will be consistent with the plan. Of the 35 eligible states, 28 have approved state plans. Texas is the only Gulf state without a plan.

Comprehensive Environmental Response, Compensation and Liability Act of 1980

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), otherwise known as the Superfund Act, established a federal program to clean up the nation's most dangerous hazardous waste and chemical contamination sites and respond to spills and other releases or threatened releases as well as leaking hazardous waste dumps. The law gives the federal government responsibility for the program; however, most of the responsibility is delegated to EPA by the President. The federal government may order that hazardous substances be removed from a site or that the site be "remediated" or improved to halt or prevent any release of the substances off the site or into ground water.

CERCLA requires development of a National Priorities List of sites prioritized according to a Hazard Ranking System, with the highest priority assigned to the sites contaminating drinking water supplies. The law sets up a timetable for completion of sites on the National Priorities List, although recent reports from the General Accounting Office suggest that this timetable is not being met.

CERCLA requires public participation in the selection of response actions. Before acting, the federal or state government must prepare a remedial action plan which provides for public notice and comment, a meeting near the site, response to public comment and a statement of basis and purpose. The state must contribute 10 percent of the clean up costs and 50 percent if the state owns the site. The state must pay 100 percent of the costs to restore water quality. The Superfund can be used for all federal costs of response and clean up if the responsible party cannot be found or amount exceeds liability limits.

CERCLA establishes broad liability for responsible parties. It also requires certain offshore vessels and facilities to demonstrate financial responsibility or face denial of entry to U.S. ports or detention.

Because of the vast number of petrochemical plants formerly and presently located on or near Galveston Bay, there are many hazardous waste disposal sites in the estuary as well as in the catchment areas for streams and rivers feeding the bay.

Superfund Amendments and Reauthorization Act of 1986

The Superfund Amendments and Reauthorization Act of 1986 (SARA) was a response to problems that developed in implementing CERCLA. It provided for a new funding mechanism, the \$8.5 billion Hazardous Substances Superfund, because the previous fund was insufficient to handle the number of sites. It also established new rules for determining the responsible party or parties and for obtaining payment or partial payment from them.

Title III of SARA, also known as the Emergency Planning and Community Right-to Know Act (EPCRA) created state and local bodies responsible for ensuring the capability to respond to emergencies involving hazardous chemicals. So that local agencies and citizens will know what hazardous substances are present in their communities, EPCRA also requires companies that store, manufacture, or use any of a list of hundreds of hazardous chemicals to report this to the Local Emergency Planning Committee (LEPC). Another reporting requirement that affects only manufacturers requires them to report to EPA their annual emissions of any of a list of about 400 hazardous chemicals. The information on these releases is made available to the public by EPA in an electronic database. The availability of this information is intended to assist in monitoring and cleanup of bodies of water, land, and air that receive these releases of hazardous materials.

Both the emergency response and public information provisions of EPCRA have important implications for protection of Galveston Bay. The ability of local governments to respond more effectively to spills or other accidents involving hazardous materials should limit the amount of materials reaching the bay. The availability of the storage and emissions data should allow local, state, and federal agencies to work with facilities to reduce emissions in the bay area.

Endangered Species Act

The Endangered Species Act (ESA) provides for the conservation of threatened and endangered species and the conservation of the ecosystems upon which such species depend. Section 4 of the ESA requires the listing of endangered or threatened species, and a designation of the critical habitat of the listed species. Section 7 of the Act requires federal agencies to ensure that any action or proposed action funded, authorized, or carried out by the agency will not jeopardize the continued existence of a listed species or the critical habitat of such species. This assurance is to be accomplished through consultation with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS). Section 7, therefore, gives the FWS and the NMFS broad authority to review federal permits and Environmental Impact Statements which may potentially affect endangered or threatened species. Section 10 of the Act authorizes a permitting process for non-federal projects which may affect listed species and their habitats. The ESA has been a potent tool for protecting entire habitats or ecosystems even if only one species is endangered.

Federal Insecticide, Fungicide and Rodenticide Act

The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) was originally enacted in 1947 and has since been amended several times. Originally, FIFRA was a pesticide labeling law, but amendments passed in 1972 required the registration of all pesticides before allowing them to be sold to the public. In order to approve registration, EPA must find that the pesticide will not adversely affect the environment or human health in comparison to the benefits of its use. In addition, FIFRA also grants EPA the authority to declare as a pest any plant or animal which is injurious to human health or the environment.

The states are given primary responsibility for enforcement of FIFRA if the state enters into a cooperative agreement with EPA for undertaking the responsibility; otherwise, EPA has the primary enforcement responsibility. States can also assume responsibility for certification of pesticide applicators. The Texas Department of Agriculture has received delegated authority from EPA to administer FIFRA.

No pesticide can be sold or distributed unless it has been registered with EPA. An applicant must file a statement with EPA that includes the name of the pesticide and the labeling, a statement of all claims made for the pesticide and any instructions, the chemical formula of the pesticide, and the data from tests concerning environmental and health effects. These test data also include requirements for residue chemistry, environmental fate, toxicology, reentry protection, spray drift, and other factors. In order to register a pesticide, EPA must confirm that the pesticide will perform its function without unreasonable risks to human health and the environment by weighing the environmental, economic and social benefits and costs and that the labeling complies with the act. If the registration is denied, the applicant has 30 days to correct the conditions that were the basis for the denial or may seek a hearing with EPA.

As part of the registration process, EPA determines whether the pesticide should be classified for general or restricted use. EPA will classify a pesticide for restricted use if it determines that the use of the pesticide may cause adverse effects on the environment, applicators and other people. When a pesticide is classified for restricted use, it can only be applied by, or under the direct supervision of, an EPA certified applicator if it is restricted due to harm to the applicator. If the pesticide is classified for restricted use due to the adverse effects on the environment, the pesticide may be subject to additional regulations.

Although of limited importance to Galveston Bay, FIFRA is the basic law concerning pesticides, runoff of which is potentially an important cause of nonpoint source pollution in all bodies of water crossing agricultural and urban areas. EPA is authorized to ensure that the labeled instructions for use include mechanisms for minimizing runoff as well as limiting effects on wildlife and beneficial insects such as bees. For example, instructions may forbid application of a pesticide during that portion of the crop's growing period during which it is typically watered heavily. However, the widely diffused use of pesticides makes enforcement of the labelled instructions very difficult and these precautions are not always

honored.

A new proposal would require manufacturers to include generic endangered species warnings on the labels of certain pesticides that are frequently used in areas occupied by threatened or endangered species.

Federal Water Pollution Control Act

The Federal Water Pollution Control Act, enacted in 1972 and subsequently amended, represents the central federal legislation governing the pollution of the nation's waters. The law, commonly known as the Clean Water Act (CWA), consists of two central parts: regulatory provisions concerning water pollution and authorization of federal assistance for the construction of municipal wastewater treatment facilities.

The National Pollutant Discharge Elimination System (NPDES) program, administered by the Environmental Protection Agency (EPA), constitutes the core of the regulatory provisions of the act. States may apply to EPA for permission to administer their own NPDES programs, and delegation of such responsibilities may occur after a state demonstrates the ability to carry out the provisions of the program. The Texas Water Commission's application to administer the NPDES program is currently under EPA review. Until it is approved, applicants must obtain two permits.

The Clean Water Act prohibits point source discharges of any pollutant into navigable waters unless they are expressly authorized by an NPDES permit. Under the NPDES program, industrial and municipal discharges are required to meet both technology-based effluent limitations and receiving water quality standards. The technology-based effluent standards, issued by the EPA, prescribe minimum performance standards to be obtained by industrial discharges. The standards are national in scope and are broken down by class or type of industry. These standards are based on levels obtainable through the use of pollution control technology such as Best Available Technology (BAT), and Best Conventional Pollutant Control Technology (BCT). BCT limitations concern conventional pollutants such as suspended solids, oxygen-demanding materials and bacteria. BAT limitations focus on toxic and nonconventional pollutants. EPA has also issued water quality criteria for over 115 pollutants, including 65 toxic pollutants. Municipal wastewater discharges must meet secondary treatment effluent standards developed by the EPA. These technology-based effluent standards are applicable regardless of the quality of the receiving water.

Section 303 of the Act requires states to establish their own receiving water quality standards, subject to EPA approval. These state standards must be as stringent as EPA requirements at a minimum, but they may exceed such requirements. Under section 303, state water quality standards must be reviewed every three years. The Texas Water Commission completed this review process by adopting revisions to the standards on June

12, 1991; in September, EPA approved the new standards. Section 303 also requires states to identify waters that do not or are not expected to meet water quality standards even after required controls are in place. These waters are considered "quality-limited"; the state must establish Total Maximum Daily Loads (TMDLs) for them and obtain EPA approval based on documentation. Regional offices of EPA approve the state TMDL process, the list of waters, and specific TMDLs for those water. In addition, regional offices provide technical assistance to the states and attempt to minimize duplication of data systems. Section 305 requires a biennial Water Quality Inventory Report.

Section 401 of the Clean Water Act requires an applicant for a federal license or permit authorizing an activity which may result in the discharge of a pollutant into waters of the United States to obtain state certification that the proposed activity will not violate the applicable water quality standards. This section provides for state review of all Section 404 permits. The Texas Water Commission is responsible for this certification.

Section 403 of the Act requires EPA to establish guidelines for permitted NPDES discharges into the territorial sea, the waters of the contiguous zone, or the ocean. Such guidelines include a determination of the effects of discharges on human health or welfare (including fish, shellfish, wildlife, plankton, shorelines, and beaches); marine life; and the effect of discharges on esthetic, recreation, and economic values. NPDES permits must be in accordance with these guidelines and may not be issued if there is insufficient information concerning the permit.

Section 404 of the Clean Water Act establishes a permit program jointly administered by the EPA and the Army Corps of Engineers for the disposal of dredge and fill material in the waters of the United States. Section 404(a) of the Act authorizes the Corps to issue permits for the disposal of dredge and fill materials under guidelines developed by the EPA under Section 404(b)(1) of the Act. The Act further gives EPA a veto power over the issuance of permits for such activities under Section 404(c). Under this provision, the EPA may block a permit for disposal at a specific site if a determination is made that a proposed activity would have "an unacceptable adverse affect on municipal water supplies, shellfish beds, and fishery areas (including spawning and breeding areas), wildlife, or recreational areas." In practice, however, this veto power is rarely utilized. Section 404(e) authorizes the issuance of general permits for discharges on a state, regional, or national basis involving actions determined by the Corps to be similar in nature and which have minimal individual or cumulative adverse environmental impacts. If an activity falls under a general permit classification, an individual permit is not required. Section 404(f) exempts a number of activities from the permit requirement. Such activities include, but are not limited to, normal farming, silviculture, and ranching. Federal projects authorized by Congress are exempt from permit requirements if the effects of such projects are documented in an Environmental Impact Statement pursuant to the National Environmental Policy Act of 1969.

In addition, the CWA contained many provisions for funding and assisting states to meet

their statutory obligations. Section 205 provided for a Construction Grants program, funding water quality management planning, nonpoint source management, water quality in bays and estuaries due to combined storm water and sanitary sewer overflows, and areawide wastewater management. These provisions formed the basis for present-day programs of assistance to states, discussed in the following several paragraphs.

Water Quality Act of 1987

The Water Quality Act (WQA) of 1987 represents the most significant of the three amendments to the Federal Water Pollution Control Act (Clean Water Act). The major provisions of the act included a new framework to manage storm water discharges, requirements for states to develop programs to control nonpoint source pollution, major revisions in the funding structure for federal wastewater treatment assistance, requirements for state review of section 404 dredge and fill discharge permits, and a management program for nationally significant estuaries.

Section 405 of the WQA establishes a new management structure for permitting storm water discharges through the addition of Section 402(p) to the Clean Water Act. This provision requires NPDES permits for three categories of storm water discharges: industrial and large municipal systems (serving populations in excess of 250,000), medium municipal systems (serving populations between 250,000 and 100,000) and small municipal systems (serving populations under 100,000). The provisions of Section 405 are examined in greater detail in the discussion of nonpoint source pollution.

The WQA added Section 319 to the Clean Water Act which required states to develop and implement plans to control nonpoint source pollution. Section 319 requires states to identify those bodies of water not expected to meet water quality standards due to nonpoint source pollution and to develop plans to reduce such pollution. It also authorizes funds for implementation.

The WQA extended the traditional Title II grant program for the construction of wastewater treatment facilities through Fiscal Year 1990. Under Title II provisions, federal funding could cover as much as 55 percent of project costs. The WQA also established a program to capitalize State Revolving Loan Funds (SRF) as a mechanism to phase-out federal funding for the construction of such facilities. Under the SRF program, states must deposit at least 20 percent of the federal capitalization grant into the fund. Monies from the fund may then be loaned to communities to finance the construction of wastewater facilities. Unlike the Title II program, however, recipients must pay back loans to the SRF fund which will serve as a continuing source of funding for future projects in the state. Federal capitalization grants are authorized through Fiscal Year 1994, when financing for wastewater treatment facilities is likely to become solely a state responsibility.

Section 320 of the Act established the National Estuary Program, named Galveston Bay an

Estuary of National Significance, and authorized appropriations of up to \$12 million annually for the National Estuary Program.

Section 401 of the WQA provides for state agency certification of Section 404 permits for the discharge of dredge and fill materials. Applicants seeking discharge permits must obtain certification from the Texas Water Commission that the proposed activity will not violate state water quality standards. The permit process for dredge and fill discharges is described more fully in the main body of the text in the section on dredge and fill. Section 401 also provides for state certification of federally issued NPDES permits.

It is obvious that the water acts have a very great impact on environmental protection in Galveston Bay. At the center of a heavily populated and heavily industrialized area, and fed by waters that pass through both urban and rural areas, the bay is affected by both nonpoint and point source pollution, the latter from both industrial facilities and municipal water treatment facilities. The dredge and fill provisions are also important to the bay.

Oil Pollution Act of 1990

Section 311 of the Clean Water Act, which provided for a strategy for cleanup of and compensation for damages caused by the discharge of oil, was amended by the Oil Pollution Act of 1990. This act addressed the problems encountered with the Exxon Valdez oil spill by expanding the existing Clean Water Act liability scheme and adding new provisions for oil spill prevention and strengthening spill response capabilities. The act creates a \$1 billion Oil Spill and Liabilities Trust Fund and consolidates federal oil spill laws into a unified liability and compensation program. The law increases civil penalties from \$5,000 to \$10,000; requires the responsible party to pay for the cleanup of spills and to compensate parties who were adversely affected; and expands the costs which can be recovered from the responsible party including damage to natural resources, loss of profits and earning capabilities and costs for providing increased public services. The responsible party is obligated to respond immediately to potential or actual discharges. All tank vessels and facilities including U.S. and foreign vessels operating in U.S. waters and both offshore and onshore facilities will be required to have approved Oil Spill Response Plans designed to allow the owner or operator to immediately and easily respond to an oil spill. Section 4115 requires a double hull to be fitted on a tank vessel carrying oil as cargo or cargo residue which is constructed or undergoes a major conversion after June 30, 1991 with a phase in period commencing in 1995.

The Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act stipulates that any federal agency which proposes to control or modify any water body must first consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service as appropriate, and with the state wildlife

management agency concerning the effects of the proposed action. This act, therefore, gives the FWS and the NMFS permit review authority which is not strictly limited to endangered or threatened species. The act gives the Texas Parks and Wildlife Department review authority for permitted activities such as the disposal of dredge and fill materials under Section 404 of the Clean Water Act.

Food, Agriculture, Conservation, and Trade Act of 1990
(see Food Security Act of 1985)

Food Security Act of 1985

The Food Security Act of 1985 (FSA) contains "sodbuster" and "swampbuster" provisions encouraging the removal of highly erodible land and wetlands from agricultural production. Under the "sodbuster" provisions, agricultural producers bringing highly erodible land into cultivation after December 23, 1985 are ineligible for federal benefits under Department of Agriculture programs. Agricultural producers may bring highly erodible lands into production without disqualification from such benefit programs if they implement a conservation plan approved by the Soil Conservation Service and the local conservation district. The "swampbuster" provisions of the act are similar in that agricultural producers are discouraged from bringing wetlands into cultivation after December 23, 1985, under the threat of disqualification from federal subsidies.

These two provisions provide disincentives rather than direct land use regulations. Under the act, a violation and subsequent disqualification results only when a commodity crop has been planted on a converted wetland. The law did not expressly prohibit the drainage of wetlands. Thus, the possibility existed that farmers would drain wetlands and only plant during years of high crop prices, minimizing the necessity of federal subsidies. The law contains a Farm Debt Restructure provision which enables landowners to set aside wetlands on private lands for natural resource management. Under this provision, such land must be set aside for at least 50 years to qualify the landowner for debt relief. The FSA also established a program whereby interested parties (including states) may obtain easements on wetlands prior to the resale of lands contained on the Farmers Home Administration (FmHA) property inventory. Many of the provisions of the FSA were modified by the 1990 farm bill described in the following paragraph.

Food, Agriculture, Conservation, and Trade Act of 1990

The Food, Agriculture, Conservation, and Trade Act of 1990, known as the 1990 Farm Bill, restructured many of the key elements of the "swampbuster" provisions of the 1985 Food Security Act. First, the Farm Bill contains a "minimal effects" provision which will exempt agricultural producers from subsidy disqualifications if their activities in wetlands have a

minimal effect on wetland values (including hydrological and biological values and the value of the wetland to wildlife and waterfowl). The loopholes concerning planting in wetlands in years of high crop prices were closed. Under the 1990 Farm Bill, disqualification from the subsidy program occurs when a farmer drains a wetland to make agricultural production possible. Under this new provision, the actual planting of a commodity crop is not a violation requirement; the mere preparation of a wetland for such a crop constitutes a violation. The Farm Bill also restricts the extent of the easement program on Farmers Home Administration (FmHA) inventory list. The percentage of a property's (prior-converted wetland or frequently cropped wetland) total acreage for which an easement may be obtained prior to resale may not exceed 20 percent. The U.S. Department of Agriculture may further restrict the size of the easement if the property is not marketable due to the extent of the easement. Although this provision may actually inhibit wetland protection and restoration, Congress attempted to right the imbalance by establishing a voluntary agricultural wetlands reserve program. Under this provision, the Secretary of Agriculture may protect up to one million acres of farmed wetlands in the reserve by 1995. Farmers will be offered federal payments to place wetlands into permanent or 30-year easements restricting land use. Finally, the Farm Bill enables the conversion of farmed wetlands if the value of such land is offset by the restoration of a previously converted wetland in the same general area.

The Galveston Bay estuary depends heavily on the health of associated wetlands, which are under constant pressure for development. These farm bills provide some measure of protection from agricultural pressure on the wetlands. The Coastal Zone Management Act provides some additional protection for wetlands in affected states, of which Texas is not one.

[Magnuson] Fishery Conservation and Management Act

The Magnuson Fishery Conservation and Management Act requires that immediate action be taken to conserve and manage fishery resources found off the coasts of the United States and the anadromous species and the continental shelf fishery resources of the United States. It involves the preparation and implementation, in accordance with national standards, of fishery management plans which will achieve and maintain, on a continuing basis, the optimum yield from each fishery. These plans may be prepared by the Secretary of the Commerce or the Gulf of Mexico Fishery Management Council. The fishery management plans also include information regarding the significance of habitat to the fishery and assessment of the effects which changes to that habitat may have on the fishery.

Marine Mammal Protection Act

The Marine Mammal Protection Act recognizes that certain species and population stocks of marine mammals are, or may be, in danger of extinction or depletion as a result of man's

activities. It further states that such species and population stocks should not be permitted by the National Marine Fisheries Service to diminish beyond the point at which they cease to be a significant functioning element in the ecosystem of which they are a part or to diminish below their optimum sustainable populations. The Secretary of Commerce may issue permits for the taking or importation of any marine mammal according to regulations established by the Secretary.

Marine Plastic Pollution Research and Control Act

The Marine Plastic Pollution Research and Control Act controls domestic marine plastics pollution. It amends the 1980 Act to Prevent Pollution from Ships. The ban on plastics disposal applies to any nation polluting the waters of the 200 mile Exclusive Economic Zone over which the U.S. has claimed jurisdiction. Government vessels are excluded because the U.S. Navy asserts that it is unable to comply. The law has specific provisions for ship inspections, civil penalties and enforcement. It also requires refuse record books and ship waste management plans for certain ships as well as the posting of placards.

The Act requires the Secretary of Transportation to determine and ensure that there are adequate shoreside waste reception facilities and deny entry to ships without adequate waste facilities. The Act also provides for reports and studies. The Department of Transportation must report annually on compliance, and federal agencies operating ships in noncompliance with the act must have reported by December 1990 on the possibilities of achieving compliance. EPA must study the reduction of plastic pollution, identify improper disposal techniques, comment on the adequacy of the law, assess the impacts of plastic on waste streams, and develop recommendations on incentives for new uses of recycled plastics. EPA must also conduct a public outreach program and establish citizen patrols in cooperation with NOAA. Title IV of the act, entitled The Driftnet Impact Monitoring Assessment and Control Act addresses the problem of drift gillnets.

The Migratory Bird Hunting Act and The Migratory Bird Conservation Stamp Act

The Migratory Bird Hunting Act and the Migratory Bird Conservation Stamp Act both require waterfowl hunters to purchase "duck stamps" as a permit. Proceeds from sale of the stamps, which are also available for purchase by non-hunters at post offices and wildlife refuges, are used to purchase land for the National Wildlife Refuge System.

The National Environmental Policy Act of 1969 (NEPA)

The National Environmental Policy Act of 1969 declares a national policy encouraging a productive and enjoyable harmony between man and the environment. Section 102(c) of

NEPA contains the most significant provisions of the act, which require documentation of the environmental impacts of major federal actions and permitted activities through an Environmental Impact Statement (EIS).

Title II created the President's Council on Environmental Quality, which is responsible for appraising federal actions in light of the provisions of NEPA. The CEQ issued regulations (40 CFR 1500-1508) that require an Environmental Assessment (EA) to be conducted for all federally funded or permitted activities. An EA must briefly provide sufficient evidence that an EIS is required or must detail a Finding of No Significant Impact (FNSI). An agency is not required to develop an EIS upon reaching a FNSI.

If an EIS is found to be necessary, NEPA mandates that an EIS contain the environmental impact of the proposed action, unavoidable environmental effects entailed in the action should it be implemented, alternatives to the proposed action, an evaluation of the relationship between the short and long-term uses of the environment in regard to its productivity, and an evaluation of any irreversible and irretrievable commitments of resources. The regulations for implementing the provisions of NEPA also require each agency to develop procedures outlining activities normally requiring an EIS or ES. The Corps of Engineers, for example, has a guidance document (ER 200-2-2, 4 March 1988) outlining activities normally requiring the respective statements. Under this guidance document, most Corps permitting activities only require an Environmental Assessment.

National Flood Insurance Program

The National Flood Insurance Program (NFIP) was enacted in 1968 to limit federal flood control and disaster relief expenditures. The program was designed to limit development in the floodplain and provide reasonably priced federal insurance for development in flood hazard areas based on the principle that occupants should pay an equitable share of the cost of the use of the floodplain. The 101st Congress reauthorized the program through 1995 and also enacted a provision that directs the COE to prepare a report for Congress on the advisability of not participating in beach stabilization projects unless the state develops a beach front management plan. Policies are sold directly through a contractor or through private insurance agencies who write policies similar to the federal policies.

The program has two principal components--the emergency phase and the regular phase. Under the emergency phase, the federal government subsidizes the sale of flood insurance to a community after the community's application has been accepted, but usually before the community has completed two mapping or risk studies. The first mapping study, the Flood Hazard Boundary Map, outlines Special Flood Hazard areas based upon the land area having at least a 1 percent chance of being inundated in a given year. It also must delineate areas of special flood-related erosion hazards and areas of special mudslide hazards. The second mapping study, the Flood Insurance Rate Map, depicts the elevation and width of the 100 year floodplain, designates risk zones within the area and is used to determine

floodplain management and insurance rating requirements for new construction. The study also relates the flood risk to the estimated actuarial premium rates required to provide flood insurance on new construction. Both of the studies are used to determine properties which are subject to limited mandatory insurance purchase requirements of the NFIP.

Under the regular phase, the mapping studies are adopted and provide the basis for more detailed regulation of construction in flood prone areas and for determining actuarial rates. To participate, a community must meet minimum floodplain management requirements which include:

- permits for new construction;
- review of subdivision proposals to assure minimal flood damage;
- anchoring and flood-proofing structures in known flood-prone areas;
- safeguarding new water and sewage system and utility lines from flooding; and
- enforcing risk zones, base flood elevations and floodway requirements.

If these requirements are met, then the property owners in the community are eligible for subsidized basic coverage in the emergency phase and a higher level of coverage either subsidized or at actuarial rates in the regular phase. They also may receive federal insured or guaranteed mortgage loans and any flood related federal disaster assistance authorized in special flood hazard areas.

The program has been amended several times. Amendments have included provisions to boost program participation, limit coverage for new construction on coastal barriers, purchase real property and flood damaged structures and relocate or demolish erosion threatened structures. The Flood Disaster Protection Act of 1973 requires the purchase of flood insurance as a condition of receiving any form of federal or federally related financial assistance. However, many property owners purchase flood insurance for the first year of their mortgage, then allow the policy to lapse.

Section 1362 provides some relief for damaged coastal structures. The 1306(c) program, known as the Upton/Jones Amendment, allows funds from the flood insurance program to be used for demolition/rebuilding or relocation of erosion-threatened structures. However, critics feel that the amendment encourages demolition and fails to take into account the need for higher premiums for the additional risks from erosion-threatened structures.

Recent legislation has addressed these concerns. H.R. 1236, which passed the House of Representatives May 1, 1991, would revise the NFIP by creating a new coastal erosion program to restrict development in special erosion zones and increase compliance with mandatory purchase requirements. The legislation would repeal the 1306(c) and 1362 programs and incorporate their demolition/relocation provisions in a revised form, providing more incentive for relocation. The legislation would require review of existing federal loans for compliance with the mandatory purchase requirement. The legislation would also establish a National Flood Mitigation Fund to Provide mitigation incentives to encourage

construction and relocation away from erosion prone zones. H.R. 1050, the National Flood Insurance Compliance, Mitigation, and Erosion Management Act of 1991, and H.R. 1236, the National Flood Insurance, Mitigation, and Erosion Management Act of 1991, which also attempt to address these concerns, have been referred to the Committee on Banking, Finance and Urban Affairs.

Oil Pollution Act of 1990

Third entry under Federal Water Pollution Control Act.

Resource Conservation and Recovery Act

First enacted in 1976, the Resource Conservation and Recovery Act (RCRA) revised the Solid Waste Disposal Act of 1965 and created a systematic program for solid and hazardous waste control. RCRA defines solid waste as any garbage, refuse or sludge from a treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities. Waste is hazardous if it can cause or contribute to death or serious illness or the waste poses a substantial or potential danger to human health if mismanaged. RCRA does not cover discharges requiring NPDES permits under the Federal Water Pollution Control Act or nuclear wastes regulated pursuant of the Atomic Energy Act of 1954 (Wolf, p. 183-188). Amendments created regulatory programs for underground storage tanks.

Subtitle C directs EPA to establish a "cradle to grave" system of regulation for hazardous wastes by identifying hazardous wastes to be subject to regulation, creating a tracking system to monitor the path of hazardous wastes from the generator to the disposal site, developing standards for hazardous waste transportation and for owners and operators of hazardous waste facilities including a permit program. Transportation regulations are made with the cooperation of the Department of Transportation. Ninety days after the promulgation of a regulation identifying a hazardous waste, all generators, owners and operators of treatment or storage facilities or transportation operations must file with the EPA or approved state program a description of the location and description of activities of the certain hazardous waste. The amendments of 1984 extended the act to small quantity generators creating hazardous wastes of 100 to 1000 kilograms per month.

Subtitle D assigns to the states responsibility for nonhazardous solid waste regulation according to guidelines developed by EPA for solid waste land disposal operations and for the development of state solid waste plans. The standards identify sites known as open dumps which do not satisfy EPA requirements for sanitary landfills and require them to be closed. All nonhazardous solid waste must either be used for resource recovery or disposed in a secure sanitary landfill where there is no reasonable probability of adverse effects on human health or the environment.

Each state may develop a permit or review program to ensure that sanitary landfills meet EPA requirements. If the state fails to do this, EPA may enforce the requirements. With federal financial and technical assistance and cooperation, the states are to develop a comprehensive solid waste management plan to be approved by EPA.

The amendments of 1984 required EPA to establish a regulatory program for petroleum storage tanks more than ten percent underground. The Superfund amendments and the Reauthorization Act of 1986 gave more authority to EPA and state programs to clean up these underground storage tanks financed by a \$500 million Leaking Underground Storage Tank Fund established through a one cent gasoline tax.

Rivers and Harbors Act of 1899

The Rivers and Harbors Act, enacted in 1899, gives the U.S. Army Corps of Engineers regulatory powers over any type of work in the navigable waters of the United States. Section 9 of the act prohibits the construction of any dam or dike across any navigable water in the U.S. without Congressional consent and Corps approval. Section 10 of the Act authorizes the Corps to issue permits for activities which may affect the "navigable capacity of any of the waters of the United States." Such activities include excavation and filling in navigable waters, and the construction of structures such as wharves, piers, and jetties. The wide scope of this definition brings virtually every project on Galveston Bay under its purview.

Superfund Amendments and Reauthorization Act of 1986

(see Comprehensive Environmental Response, Compensation, and Liability Act of 1980)

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) authorizes EPA to regulate chemical substances that present a hazard to human health or the environment. It is intended to control chemical hazards at the source or discharge. The act gives EPA broad regulatory powers to control virtually all chemical substances, including those manufactured in the United States and imported chemicals. Section 4 of the act provides for testing of chemical substances if the possibility of manufacture, processing, distribution or disposal may pose an unreasonable risk to human health or the environment or if there may be production of the chemical in substantial quantities that may enter the environment and may be significant exposure to humans. Section 5 requires that manufacturers and processors provide advance notice of significant new use of new chemical substances. EPA may regulate the manufacture, processing, distribution and disposal of chemical substances and mixtures to protect humans and the environment. The act instructed EPA to establish rules governing the production and disposal of polychlorinated biphenyls (PCB's), to promulgate regulations

for reports and record keeping by manufacturers and processors of commercial chemicals, and to compile a list of all chemicals manufactured or processed in the United States. Each year EPA is required to submit to the President and Congress a comprehensive report on the administration of TSCA including a list of chemical testing rules, the number of premarket notices received, a list of hazardous chemical rules, a list of judicial actions under TSCA, a summary of the major problems of administration, and any recommendations. TSCA may be used to limit production of new plastics if it is found that they endanger the health of the environment because they are nondegradable.

Water Bank Act of 1970

The Water Bank Act of 1970 gives authority to the Agriculture Stabilization and Conservation Service, the Soil Conservation Service and local agricultural producers to develop a plan to maintain in their natural character wetlands designated by the Agricultural Stabilization and Conservation Service. The ASCS, the local soil and water conservation district, and the land owner set standards of practice which are enforceable by the ASCS.

Water Quality Act of 1987

(See Federal Water Pollution Control Act)

EXECUTIVE ORDERS

Executive Order 11514, as amended by Executive Order 11991

Executive Order 11514 (1977) directs federal agencies to ensure that their activities are consistent with enhancing the quality of the environment. It directed federal agencies to develop procedures to enhance public disclosures of federal plans and programs entailing environmental impacts. and established the Council of Environmental Quality as the arbitrator of conflicts between federal agencies concerning the implementation of the provisions of NEPA. Such conflicts, known as "elevation procedures," occur when agencies cannot reach agreement on proposed activities at lower organizational levels, thereby requiring resolution at the national level.

Executive Order 11990

Executive Order 11990 (1977) directs federal agencies to take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural beneficial values of wetlands in carrying out agency responsibilities. Section 1(b) stipulates that the provisions of the order do not apply to the issuance of federal permits to private parties for activities on non-federal property.

Executive Order 11988

The objective of Executive Order 11988 (1977) is to limit use of the floodplain. If an action must be located on the floodplain, the order requires that the agencies minimize potential harm to people and property and to natural and beneficial floodplain values. The public must also be informed of any proposed actions in the floodplain. The order is based in part on the National Environmental Policy Act of 1969, and applies to areas with a 1 percent chance in any year of inundation by a flood. The Order is administered under the framework of the Unified National Program for Floodplain Management which includes planning, research, education, legislation, regulation, administration, construction, operation and maintenance actions.

FEDERAL AGENCIES

Agricultural Stabilization and Conservation Service

The Agricultural Stabilization and Conservation Service (ASCS) is part of the Department of Agriculture and administers commodity and related land use programs. State operations are supervised by a state committee of three to five members appointed by the Secretary of Agriculture. In the counties, an elected three member committee of farmers is responsible for local administration. The ASCS administers the Commodity Credit Corporation's commodity stabilization programs for various crops through commodity loans, purchases, and payments to eligible producers. Emergency assistance is available to farmers in emergency designated areas. ASCS is also responsible for defense preparedness plans and programs and administers programs prescribed by the Federal Emergency Management Agency. The ASCS operates a reporting system for collecting information under the Agricultural Foreign Investment Disclosure Act of 1978 (7 USC 3501).

ASCS has two important responsibilities with respect to wetlands. The Conservation Reserve Program, authorized by the Food Security Act of 1985, conserves and improves soil and water resources on highly erodible cropland. The Agriculture Conservation Program provides funds to help with up to 80 percent of the cost of conservation and environmental measures, attempting to minimize nonpoint source pollution. The Water Bank Program allows people having eligible wetlands in important migratory waterfowl habitat to enter into 10-year agreements and receive annual payments for preventing the serious loss of wetlands and for preserving, restoring, and improving inland fresh water.

Bureau of Reclamation

The Bureau of Reclamation in the Department of the Interior was established under the Reclamation Act of 1902 to provide the arid and semiarid lands of the 17 contiguous western states a secure, year-round water supply for irrigation. The Bureau now provides

water for farms, towns, and industries, and is responsible for generating hydroelectric power, regulating rivers for flood control, and enhancing fish and wildlife habitats. As a primary supplier of water, the Bureau builds and operates many dams. It also becomes involved in all activities relating to water and water quality, including salinity control, groundwater management, and hazardous waste control.

In Texas, where the Bureau has one office in Austin, it has constructed Palmetto Dam and Lake Meredith. A proposed multipurpose project at Lower Lake Creek in the San Jacinto River basin which would have affected river flow into Galveston Bay is presently dormant for lack of local matching funds.

Council on Environmental Quality

The Council on Environmental Quality (CEQ) was established in the Executive Office of the President by the National Environmental Policy Act of 1969. The Council is to formulate and recommend national policies to promote the improvement of the quality of the environment.

The Council consists of three members appointed by the President with the advice and consent of the Senate. The Council develops and recommends to the president national policies that further environmental quality; performs a continuing analysis of changes or trends in the national environment; reviews and appraises programs of the federal government to determine their contributions to sound environmental policy; conducts studies, research, and analyses relating to ecological systems and environmental quality; assists the President in the preparation of the annual environmental quality report to the Congress; and oversees implementation of the National Environmental Policy Act.

Environmental Protection Agency

The purpose of the Environmental Protection Agency (EPA) is to protect and enhance the environment. It has authority to control pollution in air and water, pollution from solid waste, pesticides, radiation, and toxic substances. Its activities include research, monitoring, standard setting, permitting, planning, emergency response, assistance to states, review of Environmental Impact Statements, and enforcement. EPA supports research and antipollution activities by state and local governments, private and public groups, individuals, and educational institutions.

In order to administer the many laws for which it is responsible, EPA has created ten regional offices, each headed by an appointed Regional Administrator. Texas is in Region VI, which is headquartered in Dallas and includes Louisiana, Arkansas, Oklahoma, and New Mexico. The Region VI office is organized into several divisions, which are in turn divided into branches. Those that have responsibility for programs affecting Galveston Bay are

described below.

Water Management Division

The Water Management Division coordinates planning and objectives for the water quality management programs within EPA. These programs include the National Pollution Discharge Elimination System (NPDES) permits and enforcement, water quality management, construction grants, and water supply.

The Permits Branch coordinates the operational and planning elements of the National Pollutant Discharge Elimination System (NPDES) pursuant to the Clean Water Act. The Industrial and Municipal Sections develop NPDES permits detailing effluent limitations for discharges for industry and publicly-owned treatment facilities respectively. The Toxics Control Section establishes toxic control limitations for NPDES permits to enable compliance with state water quality standards. The Administrative Issuance Section issues public notices for NPDES permits and refers noncompliant cases to the Enforcement Branch.

The Enforcement Branch manages the enforcement process through the Administrative Section which compiles analytical data necessary for tracking compliance data. The Permit Compliance System tracks compliance data electronically. The Compliance Sections review noncompliant permit holders and take actions to ensure permit compliance.

The Water Quality Management Branch is responsible for regional water quality planning in order to preserve surface water quality. (Groundwater is primarily the responsibility of the Office of Groundwater in the Water Management Division.) The State Programs Section develops workplans for the various grants they administer. Additional technical expertise, including modeling and water quality standards guidance, is provided to state and local governments through the Technical Section, which also oversees the TMDL program. The Marine/Estuarine Section coordinates and provides technical assistance to the Galveston Bay National Estuary Program, the Gulf of Mexico Program, the Near Coastal Water Program, and site monitoring under the Ocean Dumping Program.

The Municipal Facilities Branch administers two financing programs for local sewage treatment projects: the State Revolving Loan Fund, which loans states money to make low-interest loans to local governments, and the construction grants program. The programs have been delegated to the Texas Water Development Board, while the TWC reviews and approves all project plans.

The Water Supply Branch is responsible for managing regional water supply programs to maintain national drinking water standards pursuant to the Safe Drinking Water Act. The Public Water Supply Section provides technical assistance to state and local entities to establish and operate water supply programs which protect public drinking water supplies. States are provided technical assistance for the development of state Underground Injection

Control Programs through the The Underground Injection Program Section. The Texas Railroad Commission currently operates such a program which has been approved by the EPA.

Hazardous Waste Management Division

The Hazardous Waste Management Division oversees regional hazardous waste and Superfund management programs. The Division implements oversight and regulatory responsibilities of the EPA pursuant to the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

The Superfund Programs Branch is responsible for implementing CERCLA. The Programs Branch works with states to identify hazardous wastes sites. The Branch also administers the grant program for site evaluation and provides advice on designs for remedial measures in instances where states take the lead role in closing sites on the National Priorities List. The Texas Section of the Superfund Enforcement Branch pursues those parties potentially responsible for contaminating sites on the National Priorities List. The Section attempts to establish enforcement agreements with the responsible parties for site cleanups. If such agreements are not forthcoming, the Section may order the party to perform the cleanup or conduct the work itself, and seek recovery of costs through the Cost Recovery Section.

Environmental Services Division

The Environmental Services Division collects, processes and evaluates environmental monitoring data through the Surveillance Branch. This Branch coordinates all of the monitoring programs and provides information for environmental planning and regulatory decisions. The Emergency Response Branch coordinates regional response plans under the authority of CERCLA and the Clean Water Act. The branch also coordinates EPA response for oil spill cleanup in non-tidal waters according to the National Contingency Plan. The Federal Assistance Section conducts NEPA reviews and ocean dumping site designation. The Office of Quality Assurance ensures the quality of the Region's programs and environmental data collection.

Other Divisions

The Air, Pesticides, and Toxics Division assists states in developing control programs for air, pesticides, radiation, and toxic substances. The Air Branch assists states in carrying out responsibilities under the Clean Air Act, while the Pesticides and Toxics Branch is responsible for enforcement activities of asbestos laws and for grant support and oversight of state pesticide, asbestos, and PCB programs. The Regional Counsel and the Management Division provide support services. The State Programs Section provides guidance to state agencies.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) was established to provide a single point of accountability for all federal emergency preparedness, mitigation, and response activities. The agency is charged with ensuring that resources at the federal, state and local levels are coordinated in preparing for and responding to a full range of emergencies. FEMA requires comprehensive plans covering hazard mitigation, preparedness, relief, and recovery. The National Preparedness Directorate develops and coordinates policies. The Programs and Support Directorate administers support programs to state and local governments. The Office of Training provides training and education programs. FEMA also provides federal insurance and works closely with the nation's fire services.

National Marine Fisheries Service

The National Marine Fisheries Service (NMFS) is part of the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA). Texas falls under the NMFS' Southeast Region. In this region, the NMFS maintains a Galveston Field Branch operating under the Region's Habitat Conservation Division. The NMFS has the authority to comment on the impacts which federally funded or permitted activities have on marine fisheries, marine mammals, and endangered sea turtles. Under the Fish and Wildlife Coordination Act, the NMFS has authority to review federally funded or permitted projects which may alter any water body to determine the effects of the project on marine mammals and marine fisheries. This includes reviews of COE 404 permits and waste water discharge (NPDES) permits. Under the Endangered Species Act, the NMFS may review any federally funded or permitted activity which may affect endangered and threatened marine mammals and marine fish. The responsibility for endangered and threatened sea turtles rests with the Department of Commerce (NMFS) when the turtles are in the water. The Department of the Interior (FWS) assumes responsibility when the sea turtles are on land. The NMFS has additional responsibilities regarding marine fisheries and marine mammals under the Magnuson Fishery Conservation and Management Act and the Marine Mammal Protection Act.

National Oceanic and Atmospheric Administration

The National Oceanic and Atmospheric Administration (NOAA) was created in 1970 to explore and map, manage and conserve the ocean and its living resources and the atmosphere. NOAA, which is in the Department of the Interior, reports weather, conducts satellite observations of the oceans and atmosphere, administers the National Sea Grant College program, and conducts research in all these areas. Activities affecting Galveston Bay include NOAA's responsibility for several federal laws, including the National Marine Fisheries Act, Marine Mammal Protection Act, Endangered Species Act, Fishery Conservation and Management Act, the Offshore Shrimp Fisheries Act, and the Coastal

Zone Management Act. NOAA provides technical assistance to states attempting to develop coastal zone management plans. The Office of Sea Grant receives research and educational proposals from universities, laboratories, and other entities which may be accorded up to two-thirds of their costs from federal funds. (See Texas Sea Grant in Appendix B.)

Office of Coastal Zone Management

The Office of Coastal Zone Management, U.S. Department of Commerce, acting, under the Coastal Zone Management Act of 1972, gives funds to states to develop and implement coastal management programs and provides matching funds for planning, acquiring and operating estuarine sanctuaries. Through the Coastal Energy Impact Program, the Office assists in mitigating the impacts of expanded energy activities. The Office also mandates that all federal action affecting the coastal zone must be consistent with approved state programs.

Soil Conservation Service

The Soil Conservation Service (SCS) was established under the Soil Conservation Act of 1935 (16 USC 590 a-f). It has responsibility for developing and carrying out national soil and water conservation programs and assisting in agricultural pollution control, environmental improvement, and rural community development. The Soil Conservation Service carries out its conservation programs by providing soil maps and other data that determine soil use potentials and conservation needs and by developing and coordinating the local plans. The SCS operates the federal part of the National Cooperative Soil Survey in cooperation with state agricultural experiment stations and other agencies. The Soil and Water Resources Conservation Act of 1977 requires the Service to appraise the status and use trends of soil, water, and other resources; develop long-range conservation plans in cooperation with local soil conservation districts; and evaluate progress in meeting conservation needs.

The SCS oversees certain aspects of wetlands protection. Under the authority of the Food Security Act of 1985 (16 USC 3801) field staff assist producers in preparing conservation plans in compliance with Department of Agriculture standards to be eligible for program benefits and help to determine if cropland is wetland or highly erodible. The Service cooperates with the Economic Research Service, the Forest Service and other agencies in studying watersheds of rivers and waterways. It provides loans to help fund the local share of watershed and flood prevention improvement works. The Agriculture Credit Act (16 USC 2203) gives the authority for the Service to carry out emergency watershed protection.

In the Galveston Bay Area, SCS staff are helping to plant spartina alterniflora along eroding shorelines in Galveston Bay as a demonstration project illustrating alternatives to ecologically intrusive erosion control methods such as concrete bulkheads.

United States Army Corps of Engineers

The United States Army Corps of Engineers (COE) provides engineering support for the Army and Air Force and civil works support for the entire nation. It is organized into 11 divisions; Texas falls into the Southwestern Division, which in turn has five district offices in Fort Worth, Galveston, Little Rock, Tulsa, and Albuquerque. The Secretary of the Army has delegated his permit-issuing authority to the Chief of Engineers, who in turn authorized Division and District Engineers to manage programs under section 404 of the Clean Water Act.

The Galveston District Office regulates work in the navigable waters of the United States and the disposal of dredge and fill material in the waters of the U.S. The distinction between the two definitions of "water" is important as the respective definitions determine under what statutory authority a proposed activity falls. The "navigable waters of the United States are defined in 33 CFR 329.4 as "those waters which are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce." Work done or structures built in these waters require a Corps permit under Sections 9 and 10 of the Rivers and Harbors Act of 1899. "Waters of the United States," defined in 33 CFR 328.3, include not only the above defined navigable waters of the U.S., but nearly all other waters in the country, including the wetlands adjacent to those waters. A Corps permit is required for discharges of dredged or fill materials in these waters under Section 404 of the Clean Water Act. The Galveston District Office processes applications for proposed activities not involving federal funds through its Regulatory Branch in the Construction-Operations Division. The Environmental Resources Branch in the Planning Division ensures compliance with the relevant legislation for projects involving federal funds.

United States Coast Guard

The U.S. Coast Guard is a branch of the Armed Forces which operates as part of the Navy in time of war. In peacetime, the Coast Guard acts as an arm of the U.S. Department of Transportation. It maintains a system of rescue vessels, aircraft, and communications facilities in order to save life and property in the high seas and the navigable waters of the United States including flood relief and removing hazards to navigation. It is the primary enforcement agency for maritime law and enforces applicable treaties and international agreements, and it works with other agencies in the enforcement of such laws as they pertain to the protection of living and nonliving resources and in the suppression of smuggling and illicit drug trafficking. Finally, the Coast Guard is charged with formulating, administering and enforcing various safety standards for the design, construction, equipment, and maintenance of commercial vessels of the United States and offshore structures on the Outer Continental Shelf.

To achieve these goals, the Coast Guard conducts surveillance operations and boat

boardings, licenses U.S. Merchant Marine personnel, and develops safe manning standards. The Captain of the Port is authorized to enforce rules and regulations governing the safety and security of ports and the anchorage and movement of vessels in U.S. waters. Vessel Traffic Services provides for the safe movement of vessels at all times, especially during hazardous conditions. The Coast Guard establishes and maintains the U.S. aid to navigation system that includes buoys and fog signals. The Coast Guard also directs a national boating safety program.

Two of the Coast Guard's activities are of special importance to environmental protection in Galveston Bay. Under the Deepwater Port Act of 1974 (33 USC 1501), the Coast Guard administers a licensing and regulatory program governing the construction and operation of deepwater ports on the high seas to transfer oil from tankers to shore. It also promulgates the U.S. regulations to implement an international treaty on disposal of plastics. The optional Annex V to the MARPOL 73/78 convention titled "Regulations for the Prevention of Pollution by Garbage from Ships" prohibits the disposal of all plastics including synthetic ropes and fishing nets and plastic garbage bags. Annex V requires disposal beyond 12 miles of food wastes and other garbage including paper products, rags, glass, metals, bottles, crockery and similar refuse if not ground. Otherwise disposal is allowed as close as 3 miles offshore. Nonplastic garbage such as floatable lining and packing materials are required to be disposed of beyond 25 miles. Annex V also prohibits garbage disposal from fixed offshore platforms.

The second Coast Guard function that affects Galveston Bay concerns spill response and enforcement of laws relating to the protection of marine habitat. Marine Environmental Response is responsible for enforcing the Federal Water Pollution Control Act other laws that affect habitat. In the case of spills, the Coast Guard encourages and monitors responsible party cleanups and coordinates federally-funded spill response operations including a National Strike Force.

United States Fish and Wildlife Service

The U.S. Fish and Wildlife Service (FWS) is responsible for conserving, protecting, and enhancing inland sport fisheries, migratory birds, endangered species, certain marine mammals, and other fish and wildlife and their habitats. Programs in Texas are handled through one of the seven regional offices located in Albuquerque, New Mexico. FWS conducts biological monitoring and studies of fish and wildlife populations, surveillance of pesticides, heavy metals and thermal pollution, ecological studies and environmental impact assessments on hydroelectric dams, nuclear power sites, stream channelization, dredge and fill permits and environmental impact studies review.

The Wildlife and Fisheries Resource Program is responsible for improving and maintaining fish and wildlife resources through refuge management, law enforcement, and disease and population distribution studies. Other programs include cooperative fish and wildlife

research at universities, and coastal anadromous fish hatcheries production, stocking, and research. The USFWS also administers the Endangered Species Act by developing Endangered Species Lists, conducting state surveys, preparing recovery plans, research, operation of wildlife refuges, law enforcement and coordination of national and international efforts. Public information programs include news releases, leaflets, and brochures, operation of visitor centers, self guided nature trails, observation towers and recreational activities.

Under the 1986 Emergency Wetlands Resources Act, the FWS must prepare a National Wetlands Priority Conservation Plan. The plan lays the basis for state and local governments to acquire high-priority wetlands using revenues from the Land and Water Conservation Fund. It also identifies wetlands that can be protected through measures other than direct acquisition. Regional plans complement the national plan. The Region II Wetlands Regional Concept Plan, covering the Galveston Bay area, was completed in 1989. It identified the Hoskins Mound areas as a high-priority wetlands site. FWS also works on the North American Waterfowl Management Plan.

US Geological Survey

The Geological Survey's primary responsibilities are to identify the nation's land, water, energy, and mineral resources; classify federally owned lands for minerals and energy resources and water power potential; investigate natural hazards; and conduct the National Mapping Program. The agency prepares maps and digital and cartographic data, collects and interprets data on energy, mineral and water resources, conducts research, and publishes and disseminates the results. USGS has conducted studies on freshwater inflow to the Gulf of Mexico and, on the basis of streamflow gauging stations, a trend analysis of water quality, salinity, and quantity.