SUMMARY OF FINDINGS

General

The Armand Bayou watershed has a complex regulatory structure. The management of activities with the potential to degrade or alter the environment is divided among eight federal and twelve state agencies, five local governments, and two special districts. (As mentioned earlier, Appendix E contains a complete listing of addresses and phone numbers for all agencies mentioned in this report. Appendix C provides a list of key contacts for those agencies.)

The regulatory framework governing a total of thirty-two types of activities with potential impacts to the Armand Bayou watershed was inventoried. Regulatory programs are categorized under the broad categories of: point sources of pollution; nonpoint sources of pollutions; natural and living resources; and public health protection. Most of the activities had at least some sort of regulatory framework in place. Exceptions, such as pollution from urban runoff, have regulations that are presently in the preparatory stage.

A basic regulatory framework for managing the Armand Bayou Coastal Preserve is in place. Most of the gaps identified were aspects of the regulations or in implementation. Improving interagency coordination will be critical for effective management of the preserve.

The following gaps, overlaps and opportunities for improved interagency coordination were identified in agency survey responses and through research of legislation, regulations and other reference materials.

GAPS, OVERLAPS AND INTERAGENCY COORDINATION

POINT SOURCES OF POLLUTION

Gaps

- Standards for wastewater discharge permits are based only on regulated constituent contents in effluent. The impact of unregulated constituents and the potential impact of greatly increased wastewater discharges is not addressed.
- The cumulative impacts of existing and new wastewater discharges are not addressed in the permit review process.
- Oil and gas related wastewater disposal is regulated only for oil and grease, not other contaminants such as total suspended solids (TSS) and brine.
- There is no formal environmental policy for the Texas Water Commission. Hence, permit reviews are not as comprehensive as would be desirable.

Overlaps and Interagency Coordination Issues

- o EPA and TWC overlap in permitting authority for wastewater discharges, at the present time. Opinions differ as to whether this overlap is a management problem or an additional safeguard.
- o The monitoring and inspection efforts of enforcement agencies are not coordinated.
- o There is no structured interaction between the state and local governments to reconcile state agency water quality management objectives with local facility development plans.

NONPOINT SOURCES OF POLLUTION

Gaps

- o While significant federal and state NPS regulations are forthcoming, none are currently in place.
- o There essentially is no local government regulatory framework for NPS in place, though one will soon be required by federal and state regulations.
- o While regulated, illegal disposal of hazardous waste is difficult to enforce--particularly household hazardous waste.
- o There are no local guidelines in place to govern erosion control.
- o Design of local storm sewer systems is generally geared towards flood control, not pollution abatement. The two objectives may be at cross purposes.
- o Not all activities which cause nonpoint source contamination of groundwater are directly regulated. TWC and TDH currently have a voluntary program for the protection of municipal water wells, however, Houston is the only local government in the watershed currently participating.
- o Water pollution threats may exist from already closed landfill sites.

Interagency Coordination Issues

- o It is not known whether EPA will require multiple NPDES permits for stormwater discharges from Houston, Harris County and each of the other cities in the watershed, or whether a single multi-jurisdictional permit will be employed.

Opportunities

- o There appear to be opportunities for local land uses and development/construction ordinances to be used for NPS management. Examples include erosion control on construction projects and land use controls aimed at preventing contamination in water well recharge zones.

NATURAL AND LIVING RESOURCE MANAGEMENT

Gaps - Wetlands

- o The Section 404 program only covers dredge and fill disposal projects. Other activities such as draining and clearing of wetlands are not regulated under the Clean Water Act, but through a variety of other regulations and inter-agency agreements.
- o Many minor dredge and fill projects are authorized under general or nationwide permits without individual review.
- o Section 404 permits do not fully evaluate all environmental impacts of wetlands projects.
- o There is no comprehensive inventory or monitoring of the extent of wetlands in the Armand Bayou watershed.
- o Enforcement of wetlands violation has been limited.
- o Management of small wetlands parcels is difficult.

Gaps - General

- o There is generally insufficient monitoring of living resources in the watershed.
- o There is a general lack of funding for enforcement of natural resource protection regulations.
- o Wildlife and habitat protection regulations generally only cover endangered, threatened, game or commercial species.
- o Nursery habitat provisions only cover shrimp fisheries.
- o Texas has no comprehensive Coastal Zone Management program.

Overlaps and Interagency Coordination Issues-Wetlands

- o Final authority for wetlands permitting and enforcement shared by Corps and EPA, needs additional clarification.
- o Concerns exist about the effectiveness of the multi-agency review process for wetlands permits.
- o No formal guidance has been given to regulatory agencies for implementing the President's stated "no-net-loss" policy.

Overlaps and Interagency Coordination Issues-General

- o Coordination of programs often suffers from differing orientations of participating agencies.

PUBLIC HEALTH

Gaps

- o Closure criteria for shellfish beds (oysters) are based on general weather patterns and not monitored water quality or other individual case evaluations.

REGULATORY MATRIX

The regulatory matrix provides an overview of the roles of the different federal, state and local agencies. (It should be noted that, aside from their existing regulatory duties, many of these agencies are participating directly in the five-year GBNEP planning effort, with agency representatives serving on the program's various policy and advisory committees.) The regulatory roles have been divided into five categories. The definitions of each of those roles are listed below.

SET POLICY: This category includes those regulatory agencies with the authority to implement legislative acts and to develop regulations and issue directives for the interpretation of permits and standards.

PERMIT/REGULATE: This category includes those agencies with responsibility for review and issuance of permits, licenses and other approvals required by agency regulations. Generally, this refers to reviews which must take place before an activity can commence or be renewed. Some agencies have lead status, others have coordination or review status.

ENFORCE: Enforcement activities may include inspections for permit compliance, periodic inspections to ensure no violations of regulations occur, and investigations of complaints. Also included are corrective actions whereby the agency defines the extent of a problem, specifies procedures for correction or mitigation and monitors compliance.

MONITOR: Monitoring refers to collection of data sufficient to analyze for trends or to notice deviations from accepted standards. In addition to public regulatory agencies, research organizations or non-profit groups may monitor, but not all are included in this matrix.

EMERGENCY RESPONSE: This category includes the agencies which would typically be among the first to provide a specialized response in an emergency situation. This response may include defining the extent of the problem, identifying hazards, and implementing first actions to alleviate the problem. Local emergency crews, such as police and fire departments are also likely to respond.

POINT SOURCE POLLUTION

ACTIVITY	*SET POLICY*	*REGULATE/ PERMIT*	*ENFORCE*	*MONITOR*	*EMERGENCY RESPONSE*
MUNICIPAL WASTEWATER DISCHARGES	EPA TWC CLWA	EPA TWC	EPA TWC CLWA, HC	TWC	TWC
INDUSTRIAL STORMWATER DISCHARGES (Uncontaminated runoff)	EPA TWC	EPA TWC	EPA TWC HC	TWC	TWC
DISCHARGE FROM OIL AND GAS ACTIVITIES	EPA RRC	EPA RRC	RRC		EPA RRC
SURFACE WATER QUALITY STANDARDS	EPA TWC	TWC	TWC	TWC ABNC	TWC, TPWD

NONPOINT SOURCE POLLUTION

ACTIVITY	*SET POLICY*	*REGULATE/ PERMIT*	*ENFORCE*	*MONITOR*	*EMERGENCY RESPONSE*
URBAN RUNOFF/STORM DRAINAGE**	EPA TWC HOU, PAS, HC	EPA TWC HOU, PAS, HC	EPA TWC HOU, PAS, HC	HOU, PAS, HC	N/A
INLAND EROSION AND SHORELINE EROSION	SCS, FEMA SWCB	FEMA SWCB	FEMA SWCB		N/A
GROUNDWATER CONTAMINATION	EPA TWC, TDH, RRC	EPA TWC, RRC	EPA TWC, RRC	TWC HOU	EPA TWC, RRC HOU, HC
HAZARDOUS WASTE DISPOSAL	EPA TWC, RRC	TWC, RRC	TWC, RRC		EPA TWC, RRC
SOLID WASTE DISPOSAL	EPA TWC, TDH	TWC, TDH	TWC, TDH	TDH	TDH HOU, HC
SEPTIC TANKS	TDH CITIES, HC	TDH CITIES, HC	TDH CITIES, HC		TDH HC
OIL AND GAS EXTRACTION	RRC, GLO	RRC, GLO	RRC, GLO	RRC, GLO	GLO, RRC, TWC
AIR EMISSIONS	EPA TACB	EPA TACB, TWC, TDH	TACB HOU, HC	TACB	TACB HOU

** The Environmental Protection Agency recently issued regulations for municipal stormwater systems. The Texas Water Commission will ultimately be involved in the permitting and regulatory process, and local governments will be required to regulate discharges into their drainage systems and monitor their water quality.

RESOURCE MANAGEMENT

ACTIVITY	*SET POLICY*	*REGULATE/ PERMIT*	*ENFORCE*	*MONITOR*	*EMERGENCY RESPONSE*
WETLANDS (Includes habitat management and discharge of fill materials)	EPA, CORPS,FWS, SCS TPWD	CORPS, EPA, FWS, ASCS TWC, TPWD	CORPS, EPA, ASCS	FWS TPWD	N/A
STREAM BED	CORPS TPWD, GLO	CORPS TPWD, GLO	CORPS TPWD, GLO	GLO	N/A
WATERFOWL MANAGEMENT	FWS TPWD	FWS TPWD	FWS TPWD	FWS TPWD	N/A
SPORT FISHING	TPWD	TPWD	TPWD	TPWD	N/A
ENDANGERED SPECIES	FWS, NMFS TPWD	FWS, NMFS TPWD	FWS TPWD	FWS TPWD	N/A
LAND SUBSIDENCE/ GROUNDWATER EXTRACTION	HGCSD	HGCSD	HGCSD	HGCSD	N/A
SURFACE WATER EXTRACTION	TWC, TPWD	TWC	TWC, TPWD	TWC	N/A
FLOODPLAIN MANAGEMENT	FEMA HOU, HC	FEMA TWC HOU, HC	FEMA HOU, HC	FEMA HOU, HC	FEMA HOU, HC
NATURAL AQUATIC RESOURCES AND CHARACTERISTICS	TPWD, TWDB			TPWD, TWDB	
LAND USE AND DEVELOPMENT	CITIES, HC	CITIES, HC	CITIES, HC	CITIES, HC	N/A

PUBLIC HEALTH

ACTIVITY	*SET POLICY*	*REGULATE/ PERMIT*	*ENFORCE*	*MONITOR*	*EMERGENCY RESPONSE*
FISH CONTAMINATION	TDH, TPWD	N/A	TDH	TDH	TDH, TPWD
CONTACT RECREATION	TDH	TDH PAS, HC	TDH PAS, HC		TDH HC

MATRIX ACRONYMS

FEDERAL

CG	Coast Guard
CORPS	Army Corps of Engineers
DOT	Department of Transportation
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FWS	Fish & Wildlife Service
NMFS	National Marine Fisheries Service
SCS	Soil Conservation Service

STATE

DPS	Department of Public Safety
GLO	General Land Office
RRC	Railroad Commission
SDPHT	Department of Highways and Public Transportation
SWCB	Soil and Water Conservation Board
TACB	Air Control Board
TDA	Department of Agriculture
TDH	Department of Health
TPWD	Parks and Wildlife Department
TWC	Water Commission
TWDB	Water Development Board

LOCAL-Armand Bayou

ABNC	Armand Bayou Nature Center
CLWA	Clear Lake Water Authority
DPK	Deer Park
HC	Harris County
HGCSD	Harris-Galveston Coastal Subsidence District
HOU	Houston
LAP	La Porte
LEPC	Local Emergency Planning Committee
PAS	Pasadena