
IV. Action Plan Funding Strategies

Introduction

The Galveston Bay National Estuary Program developed a ranked list of the 17 most compelling environmental problems facing the Bay. (Appendix A, The Galveston Bay Plan). In order of their management importance to the bay, these problems are:

- 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 don't 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.*
- 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 infections.*
- 17. Some exotic opportunistic species (e.g. nutria and grass carp) threaten desirable native species, habitats, and ecological relationships.*

The action plan funding strategies in this section are organized by the Galveston Bay National Estuary Program's priority problem ranking, above. The first nine action plans address the top nine priority problems, also encompassing problems ranked tenth through seventeenth. The strategy is presented for each of the nine action plans in the order of the top nine priorities, as follows:

1. Habitat Protection
Priority Problem 1
This section also includes the strategy for priority number 14
2. Non Point Sources of Pollution
Priority Problem 2
This section also includes the strategy for priority number 13
3. Point Sources of Pollution
Priority Problem 3
This section also includes the strategy for priority numbers 5 and 10
4. Freshwater Inflow and Bay Circulation
Priority Problem 4
5. Water and Sediment Quality
Priority Problem 5
This section also includes the strategy for priority number 11
6. Species Population Protection
Priority Problem 6
This section also includes the strategy for priority number 17
7. Shoreline Management
Priority Problem 7
This section also includes the strategy for priority number 14
8. Spills and Dumping
Priority Problem 8
This section also includes the strategy for priority number 15
9. Public Health Protection
Priority Problem 9
This section also includes the strategy for priority numbers 12 and 16.

The funding strategies for the Support Action Plans of Research and Public Participation and Education follow the strategies for the first nine action plans.

Habitat Protection

Loss of vital habitats such as wetlands is listed as the first priority problem in *The Galveston Bay Plan*. Actions to increase the quantity and improve the quality of wetlands and other habitats for fish and wildlife, as well as those that eliminate or mitigate the conversion of wetlands to other uses will address the problem of loss of vital habitats. These actions are described in the Habitat Protection Action Plan. State and local governments, universities and researchers can apply to several federal grant programs to finance habitat related research. Programs that specifically address research are described in the funding strategy for the Research Action Plan.

Federal programs and partnerships are the two most promising methods that can aid the Galveston Bay Program and the state in restoring and acquiring vital habitats, especially wetlands. To take full advantage of cost-share assistance from competitive matching grants authorized by the Coastal Wetlands Planning, Protection and Restoration Act, the Galveston Bay Program should aid the state in establishing a trust fund to acquire coastal wetlands, natural areas, and open spaces. This will enable the state to receive up to 75 percent of project costs from National Coastal Wetlands Conservation Grants.

The Galveston Bay Program will want to make private landowners in the Bay area aware of the USDA's Wetlands Reserve Program, which provides direct payments to agricultural landowners to restore and permanently maintain wetlands on their property. The Clinton administration has recommended increased funding for this program. In addition, the program has expanded to include Texas for the first time in fiscal year 1994.

The North American Wetlands Conservation Fund facilitates partnerships such as the Gulf Coast Joint Venture, a coalition of state agencies and private industrial and conservation groups which are pooling their funds and resources to acquire, protect, and restore wetlands and other priority habitat that support waterfowl. Other promising partnerships for acquisition and restoration include those between state agencies and the Nature Conservancy, as well as the Coastal America Program. Although still in an experimental stage, mitigation banking is another method for financing wetlands creation and restoration.

Acquisitions. *The Galveston Bay Plan* calls for the TPWD and the GLO to examine methods of raising or securing funds for habitat acquisitions on a state-wide and local level. Although the EPA's Wetlands Protection - State Development Fund does not provide grant funds for wetland acquisition, the fund, which is described below, supports state wetlands conservation programs, development of wetland water quality standards, mitigation, and wetland protection demonstration projects.

The Galveston Bay Program should work with the TPWD to ensure that habitat acquisition and restoration activities in the Galveston Bay benefit from federal funds from the Sport Fish Restoration Fund, the Wildlife Restoration Fund; the Cooperative Endangered Species Conservation Fund, and the Coastal Wetlands

Planning, Protection, and Restoration Act. The Texas Parks and Wildlife Department receives grants from these USFWS programs that can be used to fund wetlands protection.

The following programs are the most probable sources of federal financial assistance for habitat acquisition. As can be seen in their descriptions, they will also be useful for habitat restoration, nonpoint source pollution reduction, species population protection, and other actions which address the most pressing environmental problems of the Bay. The Galveston Bay Program will want to optimize the resources from these programs to address these priority problems.

Coastal Wetlands Planning, Protection, and Restoration Act (USFWS). The competitive National Coastal Wetlands Conservation Grants are awarded to coastal states to acquire, restore, enhance or manage coastal wetlands ecosystems. Proposed projects must provide for long term conservation of the wetlands as well as the hydrology, water quality and fish and wildlife that depend on them. The grant cannot exceed 50 percent of the total project cost, unless the State has established a trust fund for the purpose of acquiring coastal wetlands, other natural area or open spaces, in which case the Grant can be increased to 75 percent of project costs. Grants of up to \$150,000 can be made per project.

Sport Fish Restoration (USFWS). The USFWS distributes Sport Fish Restoration Funds to states on a formula basis. (40 percent based on state land mass + 3 miles of coastal waters, and 60 percent on number of recreational fishing license holders). The Texas Parks and Wildlife Department receives approximately \$10 million annually from this fund. The TPWD must submit a workplan, and the fund reimburses 75 percent of approved expenses. The TPWD can spend its Sport Fish Restoration funds on a broad range of activities, including boating access and facility improvement, minimizing nonpoint source pollution from boating activities, water quality education, boater education, habitat restoration, bycatch reduction, and research, however, the funds can only be spent on projects that benefit recreational fishermen or boaters, and no funds may be spent on enforcement activities.

Wildlife Restoration (USFWS). Officially known as Federal Aid to Wildlife Restoration, this fund is often referred to as Pitman-Robinson (1939). The Fund's budget for fiscal year 1994 was approximately \$153 million, which was an 8 percent decrease from fiscal year 1993. Although declining revenues from the fund will increase competition for grants, priority will be given to habitat restoration projects. The USFWS apportions Formula Grants to the states based 50 percent on land mass relative to the U.S. total, and 50 percent on licensed hunters relative to the U.S. total. The TPWD must submit a workplan, and the fund reimburses 75 percent of approved expenses for projects involving restoration of mammal or bird habitat. Funds may be used for land acquisition, research, coordination, restoration, management of populations, and hunter safety programs.

Cooperative Endangered Species Conservation Fund (USFWS). Unlike the Sport Fish Restoration and Pitman Robinson Funds, this fund depends on Congressional appropriations. Its annual federal budget is approximately \$10 million. Allocations are made to the Regional Fish and Wildlife Offices on the basis of the number and rank of endangered species in the region. Regional Offices rank proposals made by the states. State fish and wildlife agencies, such as the TPWD, that have entered into a cooperative agreement with the Fish and Wildlife Service to develop programs for the conservation of endangered and threatened species are eligible for project grants from this program, which average \$23,400 each. Funded projects can include animal, plant, and habitat surveys, research, planning, management, land acquisition, protection, and public education. The project must involve research, protection or management of a state or federally listed endangered species. The grant cannot exceed 75 percent of the project costs unless it is made to two or more states that have entered into a joint agreement, in which case the grant may be up to 90 percent of project costs.

Wetland Protection Incentives for Private Landowners. The USDA is the primary federal agency that offers incentives to protect wetlands from conversion. The USDA offers financial incentives and payments to landowners to restore and maintain wetlands on their property, and to place wetlands and other environmentally sensitive lands under conservation management. Landowners with qualifying property in the Galveston Bay region are eligible to participate in the Wetlands Reserve Program and the Rice Production Stabilization Program. Because of the Clinton administration's plans to increase funding for the Wetlands Reserve Program, and because the program encourages private landowners to restore and permanently maintain wetlands on their property, this program can greatly enhance restoration activities in the Galveston Bay region at a lower cost than acquisition.

Landowners with highly erodible land are eligible to participate in the Conservation Reserve Program, however, there may not be land in the region that qualifies as highly erodible. *The Galveston Bay Plan* notes that the Water Bank Program provides compensation to property owners for preserving wetlands. This program provides direct payments to private wetland owners in participating states whose land is essential to migratory bird nesting and breeding to preserve their land for these purposes for ten year periods. It should be noted, however, that Texas is not currently included in this program. Texas has applied to participate in the Water Bank Program, but has been turned down because the Water Bank Program is not accepting any new states or counties. Only twelve states are included in the program. They include Arkansas, Louisiana, Kentucky, Mississippi, California, and several mid western and northern states. The Water Bank has experienced a steep decline in federal funding. Its fiscal year appropriation for 1994 was \$8 million, and is expected to be the same for 1995. This is down from approximately \$16 million in 1993.

Wetlands Reserve Program (USDA). This program, authorized by the 1990 Farm Bill, provides direct payments to agricultural landowners for

restoring and maintaining wetlands on their property. Congress appropriated approximately \$66.7 million to the Wetland Reserve Program in fiscal year 1994, and is expected to appropriate at least that amount for 1995. The program has expanded to include Texas for the first time in FY 94. The national average payment per acre is \$723. Voluntary easements are used to permanently remove wetlands from crop use and restore them as wetlands. Riparian and buffer area protection, and long-term easement are also included. Landowners can apply to the ASCS to participate in the program.

Rice Production Stabilization (USDA). This program provides up to \$250,000 per farmer who contracts with the ASCS to remove 5 percent of his or her rice crop land from production, and to maintain it in approved conservation use, which includes maintaining the land as habitat for wildlife.

Conservation Reserve Program (USDA). This program provides direct payments of up to \$5,324 per landowner to remove highly erodible cropland from production. Its objective is to protect long-term agriculture, reduce soil erosion and sedimentation, improve water quality, create better wildlife and fish habitat, and provide income support to farmers. Eligible land is enrolled in a reserve program of 10-15 years. The program encourages landowners to allow tree growth and wildlife habitat to become established on land enrolled in the program. Landowners can apply to the ASCS to participate in the program.

Partnerships and Foundations. The following partnerships, foundations, and non profits can aid in financing habitat acquisition, protection and restoration:

Coastal America Program. This program is a partnership between the four federal agencies that have primary responsibility for the management, regulation, and stewardship of coastal living resources: The Army Corps of Engineers, Dept. of the Interior, EPA, and NOAA. This core group works with local and state groups to form partnerships to address coastal environmental problems such as habitat loss and degradation, non-point source pollution, and contaminated sediments. The Coastal America Program asks for a minimum 25 percent non-federal match of funds for supported projects, and encourages higher matching percentages.

The Armand Bayou and Galveston Bay Oyster Reef Projects -- Two Coastal America projects undertaken in the Galveston Bay area are the Armand Bayou Wetland Restoration Project, which is a demonstration project using detention basins to control residential nonpoint source pollution, and the Galveston Bay Oyster Reef Creation Project to construct a 5 acre oyster reef in the Galveston Bay. Both of these projects were financed over 80 percent by non-federal funds. The Tampa Bay National Estuary Program received the first CAP grant for a habitat restoration project that is expected to continue for the next 10 to 20 years in Cockroach Bay, Florida.

North American Wetlands Conservation Fund and The North American Waterfowl Management Plan. The North American Wetlands Conservation Act of 1989 established the North American Waterfowl Management Plan, which includes the United States, Canada, and Mexico in a long-term program to protect, preserve, enhance, and restore habitat throughout the North American continent for waterfowl and wetland inhabitants. The goal of *The North American Waterfowl Management Plan* is to protect wetlands and priority habitat for the specific purpose of returning waterfowl populations to those observed in the 1970s. The multi-million dollar North American Wetlands Conservation Fund finances the wetlands conservation necessary to fulfill the goals of *The Plan*. Any person, organization, or agency with the qualifying matching funds may apply for a matching grant from the North American Wetlands Conservation Fund. Grants are available for wetlands acquisition, restoration, and enhancement projects. The public-private North American Wetlands Conservation Council recommends proposed wetlands conservation projects to the Migratory Bird Conservation Commission, which approves grant funding for the projects. The U.S. Fish and Wildlife Service coordinates the Council and administers the Fund. Proposers must raise at least the same amount that they request from the Commission.

The Fund also facilitates partnerships in the form of joint ventures, in which coalitions of private conservation and industry groups and state wildlife agencies cooperate to acquire, protect, and restore wetlands and other priority habitat. The Gulf Coast Joint Venture is one of twelve such ventures. Coalitions representing the Galveston Bay can take part in the Gulf Coast Joint Venture. Though a matching partnership with this program, there is great potential for habitat restoration and protection for the Galveston Bay wetlands. The Gulf Coast Joint Venture is administered by a management board comprised of members of the venture. The U.S. Fish and Wildlife Service Regional Office can be contacted for more information on how to participate in this program.

The Nature Conservancy (TNC). The Nature Conservancy is involved in acquiring wetlands and ecologically sensitive areas. TNC is a landowner that purchases properties with membership funds and assists in the creation of easements and private landowner management agreements. TNC primarily works as a broker for state and federal agencies to acquire land by purchasing land and then selling it to the agency. The Nature Conservancy Texas Office in San Antonio can be contacted regarding the program.

Hoblitzelle Foundation. Grants are made to educational, scientific, cultural, and other charitable organizations in the state of Texas. This foundation does not have a separate environmental program, but does support conservation efforts. Environmental grant recipients in 1991 included The Nature Conservancy (\$53,000), South Texas Primate Observatory (\$25,000), Dallas Civic Garden Center (\$7,808), and Sportsmen

Conservationists of Texas/ Texas Wildlife Foundation (\$3,000). Grant application information is available from The Foundation office in Dallas.

Margaret Cullinan Wray Charitable Lead Annuity Trust. This Houston based trust awards grants for education, conservation, habitat and species protection; and aesthetic and recreational improvements. Grants have been awarded to the Galveston Bay Foundation (\$6,000), Houston Audubon Society (\$8,000), The Nature Conservancy (\$7,500), Texas A&M University Development Foundation (\$3,530), and the Citizen's Environmental Coalition (\$1,000) in Houston. Small seed grants for start-up costs are awarded to groups with grassroots origins, volunteer participation, and advocacy and educational goals. Grant information is available from the Trust office in Houston.

National Fish and Wildlife Foundation (NFWF). The National Fish and Wildlife Foundation is a national, nonprofit grant making and grant seeking 501(c)(3) organization dedicated to funding projects that protect the nation's fish, wildlife, and plant resources. The NFWF was established by Congress in 1984 to leverage public and private funds by awarding challenge grants with private and federally appointed funds for innovative and effective conservation activities. The foundation will match one dollar to every two dollars raised by the proposer. Grants from the foundation must be matched with third party dollars. These third party dollars must not come from the requester's own budget, or from federal dollars. Congress authorized \$25 million for this fund. Grants are awarded to conservation projects for habitat acquisition, protection and restoration, research and policy development, education and leadership training, and applied conservation. Grant recipients include The Galveston Bay Foundation (\$20,000 for coastal marsh restoration) U.S. Fish and Wildlife Service (13 grants totaling \$1,728,900), Ducks Unlimited, Inc. (4 grants totaling \$1,330,000), Ducks Unlimited Canada (\$400,000), The Nature Conservancy (\$400,000), and Hollywood Promos (\$320,000). Grant information is available from the Washington DC office.

Wetlands Restoration. The same USFWS administered programs that fund wetland acquisition can also be used to fund programs to restore wetlands. The Galveston Bay Program can apply directly to the EPA, or can aid TNRCC, TWPD, and other agencies with wetland related programs in applying for Wetlands Protection State Development Grants, which they can use to develop stewardship, mitigation, and wetlands restoration programs.

Wetlands Protection- State Development Fund (EPA). This fund, authorized by Section 104 (b) (3) of the Clean Water Act, provides project grants to state agencies to develop new wetland projects and plans, and enhance existing programs. The program funds two year projects, but is not a source of money for long-term administrative positions. State agencies involved in wetland protection and water quality, or wetlands related programs are eligible for these grants. This includes TNRCC,

TPWD, and the GLO. Pre-applications can be made to the EPA Regional Office in Dallas. The average grant to a state agency is approximately \$188,000, and the state can apply for more than one grant. A 20 percent state match is required. Funding of these project grants has focused on development of state wetlands conservation programs, development of wetland water quality standards, mitigation, and wetland protection demonstration projects. Projects must demonstrate a direct link to increasing a state's ability to protect its wetlands resources.

Intermodal Surface Transportation Efficiency Act (ISTEA) (DOT). In 1992, the Intermodal Surface Transportation Efficiency Act (ISTEA) authorized a projected \$150 billion to be distributed to state departments of transportation between 1992 and 1998. A state cost-share of 20 percent is required. Where appropriate, transportation enhancement activities may be developed in cooperation with other state and local agencies and with private entities. However, the state DOT must administer these enhancement funds. Projects must be related to the intermodal transportation system, but not necessarily to a currently planned highway project. Enhancement measures that go beyond what is customarily provided as environmental mitigation can be considered as transportation enhancement. This program has funded railroad restoration, bike paths, and highway landscaping, mitigation of water pollution due to highway runoff, and acquisition of scenic easements. The Galveston Bay Foundation has participated in a project to develop the Galveston Bay loop of the Texas Coastal Trail using ISTEA funding. There are 10 categories for funding from this program:

1. Provision of facilities for pedestrians and bicyclists
2. Acquisition of scenic easements and scenic or historical sites
3. Scenic or historical highway programs
4. Landscaping and other scenic beautification
5. Historic preservation
6. Rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals)
7. Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle use)
8. Control and removal of outside advertising
9. Archeological planning and research
10. Mitigation of water pollution due to highway runoff

Mitigation Banking. Mitigation banking would be a weak tool for achieving *Galveston Bay Plan* objectives. *The Galveston Bay Plan's* priorities are to restore and acquire wetlands, rather than mitigate the conversion of the wetlands. Furthermore, mitigation banking is a weak financing tool because the revenue stream from the sale of credits to developers is unstable. Mitigation banking requires start-up funding from sources other than revenue from the sale of credits, because the law requires that an agency's wetland must be restored or created before credits can be sold.

Because credits can only be sold as permits are granted, the revenue stream from mitigation banking is likely to be sporadic and unstable.

State Water Quality Assessment Fees. The costs of The San Jacinto and Trinity River Authorities' participation in establishing an integrated baywide erosion management program to develop, apply, and publicize methods for erosion prevention for wetlands and bay habitats can be covered by revenues from the Water Quality Assessment Fees.

State Coastal Protection (Oil Import) Fees. GLO's costs of establishing non structural shoreline management incentives such as mitigation banking could be funded by revenues from the Coastal Protection Fee, however, this would require legislation.

Local Government Funding Options. No local costs of habitat protection have been identified in *The Galveston Bay Plan*, however, some districts, such as the Harris County Flood control districts are involved in mitigation activities. The following are options for funding these activities.

Ad valorem taxes. Local governments and districts may chose to be involved in mitigation activities. The Harris County Flood Control District, supported by ad valorem taxes, is one local government in the area currently involved in wetlands mitigation. To pay for wetlands mitigation activities, local governments and districts may issue general obligation bonds, which can be repaid with ad valorem property taxes.

Nonpoint Source Pollution Control

The environmental problem ranked second in importance by the Galveston Bay National Estuary Program is that contaminated runoff from nonpoint sources degrades the water and sediments of the bay tributaries and some near-shore areas.

The very high priority goal of reducing urban nonpoint source pollution is addressed in the Nonpoint Sources Action Plan. TNRCC administers the EPA's Nonpoint Source Implementation (Section 319) Grants through its Nonpoint Source Pollution Control Program, while the State Soil and Water Conservation Board has authority for agricultural nonpoint source programs. Section 319 funds are of two types: base program and competitive. Base program funds are awarded to the state, and the state determines how best to utilize those funds within general guidelines established by the EPA. The state may submit proposals for competitive 319 funds, which must compete against proposals submitted by other states. EPA selects proposals to be funded based on merit. To channel the 319 funds to the Galveston Bay, the Galveston Bay Program should seek to include *The Galveston Bay Plan's* nonpoint source related actions in TNRCC's 319 work plan, and should encourage TNRCC to make NPS control work in the Galveston Bay watershed a priority in its base program as well as by

soliciting grant proposals from the area and forwarding them to the EPA for consideration.

Political subdivisions may apply to the TWDB for low interest State Revolving Fund Loans to plan, design and construct structural nonpoint source controls that are authorized in the states 319 plan, as well as in *The Galveston Bay Plan*. Funds from the NPDES related grants program can be used to develop and implement control strategies for stormwater discharge problems.

As Texas's designated coastal management agency, the GLO is eligible to receive money from NOAA's Coastal Zone Management Program for development of its Coastal Management Plan, which must include development of coastal urban and marina nonpoint source control initiatives. The GLO will be eligible for implementation funds once the CMP is approved by NOAA. Local governments and other marina facility owners will be soon eligible to apply for Clean Vessel Act Grants from the TPWD to improve their pump-out facilities, which can help to reduce nonpoint source pollution from marinas and boats.

Nonpoint Source Implementation Grants (§319) (EPA). Two types of Section 319 (h) funds are allocated to TNRCC by EPA's Region VI for nonpoint source pollution control. The EPA awards TNRCC a base grant for its Nonpoint Source Program. TNRCC must provide a 40 percent match for this base program grant. The average amount allocated per state is \$850,000. Texas's apportionment could increase once *The Galveston Bay Plan* nonpoint source actions are included in the work plan. Funds may be used to implement urban nonpoint source control initiatives in areas not proposed for regulation of urban stormwater under NPDES.

The other type of Section 319 (h) funds are for competitive matching grants to local governments and other applicants. TNRCC administers this grant fund, but does not provide the match for the funds. Rather, local governments and other applicants must provide a 40 percent match for the grants.

- Section 319 (n): National Monitoring Program. Five percent of regional 319 funds are set-aside for a national monitoring program. Proposals are selected on a competitive basis. Grants are awarded for long-term (5- 10 years) monitoring projects. These funds pass through directly to the research project.
- Section 319 (i): Funding for Groundwater Initiatives. Ten percent of the state 319 (h) grant must be dedicated to groundwater programs.
- Nonpoint Source Pollution Control Grant Program (§319) (TNRCC). In Texas, local governments and other organizations may apply to TNRCC for matching grants to fund nonpoint source pollution control projects and programs to prevent and remediate nonpoint source pollution problems in targeted watersheds.

Political subdivisions of the state such as regional and local governments in targeted watersheds and aquifers may apply for assistance. The average project cost is \$250,000. Successful applicants are required to provide 40 percent of project costs.

Capitalization Grants for State Revolving Funds. The EPA awards capitalization grants to the TWDB to fund Texas's State Revolving Fund. The required state match is 20 percent of the amount of each Capitalization Grant payment. The Fund is used to provide low interest loans for local governments to finance construction of municipal wastewater treatment facilities, implementation of the nonpoint source management program under section 319, and developing and implementing an estuary conservation and management plan under section 320. The TWDB receives \$216,000,000, the maximum award.

- **State Revolving Fund Loans (TWDB).** This TWDB administered program is funded by the EPA's Capitalization Grants for State Revolving Funds. Political subdivisions such as municipalities and designated wastewater collection and or treatment agencies may apply to the TWDB for low interest loans to plan, design and construct wastewater treatment works, nonpoint source pollution control projects that address problems targeted in Texas's Section 319 plan, and qualifying actions in CCMPs such as *The Galveston Bay Plan*. The average of the loans issued by the TWDB is \$14,809,926.

National Pollutant Discharge Elimination System Related State Program Grants (EPA). The NPDES Related State Program Grants are authorized under Section 104 (b) of the Clean Water Act. State water pollution control agencies may apply to the EPA regional office in Dallas for these grants. In fiscal year 1993, the EPA made \$1,000,000 in grant monies available to recipients in EPA's Region VI. Texas does not need to be authorized to run its NPDES program to qualify for these grants. State agencies may use the money to develop model general permits for storm water, develop state combined sewer overflow control programs for targeted watersheds, develop and implement control strategies for storm water discharge problems, pre-treatment and sludge program activities and municipal pollution prevention program pilot programs. Eligible activities must commit to specific activities relating to the NPDES program over a one to two year period, with measurable results.

Coastal Zone Management Administration Awards (NOAA). This program's goal is to implement and enhance state Coastal Zone Management programs. It encourages public access improvement and local/regional planning. The awards are appropriated congressional funds. In FY 92 and FY 93 Texas received a section 305 grant for development of its Coastal Management Program (CMP). Once NOAA approves the state's CMP, the GLO as Texas's designated coastal management agency will be eligible to receive money from the Coastal Zone

Management Program for implementation of its CMP. Average Coastal Zone Management Administration Awards are \$1.2 million per state.

- Section 306 formula grants support state programs on a one-to-one cost share basis. These grants can be passed through state programs to support public access projects and ongoing local planning and management for local governments in the coastal region. A local match of 10 percent is required of jurisdictions of fewer than 3,000; 25 percent is required of jurisdictions of more than 3,000 people.
- Section 308 program development grants are authorized in §305 for regional management issues and demonstration projects. No state match is required for these grants.
- Section 309 competitive grants are allocated by NOAA to enhance state programs. Access improvements, marine debris reduction, special area management planning, and ocean resource planning including wetlands management and protection, as well as assessment of growth and development impacts on the coastal zone area can be funded with these grants.
- Section 6217. In December, 1992 Congress authorized a \$2 million national fund to develop a nonpoint source control program in coastal states. Funds are allocated to states on a noncompetitive basis for planning nonpoint source pollution control programs for coastal regions. In order to qualify for funds, states must commit to developing a coastal, watershed based nonpoint source pollution control program. Plans must include urban, agricultural, forestry, and marina best management measures to control coastal nonpoint source pollution.

Clean Vessel Act Grants. The Clean Vessel Act mandates that federal cost share money for pump-out installation be made available to the states from the Sport Fish Restoration Trust Fund, which the USFWS administers. The Sport Fish Restoration Trust Fund could provide 75 percent of the costs of installation of pump out facilities. The states must compete for Pump-out installation funds. Before installation funds are awarded, a state must complete two surveys; one of pump-out facility operators, and the other of boaters. TPWD has received funding from USFWS to conduct these surveys, which are currently underway.

- State Boat Ramp Assistance (TPWD). Matching grants from this program may be used to construct boat launching facilities and related support items, which will soon include pumpout facilities. Any city, county, river authority, and some special districts are eligible to apply for these grants. TPWD is the recipient of USFWS's Clean Vessel Act Grant to the state. Some of the funds from this grant are being passed through to Texas A&M Sea

Grant to conduct the boater and pump-out facility operator surveys. TPWD administers The Clean Vessel Act Grants for pump out facilities through its State Boat Ramp Assistance Program. Average project grants from this program are \$100,000 each. These grants require a 25 percent local match, however, the program requires no match for major rehabilitation and repair of boat ramps on state owned land.

Water Pollution Control- State and Interstate Program Support (EPA). Authorized by Section 106, formula grants are provided to TNRCC for water quality management. The primary objective of these 106 grants is to support state pollution prevention and abatement projects. As with nearly all EPA grant programs, a minimum level of effort, or match, is required of each state. The level of effort required by this program varies. Grant funds may be used for NPDES permitting, monitoring, development of water quality standards, and enforcement programs. The fund is divided into two components: surface water and groundwater. These funds could be used to sponsor citizen volunteer monitoring efforts. Grants may not be used for construction, operation, or maintenance of waste treatment plants or for any other construction activities.

Water Quality Management Planning (EPA) . This EPA program is authorized by Section 205 (j) and 604 (b) of the Clean Water Act. It assists states in carrying out water quality management planning. Formula grants with matching requirements are available to state water quality management agencies. Average grants to state agencies are \$300,000. They may pass through some of these funds to eligible Regional Public Comprehensive Planning Organizations (RPCPOs), and Interstate Organizations (IOs). States have used these grants to revise water quality standards, perform wasteload allocations, and TMDLs, and NPS activities and planning. In the Galveston Bay Region, TNRCC passes these grants through to the Houston-Galveston Area Council.

- *Water Quality Management Planning (TNRCC).* This program is funded by the EPA's Water Quality Management Planning Program. The average amount allocated per state from the EPA is \$300,000. In Texas, the Water Quality Management Planning Grants Program is administered by TNRCC. Grants are awarded to designated units of regional government to update the water quality management plans for designated metropolitan areas. In the Galveston Bay Region, the Houston-Galveston Area Council receives these awards. Assistance can also be used to assist TNRCC with other water quality management programs including stormwater management and citizen monitoring programs. Average assistance from the TNRCC is approximately \$75,000 per project grant. Successful applicants are required to provide twenty percent of the total project costs.

Environmental Protection- Consolidated Research (EPA). State and local government agencies, universities, nonprofit institutions and individuals are eligible to apply for grants from this program. The average project grant amount is \$227,334. A five percent minimum match is required. Grants are awarded to support research to determine environmental effects and control requirements associated with water quality and toxic substances and pesticides, among other topics, to identify, develop and demonstrate necessary pollution control techniques, and to evaluate the economic and social consequences of alternative strategies for to support research to explore and develop strategies and mechanisms for economic, social, governmental and environmental systems to use in environmental management.

Water Pollution Control - Research, Development, and Demonstration (EPA). State water pollution control agencies, local governments, universities and individuals are eligible to project grants from this program. A five to 25 percent non-federal match is required. Applications can be made to the EPA Regional Office in Dallas. Project grant awards average \$130,960. Grants are awarded for direct costs of research plus indirect costs of the institution. Grants are intended to support the coordination and acceleration of research, development, and demonstration projects relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution.

Water Research (TWDB). The TWDB awards research planning grants for solution-oriented water research to enhance planning, management, conservation and development of water resources in Texas. Project grants average \$74,400. Local governments and political subdivisions may apply directly to the TWDB Grants Administrator. There are no matching requirements.

Agricultural Conservation Grants to Districts (TWDB). Agricultural Conservation Districts in Texas may apply to the TWDB for grants to purchase equipment required to demonstrate efficient chemical application and systems which will prevent contamination of groundwater and surface water from chemicals and of the substances used in agriculture, and to demonstrate efficient irrigation and agricultural water conservation practice on irrigated and dry, and range lands. The average grant is approximately \$6,477. A 25 percent local match is required.

Cooperative Extension Service. This program serves as an administrative infrastructure to organize and disseminate educational materials in each state, and as an educational, administrative, and planning organizer that can aid in the development of outreach programs. It is unlikely that Extension would have money for grants in the Galveston Bay region, since it is not a granting agency, however, through coordination between the Galveston Bay Program and Extension, common educational objectives and needs could be identified. The average amount allocated by the USDA per state for the Cooperative Extension Service is \$7.1 million.

State Environmental Fees and Funds

Water Quality Assessment Fees. The Clean Rivers Program and the Galveston Bay Program are coordinating to make the best use of water quality assessment fees to accomplish the shared goals of the two programs. Revenues from the fees will be used to support activities related to the following action plans: *Habitat Protection, Nonpoint Sources of Pollution, Freshwater Inflow and Bay Circulation, and Water and Sediment Quality.*

The Texas Clean Rivers Act of 1991 requires that a regional assessment of water quality be performed for each watershed or river basin of the state. To fund the assessments, the Act established graduated Water Quality Assessment Fees, also known as Clean River Act Permit Fees and Senate Bill 818 Fees. The fees became effective on December 30, 1991.

Water Quality Assessment Fees are collected by TNRCC from all permitted water users and wastewater dischargers across Texas. The revenues are used to pay administrative costs of the regional assessment program, and are granted to the River Authorities throughout the state to pay for water quality assessments by watershed and river basin, as outlined in the Texas Administrative Code 31 Chapter 320. The River Authorities may arrange for designated local governmental organizations to perform their water quality assessments. For example, H-GAC does the regional water quality assessments for the San Jacinto River Authority.

The Water Quality Assessment Fees will fund TNRCC's Clean Rivers Program's comprehensive inventory of NPS concerns in the watershed in the program's biennial basin assessment reports, and will fund the River Authorities' participation in the preparation of inventories of known groundwater problems, and agricultural nonpoint sources.

The Water Quality Fund. To finance water quality protection in the State of Texas, the Water Quality Fund, also known as Fund 153, has been established. Revenue from the following fees are deposited into this fund:

- Waste Treatment Inspection Fees;
- Certificate of Competency Fees; and
- Water Quality Assessment Fees.

Revenue Bonds. Municipalities can issue revenue bonds to pay for stormwater drainage capital investments. Revenue bonds can fund infrastructure improvement to reduce flooding, reduce creek erosion, and to comply with EPA mandates regarding stormwater management. Funds provided by the revenue bonds can be used to acquire, construct, and repair structures, equipment and facilities.

Local Fees and Taxes.

Drainage Fees: Additions to Water and Sewer Bills. Municipalities can institute drainage fees to finance revenue bonds for stormwater drainage. To repay revenue bonds, municipalities can create municipal drainage utility districts that charge customers a monthly drainage fee, and can be included on each customer's monthly water and sewer fee. Findings from a recent study performed for the Galveston Bay National Estuary Program indicate that there would be broad support in the five county Galveston Bay region for a \$2.00 monthly surcharge on household's water and sewer bills to pay for implementation of *The Galveston Bay Plan*.¹

One advantage of a monthly fee such as the flat monthly sewerage surcharge is that it would create a steady, reliable revenue stream. For example, if collected from all residents in the 5 county metropolitan areas, a \$2.00 monthly surcharge would yield \$2.6 million each month. This is not the case for many other user fees, which can fluctuate depending on such factors as tourist season, weather, and other variables related to use.

Municipal Sales Taxes. Local governments can use most of their sales tax revenue for any public purpose that they are authorized by the state to undertake. Municipal and county sales and use tax revenues, like property tax revenues, are deposited into local governments' general funds.

Municipal governments will incur costs of building and maintaining structural nonpoint source control measures, developing ordinances and certification activities regarding residential load reductions, and malfunctioning shoreline septic tanks. They may be able to cover these costs with revenues from their general funds.

Ad valorem property taxes. County governments are also expected to incur costs for establishing residential load reduction programs and correcting malfunctioning shoreline septic tanks. They may be able to fund these activities through county ad valorem property tax revenues in their general funds.

Point Source Pollution

The third most pressing problem identified by the Galveston Bay National Estuary Program is that raw or partially treated sewage and industrial waste enters Galveston Bay due to design and operational problems, especially during rainfall runoff.

The Point Sources Action Plan addresses this very high priority problem. To eliminate the problems associated with wet weather sewage bypass and overflows, and to eliminate pollution problems from poorly operated wastewater treatment

¹Whittington et al., Draft, 1994, p.93.

plants, the State Revolving Fund, administered by the TWDB, offers low interest loans to local governments for construction, repair and enhancement of publicly owned treatment works (POTWs). TWDB offers grants for Regional Water Supply and Wastewater Planning that can be used to prepare plans to regionalize small wastewater treatment systems.

Regional Water Supply and Wastewater Planning (TWDB). TWDB awards these funds for the preparation of feasibility-level plans to regionalize water supply and wastewater facilities. Grants may also be used for planning comprehensive basin studies. Local governments, districts, and authorities with appropriate jurisdiction may apply to TWDB for these grants, which average \$89,600 per grant. Applicant must provide 50 percent of the planning cost. The board may approve substitution of in-kind services for any part of the required local share of the planning cost.

Water Quality Enhancement Account (TWDB). TWDB provides direct, low interest loans to local governments through the purchase of political subdivisions' bonds. These loans are made to political subdivisions that are not able to obtain a reasonable rate of interest in the public market. They finance projects that will provide a "degree of water quality and reasonable treatment and collection capacity to encourage and accommodate economic development for entities receiving assistance." Loan funds can be used for the construction or purchase of wastewater related facilities such as sewage treatment plants and collection systems. The applicant must either be a hardship case, or applying for a loan to finance a regional project. The average amount per loan is \$610,000.

Water Research (TWDB). The TWDB awards research planning grants for solution-oriented water research to enhance planning, management, conservation and development of water resources in Texas. Project grants average \$74,400. Local governments and political subdivisions may apply directly to the TWDB Grants Administrator.

Pollution Prevention Grant Program (EPA). This program, authorized by the Pollution Prevention Act of 1990, supports State and local level pollution prevention programs that address the reduction of pollution across all environmental media: air, land, and water. The federal budget for this program is approximately \$6 million per year. Project grants are available for any state pollution prevention project. A 50 percent match in dollars or in-kind services is required. Pollution Prevention Incentives for States (PPIS) is a grant program intended to build and support state pollution prevention approaches and methodologies. National Industrial Competitiveness Through Efficiency: Energy, Environment, and Economics (NICE3) focuses on pollution prevention and energy efficiency. This program supports wide-scale research and demonstration projects, targeted at large scale energy users and polluters. The goal of the program is to improve efficiency and reduce industrial emissions of all kinds.

Bonds

Revenue Bond Financing. Revenue bonds can be secured for specific projects, such as building and improving wastewater treatment facilities, or publicly owned treatment works. They can be repaid by user fees such as charges for waste water treatment, or water and sewer fees. Fees used to pay off the bonds are generally tied to the service the bonds are raised to fund.

State Environmental Fees

Waste Treatment Inspection Fees. Revenues from Waste Treatment Inspection Fees are used to inspect waste treatment facilities, and to enforce Chapter 26 of the Texas Water Code and permits governing waste discharges and waste treatment facilities.

Local Fees and Taxes

The Galveston Bay Plan supports ongoing and proposed programs that are external to *The Galveston Bay Plan* and incur costs to local governments. However, there are no actions identified in the Point Source Action Plan that will require local government financing.

Freshwater Inflow

The Galveston Bay National Estuary Program ranked future demands for freshwater and alterations to circulation number four in potential problems which may seriously affect productivity and overall ecosystem health in the Galveston Bay.

The Freshwater Inflows Action Plan is dedicated to ensuring freshwater inflows to the Galveston Bay. A study to determine freshwater inflow needs of the bay is underway and has been funded by the Texas legislature. To pay for monitoring, the TWDB will initiate a cooperative effort to finance the re-establishment of sediment and flow measuring stations, using state and local funds to match USGS funds. USGS will install the sediment and flow measuring stations.

Using Funds from the Clean Rivers Program, the TNRCC will finance the multiagency planning effort to establish management alternatives and strategies for meeting freshwater inflow needs.

TWDB will provide funding for pilot programs to reduce water consumption. The Galveston Bay Program will seek funding from the TWDB to develop a regional water conservation plan. As authorized by Section 22 of the Water Resources Development Act, the Corps of Engineers can provide specialized services and in-kind contributions of effort in comprehensive plan preparation for the development, utilization, and conservation of water and related resources of the drainage basins within the state through its Planning Assistance to States program. TNRCC will pursue and or provide funding for a study to evaluate the

effect of channels and structures on bay structures on bay circulation, habitats, and species.

Water Research (TWDB). The TWDB awards research planning grants for solution-oriented water research to enhance planning, management, conservation and development of water resources in Texas. Project grants average \$74,400. Local governments and political subdivisions may apply directly to the TWDB Grants Administrator. There are no matching requirements.

Planning Assistance to States (CORPS). In order to qualify for this program, a state must have a planning program for the development, use and conservation of water, in which the Corps can play an integral role. Planning Assistance to States is authorized by Section 22 of the Water Resources Development Act. It provides specialized services and in-kind contributions of effort in comprehensive plan preparation for the development, utilization, and conservation of water and related resources of the drainage basins within the state. A state may receive up to \$300,000 per year in assistance on a service sharing basis from this program. The program could be used to aid in establishing management strategies for meeting freshwater inflow needs in the Galveston Bay region.

Assistance to State Water Resources Institute (USGS). The USGS awards the University Water Resources Research Institute in each state \$101,381 per year and requires at least a 67 percent state match. With this money the Institute is required to collaborate with state interests in defining water resources research priorities. The funds are used to provide the state institutes with funds to support state and regional programs of problem oriented water resources research and information transfer.

Geological Survey Research and Data Acquisition (USGS). State and local government agencies, colleges, universities, profit making and non-profit organizations with a named principal investigator can apply to the Department of the Interior's Geological Survey for grants which average \$50,000 per project grant. Money is provided for scientific research projects including descriptions and analyses of water resources. No match is required for project grants, but cooperating state and local governments must contribute at least half of the cost of certain cooperative water resources investigations and cooperative mapping projects.

Environmental Education Grants (EPA). State environmental agencies, state and local education agencies, colleges, universities, not-for-profits, and non commercial educational broadcasting entities are eligible to receive these grants from the EPA. Grants are used to establish environmental education and training programs. The program must train teachers, faculty, or related personnel in a specific geographic area and must assess a specific environmental problem or issue. The training program must include design demonstration or dissemination of environmental curricula, field methods, practices and techniques to assess

environmental and ecological conditions and analysis of environmental problems. Applications for \$25,000 or less are made to the EPA regional office in Dallas. Grants for over \$25,000 are made to the EPA's Office of Environmental Education in Washington. Grants may not exceed \$250,000, and many are made for less than \$5,000. A 25 percent match is required, but can be fulfilled using in-kind services.

State Environmental Fees and Funds

Water Quality Assessment Fees (Clean Rivers Program). TNRCC can use revenues from the Water Quality Assessment Fees authorized by the Clean Rivers Act to finance the multiagency planning effort to establish management alternatives and strategies for meeting freshwater inflow needs. These revenues, which are deposited in the state's Water Quality Fund, can be used to fund efforts to expand monitoring of streamflow, sediment loading and rainfall, and to establish management strategies for meeting freshwater inflow needs.

Local Fees and Taxes

No local costs for the *Freshwater Inflow and Circulation Action Plan* have been identified in *The Galveston Bay Plan*.

Water and Sediment Quality

The fifth highest ranked priority problem in *The Galveston Bay Plan* is that certain toxic substances have contaminated water and sediment and may have a negative effect on aquatic life in contaminated areas. This problem is addressed in the Water and Sediment Quality Standards Action Plan.

Actions in the Water and Sediment Quality Standards Action Plan are designed to achieve the very high priority goal of reducing toxicity and contaminant concentrations in water and sediments. Potential federal funding sources for solution-oriented technical studies and monitoring for the recommendations in this Action Plan include NOAA's Sea Grant program, and the Department of the Interiors' USGS programs. The EPA has several programs for technical studies and monitoring, along with planning and management assistance for implementation. Monitoring can also be funded by Section 319 competitive grants. Potential state programs include the Texas Water Development Board's funding for research, planning, and infrastructure through the State Revolving Fund.

The Water and Sediment Quality Standards Action Plan also addresses the program ranked eleventh in *The Galveston Bay Plan*: Dissolved oxygen is reduced in certain tributaries and side bays, harming marine life.

Research and monitoring funds to reduce toxicity and contaminant concentrations in water and sediments can be sought from the following programs:

Sea Grant (NOAA). Sea Grant provides project grants to Texas A&M for marine research, education, and advisory activities to increase public benefit from basic research leading to the development and use of marine resources. Sea Grant supports studies of living and non-living resources, technology, environmental studies, and human resources.

NOAA allocates State Sea Grant programs funds on a cost sharing basis. At least one-third of total costs of the state program must be obtained from non-federal sources. NOAA allocated Sea Grant's Program at Texas A&M approximately \$1.7 million in fiscal year 1993 and 1994, and is expected to allocate approximately \$1.6 million to the state in fiscal year 1995. Texas matches the federal funds with approximately \$1,000,000 in state money annually. The Texas program conducts marine education and outreach programs, and awards project grants for marine research. In fiscal year 1992, the Texas A&M Sea Grant Program spent \$58,307 on teacher training programs and another \$83,759 on programs to educate the public about fisheries in the Texas Bays. Research grants from the institution in fiscal year 1992 on projects related to the ecosystem of the Galveston Bay totaled \$243,307. In Texas, annual Sea Grant awards for research average \$50,000.

Financial Assistance for Ocean Resources Conservation and Assessment Program (NOAA). State and local government agencies, universities, institutes, profit or non-profit entities and individuals can apply directly to the NOAA Grants Management Division for project grants to research the long term consequences of human activities that affect the coastal and marine environment, and to define and evaluate management alternatives to minimize the adverse effects of these consequences. The average project grant award is approximately \$80,000. There are no matching requirements.

Marine Research- Regional Programs (NOAA). Researchers can apply for assistance from the Regional Research Board, which must have a research plan approved by NOAA and the EPA. Project grants are awarded to researchers to conduct and administer regional marine research plan development and regional marine research programs. Average project grant awards are \$240,000. There are no matching requirements.

Assistance to State Water Resources Institute (USGS). The USGS awards the one University Water Research Institute in each state \$101,381 per year and requires at least a 67 percent state match. With this money the Institute is required to collaborate with state interests in defining water resources research priorities. The funds are used to provide the state institutes with funds to support state and regional programs of problem oriented water resources research and information transfer.

Geological Survey Research and Data Acquisition (USGS). State and local government agencies, colleges, universities, profit making and non-profit

organizations with a named principal investigator can apply to the Department of the Interior's Geological Survey for grants that average \$50,000 per project. Money is provided for scientific research projects including descriptions and analyses of water resources. No match is required for project grants, but cooperating state and local governments must contribute at least half of the cost of certain cooperative water resources investigations and cooperative mapping projects.

Environmental Protection- Consolidated Research (EPA). State and local government agencies, universities, nonprofit institutions and individuals are eligible to apply for grants from this program. The average project grant amount is \$227,334. A five percent minimum match is required. Grants are awarded to support research to determine environmental effects and control requirements associated with water quality and toxic substances and pesticides, among other topics, to identify, develop and demonstrate necessary pollution control techniques, and to evaluate the economic and social consequences of alternative strategies for to support research to explore and develop strategies and mechanisms for economic, social, governmental and environmental systems to use in environmental management.

Water Pollution Control- Research, Development, and Demonstration (EPA). State water pollution control agencies, local governments, universities and individuals are eligible for project grants from this program. A five to 25 percent non-federal match is required. Applications can be made to the EPA Regional Office in Dallas. Project grant awards average \$130,960. Grants are awarded for direct costs of research plus indirect costs of the institution. Grants are intended to support the coordination and acceleration of research, development, and demonstration projects relating to the causes, effects, extent, prevention, reduction and elimination of water pollution.

Water Research (TWDB). The TWDB awards research planning grants for solution-oriented water research to enhance planning, management, conservation and development of water resources in Texas. Project grants average \$74,400. Local governments and political subdivisions may apply directly to the TWDB Grants Administrator. There are no matching requirements.

Assistance for planning and implementation of priority Water and Sediment Quality actions can be sought from these programs:

Coastal Zone Management Administration Awards (NOAA). This program's goal is to implement and enhance Coastal Zone Management programs. It encourages public access improvement and local/regional planning. These awards are appropriated congressional funds. In FY 92 and FY 93 Texas received a section 305 grant for development of it's Coastal Management Program. Once NOAA approves the state's CMP, the GLO as Texas's designated coastal management agency will be eligible to receive

money from the Coastal Zone Management Program for implementation of its CMP. Average Coastal Zone Management Administration Awards are \$1.2 million per state.

- Section 306 formula grants support state programs on a one-to-one cost share basis. These grants can be passed through state programs to support public access projects and ongoing local planning and management for local governments in the coastal region. A local match of 10 percent is required of jurisdictions of fewer than 3,000; 25 percent is required of jurisdictions of more than 3,000 people.
- Section 308 program development grants are authorized in §305 for regional management issues and demonstration projects. No state match is required for these grants.
- Section 309 competitive grants are allocated by NOAA to enhance state programs. Access improvements, marine debris reduction, special area management planning, and ocean resource planning including wetlands management and protection, as well as assessment of growth and development impacts on the coastal zone area can be funded with these grants.
- Section 6217. In December, 1992 Congress authorized a \$2 million national fund to develop a nonpoint source control program in coastal states. Funds are allocated to states on a noncompetitive basis for planning nonpoint source pollution control programs for coastal regions. In order to qualify for funds, states must commit to developing a coastal, watershed based nonpoint source pollution control program. Plans must include urban, agricultural, forestry, and marina best management measures to control coastal nonpoint source pollution.

Water Quality Management Planning (EPA) . This EPA program is authorized by Section 205 (j) and 604 (b) of the Clean Water Act. It assists states in carrying out water quality management planning. Formula grants with matching requirements are available to state water quality management agencies. Average grants to state agencies are \$300,000. They may pass through some of these funds to eligible Regional Public Comprehensive Planning Organizations (RPCPOs), and Interstate Organizations (IOs). States have used these grants to revise water quality standards, perform wasteload allocations, and TMDLs, and NPS activities and planning. In the Galveston Bay Region, TNRCC passes these grants through to the Houston-Galveston Area Council.

- *Water Quality Management Planning (TNRCC)*. This program is funded by the EPA's Water Quality Management Planning Program. The average amount allocated per state from the EPA is \$300,000. In Texas, the Water Quality Management Planning Grants Program is administered by TNRCC. Grants are awarded to designated units of regional government to update the water quality management plans for designated metropolitan areas. In

the Galveston Bay Region, the Houston-Galveston Area Council receives these awards. Assistance can also be used to assist TNRCC with other water quality management programs including stormwater management and citizen monitoring programs. Average assistance from the TNRCC is approximately \$75,000 per project grant. Successful applicants are required to provide twenty percent of the total project costs.

- State Revolving Fund Loans (TWDB). This TWDB administered program is funded by the EPA's Capitalization Grants for State Revolving Funds. TWDB receives \$216,000,000, the maximum award possible from these Capitalization Grants. Political subdivisions such as municipalities and designated wastewater collection and or treatment agencies may apply to the TWDB for low interest loans to plan, design and construct wastewater treatment works, nonpoint source pollution control projects that address problems targeted in Texas's Section 319 plan, and estuary pollution control projects such as *The Galveston Bay Plan*. The average of the loans issued by the TWDB to local governments is \$14,809,926.

National Pollutant Discharge Elimination System Related State Program Grants (EPA). This Program is authorized under Section 104 (b) of the Clean Water Act. State water pollution control agencies may apply to the EPA regional office in Dallas for these grants. In fiscal year 1993, EPA's Region VI was awarded \$1,000,000. Texas does not need to be authorized to run its NPDES program to qualify for these grants. State agencies may use the money to develop model general permits for storm water, develop state combined sewer overflow control programs for targeted watersheds, develop and implement control strategies for storm water discharge problems, pre-treatment and sludge program activities and municipal pollution prevention program pilot programs. Eligible activities must commit to specific activities relating to the NPDES program over a one to two year period, with measurable results.

State Environmental Fees

Revenues from TNRCC's Waste Treatment Inspection Fees and Water Quality Assessment Fees, which are deposited into the TNRCC administered Water Quality Fund can be used to fund TMDL loading studies. Waste Treatment inspection Fees can also be used to help reduce contaminated concentrations to meet standards and criteria, and to help reduce nutrient and BOD loading to problem areas.

Local Fees and Taxes

Local governments can institute drainage fees which can help them pay for the local costs of reducing contaminant concentrations to meet standards and criteria, perform TMDL loading studies, and reduce nutrient and BOD loadings to

problem areas. Municipal governments can also use revenues from their sales and use taxes to cover their costs of these actions.

Species Population Protection

Sixth on the list of priority problems ranked in *The Galveston Bay Plan* is that certain species of marine organism and birds have shown a declining population trend.

The goal priorities for the Species Population Protection Plan include reversing the declining population trend for affected species of marine organisms and birds, and maintaining populations of other economically and ecologically important species. The same TPWD administered assistance programs that have been recommended in the funding strategy for acquisition of wetland habitat can be used to further these goals. Similarly, the same partnership and foundation grant programs can also help to fund species population protection efforts.

For funding to help implement a baywide species management program, the TPWD should seek financial assistance from the USFWS Wildlife Restoration (P-R) Fund.

According to *The Galveston Bay Plan*, funding constraints have slowed the implementation of the TPWD program to return the shells of harvested oysters to designated locations in the bay to increase oyster spawning. This program will require an appropriation from the Texas legislature, however, funding to augment this appropriation can be sought from NOAA's SEAMAP and Unallied Management Projects.

Houston Light and Power (HL&P) is funding an experimental project to create five acres of oyster reef substrate using coal combustion by-products. TPWD can also seek funding for this program from USFWS programs such as Wildlife Restoration (P-R), the Coastal Wetlands Planning, Protection, and Restoration Funding, and from the Sport Fish Restoration Fund.

HL&P will fund and conduct studies on impingement and entrainment activities at power generation stations that use bay water for cooling.

The Galveston Bay Program can seek to augment funding from NMFS for its bycatch development actions with NOAA's Sea Grant, MARFIN, SEAMAP, Unallied Management Projects, as well as the TPWD's Sport Fish Restoration Fund allocation. This fund can also be used to fund TPWD's educational programs for recreational fishermen about catch and release.

To develop management plans for threatened or endangered species, USFWS and TPWD programs such as Fish and Wildlife Management Assistance can be used for technical assistance, and funds can be sought from the Wildlife Restoration and Cooperative Endangered Species Conservation Funds.

The last priority problem ranked by the Galveston Bay National Estuary Program is that some exotic and opportunistic species such as nutria and grass carp threaten desirable native species, habitats, and ecological relationships. This problem is addressed in the Species Population Protection Plan with actions to improve enforcement of laws prohibiting exotic species, and actions to identify and implement techniques for problem exotic species control. USFWS has its own budget for training and hiring of enforcement officials in its own agency. The TPWD can fund its own enforcement activities with state appropriations with revenues from the user fees it collects.

A comprehensive list of research grant programs is included in the funding strategy for the Research Action Plan. Programs particularly valuable for species protection include:

Sea Grant (NOAA). Sea Grant provides project grants to Texas A&M for marine research, education, and advisory activities to increase public benefit from basic research leading to the development and use of marine resources. Sea Grant supports studies of living and non-living resources, technology, environmental studies, and human resources.

NOAA allocates State Sea Grant programs funds on a cost sharing basis. At least one-third of total costs of the state program must be obtained from non-federal sources. NOAA allocated Sea Grant's Program at Texas A&M approximately \$1.7 million in fiscal year 1993 and 1994, and is expected to allocate approximately \$1.6 million to the state in fiscal year 1995. Texas matches the federal funds with approximately \$1,000,000 in state money annually. The Texas program conducts marine education and outreach programs, and awards project grants for marine research. In fiscal year 1992, the Texas A&M Sea Grant Program spent \$58,307 on teacher training programs and another \$83,759 on programs to educate the public about fisheries in the Texas Bays. Research grants from the institution in fiscal year 1992 on projects related to the ecosystem of the Galveston Bay totaled \$243,307. In Texas, annual Sea Grant awards for research average \$50,000.

Marine Fisheries Initiative (MARFIN) (NOAA). State or local governments, universities, nonprofit or profit organizations and individuals may apply for grants to research and develop projects to provide information for use and enhancement of fishery resources, fish stock assessment, and fish stock enhancement. Grants may fund development of harvest methods. Project grants average \$50,000 each. Examples of funded projects include: Research and development of Turtle Excluder Devices to prevent by-catch of endangered species; studies of by-catch to reduce the catch of non-target species caught in trawls; and harvesting of underutilized species. There are no matching requirements, however, matching contributions are encouraged.

Habitat Conservation (NOAA). State and local governments, universities and individuals are eligible for project grants from this program.

Applications can be made to the NMFS Regional Office or Science Center. Grant amounts are highly variable and program funds are extremely limited. The federal program budget is approximately \$104,000 per year. The funds may be used for biological, economic, sociological and policy oriented research as well as public education projects on coastal and wetland habitats. Priorities include determining the effects of habitat modifications and contaminants on marine species, and promoting policies for the effective protection and restoration of wetland and coastal habitats. The National Coastal Cleanup Campaign was funded through this program. The Campaign promoted a national voluntary beach cleanup program to heighten awareness of the marine and beach debris problem. There are no matching requirements, however, matching contributions are encouraged.

Unallied Management Projects (NOAA). State and local governments, universities, colleges, individuals, profit, nonprofit and conservation organizations are eligible to apply for project grants from this program to conserve and manage fishery and wildlife resources. This program's federal budget is approximately \$6 million annually. Projects funded by this program have provided economic, sociological, and public policy information needed for conservation and management of wildlife and fishery resources. Funds can be used for management of high priority marine and estuarine resources, especially for species and habitat under or proposed for interjurisdictional or federal management and protection. There are no matching requirements.

Sport Fish Restoration (USFWS). The USFWS distributes Sport Fish Restoration Funds to states on a formula basis. (40 percent based on state land mass + 3 miles of coastal waters, and 60 percent on number of recreational fishing license holders). The Texas Parks and Wildlife Department receives approximately \$10 million annually from this fund. The TPWD must submit a workplan, and the fund reimburses 75 percent of approved expenses. The TPWD can spend its Sport Fish Restoration funds on a broad range of activities, including boating access and facility improvement, minimizing nonpoint source pollution from boating activities, water quality education, boater education, habitat restoration, bycatch reduction, and research, however, the funds can only be spent on projects that benefit recreational fishermen or boaters, and no funds may be spent on enforcement activities.

Southeast Area Monitoring and Assessment Program (SEAMAP) (NOAA, NMFS). The NMFS regional office in St. Petersburg, Florida, administers this fund. Its annual federal budget is approximately \$1 million, and average financial assistance per project grant is \$80,000. SEAMAP is a small cooperative project between NOAA and the state fisheries management agencies to collect, manage, and disseminate information on fishery management programs. This includes commercial fishery data and management, including by-catch reduction. There are no matching requirements.

State Environmental Fees and Funds

The TPWD uses revenues from user fees it collects, such as boater registration fees and recreational fishing stamps on conservation, recreation, and parks and wildlife law enforcement.

Local Fees and Taxes

No local costs of species population protection have been identified in *The Galveston Bay Plan*.
(See *Habitat Protection Action Plan* funding strategy).

Shoreline Management

The seventh most pressing environmental problem ranked by the Galveston Bay National Estuary Program is that shoreline management practices frequently do not address negative environmental consequences to the bay, or the need for environmentally compatible public access to bay resources. Addressing the problem of the cumulative effects of shoreline development is the focus of the Shoreline Management Action Plan. The plan proposes comprehensive approaches for improving the management of these cumulative impacts, such as planning and growth management.

In its planning program for shoreline development, the Galveston Bay Program will work with the USFWS and other agencies to monitor shoreline habitat deterioration due to the cumulative impacts of shoreline development. This Action Plan also recommends that the Coastal Coordination Council designate the Galveston Bay as a Special Management Area under the Coastal Management Plan. The most likely federal source of funding for this action plan is the Coastal Zone Management Award Program from NOAA. Funding to improve access to publicly owned shorelines may be sought from the Texas Parks and Wildlife Department from their Boat Ramp Assistance Program.

The problem ranked fourteenth in the priority problem list by the Galveston Bay Program is addressed in the Shoreline Management Action Plan: Some bay shorelines are subject to high rates of erosion and loss of stabilizing vegetation due to past subsidence and sea level rise as well as current human impacts. The Harris-Galveston Coastal Subsidence District (HGCSA) manages subsidence in the area, and funds itself with Subsidence Fees. *The Galveston Bay Plan* recognizes the important contribution made by the HGCSA, but does not recommend any new actions related to subsidence requiring funding.

The National Parks Service Land and Water Conservation Fund provides grants to states for planning, acquisition and development of outdoor recreation facilities that could be used to improve public access to publicly owned shorelines. The TPWD administers the Local Park Grant Assistance Program which can also be used for these purposes. The DOT's Intermodal Surface Transportation Efficiency Act (ISTEA) program can also be used for recreational area improvement and

acquisition activities related to publicly owned shorelines. For instance, the Galveston Bay Foundation has been working with ISTEA funding to develop the Galveston Bay loop of the Texas Coastal Trail.

Outdoor Recreation, Acquisition, Development, and Planning (National Parks Service) Land and Water Conservation Fund. The National Park Service awards grants from this fund to the TPWD. The TPWD can pass this money through to and local governments to acquire, develop, and maintain outdoor recreation land, water, and facilities, however, the TPWD uses a separate fund to finance grants to local governments for their park improvements. The TPWD uses the funds from this program strictly for its state parks. The federal budget for the program is approximately \$60 million dollars. Grants average \$68,000 each. Funds can be used to expand present refuges, especially wetlands areas. Grants are awarded on a one-to-one matching basis. These grants provide funds to states for planning, acquisition, and development of outdoor recreation areas for the general public. Reimbursement is available for 50 percent of the cost of park facilities, or for the cost of purchasing land for recreational use, for the protection of rare and natural features, species habitats, natural resource systems, or important coastal sites. Wetlands have recently been included on this list. Emphasis has been on smaller projects in the past.

Local Park Grant Assistance Program (TPWD). This program is funded entirely from state funds. The goal of this program is to provide local outdoor recreation lands and facilities in Texas. TPWD provides one-to-one matching reimbursement grants to any city, county, river authority, and some special districts. Grants may be used to purchase land for the expansion of existing outdoor recreation facilities or development of new ones. Types of land that qualify include waterfront property, open spaces, wetlands or outstanding natural areas. Grants may also be used to develop outdoor recreation facilities such as picnic tables, shelters, playground equipment, swimming pools, bathhouses, restrooms, ball fields, sport/game courts, campgrounds, trails, bikeways, exercise stations, roads, parking utilities, and architectural fees. Applicants are limited to the submission of applications for no more than \$500,000 assistance. The average amount requested is \$250,000.

Grants may not be used for the acquisition of historic structures, museums, properties for other than outdoor recreational use, facilities for use by professional profit-making purposes, lodges, cabins, employee residences, or facilities for the exclusive use of school athletics or curricula.

Intermodal Surface Transportation Efficiency Act (ISTEA) (DOT). In 1992, the Intermodal Surface Transportation Efficiency Act (ISTEA) authorized a projected \$150 billion to be distributed to state departments of transportation between 1992 and 1998. A state cost-share of 20 percent is required. Where appropriate, transportation enhancement activities may be developed in cooperation with other state and local agencies and with private entities. However, the state DOT must administer these enhancement funds.

Projects must be related to the intermodal transportation system, but not necessarily to a currently planned highway project. Enhancement measures that go beyond what is customarily provided as environmental mitigation can be considered as transportation enhancement. This program has funded railroad restoration, bike paths, and highway landscaping, mitigation of water pollution due to highway runoff, and acquisition of scenic easements. The Galveston Bay Foundation has participated in a project to develop the Galveston Bay loop of the Texas Coastal Trail using ISTEPA funding.

There are 10 categories for funding from this program:

1. Provision of facilities for pedestrians and bicyclists
2. Acquisition of scenic easements and scenic or historical sites
3. Scenic or historical highway programs
4. Landscaping and other scenic beautification
5. Historic preservation
6. Rehabilitation and operation of historic transportation buildings, structures or facilities (including historic railroad facilities and canals)
7. Preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian or bicycle use)
8. Control and removal of outside advertising
9. Archeological planning and research
10. Mitigation of water pollution due to highway runoff

Coastal Zone Management Administration Awards (NOAA). This program's goal is to implement and enhance state Coastal Zone Management programs. It encourages public access improvement and local/regional planning. The awards are appropriated congressional funds. In FY 92 and FY 93 Texas received a section 305 grant for development of its Coastal Management Program. Once NOAA approves the state's CMP, the GLO as Texas's designated coastal management agency will be eligible to receive money from the Coastal Zone Management Program for implementation of its CMP. Average Coastal Zone Management Administration Awards are \$1.2 million per state.

- Section 306 formula grants support state programs on a one-to-one cost share basis. These grants can be passed through state programs to support public access projects and ongoing local planning and management for local governments in the coastal region. A local match of 10 percent is required of jurisdictions of fewer than 3,000; 25 percent is required of jurisdictions of more than 3,000 people.
- Section 308 program development grants are authorized in §305 for regional management issues and demonstration projects. No state match is required for these grants.
- Section 309 competitive grants are allocated by NOAA to enhance state programs. Access improvements, marine debris reduction,

special area management planning, and ocean resource planning including wetlands management and protection, as well as assessment of growth and development impacts on the coastal zone area can be funded with these grants.

- Section 6217. In December, 1992 Congress authorized a \$2 million national fund to develop a nonpoint source control program in coastal states. Funds are allocated to states on a noncompetitive basis for planning nonpoint source pollution control programs for coastal regions. In order to qualify for funds, states must commit to developing a coastal, watershed based nonpoint source pollution control program. Plans must include urban, agricultural, forestry, and marina best management measures to control coastal nonpoint source pollution.

State Boat Ramp Assistance (TPWD). Average project grants from this program are \$100,000 each. Any city, county, river authority, and some special districts are eligible to apply. These grants require a 25 percent local match, however, the program requires no match for major rehabilitation and repair of boat ramps on state owned land. Matching grants may be used to construct boat launching facilities and related support items such as parking lots, loading docks and platforms, access roads, area lighting, erosion controls/bulkheading, landscaping and design fees.

State Environmental Fees

No state environmental fees for shoreline management have been identified.

Local Fees and Taxes

Ad valorem taxes. It is anticipated that counties will incur the costs of regulating land use in accordance with Galveston Bay Plan and Coastal Management Plan Guidelines. The Galveston Bay Program can coordinate with the CCC to ensure that adequate technical assistance is available to the local governments to develop new standards and ordinances. Counties may finance some of these costs with ad valorem tax revenues from their general funds. Municipalities will also incur costs, some of which they may be able to finance with municipal sales taxes from their general funds.

Spills and Dumping

Ranked eighth on the list of the Galveston Bay priority problems is that bay habitats and living resources are impacted by spills of toxic and hazardous materials during storage, handling, and transport.

Reducing the impact from spills on the natural environment is one of the two main goals of the Spills/Dumping Action Plan. The Coastal Protection Fund is the most promising source of funding for implementation of spill related actions. Revenues from the Coastal Protection Fee levied on oil transported on Texas

waters are deposited in this fund. Funding of actions to reduce the impact from spills on the environment and to obtain compensation for environmental injuries with revenues from these fees is a "polluter pays" method that has been recommended by the Galveston Bay National Estuary Program. Because it is collected for the purpose of protecting the coast from spills, and also because of the proven revenue generating capability of the fee, revenues from the Coastal Protection Fee should be the primary source of funding for the spills related actions of this plan. Under the Oil Spill Prevention Act, the GLO administers the Coastal Protection Fund. The GLO could share some of these funds with the Galveston Bay Program through Memoranda of Understanding. Privately funded initiatives such as the Marine Spill Response Corporation and Clean Channel can also aid in the implementation of spill related actions.

Degradation of water quality and the aesthetics of Galveston Bay from illegal dumping and water-borne and shoreline debris is number fifteen on the Galveston Bay National Estuary Program's priority problem list. The second major goal of the *Spills and Dumping Plan* is to address this problem. Once NOAA awards the GLO Coastal Zone Management Program funding, the GLO may also use part of its funding to finance planning and implementation of spill and dumping related actions such as an advance shoreline characterization and public education on the harms of illegal dumping.

The Galveston Bay Program is eligible to apply for assistance for some of the actions in this plan from EPA's TNRCC administered Water Pollution Control State and Interstate Program, the Water Quality Management Planning program, and the Nonpoint Source Implementation Grants Program. To improve trash management near the shoreline, and to publicize the harm caused by dumping, local governments, public agencies, and educational institutions may apply for TNRCC sponsored Clean Texas 2000 grants, as well as TNRCC's Solid Waste Management Public Information/Awareness Grants.

To develop educational programs to publicize environmental harm caused by illegal dumping, the Galveston Bay Program can apply to the EPA for Environmental Education Grants. Universities and other public or private organizations can apply to the TDH for Chemical Awareness Grants. Texas A&M was awarded \$60,000 in FY 1991 from this program to develop and provide public training workshops on hazard communication and chemical awareness.

Coastal Zone Management Administration Awards (NOAA). This program's goal is to implement and enhance state Coastal Zone Management programs. It encourages public access improvement and local/regional planning. The awards are appropriated congressional funds. In FY 92 and FY 93 Texas received a section 305 grant for development of its Coastal Management Program. Once NOAA approves the state's CMP, the GLO as Texas's designated coastal management agency will be eligible to receive money from the Coastal Zone Management Program for implementation of its CMP. Average Coastal Zone Management Administration Awards are \$1.2 million per state.

- Section 306 formula grants support state programs on a one-to-one cost share basis. These grants can be passed through state programs to support public access projects and ongoing local planning and management for local governments in the coastal region. A local match of 10 percent is required of jurisdictions of fewer than 3,000; 25 percent is required of jurisdictions of more than 3,000 people.
- Section 308 program development grants are authorized in §305 for regional management issues and demonstration projects. No state match is required for these grants.
- Section 309 competitive grants are allocated by NOAA to enhance state programs. Access improvements, marine debris reduction, special area management planning, and ocean resource planning including wetlands management and protection, as well as assessment of growth and development impacts on the coastal zone area can be funded with these grants.
- Section 6217. In December, 1992 Congress authorized a \$2 million national fund to develop a nonpoint source control program in coastal states. Funds are allocated to states on a noncompetitive basis for planning nonpoint source pollution control programs for coastal regions. In order to qualify for funds, states must commit to developing a coastal, watershed based nonpoint source pollution control program. Plans must include urban, agricultural, forestry, and marina best management measures to control coastal nonpoint source pollution.

Water Quality Management Planning (TNRCC). This program is funded by the EPA's Water Quality Management Planning Program. The average amount allocated per state from the EPA is \$300,000. In Texas, the Water Quality Management Planning Grants Program is administered by TNRCC. Grants are awarded to designated units of regional government to update the water quality management plans for designated metropolitan areas. In the Galveston Bay Region, the Houston-Galveston Area Council receives these awards. Assistance can also be used to assist TNRCC with other water quality management programs including stormwater management and citizen monitoring programs. Average assistance from the TNRCC is approximately \$75,000 per project grant. Successful applicants are required to provide twenty percent of the total project costs.

Nonpoint Source Implementation Grants (§319) (EPA). Two types of Section 319 (h) funds are allocated to TNRCC by EPA's Region VI for nonpoint source pollution control. The EPA awards TNRCC a base grant for its Nonpoint Source Program. TNRCC must provide a 40 percent match for this base program grant. The average amount allocated per state is \$850,000. Funds may be used to implement urban nonpoint source control initiatives in areas not proposed for regulation of urban stormwater under NPDES.

The other type of Section 319 (h) funds are for competitive matching grants to local governments and other applicants. TNRCC administers this grant fund, but does not provide the match for the funds. Rather, local governments and other applicants must provide a 40 percent match for the grants.

- Section 319 (n): National Monitoring Program. Five percent of regional 319 funds are set-aside for a national monitoring program. Proposals are selected on a competitive basis. Grants are awarded for long-term (5- 10 years) monitoring projects. These funds pass through directly to the research project.
- Section 319 (i): Funding for Groundwater Initiatives. Ten percent of the state 319 (h) grant must be dedicated to groundwater programs.
- Nonpoint Source Pollution Control Grant Program (§319) (TNRCC). In Texas, local governments and others may apply to TNRCC for matching grants to fund nonpoint source pollution control projects and programs to prevent and remediate nonpoint source pollution problems in targeted watersheds. Political subdivisions of the state such as regional and local governments in targeted watersheds and aquifers may apply for assistance. The average project cost is \$250,000. Successful applicants are required to provide 40 percent of project costs.

Environmental Education Grants (EPA). State environmental agencies, state and local education agencies, colleges, universities, and not-for-profits are eligible to receive these grants from the EPA. Funds from these grants are used to establish environmental education and training programs. The program must train teachers, faculty, or related personnel in a specific geographic area. The training program must include design demonstration or dissemination of environmental curricula, field methods, practices and techniques to assess environmental and ecological conditions and analysis of environmental problems, projects to assess a specific environmental problem or issue, and training. Applications for \$25,000 or less are made to the EPA regional office in Dallas. Grants for over \$25,000 are made to the EPA's Office of Environmental Education in Washington. Grants may not exceed \$250,000, and many are made for less than \$5,000. A 25 percent match is required, but can be fulfilled using "in-kind services."

Solid Waste Management Grants (TNRCC). To improve trash management near the shoreline, local governments, public agencies, and educational institutions may apply for Solid Waste Management Public Information/Awareness Grants. Local governments may also apply for Solid Waste Management Enforcement and Litter Grants, Solid Waste Management Technical Assistance Grants, and Solid Waste Management Feasibility Study Grants from TNRCC. The average amount of these grants has not been established. They have no matching requirements.

Solid Waste Management Public Information/Awareness Grants (TNRCC). These grants are intended to provide financial assistance for the creation, dissemination, and implementation of programs designed to increase public awareness and knowledge of municipal solid waste management issues. This program encourages organizations to develop creative, innovative, multifaceted, public education and awareness projects.

Local governments, public agencies, and educational institutions may apply to TNRCC for grants from this program. There are no matching requirements. Programs and materials developed with this grant money must be made available to the public free of charge or for a nominal fee designed to offset organizational handling expenses.

Solid Waste Management Demonstration Grants. These grants are awarded to illustrate, by example, the economic and operational merits or value of a particular solid waste operation or system. Research institutions; schools and universities; scientists, professors, and researchers associated with accredited universities/research institutions; environmental protection or service organizations with experience in solid waste management; and, in certain instances, businesses and/or corporations are eligible for demonstration or pilot project grants from this program. There are no matching requirements for these grants, which range from \$20,000 to \$100,000 for 3 year projects.

Clean Texas 2000 Grants. The following eight Clean Texas 2000 grants are offered by the Texas Natural Resource Conservation Commission to assist local governments, non-profit organizations, and public institutions in recycling and waste minimization. The Recycling & Waste Minimization Section administers the programs. There are no matching requirements for the grants in these programs.

1. Household Hazardous Waste Grants. These grants are awarded to develop and implement collection programs for household hazardous waste.
2. Public Sector Workplace Recycling Grants. This program provides grants for waste reduction activities in governmental facilities.
3. Comprehensive Community Waste Reduction Grants. Grants are awarded to supplement community sponsored recycling and waste reduction activities.
4. Community Recycling Grants. Grants for residential source reduction and recycling activities.
5. Composting and yard trimmings management grants. Grants for implementation of programs to reduce disposal of yard trimmings.

6. Used Oil Recycling Grants. Grants for programs to recover used motor oil from "do-it yourselfers." The Recycling & Waste Minimization Section administers the program.
7. Recycling Market Development Grants. Grants for marketing programs to promote recycling and for programs to develop markets for recycled materials.
8. Solid Waste Management Enforcement and Litter . This program financially encourages and assists local governments in developing programs designed to specifically target illegal dumping and littering activities. Local governments can apply to TNRCC for enforcement grants from this program. There are no matching requirements.

Chemical Awareness Grants (TDH). To publicize environmental harm caused by illegal dumping, universities and other public or private organizations can apply for these grants. Texas A&M was awarded \$60,000 in FY 1991 to develop and provide public training workshops on hazard communication and chemical awareness. There are no matching requirements.

State Environmental Fees and Funds

Coastal Protection Fees. The Management Committee has suggested that the revenue from the existing 2 cent Coastal Protection Fee, which is levied on each barrel of crude oil that is transported on State waters, could be used to implement actions recommended in *The Galveston Bay Plan*, and to leverage matching grants to increase funding for implementation. Under the Texas Oil Spill Prevention and Response Act of 1991 (OSPRA), revenues from the fees could be spent on actions SD-1 through SD-4, which address spills and dumping. The costs of these actions to the Galveston Bay Program have been estimated at \$9,150 per year for five years. Costs to the GLO have not been estimated.

Annual revenues from the fee average approximately \$16 million, and more than half of those revenues are collected from oil that passes through Galveston Bay Ports of Entry. Revenues from the Fees are deposited into the Coastal Protection Fund, which is administered by the GLO. Revenues from fines and reimbursements of spill clean-ups are also deposited in the Fund, however, revenues from these sources are not as predictable as those from the fees.

The OSPRA places a constraint on collection of the fees that makes the revenue stream from them less predictable than it could be. The legislation requires that fees be suspended two months after the fund exceeds \$25 million, and that fees cannot be collected again until the fund drops to \$14 million. Fees are not currently being collected because the fund exceeded \$25 million on October 31, 1993.

There is also a cap on the amount of funds that can be raised by the Coastal Protection Fees. The maximum amount that can be managed in the fund is \$50 million.

Corporate Sponsorship of Oil Spill Clean Up. Corporate sponsorship of oil spill response programs, funded by oil and tanker companies, is encouraged by OSPRA. The law provides an incentive for private clean up initiatives by relieving them of liability. Like its federal counterpart, the Oil Pollution Act of 1990, OSPRA authorizes private parties to aid in the clean-up of spills without being subject to liability except in cases of gross negligence. This enables Galveston Bay to benefit from the technical expertise and equipment of industry cooperatives. In the Galveston Bay area, the industry cooperatives are the Marine Spill Response Corporation (MSRC) and Clean Channel.

The Marine Spill Response Corporation. Headquartered in the Galveston Bay Area and funded by major oil, pipeline, and shipping companies, the MSRC was established to respond to large oil spills anywhere along the U.S. coastline. Hadden and Riggan (1992) report that by 1996, this non-profit plans to have invested \$400 million in spill response equipment and \$35 million on research and development. It is also planning to build 16 offshore clean-up vessels.

Clean Channel Association. The non-profit industry cooperative Clean Channel Association is funded by fifteen member companies, each of which operates in the Houston Ship Channel. It was created to respond to member companies' oil spills of 10,000 gallons or more, and to some chemical spills in the Houston Ship Channel, the Gulf Intracoastal Waterway, and Galveston Bay and its tributaries. To enable it to respond to non-member spills in the area, Clean Channel now accepts non-member dues from foreign vessels. The cooperative has a skimmer barge in Galveston, and a skimmer and an operations barge in Barbour's Cut. Clean Channel's crew is trained in quick response, and can be at its equipment site within two hours of notification. According to Hadden and Riggan (1992), by 1992, Clean Channel had invested \$700,000 in response and clean-up equipment.

Local Fees and Taxes

No local costs for the Spills and Dumping Action Plan have been identified in *The Galveston Bay Plan*.

Public Health Protection

Number nine on the priority problem list is that seafood from some areas in the 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.

The potential risk of toxic chemicals in fish and shellfish taken from the bay and two other problems ranked by the Galveston Bay National Estuary Program are addressed in the Public Health Protection Action Plan. Ranked twelfth is that about half of the bay is permanently or provisionally closed to the taking of shellfish because of high fecal coliform levels that may indicate risk to shellfish consumers. Sixteenth on the list of problems is that 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.

To reduce the potential health risk resulting from these problems, the Public Health Protection Action Plan recommends that the TDH develop a seafood consumption safety program, enhance its Shellfish Sanitation Program, and develop a contact recreational advisory program.

The Galveston Bay Plan explains that the TDH will pursue federal funding sources as well as state appropriations for a Seafood Consumption Safety Program. For assistance with monitoring, sampling, and analysis of seafood, state appropriations should be sought. No grant programs have been identified to fund seafood testing. Funding strategies for reducing contaminant source to the estuary have been developed and are described in this report for the Water and Sediment Quality, Point Source Pollution, and Non Point Source Pollution Action Plans.

NOAA's Sea Grant conducts outreach activities that can augment, but not provide funding to the TDH public education program. Other NOAA programs, such as the Coastal Zone Management Estuarine Research Reserves Program can provide technical and grant support for research and public education activities. Funds from the TPWD administered Sport Fish Restoration Program may also be used for these purposes, as long as the efforts are directed to recreational fishermen.

The Plan recommends that TDH should conduct more frequent water sampling in shellfish harvesting areas. This sampling can be funded by state appropriations.

TNRCC can use funds from its EPA Water Pollution Control- State and Interstate Program Support (§106) formula grant to support state pollution prevention and abatement projects including enforcement programs.

The TDH should look at the following programs for possible technical and financial assistance:

Sea Grant (NOAA). Sea Grant provides project grants to Texas A&M for marine research, education, and advisory activities to increase public benefit from basic research leading to the development and use of marine resources. Sea Grant supports studies of living and non-living resources, technology, environmental studies, and human resources.

NOAA allocates State Sea Grant programs funds on a cost sharing basis. At least one-third of total costs of the state program must be obtained from non-federal sources. NOAA allocated Sea Grant's Program at Texas A&M approximately \$1.7 million in fiscal year 1993 and 1994, and is expected to allocate approximately \$1.6 million to the state in fiscal year 1995. Texas matches the federal funds with approximately \$1,000,000 in state money annually. The Texas program conducts marine education and outreach programs, and awards project grants for marine research. In fiscal year 1992, the Texas A&M Sea Grant Program spent \$58,307 on teacher training programs and another \$83,759 on programs to educate the public about fisheries in the Texas Bays. Research grants from the institution in fiscal year 1992 on projects related to the ecosystem of the Galveston Bay totaled \$243,307. In Texas, annual Sea Grant awards for research average \$50,000.

Coastal Zone Management Estuarine Research Reserves (NOAA). This program provides grants to coastal states to acquire, monitor, and develop specific estuarine reserves. The purpose of the program is to create natural field laboratories to gather data and study the natural processes in the estuary, and to educate the public about them. The program's federal budget is approximately \$3.5 million per year, and grants to the states average \$70,400 each. Matching requirements range from 30 to 50 percent of the total project cost, depending on the type of project.

Sport Fish Restoration (USFWS). The USFWS distributes Sport Fish Restoration Funds to states on a formula basis. (40 percent based on state land mass + 3 miles of coastal waters, and 60 percent on number of recreational fishing license holders). The Texas Parks and Wildlife Department receives approximately \$10 million annually from this fund. The TPWD must submit a workplan, and the fund reimburses 75 percent of approved expenses. The TPWD can spend its Sport Fish Restoration funds on a broad range of activities, including boating access and facility improvement, minimizing nonpoint source pollution from boating activities, water quality education, boater education, habitat restoration, bycatch reduction, and research, however, the funds can only be spent on projects that benefit recreational fishermen or boaters, and no funds may be spent on enforcement activities.

State/EPA Data Management Financial Assistance Program (§104(b)(3)) (DATA). The federal budget for this program is approximately \$1 million per year. This program provides project grants to states, local governments, and universities to improve the management and use of environmental data at all levels of government, and thus improve the decision-making process regarding environmental management. Average grants are approximately \$35,000, with a five percent matching requirement.

Environmental Monitoring and Assessment Program (EMAP) (EPA). The purpose of EMAP, administered by the EPA, is to monitor and assess the

condition of the nation's ecological resources through interdisciplinary and interagency cooperation. EMAP focuses on regional data collection and assessment. The program has conducted pilot studies nationwide to test data collection methodologies. In the Galveston Bay area, EMAP provided technical assistance to the Galveston Bay NEP in developing the Regional Monitoring Plan.

Toxic Substances Research (EPA). This program, authorized by the Toxic Substances Control Act, supports research projects on the effects, extent, prevention and control of toxic chemical substances or mixtures. Project grants are available to State and local governments, colleges and universities, and individuals. Grants have a matching requirement of 5 percent. The federal budget for this program is approximately \$4.2 million per year, and grants average \$172,530 each.

Water Pollution Control- Research, Development, and Demonstration (EPA). State water pollution control agencies, local governments, universities and individuals are eligible to project grants from this program. A five to 25 percent match is required. Applications can be made to the EPA Regional Office in Dallas. Project grant awards average \$130,960. Grants are awarded for direct costs of research plus indirect costs of the institution. Grants are intended to support the coordination and acceleration of research, development, and demonstration projects relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution.

Coastal America Program. This program is a partnership between the four federal agencies that have primary responsibility for the management, regulation, and stewardship of coastal living resources: The Army Corps of Engineers, Dept. of the Interior, EPA, and NOAA. These agencies form partnerships with local and state groups to address coastal problems such as habitat loss and degradation, non-point source pollution, and contaminated sediments. The Coastal America Program asks for a minimum 25 percent non-federal match of funds for supported projects, and encourages higher matching percentages.

State Environmental Fees and Funds

No state environmental fees that could provide revenues for the public health initiatives in the *Public Health Protection Plan* have been identified.

Local Fees and Taxes

No local costs for the Public Health Protection Plan have been identified in *The Galveston Bay Plan*.

Research

The goal of the Research Action Plan is to ensure that adequate research is conducted which will allow Galveston Bay management decisions to be made. The following programs can provide assistance to research necessary to achieve the priority goals of *The Galveston Bay Plan*.

Sea Grant (NOAA). Sea Grant provides project grants to Texas A&M for marine research, education, and advisory activities to increase public benefit from basic research leading to the development and use of marine resources. Sea Grant supports studies of living and non-living resources, technology, environmental studies, and human resources.

NOAA allocates State Sea Grant programs funds on a cost sharing basis. At least one-third of total costs of the state program must be obtained from non-federal sources. NOAA allocated Sea Grant's Program at Texas A&M approximately \$1.7 million in fiscal year 1993 and 1994, and is expected to allocate approximately \$1.6 million to the state in fiscal year 1995. Texas matches the federal funds with approximately \$1,000,000 in state money annually. The Texas program conducts marine education and outreach programs, and awards project grants for marine research. In fiscal year 1992, the Texas A&M Sea Grant Program spent \$58,307 on teacher training programs and another \$83,759 on programs to educate the public about fisheries in the Texas Bays. Research grants from the institution in fiscal year 1992 on projects related to the ecosystem of the Galveston Bay totaled \$243,307. In Texas, annual Sea Grant awards for research average \$50,000.

Marine Research- Regional Programs (NOAA). Researchers can apply for assistance from the Regional Research Board, which must have a research plan approved by NOAA and the EPA. Project grants are awarded to researchers to conduct and administer regional marine research plan development and regional marine research programs. Average project grant awards are \$240,000. There are no matching requirements.

Coastal Zone Management Estuarine Research Reserves (NOAA). This program provides grants to coastal states to acquire, monitor, and develop specific estuarine reserves. The purpose of the program is to create natural field laboratories to gather data and study the natural processes in the estuary, and to educate the public about them. The program's federal budget is approximately \$3.5 million per year, and grants to the states average \$70,400 each. Matching requirements range from 30 to 50 percent of the total project cost, depending on the type of project.

Marine Fisheries Initiative (MARFIN) (NOAA). State or local governments, universities, nonprofit or profit organizations and individuals may apply for grants to research and develop projects to provide information for use and enhancement of fishery resources, fish stock assessment, and fish stock enhancement. Grants may fund development of

harvest methods. Project grants average \$50,000 each. Examples of funded projects include: Research and development of Turtle Excluder Devices to prevent by-catch of endangered species; studies of by-catch to reduce the catch of non-target species caught in trawls; and harvesting of underutilized species. There are no matching requirements, however, matching contributions are encouraged.

Assistance to State Water Resources Institute (USGS). The USGS awards the one University Water Research Institute in each state \$101,381 per year. With this money the Institute is required to collaborate with state interests in defining water resources research priorities. The funds are used to provide the state institutes with funds to support and state and regional programs of problem oriented water resources research and information transfer.

Geological Survey Research and Data Acquisition (USGS). State and local government agencies, colleges, universities, profit making and non-profit organizations with a named principal investigator can apply to the Department of the Interior's Geological Survey for grants which average \$50,000 per project grant. Money is provided for scientific research projects including descriptions and analyses of water resources.

Grants for Agricultural Research, National Research Initiative (NRI) (USDA). These grants support research on agriculture, natural resources, and the environment to further understand biological, ecological and socioeconomic processes and to contribute to sustainable productivity and ecosystem health. The federal budget for FY 94 for this program is approximately \$123 million. Project grants, which average \$118,582, provide up to five years of research funding. Eligible project grant categories include soils and microorganisms, plant and water contaminant interactions, and forest ecosystems.

Environmental Protection- Consolidated Research (EPA). State and local government agencies, universities, nonprofit institutions and individuals are eligible to apply for grants from this program. The average project grant amount is \$227,334. A five percent minimum match is required. Grants are awarded to support research to determine environmental effects and control requirements associated with Water Quality and Toxic Substances and pesticides, among other topics, to identify, develop and demonstrate necessary pollution control techniques, and to evaluate the economic and social consequences of alternative strategies for to support research to explore and develop strategies and mechanisms for economic, social, governmental and environmental systems to use in environmental management.

Water Pollution Control- Research, Development, and Demonstration (EPA). State water pollution control agencies, local governments, universities and individuals are eligible for project grants from this program. A five to 25 percent match is required. Applications can be made

to the EPA Regional Office in Dallas. Project grant awards average \$130,960. Grants are awarded for direct costs of research plus indirect costs of the institution. Grants are intended to support the coordination and acceleration of research, development, and demonstration projects relating to the causes, effects, extent, prevention, reduction, and elimination of water pollution.

Sport Fish Restoration (USFWS). The USFWS distributes Sport Fish Restoration Funds to states on a formula basis. (40 percent based on state land mass + 3 miles of coastal waters, and 60 percent on number of recreational fishing license holders). The Texas Parks and Wildlife Department receives approximately \$10 million annually from this fund. The TPWD must submit a workplan, and the fund reimburses 75 percent of approved expenses. The TPWD can spend its Sport Fish Restoration funds on a broad range of activities, including boating access and facility improvement, minimizing nonpoint source pollution from boating activities, water quality education, boater education, habitat restoration, bycatch reduction, and research, however, the funds can only be spent on projects that benefit recreational fishermen or boaters, and no funds may be spent on enforcement activities.

Wildlife Restoration (USFWS). Officially known as Federal Aid to Wildlife Restoration, this fund is often referred to as Pitman-Robinson (1939). The Fund's budget for fiscal year 1994 was approximately \$153 million, which was an 8 percent decrease from fiscal year 1993. Although declining revenues from the fund will increase competition for grants, priority will be given to habitat restoration projects. The USFWS apportions Formula Grants to the states based 50 percent on land mass relative to the U.S. total, and 50 percent on licensed hunters relative to the U.S. total. The TPWD must submit a workplan, and the fund reimburses 75 percent of approved expenses for projects involving restoration of mammal or bird habitat. Funds may be used for land acquisition, research, coordination, restoration, management of populations, and hunter safety programs.

Cooperative Endangered Species Conservation Fund (USFWS). Unlike the Sport Fish Restoration and Pitman Robinson Funds, this fund depends on Congressional appropriations. Its federal budget is approximately \$10 million. Allocations are made to the Regional Fish and Wildlife Offices on the basis of the number and rank of endangered species in the region. Regional Offices rank proposals made by the states. State fish and wildlife agencies, such as the TPWD, that have entered into a cooperative agreement with the Fish and Wildlife Service to develop programs for the conservation of endangered and threatened species are eligible for project grants from this program, which average \$23,400 each. Funded projects can include animal, plant, and habitat surveys, research, planning, management, land acquisition, protection, and public education. The project must involve research, protection or management of a state or federally listed endangered species. The grant cannot exceed 75 percent of the project costs unless it is made to two or more states that have entered

into a joint agreement, in which case the grant may be up to 90 percent of project costs.

Toxic Substances Research (EPA). This program, authorized by the Toxic Substances Control Act, supports research projects on the effects, extent, prevention and control of toxic chemical substances or mixtures. Project grants are available to State and local governments, colleges and universities, and individuals. Grants have a matching requirement of 5 percent. The federal budget for this program is approximately \$4.2 million per year, and grants average \$172,530 each.

Water Research (TWDB). The TWDB awards research planning grants for solution-oriented water research to enhance planning, management, conservation and development of water resources in Texas. Project grants average \$74,400. Local governments and political subdivisions may apply directly to the TWDB Grants Administrator.

Wastewater Treatment Research (TNRCC). To increase funding for Galveston Bay research, universities and colleges may apply to the TNRCC On Site Waste Water Treatment Council for project grants, which average \$69,000 each.

Solid Waste Management Applied Research Grants (TNRCC). Researchers associated with universities, environmental protection or service organizations, businesses and corporations may apply to TNRCC for Solid Waste Management Applied Research Grants. No average has yet been established for these grants. There are no matching requirements.

Other Programs for Research Funding. The National Science Foundation and the Texas State Higher Education Board administer programs that are important sources of research funds for academic researchers in the state. In addition, the Minerals Management Service sponsors some research.

State Environmental Fees and Funds

No state fees have been identified that could provide revenue for the research related initiatives recommended in *The Galveston Bay Plan*.

Local Fees and Taxes

No local costs of research were identified in *The Galveston Bay Plan*.

Public Participation and Education

Facilitating public involvement in Bay policy and management is listed as the overarching goal for this Action Plan. Funding for the actions can be sought from the EPA's Environmental Education Grants, as well as from NOAA's Sea Grant Program. Assistance and support in public education and outreach can be

sought from the USDA's Cooperative Extension Service. It may also be possible for the EPA's CWA Section 319 Grants to fund public education related to nonpoint source pollution control. At the State Level, TNRCC awards solid waste management grants for demonstration projects which could help to develop and implement long range adult education as well as informing local governments in methods to improve trash management near the shoreline. The Texas Forest Service (TFS) offers Federal Urban Forestry Grants which could also be instrumental in implementing a long range adult education and outreach program on the merits of conserving urban wooded areas.

Cooperative Extension Service (USDA). This program serves as an administrative infrastructure to organize and disseminate educational materials in each state, and as an educational, administrative, and planning organizer that can aid in the development of outreach programs. It is unlikely that Extension would have money for grants in the Galveston Bay region, since it is not a granting agency, however, through coordination between the Galveston Bay Program and Extension, common educational objectives and needs could be identified. The average amount allocated by the USDA per state for the Cooperative Extension Service is \$7.1 million.

Sea Grant (NOAA). Sea Grant provides project grants to Texas A&M for marine research, education, and advisory activities to increase public benefit from basic research leading to the development and use of marine resources. Sea Grant supports studies of living and non-living resources, technology, environmental studies, and human resources.

NOAA allocates State Sea Grant programs funds on a cost sharing basis. At least one-third of total costs of the state program must be obtained from non-federal sources. NOAA allocated Sea Grant's Program at Texas A&M approximately \$1.7 million in fiscal year 1993 and 1994, and is expected to allocate approximately \$1.6 million to the state in fiscal year 1995. Texas matches the federal funds with approximately \$1,000,000 in state money annually. The Texas program conducts marine education and outreach programs, and awards project grants for marine research. In fiscal year 1992, the Texas A&M Sea Grant Program spent \$58,307 on teacher training programs and another \$83,759 on programs to educate the public about fisheries in the Texas Bays. Research grants from the institution in fiscal year 1992 on projects related to the ecosystem of the Galveston Bay totaled \$243,307. In Texas, annual Sea Grant awards for research average \$50,000.

Nonpoint Source Implementation Grants (§319) (EPA). Two types of Section 319 (h) funds are allocated to TNRCC by EPA's Region VI for nonpoint source pollution control. The EPA awards TNRCC a base grant for its Nonpoint Source Program. TNRCC must provide a 40 percent match for this base program grant. The average amount allocated per state is \$850,000. Texas's apportionment could increase once *The Galveston Bay Plan* nonpoint source actions are included in the work plan. Funds may be

used to implement urban nonpoint source control initiatives in areas not proposed for regulation of urban stormwater under NPDES.

The other type of Section 319 (h) funds are for competitive matching grants to local governments and other applicants. TNRCC administers this grant fund, but does not provide the match for the funds. Rather, local governments and other applicants must provide a 40 percent match for the grants.

- Section 319 (n): National Monitoring Program. Five percent of regional 319 funds are set-aside for a national monitoring program. Proposals are selected on a competitive basis. Grants are awarded for long-term (5- 10 years) monitoring projects. These funds pass through directly to the research project.
- Section 319 (i): Funding for Groundwater Initiatives. Ten percent of the state 319 (h) grant must be dedicated to groundwater programs.
- Nonpoint Source Pollution Control Grant Program (§319) (TNRCC). In Texas, local governments and other organizations may apply to TNRCC for matching grants to fund nonpoint source pollution control projects and programs to prevent and remediate nonpoint source pollution problems in targeted watersheds. Political subdivisions of the state such as regional and local governments in targeted watersheds and aquifers may apply for assistance. The average project cost is \$250,000. Successful applicants are required to provide 40 percent of project costs.

Environmental Education Grants (EPA). State environmental agencies, state and local education agencies, colleges, universities, and not-for-profits are eligible to receive these grants from the EPA. Funds from these grants are used to establish environmental education and training programs. The program must train teachers, faculty, or related personnel in an specific geographic area. The training program must include design demonstration or dissemination of environmental curricula, field methods, practices and techniques to assess environmental and ecological conditions and analysis of environmental problems, projects to assess a specific environmental problem or issue, and training. Applications for \$25,000 or less are made to the EPA regional office in Dallas. Grants for over \$25,000 are made to the EPA's Office of Environmental Education in Washington. Grants may not exceed \$250,000, and many are made for less than \$5,000. A 25 percent match is required, but can be fulfilled using "in-kind services."

Solid Waste Management Demonstration Grants (TNRCC). To develop and implement a long-range adult education and outreach program and to develop and implement a strategy for informing, educating, and providing support for local government involvement, researchers associated with universities, environmental protection or service organizations, businesses and corporations may apply to TNRCC for Solid Waste Management

Demonstration Grants. Three year project grants average \$60,000 each. There are no matching requirements.

Urban Forestry Grants (Texas Forest Service). Units of local government, municipalities, county, or other legal entity of local government, and non-profit 501(c)(3) organizations may apply to the Texas Forest Service for Federal Urban Forestry Grants, which can provide up to \$10,000 per project grant, or per project phase, on a one-to-one cost-share basis. Grant funds can be used to develop programs to improve understanding of the benefits of preserving existing tree cover; encourage property owners to maintain trees and expand forest cover; provide educational and technical assistance to local organizations in maintaining and expanding forest cover; implement tree planting programs; establish demonstration projects; and develop skills of individuals involved in urban forests.

State Environmental Fees and Funds

No state fees have been identified that could provide revenue for public participation and education related initiatives recommended in *The Galveston Bay Plan*.

Local Fees and Taxes

No local costs of public participation and education were identified in *The Galveston Bay Plan*.