4TH PRIORITY PROJECT LIST REPORT (APPENDICES)

PREPARED BY:

LOUISIANA COASTAL WETLANDS CONSERVATION AND RESTORATION TASK FORCE

December 1994

Coastal Wetlands Planning, Protection and Restoration Act

4th Priority Project List Report

Appendix A

Summary and Complete Text of the CWPPRA

COASTAL WETLANDS PLANNING, PROTECTION, & RESTORATION ACT
(Public Law 101-646, Title III)

SECTION 303. Priority Louisiana Coastal Wetlands Restoration Projects.

- Section 303a. Priority Project List.
  - NLT 13 Jan 91, Sec. of the Army (Secretary) will convene a Task Force.
    - •Secretary
    - •Administrator, EPA
    - •Governor, Louisiana
    - •Secretary, Interior
    - •Secretary, Agriculture
    - •Secretary, Commerce
  - NLT 28 Nov 91, Task Force will prepare and transmit to Congress a Priority List of wetland restoration projects based on cost effectiveness and wetland quality.
  - Priority List is revised and submitted annually as part of President's budget.
- Section 303b. Federal and State Project Planning.
  - NLT 28 Nov 93, Task Force will prepare a comprehensive coastal wetlands Restoration Plan for Louisiana.
  - Restoration Plan will consist of a list of wetland projects, ranked by cost effectiveness and wetland quality.
  - Completed Restoration Plan will become Priority List.
  - Secretary will ensure that navigation and flood control projects are consistent with the purpose of the Restoration Plan.
  - Upon submission of the Restoration Plan to Congress, the Task Force will conduct a scientific evaluation of the completed wetland restoration projects every 3 years and report the findings to Congress.

SECTION 304. Louisiana Coastal Wetlands Conservation Planning.

- Secretary; Administrator, EPA; and Director, USFWS will:
  - Sign an agreement with the Governor specifying how Louisiana will develop and implement the Conservation Plan.
  - Approve the Conservation Plan.
  - Provide Congress with periodic status reports on Plan implementation.
- NLT 3 years after agreement is signed, Louisiana will develop a Wetland Conservation Plan to achieve no net loss of wetlands resulting from development.

SECTION 305. National Coastal Wetlands Conservation Grants.

- Director, USFWS, will make matching grants to any coastal state to implement Wetland Conservation Projects (projects to acquire, restore, manage, and enhance real property interest in coastal lands and waters).
- Cost sharing is 50% Federal / 50% State *

SECTION 306. Distribution of Appropriations.

- 70% of annual appropriations not to exceed (NTE) $70 million used as follows:
  - NTE $15 million to fund Task Force completion of Priority List and Restoration Plan -- Secretary disburses funds.
  - NTE $10 million to fund 75% of Louisiana's cost to complete Conservation Plan -- Administrator disburses funds.
  - Balance to fund wetland restoration projects at 75% Federal/ 25% Louisiana ** -- Secretary disburses funds.
- 15% of annual appropriations, NTE $15 million for Wetland Conservation Grants - Director, USFWS disburses funds.
- 15% of annual appropriations, NTE $15 million for projects authorized by the North American Wetlands Conservation Act - Secretary, Interior disburses funds.

SECTION 307. Additional Authority for the Corps of Engineers.

- Section 307a. Secretary authorized to:
  - Carry out projects to protect, restore, and enhance wetlands and aquatic/coastal ecosystems.
- Section 307b. Secretary authorized and directed to study feasibility of modifying the MR&T to increase flows and sediment to the Atchafalaya River for land building and wetland nourishment.

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* 25% if the state has dedicated trust fund from which principal is not spent.

** 15% when Louisiana's Conservation Plan is approved.

activities, where appropriate, that would contribute to the restoration or improvement of one or more fish stocks of the Great Lakes Basin; and

"(2) activities undertaken to accomplish the goals stated in section 2006.

16 USC 941g.

"SEC. 2009. AUTHORIZATION OF APPROPRIATIONS.

"(a) There are authorized to be appropriated to the Director—

"(1) for conducting a study under section 2005 not more than $4,000,000 for each of fiscal years 1991 through 1994;

"(2) to establish and operate the Great Lakes Coordination Office under section 2008(a) and Upper Great Lakes Fishery Resources Offices under section 2008(c), not more than $4,000,000 for each of fiscal years 1991 through 1995; and

"(3) to establish and operate the Lower Great Lakes Fishery Resources Offices under section 2008(b), not more than $2,000,000 for each of fiscal years 1991 through 1995.

"(b) There are authorized to be appropriated to the Secretary to carry out this Act, not more than $1,500,000 for each of fiscal years 1991 through 1995.".

TITLE III—WETLANDS

Coastal Wetlands Planning, Protection and Restoration Act.
16 USC 3951 note.

SEC. 301. SHORT TITLE.

This title may be cited as the "Coastal Wetlands Planning, Protection and Restoration Act".

16 USC 3951.

SEC. 302. DEFINITIONS.

As used in this title, the term—

(1) "Secretary" means the Secretary of the Army;

(2) "Administrator" means the Administrator of the Environmental Protection Agency;

(3) "development activities" means any activity, including the discharge of dredged or fill material, which results directly in a more than de minimus change in the hydrologic regime, bottom contour, or the type, distribution or diversity of hydrophytic vegetation, or which impairs the flow, reach, or circulation of surface water within wetlands or other waters;

(4) "State" means the State of Louisiana;

(5) "coastal State" means a State of the United States in, or bordering on, the Atlantic, Pacific, or Arctic Ocean, the Gulf of Mexico, Long Island Sound, or one or more of the Great Lakes; for the purposes of this title, the term also includes Puerto Rico, the Virgin Islands, Guam, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific Islands, and American Samoa;

(6) "coastal wetlands restoration project" means any technically feasible activity to create, restore, protect, or enhance coastal wetlands through sediment and freshwater diversion, water management, or other measures that the Task Force finds will significantly contribute to the long-term restoration or protection of the physical, chemical and biological integrity of coastal wetlands in the State of Louisiana, and includes any such activity authorized under this title or under any other provision of law, including, but not limited to, new projects, completion or expansion of existing or on-going projects, individ-

ual phases, portions, or components of projects and operation, maintanence and rehabilitation of completed projects; the primary purpose of a "coastal wetlands restoration project" shall not be to provide navigation, irrigation or flood control benefits;

(7) "coastal wetlands conservation project" means—

(A) the obtaining of a real property interest in coastal lands or waters, if the obtaining of such interest is subject to terms and conditions that will ensure that the real property will be administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon; and

(B) the restoration, management, or enhancement of coastal wetlands ecosystems if such restoration, management, or enhancement is conducted on coastal lands and waters that are administered for the long-term conservation of such lands and waters and the hydrology, water quality and fish and wildlife dependent thereon;

(8) "Governor" means the Governor of Louisiana;

(9) "Task Force" means the Louisiana Coastal Wetlands Conservation and Restoration Task Force which shall consist of the Secretary, who shall serve as chairman, the Administrator, the Governor, the Secretary of the Interior, the Secretary of Agriculture and the Secretary of Commerce; and

(10) "Director" means the Director of the United States Fish and Wildlife Service.

SEC. 302. PRIORITY LOUISIANA COASTAL WETLANDS RESTORATION PROJECTS. 16 USC 3952.

(a) PRIORITY PROJECT LIST.—

(1) PREPARATION OF LIST.—Within forty-five days after the date of enactment of this title, the Secretary shall convene the Task Force to initiate a process to identify and prepare a list of coastal wetlands restoration projects in Louisiana to provide for the long-term conservation of such wetlands and dependent fish and wildlife populations in order of priority, based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing coastal wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration.

(2) TASK FORCE PROCEDURES.—The Secretary shall convene meetings of the Task Force as appropriate to ensure that the list is produced and transmitted annually to the Congress as required by this subsection. If necessary to ensure transmittal of the list on a timely basis, the Task Force shall produce the list by a majority vote of those Task Force members who are present and voting; except that no coastal wetlands restoration project shall be placed on the list without the concurrence of the lead Task Force member that the project is cost effective and sound from an engineering perspective. Those projects which potentially impact navigation or flood control on the lower Mississippi River System shall be constructed consistent with section 304 of this Act.

(3) TRANSMITTAL OF LIST.—No later than one year after the date of enactment of this title, the Secretary shall transmit to the Congress the list of priority coastal wetlands restoration projects required by paragraph (1) of this subsection. Thereafter,

Reports.

the list shall be updated annually by the Task Force members and transmitted by the Secretary to the Congress as part of the President's annual budget submission. Annual transmittals of the list to the Congress shall include a status report on each project and a statement from the Secretary of the Treasury indicating the amounts available for expenditure to carry out this title.

(4) LIST OF CONTENTS.—

(A) AREA IDENTIFICATION; PROJECT DESCRIPTION.—The list of priority coastal wetlands restoration projects shall include, but not be limited to—

(i) identification, by map or other means, of the coastal area to be covered by the coastal wetlands restoration project; and

(ii) a detailed description of each proposed coastal wetlands restoration project including a justification for including such project on the list, the proposed activities to be carried out pursuant to each coastal wetlands restoration project, the benefits to be realized by such project, the identification of the lead Task Force member to undertake each proposed coastal wetlands restoration project and the responsibilities of each other participating Task Force member, an estimated timetable for the completion of each coastal wetlands restoration project, and the estimated cost of each project.

(B) PRE-PLAN.—Prior to the date on which the plan required by subsection (b) of this section becomes effective, such list shall include only those coastal wetlands restoration projects that can be substantially completed during a five-year period commencing on the date the project is placed on the list.

(C) Subsequent to the date on which the plan required by subsection (b) of this section becomes effective, such list shall include only those coastal wetlands restoration projects that have been identified in such plan.

(5) FUNDING.—The Secretary shall, with the funds made available in accordance with section 306 of this title, allocate funds among the members of the Task Force based on the need for such funds and such other factors as the Task Force deems appropriate to carry out the purposes of this subsection.

(b) FEDERAL AND STATE PROJECT PLANNING.—

(1) PLAN PREPARATION.—The Task Force shall prepare a plan to identify coastal wetlands restoration projects, in order of priority, based on the cost-effectiveness of such projects in creating, restoring, protecting, or enhancing the long-term conservation of coastal wetlands, taking into account the quality of such coastal wetlands, with due allowance for small-scale projects necessary to demonstrate the use of new techniques or materials for coastal wetlands restoration. Such restoration plan shall be completed within three years from the date of enactment of this title.

(2) PURPOSE OF THE PLAN.—The purpose of the restoration plan is to develop a comprehensive approach to restore and prevent the loss of, coastal wetlands in Louisiana. Such plan shall coordinate and integrate coastal wetlands restoration

projects in a manner that will ensure the long-term conservation of the coastal wetlands of Louisiana.

(3) INTEGRATION OF EXISTING PLANS.—In developing the restoration plan, the Task Force shall seek to integrate the "Louisiana Comprehensive Coastal Wetlands Feasibility Study" conducted by the Secretary of the Army and the "Coastal Wetlands Conservation and Restoration Plan" prepared by the State of Louisiana's Wetlands Conservation and Restoration Task Force.

(4) ELEMENTS OF THE PLAN.—The restoration plan developed pursuant to this subsection shall include—

(A) identification of the entire area in the State that contains coastal wetlands;

(B) identification, by map or other means, of coastal areas in Louisiana in need of coastal wetlands restoration projects;

(C) identification of high priority coastal wetlands restoration projects in Louisiana needed to address the areas identified in subparagraph (B) and that would provide for the long-term conservation of restored wetlands and dependent fish and wildlife populations;

(D) a listing of such coastal wetlands restoration projects, in order of priority, to be submitted annually, incorporating any project identified previously in lists produced and submitted under subsection (a) of this section;

(E) a detailed description of each proposed coastal wetlands restoration project, including a justification for including such project on the list;

(F) the proposed activities to be carried out pursuant to each coastal wetlands restoration project;

(G) the benefits to be realized by each such project;

(H) an estimated timetable for completion of each coastal wetlands restoration project;

(I) an estimate of the cost of each coastal wetlands restoration project;

(J) identification of a lead Task Force member to undertake each proposed coastal wetlands restoration project listed in the plan;

(K) consultation with the public and provision for public review during development of the plan; and

(L) evaluation of the effectiveness of each coastal wetlands restoration project in achieving long-term solutions to arresting coastal wetlands loss in Louisiana.

(5) PLAN MODIFICATION.—The Task Force may modify the restoration plan from time to time as necessary to carry out the purposes of this section.

(6) PLAN SUBMISSION.—Upon completion of the restoration plan, the Secretary shall submit the plan to the Congress. The restoration plan shall become effective ninety days after the date of its submission to the Congress.

(7) PLAN EVALUATION.—Not less than three years after the completion and submission of the restoration plan required by this subsection and at least every three years thereafter, the Task Force shall provide a report to the Congress containing a scientific evaluation of the effectiveness of the coastal wetlands restoration projects carried out under the plan in crea- Reports.

ting, restoring, protecting and enhancing coastal wetlands in Louisiana.

(c) COASTAL WETLANDS RESTORATION PROJECT BENEFITS.—Where such a determination is required under applicable law, the net ecological, aesthetic, and cultural benefits, together with the economic benefits, shall be deemed to exceed the costs of any coastal wetlands restoration project within the State which the Task Force finds to contribute significantly to wetlands restoration.

(d) CONSISTENCY.—(1) In implementing, maintaining, modifying, or rehabilitating navigation, flood control or irrigation projects, other than emergency actions, under other authorities, the Secretary, in consultation with the Director and the Administrator, shall ensure that such actions are consistent with the purposes of the restoration plan submitted pursuant to this section.

(2) At the request of the Governor of the State of Louisiana, the Secretary of Commerce shall approve the plan as an amendment to the State's coastal zone management program approved under section 306 of the Coastal Zone Management Act of 1972 (16 U.S.C. 1455).

(e) FUNDING OF WETLANDS RESTORATION PROJECTS.—The Secretary shall, with the funds made available in accordance with this title, allocate such funds among the members of the Task Force to carry out coastal wetlands restoration projects in accordance with the priorities set forth in the list transmitted in accordance with this section. The Secretary shall not fund a coastal wetlands restoration project unless that project is subject to such terms and conditions as necessary to ensure that wetlands restored, enhanced or managed through that project will be administered for the long-term conservation of such lands and waters and dependent fish and wildlife populations.

(f) COST-SHARING.—

(1) FEDERAL SHARE.—Amounts made available in accordance with section 306 of this title to carry out coastal wetlands restoration projects under this title shall provide 75 percent of the cost of such projects.

(2) FEDERAL SHARE UPON CONSERVATION PLAN APPROVAL.—Notwithstanding the previous paragraph, if the State develops a Coastal Wetlands Conservation Plan pursuant to this title, and such conservation plan is approved pursuant to section 304 of this title, amounts made available in accordance with section 306 of this title for any coastal wetlands restoration project under this section shall be 85 percent of the cost of the project. In the event that the Secretary, the Director, and the Administrator jointly determine that the State is not taking reasonable steps to implement and administer a conservation plan developed and approved pursuant to this title, amounts made available in accordance with section 306 of this title for any coastal wetlands restoration project shall revert to 75 percent of the cost of the project: *Provided, however*, that such reversion to the lower cost share level shall not occur until the Governor has been provided notice of, and opportunity for hearing on, any such determination by the Secretary, the Director, and Administrator, and the State has been given ninety days from such notice or hearing to take corrective action.

(3) FORM OF STATE SHARE.—The share of the cost required of the State shall be from a non-Federal source. Such State share shall consist of a cash contribution of not less than 5 percent of

the cost of the project. The balance of such State share may take the form of lands, easements, or right-of-way, or any other form of in-kind contribution determined to be appropriate by the lead Task Force member.

(4) Paragraphs (1), (2), and (3) of this subsection shall not affect the existing cost-sharing agreements for the following projects: Caernarvon Freshwater Diversion, Davis Pond Freshwater Diversion, and Bonnet Carre Freshwater Diversion.

SEC. 304. LOUISIANA COASTAL WETLANDS CONSERVATION PLANNING. 16 USC 3953.

(a) DEVELOPMENT OF CONSERVATION PLAN.—

(1) AGREEMENT.—The Secretary, the Director, and the Administrator are directed to enter into an agreement with the Governor, as set forth in paragraph (2) of this subsection, upon notification of the Governor's willingness to enter into such agreement.

(2) TERMS OF AGREEMENT.—

(A) Upon receiving notification pursuant to paragraph (1) of this subsection, the Secretary, the Director, and the Administrator shall promptly enter into an agreement (hereafter in this section referred to as the "agreement") with the State under the terms set forth in subparagraph (B) of this paragraph.

(B) The agreement shall—

(i) set forth a process by which the State agrees to develop, in accordance with this section, a coastal wetlands conservation plan (hereafter in this section referred to as the "conservation plan");

(ii) designate a single agency of the State to develop the conservation plan;

(iii) assure an opportunity for participation in the development of the conservation plan, during the planning period, by the public and by Federal and State agencies;

(iv) obligate the State, not later than three years after the date of signing the agreement, unless extended by the parties thereto, to submit the conservation plan to the Secretary, the Director, and the Administrator for their approval; and

(v) upon approval of the conservation plan, obligate the State to implement the conservation plan.

(3) GRANTS AND ASSISTANCE.—Upon the date of signing the agreement—

(A) the Administrator shall, in consultation with the Director, with the funds made available in accordance with section 306 of this title, make grants during the development of the conservation plan to assist the designated State agency in developing such plan. Such grants shall not exceed 75 percent of the cost of developing the plan; and

(B) the Secretary, the Director, and the Administrator shall provide technical assistance to the State to assist it in the development of the plan.

(b) CONSERVATION PLAN GOAL.—If a conservation plan is developed pursuant to this section, it shall have a goal of achieving no net loss of wetlands in the coastal areas of Louisiana as a result of development activities initiated subsequent to approval of the plan,

exclusive of any wetlands gains achieved through implementation of the preceding section of this title.

(c) ELEMENTS OF CONSERVATION PLAN.—The conservation plan authorized by this section shall include—

(1) identification of the entire coastal area in the State that contains coastal wetlands;

(2) designation of a single State agency with the responsibility for implementing and enforcing the plan;

(3) identification of measures that the State shall take in addition to existing Federal authority to achieve a goal of no net loss of wetlands as a result of development activities, exclusive of any wetlands gains achieved through implementation of the preceding section of this title;

(4) a system that the State shall implement to account for gains and losses of coastal wetlands within coastal areas for purposes of evaluating the degree to which the goal of no net loss of wetlands as a result of development activities in such wetlands or other waters has been attained;

(5) satisfactory assurances that the State will have adequate personnel, funding, and authority to implement the plan;

(6) a program to be carried out by the State for the purpose of educating the public concerning the necessity to conserve wetlands;

(7) a program to encourage the use of technology by persons engaged in development activities that will result in negligible impact on wetlands; and

(8) a program for the review, evaluation, and identification of regulatory and nonregulatory options that will be adopted by the State to encourage and assist private owners of wetlands to continue to maintain those lands as wetlands.

(d) APPROVAL OF CONSERVATION PLAN.—

(1) IN GENERAL.—If the Governor submits a conservation plan to the Secretary, the Director, and the Administrator for their approval, the Secretary, the Director, and the Administrator shall, within one hundred and eighty days following receipt of such plan, approve or disapprove it.

(2) APPROVAL CRITERIA.—The Secretary, the Director, and the Administrator shall approve a conservation plan submitted by the Governor, if they determine that—

(A) the State has adequate authority to fully implement all provisions of such a plan;

(B) such a plan is adequate to attain the goal of no net loss of coastal wetlands as a result of development activities and complies with the other requirements of this section; and

(C) the plan was developed in accordance with terms of the agreement set forth in subsection (a) of this section.

(e) MODIFICATION OF CONSERVATION PLAN.—

(1) NONCOMPLIANCE.—If the Secretary, the Director, and the Administrator determine that a conservation plan submitted by the Governor does not comply with the requirements of subsection (d) of this section, they shall submit to the Governor a statement explaining why the plan is not in compliance and how the plan should be changed to be in compliance.

(2) RECONSIDERATION.—If the Governor submits a modified conservation plan to the Secretary, the Director, and the Administrator for their reconsideration, the Secretary, the

Director, and Administrator shall have ninety days to determine whether the modifications are sufficient to bring the plan into compliance with requirements of subsection (d) of this section.

(3) APPROVAL OF MODIFIED PLAN.—If the Secretary, the Director, and the Administrator fail to approve or disapprove the conservation plan, as modified, within the ninety-day period following the date on which it was submitted to them by the Governor, such plan, as modified, shall be deemed to be approved effective upon the expiration of such ninety-day period.

(f) AMENDMENTS TO CONSERVATION PLAN.—If the Governor amends the conservation plan approved under this section, any such amended plan shall be considered a new plan and shall be subject to the requirements of this section; except that minor changes to such plan shall not be subject to the requirements of this section.

(g) IMPLEMENTATION OF CONSERVATION PLAN.—A conservation plan approved under this section shall be implemented as provided therein.

(h) FEDERAL OVERSIGHT.—

(1) INITIAL REPORT TO CONGRESS.—Within one hundred and eighty days after entering into the agreement required under subsection (a) of this section, the Secretary, the Director, and the Administrator shall report to the Congress as to the status of a conservation plan approved under this section and the progress of the State in carrying out such a plan, including and accounting, as required under subsection (c) of this section, of the gains and losses of coastal wetlands as a result of development activities.

(2) REPORT TO CONGRESS.—Twenty-four months after the initial one hundred and eighty day period set forth in paragraph (1), and at the end of each twenty-four-month period thereafter, the Secretary, the Director, and the Administrator shall, report to the Congress on the status of the conservation plan and provide an evaluation of the effectiveness of the plan in meeting the goal of this section.

SEC. 305 NATIONAL COASTAL WETLANDS CONSERVATION GRANTS. 16 USC 3954.

(a) MATCHING GRANTS.—The Director shall, with the funds made available in accordance with the next following section of this title, make matching grants to any coastal State to carry out coastal wetlands conservation projects from funds made available for that purpose.

(b) PRIORITY.—Subject to the cost-sharing requirements of this section, the Director may grant or otherwise provide any matching moneys to any coastal State which submits a proposal substantial in character and design to carry out a coastal wetlands conservation project. In awarding such matching grants, the Director shall give priority to coastal wetlands conservation projects that are—

(1) consistent with the National Wetlands Priority Conservation Plan developed under section 301 of the Emergency Wetlands Resources Act (16 U.S.C. 3921); and

(2) in coastal States that have established dedicated funding for programs to acquire coastal wetlands, natural areas and open spaces. In addition, priority consideration shall be given to coastal wetlands conservation projects in maritime forests on coastal barrier islands.

(c) CONDITIONS.—The Director may only grant or otherwise provide matching moneys to a coastal State for purposes of carrying out a coastal wetlands conservation project if the grant or provision is subject to terms and conditions that will ensure that any real property interest acquired in whole or in part, or enhanced, managed, or restored with such moneys will be administered for the long-term conservation of such lands and waters and the fish and wildlife dependent thereon.

(d) COST-SHARING.—

(1) FEDERAL SHARE.—Grants to coastal States of matching moneys by the Director for any fiscal year to carry out coastal wetlands conservation projects shall be used for the payment of not to exceed 50 percent of the total costs of such projects: except that such matching moneys may be used for payment of not to exceed 75 percent of the costs of such projects if a coastal State has established a trust fund, from which the principal is not spent, for the purpose of acquiring coastal wetlands, other natural area or open spaces.

(2) FORM OF STATE SHARE.—The matching moneys required of a coastal State to carry out a coastal wetlands conservation project shall be derived from a non-Federal source.

(3) IN-KIND CONTRIBUTIONS.—In addition to cash outlays and payments, in-kind contributions of property or personnel services by non-Federal interests for activities under this section may be used for the non-Federal share of the cost of those activities.

(e) PARTIAL PAYMENTS.—

(1) The Director may from time to time make matching payments to carry out coastal wetlands conservation projects as such projects progress, but such payments, including previous payments, if any, shall not be more than the Federal pro rata share of any such project in conformity with subsection (d) of this section.

(2) The Director may enter into agreements to make matching payments on an initial portion of a coastal wetlands conservation project and to agree to make payments on the remaining Federal share of the costs of such project from subsequent moneys if and when they become available. The liability of the United States under such an agreement is contingent upon the continued availability of funds for the purpose of this section.

Texas. (f) WETLANDS ASSESSMENT.—The Director shall, with the funds made available in accordance with the next following section of this title, direct the U.S. Fish and Wildlife Service's National Wetland Inventory to update and digitize wetlands maps in the State of Texas and to conduct an assessment of the status, condition, and trends of wetlands in that State.

16 USC 3955. **SEC. 306. DISTRIBUTION OF APPROPRIATIONS.**

(a) PRIORITY PROJECT AND CONSERVATION PLANNING EXPENDITURES.—Of the total amount appropriated during a given fiscal year to carry out this title, 70 percent, not to exceed $70,000,000, shall be available, and shall remain available until expended, for the purposes of making expenditures—

(1) not to exceed the aggregate amount of $5,000,000 annually to assist the Task Force in the preparation of the list required under this title and the plan required under this title, including preparation of—

(A) preliminary assessments;
(B) general or site-specific inventories;
(C) reconnaissance, engineering or other studies;
(D) preliminary design work; and
(E) such other studies as may be necessary to identify and evaluate the feasibility of coastal wetland restoration projects;

(2) to carry out coastal wetlands restoration projects in accordance with the priorities set forth on the list prepared under this title;

(3) to carry out wetlands restoration projects in accordance with the priorities set forth in the restoration plan prepared under this title;

(4) to make grants not to exceed $2,500,000 annually or $10,000,000 in total, to assist the agency designated by the State in development of the Coastal Wetlands Conservation Plan pursuant to this title.

(b) COASTAL WETLANDS CONSERVATION GRANTS.—Of the total amount appropriated during a given fiscal year to carry out this title, 15 percent, not to exceed $15,000,000 shall be available, and shall remain available to the Director, for purposes of making grants—

(1) to any coastal State, except States eligible to receive funding under section 306(a), to carry out coastal wetlands conservation projects in accordance with section 305 of this title; and

(2) in the amount of $2,500,000 in total for an assessment of the status, condition, and trends of wetlands in the State of Texas.

(c) NORTH AMERICAN WETLANDS CONSERVATION.—Of the total amount appropriated during a given fiscal year to carry out this title, 15 percent, not to exceed $15,000,000, shall be available to, and shall remain available until expended by, the Secretary of the Interior for allocation to carry out wetlands conservation projects in any coastal State under section 8 of the North American Wetlands Conservation Act (Public Law 101-233, 103 Stat. 1968, December 13, 1989).

SEC. 307. GENERAL PROVISIONS. 16 USC 3956.

(a) ADDITIONAL AUTHORITY FOR THE CORPS OF ENGINEERS.—The Secretary is authorized to carry out projects for the protection, restoration, or enhancement of aquatic and associated ecosystems, including projects for the protection, restoration, or creation of wetlands and coastal ecosystems. In carrying out such projects, the Secretary shall give such projects equal consideration with projects relating to irrigation, navigation, or flood control. Irrigation. Navigation. Flood control.

(b) STUDY.—The Secretary is hereby authorized and directed to study the feasibility of modifying the operation of existing navigation and flood control projects to allow for an increase in the share of the Mississippi River flows and sediment sent down the Atchafalaya River for purposes of land building and wetlands nourishment.

SEC. 308. CONFORMING AMENDMENT.

16 U.S.C. 777c is amended by adding the following after the first sentence: "The Secretary shall distribute 18 per centum of each annual appropriation made in accordance with the provisions of

section 777b of this title as provided in the Coastal Wetlands Planning, Protection and Restoration Act: *Provided*, That, notwithstanding the provisions of section 777b, such sums shall remain available to carry out such Act through fiscal year 1999.".

Great Lakes Oil Pollution Research and Development Act.

"TITLE IV—GREAT LAKES OIL POLLUTION RESEARCH AND DEVELOPMENT

33 USC 2701 note.

"SEC. 4001. SHORT TITLE.

"This title may be cited as the "Great Lakes Oil Pollution Research and Development Act".

"SEC. 4002. GREAT LAKES OIL POLLUTION RESEARCH AND DEVELOPMENT.

"Section 7001 of the Oil Pollution Act of 1990 (Public Law 101-380) is amended as follows:

Ante, p. 559.

"(1) GREAT LAKES DEMONSTRATION PROJECT.—In subsection (c)(6), strike "3" and insert "4", strike "and" after "California,", and insert "and (D) ports on the Great Lakes," after "Louisiana,".

"(2) FUNDING.—In subsection (f) strike "21,250,000" and insert "22,000,000" and in subsection (f)(2) strike "2,250,000" and insert "3,000,000".".

Approved November 29, 1990.

LEGISLATIVE HISTORY—H.R. 5390 (S. 2244):

SENATE REPORTS: No. 101-523 accompanying S. 2244 (Comm. on Environment and Public Works).

CONGRESSIONAL RECORD, Vol. 136 (1990):
Oct. 1, considered and passed House.
Oct. 26, considered and passed Senate, amended, in lieu of S. 2244.
Oct. 27, House concurred in Senate amendment.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 26 (1990):
Nov. 29, Presidential statement.

Coastal Wetlands Planning, Protection and Restoration Act

4th Priority Project List Report

Appendix B

Wetland Value Assessment Appendix

APPENDIX B

WETLAND VALUE ASSESSMENT APPENDIX

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WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Eden Isle Marsh Restoration (PPO–4)

Condition: Future Without Project

Marsh type acres:
Fresh..... 149
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	85	0.87	85	0.87	0	0.10
V2	% Aquatic	30	0.37	30	0.37	15	0.24
V3	Interspersion	%		%		%	
	Class 1	85	0.88	85	0.88		0.10
	Class 2						
	Class 3						
	Class 4	15		15			
	Class 5					100	
V4	%OW <= 1.5ft	25	0.38	25	0.38	20	0.33
V5	Salinity (ppt) fresh intermediate	0	1.00	0	1.00	0	1.00
V6	Access Value	0.00	0.30	0.00	0.30	0.00	0.30
		HSI =	0.65	HSI =	0.65	HSI =	0.21

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Eden Isle Marsh Restoration (PPO–4)

Condition: Future With Project

Marsh type acres:
Fresh..... 149
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	85	0.87	21	0.29	57	0.61
V2	% Aquatic	30	0.37	30	0.37	85	0.87
V3	Interspersion	%		%		%	
	Class 1	85	0.88	25	0.48	25	0.48
	Class 2						
	Class 3			40		40	
	Class 4	15		35		35	
	Class 5						
V4	%OW <= 1.5ft	25	0.38	66	0.84	45	0.61
V5	Salinity (ppt) fresh intermediate	0	1.00	0	1.00	0	1.00
V6	Access Value	0.00	0.30	0.00	0.30	0.00	0.30
		HSI =	0.65	HSI =	0.41	HSI =	0.64

AAHU CALCULATION

Project: Eden Isle Marsh Restoration (PPO–4)

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	149	0.65	97.06	
1	149	0.65	97.06	97.06
20	22	0.21	4.71	791.08
			AAHU's =	44.41

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	149	0.65	97.06	
1	2536	0.41	1045.86	666.55
20	2536	0.64	1615.49	25282.84
			AAHU's	1297.47

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	1297.47
B. Future Without Project AAHU's =	44.41
Net Change (FWP – FWOP) =	1253.06

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: Eden Isles Marsh Restoration (PPO-4)

Date: 6/29/94 Marsh Acreage: 127ac

Wetland Type: Fresh Water Acreage: 22ac

Land Loss Rate: Total Acreage: 149 ac

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	127ac 85%	30%	85%-Class 1 15%-Class 4	25%	Ø ppt	Ø
FWOP	1	127ac 85%	30%	↓	25%	↓	↓
	20	Øac Ø%	15%	100%-Class 4	20%	↓	↓
FWP	1	541ac 21%	30%	25% - 1 40% - 3 35% - 4	66%	Ø ppt	Ø
	20	1454ac 57%	85%	↓	45%	↓	↓

Remarks: Project Area changes size through time, as follows:

FWOP	TY	Size
	1	149 ac
	20	22ac

FWP	TY	Size
	1	2536ac
	20	2536ac

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Eden Isles Marsh Restoration (PPO-4)

Wetland Type: Fresh

Project Year	Project Area (acres)		Emergent Marsh				
			Without Project		With Project		
	w/o proj.	w/ proj.	Acres	%	Acres	%	Net Acres
0	149	149	127	85	127	85	--
1	149	2,536	127	85	541	21	414
2	142	2536	120	85	589	23	469
3	136	2536	114	84	637	25	523
4	129	2536	107	83	685	27	578
5	122	2536	100	82	733	29	633
6	116	2536	94	81	781	31	688
7	109	2536	87	80	829	33	742
8	102	2536	80	78	877	35	797
9	96	2536	74	77	925	36	852
10	89	2536	67	75	973	38	907
11	82	2536	60	73	1,022	40	961
12	75	2536	53	71	1,070	42	1,016
13	69	2536	47	68	1,118	44	1,071
14	62	2536	40	65	1,166	46	1,126
15	55	2536	33	60	1,214	48	1,180
16	49	2536	27	55	1,262	50	1,235
17	42	2536	20	48	1,310	52	1,290
18	35	2536	13	38	1,358	54	1,345
19	29	2536	7	23	1,406	55	1,399
20	22	2536	0	0	1,454	57	1,454
Total Years 1-20			1,270		19,950		
Average Annual Acres			63		998		934

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

MULTIPLE AREA BENEFITS SUMMARY SHEET

Project: Grand Bay Crevasse (PBS–6)

The WVA analysis for project PBS–6 includes 2 areas: Area 1, a brackish marsh, occupies the western portion of the overall project area. Area 2, a saline marsh, occupies the eastern part of the overall project area. Total benefits (AAHU's) for this project are obtained by adding the benefits calculated for each area, as summaruzed below::

Area	AAHU's
1	216.67
2	40.27

TOTAL BENEFITS = 257 AAHU'S

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Grand Bay Crevasse (PBS–6) Marsh type acres..... 3150
Area 1 – West area
Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	38	0.44	37	0.43	28	0.35
V2	% Aquatic	5	0.34	5	0.34	7	0.35
V3	Interspersion	%		%		%	
	Class 1		0.30		0.30		0.29
	Class 2						
	Class 3	50		50		45	
	Class 4	50		50		55	
	Class 5						
V4	%OW <= 1.5ft	20	0.36	20	0.36	20	0.36
V5	Salinity (ppt)	10	1.00	10	1.00	10	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.51	HSI =	0.50	HSI =	0.46

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Grand Bay Crevasse (PBS–6) Marsh type acres..... 3150
Area 1 – West area
Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	38	0.44	38	0.44	45	0.51
V2	% Aquatic	5	0.34	10	0.37	20	0.44
V3	Interspersion	%		%		%	
	Class 1		0.30		0.30		0.32
	Class 2					8	
	Class 3	50		50		42	
	Class 4	50		50		50	
	Class 5						
V4	%OW <= 1.5ft	20	0.36	20	0.36	50	0.74
V5	Salinity (ppt)	10	1.00	7	1.00	7	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.51	HSI =	0.51	HSI =	0.59

AAHU CALCULATION

Project: Grand Bay Crevasse (PBS–6)
Area 1– West area

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	3150	0.51	1592.91	
1	3150	0.50	1578.11	1585.51
20	3150	0.46	1445.20	28721.46
			AAHU's =	1515.35

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	3150	0.51	1592.91	
1	3150	0.51	1617.12	1605.01
20	3150	0.59	1860.28	33035.30
			AAHU's	1732.02

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	1732.02
B. Future Without Project AAHU's =	1515.35
Net Change (FWP – FWOP) =	216.67

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: PBS-6 Grand Bay Terrace - Area 1

Date: 6-29-30

Wetland Type: ~~Fresh~~ Brackish

Land Loss Rate: 83-90 3.1% per - Now - 2.0%/yr

	Ref SAC	BR	SAC
Marsh Acreage:	1585	1190	395
Water Acreage:	4317	1960	2755
Total Acreage:	6300	3150	3150

Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
TY0	1190 ac 38%	5%	3-50 4-50	20%	10 ppt	1.0
1	48 - 24 ac 1174 37%	5%	"	20%	10 ppt	
20	-174 ac 874 ac 28%	7%	3-45 4-55	20%	10 ppt	
0	1190 ac 38%	5%	3-50 4-50	20%	10 ppt	
1	1202 ac 38%	10%	"	20%	7 ppt	
20	1430 ac 45%	20%	2-? 3-42 4-50	50%	7 ppt	

FWOP

Creation - 8ac/yr

Loss 2.0%

FWP

Creation 24ac/yr

Loss 1.0%/yr - (12ac)

+ 12ac/yr

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Grand Bay Crevasse (PBS–6)
Area 1– West Area
Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	3,150	1,190	38	1,190	38	--
1	3,150	1,174	37	1,202	38	28
2	3,150	1,158	37	1,214	39	56
3	3,150	1,142	36	1,226	39	84
4	3,150	1,127	36	1,238	39	111
5	3,150	1,111	35	1,250	40	139
6	3,150	1,095	35	1,262	40	167
7	3,150	1,079	34	1,274	40	195
8	3,150	1,063	34	1,286	41	223
9	3,150	1,048	33	1,298	41	250
10	3,150	1,032	33	1,310	42	278
11	3,150	1,016	32	1,322	42	306
12	3,150	1,000	32	1,334	42	334
13	3,150	985	31	1,346	43	361
14	3,150	969	31	1,358	43	389
15	3,150	953	30	1,370	43	417
16	3,150	937	30	1,382	44	445
17	3,150	921	29	1,394	44	473
18	3,150	906	29	1,406	45	500
19	3,150	890	28	1,418	45	528
20	3,150	874	28	1,430	45	556
Total Years 1–20		20,480		26,320		
Average Annual Acres		1,024		1,316		**292**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project..... Grand Bay Crevasse (PBS–6) Marsh type acres..... 3150
Area 2– East area
Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	13	0.22	12	0.21	8	0.17
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		0.20
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V4	%OW <= 1.5ft	10	0.23	10	0.23	10	0.23
V5	Salinity (ppt)	12	1.00	12	1.00	12	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.36	HSI =	0.36	HSI =	0.33

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project..... Grand Bay Crevasse (PBS–6) Marsh type acres..... 3150
Area 2– East area
Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	13	0.22	12	0.21	10	0.19
V2	% Aquatic	0	0.30	0	0.30	5	0.34
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		0.20
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V4	%OW <= 1.5ft	10	0.23	10	0.23	20	0.36
V5	Salinity (ppt)	12	1.00	10	1.00	10	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.36	HSI =	0.36	HSI =	0.36

AAHU CALCULATION

Project: Grand Bay Crevasse (PBS–6)
Area 2– East area

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	3150	0.36	1146.18	
1	3150	0.36	1124.50	1135.34
20	3150	0.33	1034.12	20506.82
			AAHU's =	1082.11

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	3150	0.36	1146.18	
1	3150	0.36	1124.50	1135.34
20	3150	0.36	1118.91	21312.32
			AAHU's	1122.38

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	1122.38
B. Future Without Project AAHU's =	1082.11
Net Change (FWP – FWOP) =	40.27

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: PPS-6 Grand Bay (Area 2)

Date: 6-29-94

Marsh Acreage: 395

Wetland Type: Saline

Water Acreage: 2755

Land Loss Rate: FWP 20%/yr

Total Acreage: 3150

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	395 ac 13%	0%	4-100	10%	12 ppt	1.0
FWOP	1	387 ac 12%	0%	4-100	↓	↓	↓
	20	-158 ac 237 ac 8%	0%	"	↓	↓	↓
FWP	0	395 ac	0%	4-100	10%	12	↓
Loss reduced from 2 to 1 %/yr	1	-4 391 ac 13%	0%	↓	10%	10 ppt	1.0
	20	-80 315 ac 10%	5%	↓	20%	10 ppt	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Grand Bay Crevasse (PBS–6)
Area 2– East Area
Wetland Type: Saline

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	3,150	395	13	395	13	--
1	3,150	387	12	391	12	4
2	3,150	379	12	387	12	8
3	3,150	371	12	383	12	12
4	3,150	363	12	379	12	16
5	3,150	355	11	375	12	20
6	3,150	348	11	371	12	23
7	3,150	340	11	367	12	27
8	3,150	332	11	363	12	31
9	3,150	324	10	359	11	35
10	3,150	316	10	355	11	39
11	3,150	308	10	351	11	43
12	3,150	300	10	347	11	47
13	3,150	292	9	343	11	51
14	3,150	284	9	339	11	55
15	3,150	276	9	335	11	59
16	3,150	269	9	331	11	62
17	3,150	261	8	327	10	66
18	3,150	253	8	323	10	70
19	3,150	245	8	319	10	74
20	3,150	237	8	315	10	78
Total Years 1–20		6,240		7,060		
Average Annual Acres		312		353		**41**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Pass–a–Loutre Sediment Mining (PMR–8)

Marsh type acres:

Fresh..... 300

Condition: Future Without Project

Intermediate..

Variable		TY 0		TY 1		TY 2	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	0	0.10	0	0.10	0	0.10
V2	% Aquatic	0	0.10	0	0.10	0	0.10
V3	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	% 100	0.10	% 100	0.10	% 100	0.10
V4	%OW <= 1.5ft	0	0.10	0	0.10	0	0.10
V5	Salinity (ppt) fresh intermediate	2	1.00	2	1.00	2	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.19	HSI =	0.19	HSI =	0.19

Project.....Pass–a–Loutre Sediment Mining (PMR–8)

FWOP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	0	0.10				
V2	% Aquatic	20	0.28				
V3	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	% 100	0.10	%		%	
V4	%OW <= 1.5ft	10	0.21				
V5	Salinity (ppt) fresh intermediate	2	1.00				
V6	Access Value	1.00	1.00				
		HSI =	0.23	HSI =		HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Pass–a–Loutre Sediment Mining (PMR–8)

Condition: Future With Project

Marsh type acres:
Fresh..... 300
Intermediate..

Variable		TY 0		TY 1		TY 2	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	0	0.10	25	0.33	50	0.55
V2	% Aquatic	0	0.10	20	0.28	60	0.64
V3	Interspersion	%		%		%	
	Class 1		0.10		0.40		0.40
	Class 2						
	Class 3			100		100	
	Class 4						
	Class 5	100					
V4	%OW <= 1.5ft	0	0.10	80	1.00	80	1.00
V5	Salinity (ppt)						
	fresh	2	1.00	2	1.00	2	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.19	HSI =	0.45	HSI =	0.65

Project.....Pass–a–Loutre Sediment Mining (PMR–8)
FWP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	40	0.46				
V2	% Aquatic	90	0.91				
V3	Interspersion	%		%		%	
	Class 1		0.40				
	Class 2						
	Class 3	100					
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	75	0.94				
V5	Salinity (ppt)						
	fresh	2	1.00				
	intermediate						
V6	Access Value	1.00	1.00				
		HSI =	0.64	HSI =		HSI =	

AAHU CALCULATION

Project: Pass–a–Loutre Sediment Mining (PMR–8)

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	300	0.19	56.48	
1	300	0.19	56.48	56.48
2	300	0.19	56.48	56.48
20	300	0.23	67.94	1119.74
			AAHU's =	61.63

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	300	0.19	56.48	
1	300	0.45	135.61	96.04
2	300	0.65	195.49	165.55
20	300	0.64	190.84	3476.98
			AAHU's	186.93

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	186.93
B. Future Without Project AAHU's =	61.63
Net Change (FWP – FWOP) =	125.29

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: Pass-a-Loutre Sediment mining (PMR-8)

Date: 6/29/94

Marsh Acreage: Øac

Wetland Type: Fresh

Water Acreage: 300ac

Land Loss Rate:

Total Acreage: 300ac

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	Øac Ø%	Ø%	Class 5 - 100%	Ø%	2 ppt	1.0
FWOP	1	Ø%	Ø%	Class 5 - 100%	Ø%	2 ppt	1.0
	2	Ø%	Ø%	Class 5 - 100%	Ø%	2 ppt	1.0
	20	Ø%	20%	Class 5 - 100%	10%	2 ppt	1.0
FWP	1	75ac 25%	20%	Class 3 - 100%	80%	2 ppt	1.0
Create 150ac Shallow 150ac ows	2	150ac 50%	60%	Class 3 - 100%	80%	2 ppt	1.0
	20	120 ac 40%	90%	Class 3 - 100%	75%	2 ppt	1.0

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Pass–a–Loutre Sediment Mining (PMR–8)

Wetland Type: Fresh

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	300	0	0	0	0	--
1	300	0	0	75	25	75
2	300	0	0	150	50	150
3	300	0	0	148	49	148
4	300	0	0	147	49	147
5	300	0	0	145	48	145
6	300	0	0	143	48	143
7	300	0	0	142	47	142
8	300	0	0	140	47	140
9	300	0	0	138	46	138
10	300	0	0	137	46	137
11	300	0	0	135	45	135
12	300	0	0	133	44	133
13	300	0	0	132	44	132
14	300	0	0	130	43	130
15	300	0	0	128	43	128
16	300	0	0	127	42	127
17	300	0	0	125	42	125
18	300	0	0	123	41	123
19	300	0	0	122	41	122
20	300	0	0	120	40	120
Total Years 1–20		0		2,640		
Average Annual Acres		0		132		**132**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

MULTIPLE AREA BENEFITS SUMMARY SHEET

Project: Naomi Siphon Outfall Management (BA–3c)

The WVA analysis for project BA–3c includes 3 areas: Area 1, an intermediate marsh occupying the northern portion of the overall project area; Area 2, a brackish marsh in the central part of the project area; and Area 3, a brackish marsh in the southern portion of the project area. Total WVA benefits (AAHU's) for this project are obtained by adding the benefits calculated for each area, as summarized below:

Area	AAHU's
1	113.82
2	142.66
3	122.43

TOTAL BENEFITS = 379 AAHU'S

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Naomi Siphon Outfall Management (BA-3c)
Area 1
Condition: Future Without Project

Marsh type acres:
Fresh.....
Intermediate.. 7747

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	74	0.77	73	0.76	69	0.72
V2	% Aquatic	80	0.82	80	0.82	80	0.82
V3	Interspersion	%		%		%	
	Class 1	75	0.88	75	0.88	85	0.94
	Class 2	15		15		15	
	Class 3	10		10			
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	80	1.00	80	1.00	85	1.00
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	1		1		1	
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.84	HSI =	0.83	HSI =	0.82

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Naomi Siphon Outfall Management (BA-3c)
Area 1
Condition: Future With Project

Marsh type acres:
Fresh.....
Intermediate.. 7747

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	74	0.77	74	0.77	72	0.75
V2	% Aquatic	80	0.82	81	0.83	85	0.87
V3	Interspersion	%		%		%	
	Class 1	75	0.88	75	0.88	90	0.96
	Class 2	15		15		10	
	Class 3	10		10			
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	80	1.00	80	1.00	90	1.00
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	1		1		1	
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.84	HSI =	0.84	HSI =	0.84

AAHU CALCULATION

Project: Naomi Siphon Outfall Management (BA-3c)
Area 1

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	7747	0.84	6484.26	
1	7747	0.83	6447.94	6466.10
20	7747	0.82	6335.54	121443.05
			AAHU's =	6395.46

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	7747	0.84	6484.26	
1	7747	0.84	6497.74	6491.00
20	7747	0.84	6522.74	123694.56
			AAHU's	6509.28

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	6509.28
B. Future Without Project AAHU's =	6395.46
Net Change (FWP – FWOP) =	113.82

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: Naomi Siphon Outfall Mgt. - BA-3c
Area 1

Date: 6/28/94

Marsh Acreage: 5,699ac

Wetland Type: Intermediate

Water Acreage: 2,048ac

Land Loss Rate: 1.17%/yr, reduced FWOP to 0.293%/yr

Total Acreage: 7,747ac

Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
TY0	5,699ac 74%	80%	Class 1 - 75% Class 2 - 15% Class 3 - 10%	80%	1 ppt	1.0
FWOP 1	5682ac 73%	80%	↓	↓	↓	↓
20	5366ac 69%	80%	1 - 85% 2 - 15%	85%	↓	↓
FWP 1	5,695ac 74%	81%	1 - 75% 2 - 15% 3 - 10%	80%	1 ppt	1.0
20	5616ac 72%	85%	1 - 90% 2 - 10%	90%	↓	↓

Loss rate reduced FWP by 75% to 0.073%/yr.

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Naomi Siphon Outfall Management (BA-3c)
Area 1
Wetland Type: Intermediate

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	7,747	5,699	74	5,699	74	--
1	7,747	5,682	73	5,695	74	13
2	7,747	5,665	73	5,691	73	25
3	7,747	5,649	73	5,687	73	38
4	7,747	5,632	73	5,683	73	50
5	7,747	5,615	72	5,678	73	63
6	7,747	5,599	72	5,674	73	75
7	7,747	5,582	72	5,670	73	88
8	7,747	5,566	72	5,666	73	100
9	7,747	5,549	72	5,662	73	113
10	7,747	5,532	71	5,658	73	125
11	7,747	5,516	71	5,653	73	138
12	7,747	5,499	71	5,649	73	150
13	7,747	5,482	71	5,645	73	163
14	7,747	5,466	71	5,641	73	175
15	7,747	5,449	70	5,637	73	188
16	7,747	5,433	70	5,633	73	200
17	7,747	5,416	70	5,628	73	213
18	7,747	5,399	70	5,624	73	225
19	7,747	5,383	69	5,620	73	238
20	7,747	5,366	69	5,616	72	250
Total Years 1-20		110,480		113,110		
Average Annual Acres		5,524		5,655		**132**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Naomi Siphon Outfall Management (BA-3c) Area 2 Marsh type acres..... 10611

Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	44	0.50	44	0.50	38	0.44
V2	% Aquatic	50	0.65	50	0.65	60	0.72
V3	Interspersion	%		%		%	
	Class 1	35	0.51	35	0.51	30	0.48
	Class 2						
	Class 3	15		15		20	
	Class 4	50		50		50	
	Class 5						
V4	%OW <= 1.5ft	25	0.42	25	0.42	25	0.42
V5	Salinity (ppt)	3	1.00	3	1.00	3	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.61	HSI =	0.61	HSI =	0.59

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Naomi Siphon Outfall Management (BA-3c) Area 2 Marsh type acres..... 10611

Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	44	0.50	44	0.50	39	0.45
V2	% Aquatic	50	0.65	55	0.69	75	0.83
V3	Interspersion	%		%		%	
	Class 1	35	0.51	35	0.51	31	0.49
	Class 2						
	Class 3	15		15		19	
	Class 4	50		50		50	
	Class 5						
V4	%OW <= 1.5ft	25	0.42	25	0.42	30	0.49
V5	Salinity (ppt)	3	1.00	3	1.00	3	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.61	HSI =	0.62	HSI =	0.61

AAHU CALCULATION

Project: Naomi Siphon Outfall Management (BA–3c)
Area 2

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	10611	0.61	6489.61	
1	10611	0.61	6489.61	6489.61
20	10611	0.59	6229.71	120833.55
			AAHU's =	6366.16

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	10611	0.61	6489.61	
1	10611	0.62	6542.04	6515.82
20	10611	0.61	6474.86	123660.52
			AAHU's	6508.82

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	6508.82
B. Future Without Project AAHU's =	6366.16
Net Change (FWP – FWOP) =	142.66

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: Naomi Siphon outfall Mgt. - BA-3c
Area 2

Date: 6/28/94

Marsh Acreage: 4670 ac

Wetland Type: Brackish

Water Acreage: 5941 ac

Land Loss Rate: 0.725%/yr.

Total Acreage: 10,611 ac

Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
TY0	4670ac 44%	50%	class 1 - 35% class 3 - 15% class 4 - 50%	25%	3 ppt	1.0
FWOP 1	4636ac 44%	↓	↓	↓	↓	↓
20	3993ac 38%	60%	1 - 30% 3 - 20% 4 - 50%	↓	↓	↓
FWP 1	4645ac 44%	55%	1 - 35% 3 - 15% 4 - 50%	25%	3 ppt	1.0
20	4163ac 39%	75%	1 - 31% 3 - 19% 4 - 50%	30%	↓	↓

Remarks: Historic loss rate was 0.967%/yr. For baseline & FWOP, we estimated that the siphon alone had reduced that rate by 25%, to 0.725%/yr. For FWP, we estimated the outfall mgt. project would further reduce loss rates another 25%, to 0.543%/yr.

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Naomi Siphon Outfall Management (BA–3c)
Area 2
Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	10,611	4,670	44	4,670	44	--
1	10,611	4,636	44	4,645	44	9
2	10,611	4,602	43	4,620	44	17
3	10,611	4,568	43	4,594	43	26
4	10,611	4,534	43	4,569	43	34
5	10,611	4,501	42	4,544	43	43
6	10,611	4,467	42	4,518	43	51
7	10,611	4,433	42	4,493	42	60
8	10,611	4,399	41	4,467	42	68
9	10,611	4,365	41	4,442	42	77
10	10,611	4,331	41	4,417	42	85
11	10,611	4,298	41	4,391	41	94
12	10,611	4,264	40	4,366	41	102
13	10,611	4,230	40	4,341	41	111
14	10,611	4,196	40	4,315	41	119
15	10,611	4,162	39	4,290	40	128
16	10,611	4,128	39	4,264	40	136
17	10,611	4,095	39	4,239	40	145
18	10,611	4,061	38	4,214	40	153
19	10,611	4,027	38	4,188	39	162
20	10,611	3,993	38	4,163	39	170
Total Years 1–20		86,290		88,080		
Average Annual Acres		4,315		4,404		**90**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Naomi Siphon Outfall Management (BA-3c) Area 3 Marsh type acres..... 8245

Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	31	0.38	30	0.37	10	0.19
V2	% Aquatic	50	0.65	50	0.65	50	0.65
V3	Interspersion	%		%		%	
	Class 1	10	0.38	10	0.38		0.24
	Class 2	10		10			
	Class 3	30		30		20	
	Class 4	50		50		80	
	Class 5						
V4	%OW <= 1.5ft	30	0.49	29	0.47	10	0.23
V5	Salinity (ppt)	4	1.00	4	1.00	4	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.54	HSI =	0.53	HSI =	0.37

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Naomi Siphon Outfall Management (BA-3c) Area 3 Marsh type acres..... 8245

Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	31	0.38	30	0.37	13	0.22
V2	% Aquatic	50	0.65	51	0.66	55	0.69
V3	Interspersion	%		%		%	
	Class 1	10	0.38	10	0.38		0.25
	Class 2	10		10			
	Class 3	30		30		25	
	Class 4	50		50		75	
	Class 5						
V4	%OW <= 1.5ft	30	0.49	29	0.47	15	0.29
V5	Salinity (ppt)	4	1.00	3	1.00	3	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.54	HSI =	0.53	HSI =	0.40

AAHU CALCULATION

Project: Naomi Siphon Outfall Management (BA-3c)
Area 3

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	8245	0.54	4426.62	
1	8245	0.53	4371.70	4399.16
20	8245	0.37	3069.04	70687.05
			AAHU's =	3754.31

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	8245	0.54	4426.62	
1	8245	0.53	4378.65	4402.63
20	8245	0.40	3319.48	73132.26
			AAHU's	3876.74

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	3876.74
B. Future Without Project AAHU's =	3754.31
Net Change (FWP - FWOP) =	122.43

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: Naomi Siphon Outfall Mgt. BA-3c Area III

Date: 6/28/94

Marsh Acreage: 2,584ac

Wetland Type: Brackish

Water Acreage: 5,661 ac

Land Loss Rate: 3.353%/yr.

Total Acreage: 8,245ac

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	2584ac 31%	50%	Class 1- 10% Class 2- 10% Class 3- 30% Class 4- 50%	30%	4 ppt	1.0
FWOP	1	2497ac 30%	↓	↓	29%	↓	↓
	20	851ac 10%	↓	3 - 20% 4 - 80%	10%	↓	↓
FWP	1	2508ac 30%	51%	1 - 10% 2 - 10% 3 - 30% 4 - 50%	29%	3 ppt	1.0
	20	1064ac 13%	55%	3 - 25% 4 - 75%	15%	3 ppt	↓

Remarks: Historic (pre-siphon) loss rate = 3.53%/yr. For baseline and FWOP scenario, estimated siphon alone reduces that rate 5% to 3.353%/yr.

For FWP, estimate baseline loss rate reduced by 13% to 2.91%/yr

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Naomi Siphon Outfall Management (BA–3c)
Area 3
Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	8,245	2,584	31	2,584	31	--
1	8,245	2,497	30	2,508	30	11
2	8,245	2,410	29	2,432	29	22
3	8,245	2,324	28	2,356	29	32
4	8,245	2,237	27	2,280	28	43
5	8,245	2,150	26	2,204	27	54
6	8,245	2,064	25	2,128	26	64
7	8,245	1,977	24	2,052	25	75
8	8,245	1,891	23	1,976	24	85
9	8,245	1,804	22	1,900	23	96
10	8,245	1,717	21	1,824	22	107
11	8,245	1,631	20	1,748	21	117
12	8,245	1,544	19	1,672	20	128
13	8,245	1,457	18	1,596	19	139
14	8,245	1,371	17	1,520	18	149
15	8,245	1,284	16	1,444	18	160
16	8,245	1,198	15	1,368	17	170
17	8,245	1,111	13	1,292	16	181
18	8,245	1,024	12	1,216	15	192
19	8,245	938	11	1,140	14	202
20	8,245	851	10	1,064	13	213
Total Years 1–20		33,480		35,720		
Average Annual Acres		1,674		1,786		**112**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Barataria Bay Waterway Shore Protection — Marsh type acres..... 1789
PBA–12 Increment 1 West Bank
Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	16	0.24	15	0.24	1	0.11
V2	% Aquatic	80	0.86	78	0.85	33	0.53
V3	Interspersion	%		%		%	
	Class 1		0.22		0.22		0.21
	Class 2						
	Class 3	10		10		6	
	Class 4	90		90		94	
	Class 5						
V4	%OW <= 1.5ft	90	0.80	90	0.80	70	1.00
V5	Salinity (ppt)	5	1.00	5	1.00	7	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.47	HSI =	0.47	HSI =	0.35

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Barataria Bay Waterway Shore Protection — Marsh type acres..... 1789
PBA–12 Increment 1 West Bank
Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	16	0.24	16	0.24	14	0.23
V2	% Aquatic	80	0.86	85	0.90	90	0.93
V3	Interspersion	%		%		%	
	Class 1		0.22		0.22		0.22
	Class 2						
	Class 3	10		10		8	
	Class 4	90		90		92	
	Class 5						
V4	%OW <= 1.5ft	90	0.80	90	0.80	90	0.80
V5	Salinity (ppt)	5	1.00	3	1.00	3	1.00
V6	Access Value	1.00	1.00	0.60	0.64	0.60	0.64
		HSI =	0.47	HSI =	0.45	HSI =	0.44

AAHU CALCULATION

Project: Barataria Bay Waterway Shore Protection
PBA–12 Increment 1 West Bank

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	1789	0.47	846.85	
1	1789	0.47	832.08	839.46
20	1789	0.35	617.43	13770.30
			AAHU's =	730.49

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	1789	0.47	846.85	
1	1789	0.45	801.64	824.24
20	1789	0.44	781.04	15035.43
			AAHU's	792.98

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	792.98
B. Future Without Project AAHU's =	730.49
Net Change (FWP – FWOP) =	62.50

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Barataria Bay Waterway Shore Protection (PBA–12)
Increment #1 West Bank
Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	1,789	283	16	283	16	--
1	1,789	270	15	282	16	12
2	1,789	257	14	281	16	24
3	1,789	244	14	279	16	35
4	1,789	231	13	278	16	47
5	1,789	218	12	276	15	58
6	1,789	205	11	275	15	70
7	1,789	192	11	273	15	81
8	1,789	179	10	272	15	93
9	1,789	166	9	271	15	105
10	1,789	153	9	269	15	116
11	1,789	140	8	268	15	128
12	1,789	127	7	266	15	139
13	1,789	114	6	265	15	151
14	1,789	101	6	264	15	163
15	1,789	88	5	262	15	174
16	1,789	75	4	261	15	186
17	1,789	62	3	259	14	197
18	1,789	49	3	258	14	209
19	1,789	36	2	256	14	220
20	1,789	23	1	255	14	232
Total Years 1–20		2,930		5,370		
Average Annual Acres		147		269		**122**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Barataria Bay Waterway Shore Protection Marsh type acres..... 2790
PBA–12 Increment 2 East Bank (12–5–94)
Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	53	0.58	53	0.58	40	0.46
V2	% Aquatic	35	0.55	35	0.55	20	0.44
V3	Interspersion	%		%		%	
	Class 1		0.32		0.32		0.30
	Class 2						
	Class 3	60		60		50	
	Class 4	40		40		50	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	49	0.73	30	0.49
V5	Salinity (ppt)	5	1.00	5	1.00	7	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.65	HSI =	0.65	HSI =	0.55

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Barataria Bay Waterway Shore Protection Marsh type acres..... 2790
PBA–12 Increment 2 East Bank (12–5–94)
Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	53	0.58	53	0.58	48	0.53
V2	% Aquatic	35	0.55	40	0.58	45	0.62
V3	Interspersion	%		%		%	
	Class 1		0.32		0.32		0.31
	Class 2						
	Class 3	60		60		55	
	Class 4	40		40		45	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	50	0.74
V5	Salinity (ppt)	5	1.00	4	1.00	4	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.65	HSI =	0.65	HSI =	0.64

AAHU CALCULATION

Project: Barataria Bay Waterway Shore Protection
PBA–12 Increment 2 East Bank (12–5–94)

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	2790	0.65	1808.15	
1	2790	0.65	1805.49	1806.82
20	2790	0.55	1524.66	31636.44
			AAHU's =	1672.16

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	2790	0.65	1808.15	
1	2790	0.65	1825.46	1816.81
20	2790	0.64	1772.57	34181.30
			AAHU's	1799.91

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	1799.91
B. Future Without Project AAHU's =	1672.16
Net Change (FWP – FWOP) =	127.74

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Barataria Bay Waterway Shore Protection (PBA–12)
Increment #2 East Bank
Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	2,790	1,483	53	1,483	53	--
1	2,790	1,465	53	1,476	53	11
2	2,790	1,447	52	1,469	53	22
3	2,790	1,429	51	1,461	52	33
4	2,790	1,411	51	1,454	52	44
5	2,790	1,393	50	1,447	52	54
6	2,790	1,374	49	1,440	52	65
7	2,790	1,356	49	1,432	51	76
8	2,790	1,338	48	1,425	51	87
9	2,790	1,320	47	1,418	51	98
10	2,790	1,302	47	1,411	51	109
11	2,790	1,284	46	1,403	50	119
12	2,790	1,266	45	1,396	50	130
13	2,790	1,248	45	1,389	50	141
14	2,790	1,230	44	1,382	50	152
15	2,790	1,212	43	1,374	49	163
16	2,790	1,193	43	1,367	49	174
17	2,790	1,175	42	1,360	49	184
18	2,790	1,157	41	1,353	48	195
19	2,790	1,139	41	1,345	48	206
20	2,790	1,121	40	1,338	48	217
Total Years 1–20		25,860		28,140		
Average Annual Acres		1,293		1,407		**114**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Bayou L'Ours Ridge Hydrologic Restoration (PBA–34) Increment #1 Marsh type acres..... 24,765

Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	59	0.63	59	0.63	49	0.54
V2	% Aquatic	60	0.72	60	0.72	50	0.65
V3	Interspersion	%		%		%	
	Class 1	10	0.44	10	0.44	5	0.39
	Class 2	15		15		10	
	Class 3	50		50		55	
	Class 4	25		25		30	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	45	0.68
V5	Salinity (ppt)	5	1.00	5	1.00	6	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.71	HSI =	0.71	HSI =	0.65

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Bayou L'Ours Ridge Hydrologic Restoration (PBA–34) Increment #1 Marsh type acres..... 24,765

Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	59	0.63	59	0.63	52	0.57
V2	% Aquatic	60	0.72	60	0.72	65	0.76
V3	Interspersion	%		%		%	
	Class 1	10	0.44	10	0.44	10	0.43
	Class 2	15		15		10	
	Class 3	50		50		55	
	Class 4	25		25		25	
	Class 5						
V4	%OW <= 1.5ft	50	0.74	50	0.74	52	0.77
V5	Salinity (ppt)	5	1.00	4	1.00	4	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.71	HSI =	0.71	HSI =	0.69

AAHU CALCULATION

Project: Bayou L'Ours Ridge Hydrologic Restoration (PBA–34)

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	24765	0.71	17687.49	
1	24765	0.71	17687.49	17687.49
20	24765	0.65	16018.40	320205.89
			AAHU's =	16894.67

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	24765	0.71	17687.49	
1	24765	0.71	17687.49	17687.49
20	24765	0.69	17002.00	329550.17
			AAHU's	17361.88

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	17361.88
B. Future Without Project AAHU's =	16894.67
Net Change (FWP – FWOP) =	467.21

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Bayou L'Ours Ridge Hydrologic Restoration (PBA–34)
Increment #1
Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	24,765	14,707	59	14,707	59	--
1	24,765	14,584	59	14,621	59	37
2	24,765	14,461	58	14,535	59	74
3	24,765	14,338	58	14,449	58	111
4	24,765	14,216	57	14,363	58	148
5	24,765	14,093	57	14,277	58	184
6	24,765	13,970	56	14,191	57	221
7	24,765	13,847	56	14,105	57	258
8	24,765	13,724	55	14,019	57	295
9	24,765	13,602	55	13,933	56	332
10	24,765	13,479	54	13,847	56	369
11	24,765	13,356	54	13,762	56	405
12	24,765	13,233	53	13,676	55	442
13	24,765	13,111	53	13,590	55	479
14	24,765	12,988	52	13,504	55	516
15	24,765	12,865	52	13,418	54	553
16	24,765	12,742	51	13,332	54	590
17	24,765	12,619	51	13,246	53	626
18	24,765	12,497	50	13,160	53	663
19	24,765	12,374	50	13,074	53	700
20	24,765	12,251	49	12,988	52	737
Total Years 1–20		268,350		276,090		
Average Annual Acres		13,417		13,804		**387**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

MULTIPLE AREA BENEFITS SUMMARY SHEET

Project: Grand Bayou/GIWW Diversion (TE-10/XTE-49)

The WVA analysis for project TE-10/XTE-49 includes 3 areas: Area 1, consisting of intermediate wetlands in the northern portion of the overall project area; Area 2, consisting of brackish wetlands in the southern part of the project area; and Area 3, brackish wetlands in the central part of the projet area that are predicted to convert to intermediate after Target Year 1 (TY1) under the Future-With-Project (FWP) scenario. Area 3 was assessed using the Brackish WVA model for TY0, TY1, and TY20 under the Future-Without-Project (FWOP) scenario, and for TY0 and TY1 under the FWP scenario, and using the Intermediate WVA model for TY20 under the FWP scenario. Total WVA benefits (AAHU's) for this project are obtained by adding the benefits calculated for each area, as summarized below:

Area	AAHU's
1	360.22
2	384.25
2	26.80

TOTAL BENEFITS = 771 AAHU'S

18-Oct-94

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Grand Bayou/GIWW Diversion (TE-10/XTE-49) Marsh type acres:
Area 1 Fresh.....
Condition: Future Without Project Intermediate.. 8969

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	83	0.85	83	0.85	72	0.75
V2	% Aquatic	75	0.78	74	0.77	60	0.64
V3	Interspersion	%		%		%	
	Class 1	30	0.63	30	0.63	20	0.57
	Class 2	40		40		40	
	Class 3	15		15		25	
	Class 4	15		15		15	
	Class 5						
V4	%OW <= 1.5ft	80	1.00	80	1.00	75	0.94
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	2		2		4	
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.85	HSI =	0.85	HSI =	0.76

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Grand Bayou/GIWW Diversion (TE-10/XTE-49) Marsh type acres:
Area 1 Fresh.....
Condition: Future With Project Intermediate.. 8969

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	83	0.85	83	0.85	80	0.82
V2	% Aquatic	75	0.78	75	0.78	80	0.82
V3	Interspersion	%		%		%	
	Class 1	30	0.63	30	0.63	28	0.62
	Class 2	40		40		40	
	Class 3	15		15		17	
	Class 4	15		15		15	
	Class 5						
V4	%OW <= 1.5ft	80	1.00	80	1.00	80	1.00
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	2		1		1	
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.85	HSI =	0.85	HSI =	0.85

AAHU CALCULATION

Project: Grand Bayou/GIWW Diversion (TE-10/XTE-49)
Area 1

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	8969	0.85	7626.31	
1	8969	0.85	7608.80	7617.55
20	8969	0.76	6841.66	137279.40
			AAHU's =	7244.85

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	8969	0.85	7626.31	
1	8969	0.85	7626.31	7626.31
20	8969	0.85	7581.60	144475.09
			AAHU's	7605.07

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	7605.07
B. Future Without Project AAHU's =	7244.85
Net Change (FWP – FWOP) =	360.22

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: TE-10/XTE-49 Grand Bayou GIWW Diversion
AREA 1:

Date: 21 June 1993

Marsh Acreage: 7468 ac

Wetland Type: Intermediate

Water Acreage: 1,501 ac

Land Loss Rate: .68%/yr

Total Acreage: 8,969 ac

Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
TY0	7468ac 83%	75%	1 - 30% 2 - 40% 3 - 15% 4 - 15%	80%	2 ppt	1.0
FWOP 1	7416ac 83%	74%	1 - 30 2 - 40 3 - 15 4 - 15	80%	2 ppt	↓
20	6424ac 72%	60%	1 - 20 2 - 40 3 - 25 4 - 15	75%	4 ppt	↓
FWP Loss reduced 70% → .2097%/yr	7468ac 83%	75%	1 - 30 2 - 40 3 - 15 4 - 15	80%	2 ppt	↓
1	-16 7452ac 83%	75%	1 - 30 2 - 40 3 - 15 4 - 15	80%	1 ppt	1.0
20	7155ac 80%	80%	1 - 28 2 - 40 3 - 17 4 - 15	80%	1 ppt	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Grand Bayou/GIWW Diversion (TE-10/XTE-49)
Area 1
Wetland Type: Intermediate

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	8,969	7,468	83	7,468	83	--
1	8,969	7,416	83	7,452	83	36
2	8,969	7,364	82	7,436	83	73
3	8,969	7,312	82	7,421	83	109
4	8,969	7,259	81	7,405	83	146
5	8,969	7,207	80	7,389	82	182
6	8,969	7,155	80	7,374	82	219
7	8,969	7,103	79	7,358	82	255
8	8,969	7,051	79	7,343	82	292
9	8,969	6,998	78	7,327	82	329
10	8,969	6,946	77	7,311	82	365
11	8,969	6,894	77	7,296	81	402
12	8,969	6,842	76	7,280	81	438
13	8,969	6,789	76	7,264	81	475
14	8,969	6,737	75	7,249	81	512
15	8,969	6,685	75	7,233	81	548
16	8,969	6,633	74	7,218	80	585
17	8,969	6,581	73	7,202	80	621
18	8,969	6,528	73	7,186	80	658
19	8,969	6,476	72	7,171	80	694
20	8,969	6,424	72	7,155	80	731
Total Years 1-20		138,400		146,070		
Average Annual Acres		6,920		7,303		**383**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Grand Bayou/GIWW Diversion (TE-10/XTE-49) Marsh type acres..... 15,605
Area 2
Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	63	0.67	62	0.66	47	0.52
V2	% Aquatic	50	0.65	50	0.65	40	0.58
V3	Interspersion	%		%		%	
	Class 1		0.38		0.38		0.32
	Class 2	20		20		5	
	Class 3	50		50		50	
	Class 4	30		30		45	
	Class 5						
V4	%OW <= 1.5ft	65	0.94	65	0.94	50	0.74
V5	Salinity (ppt)	7	1.00	7	1.00	8	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.73	HSI =	0.73	HSI =	0.63

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Grand Bayou/GIWW Diversion (TE-10/XTE-49) Marsh type acres..... 15,605
Area 2
Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	63	0.67	63	0.67	52	0.57
V2	% Aquatic	50	0.65	50	0.65	55	0.69
V3	Interspersion	%		%		%	
	Class 1		0.38		0.38		0.34
	Class 2	20		20		10	
	Class 3	50		50		50	
	Class 4	30		30		40	
	Class 5						
V4	%OW <= 1.5ft	65	0.94	65	0.94	55	0.81
V5	Salinity (ppt)	7	1.00	6	1.00	6	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.73	HSI =	0.73	HSI =	0.67

AAHU CALCULATION

Project: Grand Bayou/GIWW Diversion (TE-10/XTE-49)
Area 2

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	15605	0.73	11410.29	
1	15605	0.73	11339.39	11374.84
20	15605	0.63	9762.12	200464.38
			AAHU's =	10591.96

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	15605	0.73	11410.29	
1	15605	0.73	11410.29	11410.29
20	15605	0.67	10496.43	208113.89
			AAHU's	10976.21

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	10976.21
B. Future Without Project AAHU's =	10591.96
Net Change (FWP – FWOP) =	384.25

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: TE-10/TE-49 Grand Bayou GIWW Diversion
AREA 2:

Date: 21 June 1993

Marsh Acreage: 9,846 ac.

Wetland Type: Brackish

Water Acreage: 5,759 ac.

Land Loss Rate: 1.28% /yr

Total Acreage: 15,605 ac.

Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
TY0	9846 ac 63%	50%	2-20% 3-50% 4-30%	65%	7 ppt	1.0
FWOP 1	9720 ac 62%	50%	2-20 3-50 4-30	65%	7 ppt	↓
20	7321 ac 47%	40%	2-5 3-50 4-45	50%	8 ppt	↓
FWP loss reduced 30% to → 0.8974%/yr Ø	9846 ac 63%	50	2-20 3-50 4-30	65%	7	↓
1	-88 9758 ac 63%	50	1 2-20 3-50 4-30	65%	6 ppt	1.0
20	-1767 8079 ac. 52%	55%	1 2-10 3-50 4-40	55	6 ppt	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Grand Bayou/GIWW Diversion (TE-10/XTE-49)
Area 2
Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	15,605	9,846	63	9,846	63	--
1	15,605	9,720	62	9,758	63	38
2	15,605	9,594	61	9,670	62	76
3	15,605	9,467	61	9,581	61	114
4	15,605	9,341	60	9,493	61	152
5	15,605	9,215	59	9,405	60	190
6	15,605	9,089	58	9,316	60	227
7	15,605	8,962	57	9,228	59	265
8	15,605	8,836	57	9,139	59	303
9	15,605	8,710	56	9,051	58	341
10	15,605	8,584	55	8,963	57	379
11	15,605	8,457	54	8,874	57	417
12	15,605	8,331	53	8,786	56	455
13	15,605	8,205	53	8,698	56	493
14	15,605	8,079	52	8,609	55	531
15	15,605	7,952	51	8,521	55	569
16	15,605	7,826	50	8,432	54	606
17	15,605	7,700	49	8,344	53	644
18	15,605	7,574	49	8,256	53	682
19	15,605	7,447	48	8,167	52	720
20	15,605	7,321	47	8,079	52	758
Total Years 1-20		170,410		178,370		
Average Annual Acres		8,520		8,919		**398**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Grand Bayou/GIWW Diversion (TE-10/XTE-49) Marsh type acres..... 1956
Area 3- brackish converting to intermediate after TY1, FWP
Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	48	0.53	47	0.52	36	0.42
V2	% Aquatic	50	0.65	50	0.65	45	0.62
V3	Interspersion	%		%		%	
	Class 1		0.36		0.36		0.32
	Class 2	30		30		20	
	Class 3	20		20		20	
	Class 4	50		50		60	
	Class 5						
V4	%OW <= 1.5ft	65	0.94	65	0.94	55	0.81
V5	Salinity (ppt)	6	1.00	6	1.00	7	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.66	HSI =	0.65	HSI =	0.58

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Grand Bayou/GIWW Diversion (TE-10/XTE-49) Marsh type acres..... 1956
Area 3- brackish converting to intermediate after TY1, FWP
Condition: Future With Project

Variable		TY 0		TY 1		(from Intermediate model)	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	48	0.53	48	0.53		
V2	% Aquatic	50	0.65	55	0.69		
V3	Interspersion	%		%		%	
	Class 1		0.36		0.36		
	Class 2	30		30			
	Class 3	20		20			
	Class 4	50		50			
	Class 5						
V4	%OW <= 1.5ft	65	0.94	65	0.94		
V5	Salinity (ppt)	6	1.00	4	1.00		
V6	Access Value	1.00	1.00	1.00	1.00		
		HSI =	0.66	HSI =	0.66	HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Grand Bayou/GIWW Diversion (TE-10/XTE-49) Marsh type acres:
Area 3- brackish converting to intermediate after TY1, FWP Fresh.....
Condition: Future With Project Intermediate.. 1956

Variable		(from Brackish model)		(from Brackish model)		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent					42	0.48
V2	% Aquatic					65	0.69
V3	Interspersion	%		%		%	
	Class 1						0.34
	Class 2					25	
	Class 3					20	
	Class 4					55	
	Class 5						
V4	%OW <= 1.5ft					60	0.78
V5	Salinity (ppt)						
	fresh						1.00
	intermediate					4	
V6	Access Value					1.00	1.00
		HSI =		HSI =		HSI =	0.60

AAHU CALCULATION

Project: Grand Bayou/GIWW Diversion (TE–10/XTE–49)
Area 3– brackish converting to intermediate after TY1, FWP

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	1956	0.66	1288.42	
1	1956	0.65	1278.69	1283.55
20	1956	0.58	1133.16	22912.51
			AAHU's =	1209.80

Future With Project			Total	Cummulative	
TY	Acres	x HSI	HU's	HU's	
0	1956	0.66	1288.42		
1	1956	0.66	1298.50	1293.46	
20	1956	0.60	1168.73	23438.67	*
			AAHU's	1236.61	

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	1236.61
B. Future Without Project AAHU's =	1209.80
Net Change (FWP – FWOP) =	26.80

* HSI calculated using the Intermediate Marsh model

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: TE-10/XTE-49 Grand Bayou Diversion
Area 3:

Date: 21 June 1993

Marsh Acreage: 936ac.

Wetland Type: Brackish to revert to intermediate FWP after TY1

Water Acreage: 1080 ac.

Land Loss Rate: 1.282 %/yr

Total Acreage: 1956ac.

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	936ac. 48%	50%	2 - 30 3 - 20 4 - 50	65%	6 ppt	1.0
FWOP	1	924ac. 47%	50%	2 - 30 3 - 20 4 - 50	65%	6 ppt	
	20	696ac. 36%	45%	2 - 20 3 - 20 4 - 60	55%	7 ppt	↓
FWP Loss rate reduced 50% to → 0.641%/yr.	0	930 48%	50%	2 - 30 3 - 20 4 - 50	65%	6	
	1	930ac 48%	55%	2 - 30 3 - 30 4 - 50	65%	4 ppt	1.0
	20	120 816ac 41%	65%	2 - 25 3 - 20 4 - 55	60%	4 ppt	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Grand Bayou/GIWW Diversion (TE-10/XTE-49)
Area 3
Wetland Type: Brackish, converting to intermediate after TY1, FWP

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	1,956	936	48	936	48	--
1	1,956	924	47	930	48	6
2	1,956	912	47	924	47	12
3	1,956	900	46	918	47	18
4	1,956	888	45	912	47	24
5	1,956	876	45	906	46	30
6	1,956	864	44	900	46	36
7	1,956	852	44	894	46	42
8	1,956	840	43	888	45	48
9	1,956	828	42	882	45	54
10	1,956	816	42	876	45	60
11	1,956	804	41	870	44	66
12	1,956	792	40	864	44	72
13	1,956	780	40	858	44	78
14	1,956	768	39	852	44	84
15	1,956	756	39	846	43	90
16	1,956	744	38	840	43	96
17	1,956	732	37	834	43	102
18	1,956	720	37	828	42	108
19	1,956	708	36	822	42	114
20	1,956	696	36	816	42	120
Total Years 1-20		16,200		17,460		
Average Annual Acres		810		873		**63**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

MULTIPLE AREA BENEFITS SUMMARY SHEET

Project: East Timbalier Island Restoration (XTE-45/67b)

The WVA analysis for project XTE-45/67b includes 2 areas: Area 1, consisting of island wetlands predicted to be benefitted by the project, and Area 2, consisting of mainland wetlands to be benefitted by the project. Both areas were assessed using the Saline WVA model. Total WVA benefits (AAHU's) for this project are obtained by adding the benefits calculated for each area, as summarized below:

Area	AAHU's
1	67.46
2	72.25

TOTAL BENEFITS = 140 AAHU'S

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project..... East Timbalier Island Restoration (XTE–45/67b) Marsh type acres..... 150
Area 1 – island benefits
Condition: Future Without Project

Variable		TY 0		TY 1		TY 3	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	7	0.16	2	0.12	0	0.10
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	% 100	0.20	% 100	0.20	% 100	0.10
V4	%OW <= 1.5ft	60	0.87	55	0.81	50	0.74
V5	Salinity (ppt)	22	0.93	22	0.93	22	0.93
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.36	HSI =	0.32	HSI =	0.29

Project..... East Timbalier Island Restoration (XTE–45/67b)
FWOP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	0	0.10				
V2	% Aquatic	0	0.30				
V3	Interspersion Class 1 Class 2 Class 3 Class 4 Class 5	% 100	0.10	%		%	
V4	%OW <= 1.5ft	0	0.10				
V5	Salinity (ppt)	22	0.93				
V6	Access Value	1.00	1.00				
		HSI =	0.24	HSI =		HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project.....East Timbalier Island Restoration (XTE-45/67b) Marsh type acres..... 150
Area 1 – island benefits
Condition: Future With Project

Variable		TY 0		TY 1		TY 3	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	7	0.16	91	0.92	86	0.87
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1		0.20	100	1.00	80	0.84
	Class 2						
	Class 3						
	Class 4	100				20	
	Class 5						
V4	%OW <= 1.5ft	60	0.87	90	0.75	85	0.88
V5	Salinity (ppt)	22	0.93	22	0.93	22	0.93
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.36	HSI =	0.85	HSI =	0.82

Project.....East Timbalier Island Restoration (XTE-45/67b)
FWP

Variable		TY 20					
		Value	SI	Value	SI	Value	SI
V1	% Emergent	41	0.47				
V2	% Aquatic	0	0.30				
V3	Interspersion	%		%		%	
	Class 1	40	0.58				
	Class 2						
	Class 3	30					
	Class 4	30					
	Class 5						
V4	%OW <= 1.5ft	70	1.00				
V5	Salinity (ppt)	22	0.93				
V6	Access Value	1.00	1.00				
		HSI =	0.61	HSI =		HSI =	

AAHU CALCULATION

Project: East Timbalier Island Restoration (XTE–45/67b)
Area 1 – island benefits

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	150	0.36	54.44	
1	150	0.32	47.72	51.08
3	150	0.29	43.26	90.98
20	150	0.24	36.12	674.72
			AAHU's =	40.84

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	150	0.36	54.44	
1	150	0.85	126.99	90.71
3	150	0.82	123.53	250.52
20	150	0.61	91.15	1824.77
			AAHU's	108.30

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	108.30
B. Future Without Project AAHU's =	40.84
Net Change (FWP – FWOP) =	67.46

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: East Timbalier Island Restoration (XTE -45/676)
Area 1 - island benefits

Date: 3 August 1994

Marsh Acreage: 10ac

Wetland Type: saline

Water Acreage: 140ac

Land Loss Rate:

Total Acreage: 150ac

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	10ac 7%	0%	100%-4	60%	22ppt	1.0
FWOP	1	6ac 2%	↓	↓	55%	↓	↓
	3	0ac 0%	↓	100%-5	50%	↓	↓
	20	0ac 0%	↓	100%-5	0%	↓	↓
FWP	1	137ac 91%	0%	100%-1	90%	22ppt	1.0
	3	129ac 86%	↓	80%-1 20%-4	85%	↓	↓
	20	61ac 41%	↓	40%-1 30%-3 30%-4	70%	↓	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: East Timbalier Island Restoration (XTE–45/67b)
Area 1– Island
Wetland Type: Saline

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	150	10	7	10	7	--
1	150	6	4	137	91	131
2	150	3	2	133	89	130
3	150	0	0	129	86	129
4	150	0	0	125	83	125
5	150	0	0	121	81	121
6	150	0	0	117	78	117
7	150	0	0	113	75	113
8	150	0	0	109	73	109
9	150	0	0	105	70	105
10	150	0	0	101	67	101
11	150	0	0	97	65	97
12	150	0	0	93	62	93
13	150	0	0	89	59	89
14	150	0	0	85	57	85
15	150	0	0	81	54	81
16	150	0	0	77	51	77
17	150	0	0	73	49	73
18	150	0	0	69	46	69
19	150	0	0	65	43	65
20	150	0	0	61	41	61
Total Years 1–20		9		1,980		
Average Annual Acres		0		99		**99**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project.....East Timbalier Island Restoration (XTE–45/67b) Marsh type acres..... 9180
Area 2– mainland benefits
Condition: Future Without Project

Variable		TY 0		TY 1		TY 5	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	60	0.64	60	0.64	58	0.62
V2	% Aquatic	5	0.34	5	0.34	3	0.32
V3	Interspersion	%		%		%	
	Class 1		0.38		0.38		0.38
	Class 2	20		20		20	
	Class 3	50		50		50	
	Class 4	30		30		30	
	Class 5						
V4	%OW <= 1.5ft	40	0.61	40	0.61	35	0.55
V5	Salinity (ppt)	16	1.00	16	1.00	16	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.67	HSI =	0.67	HSI =	0.65

Project.....East Timbalier Island Restoration (XTE–45/67b)
FWOP

Variable		TY 12		TY 20			
		Value	SI	Value	SI	Value	SI
V1	% Emergent	55	0.60	51	0.56		
V2	% Aquatic	3	0.32	2	0.31		
V3	Interspersion	%		%		%	
	Class 1		0.36		0.34		
	Class 2	15		10			
	Class 3	50		50			
	Class 4	35		40			
	Class 5						
V4	%OW <= 1.5ft	35	0.55	30	0.49		
V5	Salinity (ppt)	16	1.00	16	1.00		
V6	Access Value	1.00	1.00	1.00	1.00		
		HSI =	0.64	HSI =	0.61	HSI =	

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Saline Marsh

Project.....East Timbalier Island Restoration (XTE–45/67b) Marsh type acres..... 9180
Area 2– mainland benefits
Condition: Future With Project

Variable		TY 0		TY 1		TY 5	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	60	0.64	60	0.64	58	0.62
V2	% Aquatic	5	0.34	5	0.34	5	0.34
V3	Interspersion	%		%		%	
	Class 1		0.38		0.38		0.38
	Class 2	20		20		20	
	Class 3	50		50		50	
	Class 4	30		30		30	
	Class 5						
V4	%OW <= 1.5ft	40	0.61	40	0.61	37	0.58
V5	Salinity (ppt)	16	1.00	16	1.00	16	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.67	HSI =	0.67	HSI =	0.66

Project.....East Timbalier Island Restoration (XTE–45/67b)
FWP

Variable		TY 12		TY 20			
		Value	SI	Value	SI	Value	SI
V1	% Emergent	56	0.60	53	0.58		
V2	% Aquatic	5	0.34	3	0.32		
V3	Interspersion	%		%		%	
	Class 1		0.36		0.36		
	Class 2	15		14			
	Class 3	50		50			
	Class 4	35		36			
	Class 5						
V4	%OW <= 1.5ft	37	0.58	35	0.55		
V5	Salinity (ppt)	16	1.00	16	1.00		
V6	Access Value	1.00	1.00	1.00	1.00		
		HSI =	0.65	HSI =	0.63	HSI =	

AAHU CALCULATION

Project: East Timbalier Island Restoration (XTE–45/67b)
Area 2– mainland benefits

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	9180	0.67	6136.50	
1	9180	0.67	6136.50	6136.50
5	9180	0.65	5985.25	24243.51
12	9180	0.64	5841.14	41392.38
20	9180	0.61	5596.20	45749.36
			AAHU's =	5876.09

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	9180	0.67	6136.50	
1	9180	0.67	6136.50	6136.50
5	9180	0.66	6024.01	24321.03
12	9180	0.65	5923.24	41815.38
20	9180	0.63	5750.23	46693.87
			AAHU's	5948.34

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	5948.34
B. Future Without Project AAHU's =	5876.09
Net Change (FWP – FWOP) =	72.25

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: East Timbalier Island Restoration (XTE-45/675)
Area 2 - mainland benefits

Date: 3 August 1994

Marsh Acreage: 5508

Wetland Type: saline marsh

Water Acreage: 3672

Land Loss Rate:

Total Acreage: 9,180

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	5508ac 60%	5%	20% - 2 50% - 3 30% - 4	40%	16 ppt	1.0
FWOP	1	-334 5474 60%	5%	↓	40%	↓	↓
	5	5340 58%	3%	↓	35%	↓	↓
	12	5089 55%	3%	15% - 2 50% - 3 35% - 4	35%	↓	↓
	20	4682 51%	2%	10% - 2 50% - 3 40% - 4	30%	↓	↓
FWP	1	5474ac 60%	5%	20% - 2 50% - 3 30% - 4	40%	16 ppt	1.0
	5	5340ac 58%	5%	↓	37%	↓	↓
	12	5105ac 56%	5%	15% - 2 50% - 3 35% - 4	37%	↓	↓
	20	4836ac 53%	3%	14% - 2 50% - 3 36% - 4	35%	↓	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: East Timbalier Island Restoration (XTE-45/67b)
Area 2- Mainland marshes
Wetland Type: Saline

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	9,180	5,508	60	5,508	60	--
1	9,180	5,474	60	5,474	60	0
2	9,180	5,441	59	5,441	59	0
3	9,180	5,407	59	5,407	59	0
4	9,180	5,374	59	5,374	59	0
5	9,180	5,340	58	5,340	58	0
6	9,180	5,304	58	5,306	58	2
7	9,180	5,268	57	5,273	57	5
8	9,180	5,232	57	5,239	57	7
9	9,180	5,197	57	5,206	57	9
10	9,180	5,161	56	5,172	56	11
11	9,180	5,125	56	5,139	56	14
12	9,180	5,089	55	5,105	56	16
13	9,180	5,038	55	5,071	55	33
14	9,180	4,987	54	5,038	55	51
15	9,180	4,936	54	5,004	55	68
16	9,180	4,886	53	4,971	54	85
17	9,180	4,835	53	4,937	54	102
18	9,180	4,784	52	4,903	53	120
19	9,180	4,733	52	4,870	53	137
20	9,180	4,682	51	4,836	53	154
Total Years 1-20		102,292		103,105		
Average Annual Acres		5,115		5,155		**41**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Marsh Island Shore Stabilization/Hydrologic Restoration (TV–5/7) Increment 3 — Marsh type acres..... 6697

Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	75	0.78	75	0.78	66	0.69
V2	% Aquatic	0.2	0.30	0.2	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1	15	0.49	15	0.49	13	0.46
	Class 2	35		35		27	
	Class 3	15		15		25	
	Class 4	35		35		35	
	Class 5						
V4	%OW <= 1.5ft	43	0.65	43	0.65	40	0.61
V5	Salinity (ppt)	4	1.00	4	1.00	4	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.68	HSI =	0.68	HSI =	0.64

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Marsh Island Shore Stabilization/Hydrologic Restoration (TV–5/7) Increment 3 — Marsh type acres..... 6697

Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	75	0.78	76	0.78	72	0.75
V2	% Aquatic	0.2	0.30	5	0.34	65	0.76
V3	Interspersion	%		%		%	
	Class 1	15	0.49	15	0.49	15	0.48
	Class 2	35		35		31	
	Class 3	15		15		19	
	Class 4	35		35		35	
	Class 5						
V4	%OW <= 1.5ft	43	0.65	43	0.65	42	0.64
V5	Salinity (ppt)	4	1.00	4	1.00	4	1.00
V6	Access Value	1.00	1.00	0.982	0.98	0.982	0.98
		HSI =	0.68	HSI =	0.70	HSI =	0.77

AAHU CALCULATION

Project: Marsh Island Shore Stabilization/Hydrologic Restoration (TV–5/7) Increment 3

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	6697	0.68	4579.86	
1	6697	0.68	4579.86	4579.86
20	6697	0.64	4318.38	84533.28
			AAHU's =	4455.66

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	6697	0.68	4579.86	
1	6697	0.70	4668.16	4624.01
20	6697	0.77	5176.05	93520.07
			AAHU's	4907.20

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	4907.20
B. Future Without Project AAHU's =	4455.66
Net Change (FWP – FWOP) =	451.55

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: Marsh Island Shoreline Stabilization / Hydrologic Restoration (TV-57aiii) - Increment 3

Date: 6/29/94

Marsh Acreage: 5,034 ac.

Wetland Type: Brackish

Water Acreage: 1,663 ac.

Land Loss Rate:

Total Acreage: 6,697 ac.

Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
TY0	5,034ac. 75%	0.2%	Class 2 - 15% Class 2 - 35% Class 3 - 15% Class 4 - 35%	43%	4 ppt	1.0
FWOP 1	5,004ac. 75%	↓	↓	↓	↓	↓
FWOP 20	4,427ac. 66%	0%	1 - 13% 2 - 27% 3 - 25% 4 - 35%	40%	↓	↓
FWP 1	5,063ac. 76%	5%	1 - 15% 2 - 35% 3 - 15% 4 - 35%	43%	4 ppt	0.982
FWP 20	4,835ac. 72%	65%	1 - 15% 2 - 31% 3 - 19% 4 - 35%	42%	4 ppt	0.982

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Marsh Island Shore Stabilization/ Hydrologic Restoration (TV–5/7) Increment 3

Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	6,697	5,034	75	5,034	75	--
1	6,697	5,004	75	5,063	76	59
2	6,697	4,974	74	5,051	75	77
3	6,697	4,943	74	5,039	75	96
4	6,697	4,913	73	5,027	75	114
5	6,697	4,883	73	5,015	75	132
6	6,697	4,852	72	5,003	75	151
7	6,697	4,822	72	4,991	75	169
8	6,697	4,791	72	4,979	74	188
9	6,697	4,761	71	4,967	74	206
10	6,697	4,731	71	4,955	74	224
11	6,697	4,700	70	4,943	74	243
12	6,697	4,670	70	4,931	74	261
13	6,697	4,640	69	4,919	73	279
14	6,697	4,609	69	4,907	73	298
15	6,697	4,579	68	4,895	73	316
16	6,697	4,548	68	4,883	73	335
17	6,697	4,518	67	4,871	73	353
18	6,697	4,488	67	4,859	73	371
19	6,697	4,457	67	4,847	72	390
20	6,697	4,427	66	4,835	72	408
Total Years 1–20		94,310		98,980		
Average Annual Acres		4,716		4,949		**233**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Little Vermilion Bay Sediment Trapping (PTV–19)
Condition: Future Without Project

Marsh type acres:
Fresh.....
Intermediate.. 964

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	7	0.16	7	0.16	2	0.12
V2	% Aquatic	1	0.11	1	0.11	1	0.11
V3	Interspersion	%		%		%	
	Class 1		0.20		0.20		0.20
	Class 2						
	Class 3						
	Class 4	100		100		100	
	Class 5						
V4	%OW <= 1.5ft	85	1.00	85	1.00	90	1.00
V5	Salinity (ppt)						
	fresh		0.80		0.80		1.00
	intermediate	5		5		4	
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.29	HSI =	0.29	HSI =	0.28

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Little Vermilion Bay Sediment Trapping (PTV–19)
Condition: Future With Project

Marsh type acres:
Fresh.....
Intermediate.. 964

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	7	0.16	10	0.19	47	0.52
V2	% Aquatic	1	0.11	5	0.15	25	0.33
V3	Interspersion	%		%		%	
	Class 1		0.20		0.24		0.50
	Class 2					50	
	Class 3			20		50	
	Class 4	100		80			
	Class 5						
V4	%OW <= 1.5ft	85	1.00	81	1.00	90	1.00
V5	Salinity (ppt)						
	fresh		0.80		0.80		1.00
	intermediate	5		5		4	
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.29	HSI =	0.32	HSI =	0.57

AAHU CALCULATION

Project: Little Vermilion Bay Sediment Trapping (PTV–19)

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	964	0.29	276.57	
1	964	0.29	276.57	276.57
20	964	0.28	265.93	5153.72
			AAHU's =	271.51

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	964	0.29	276.57	
1	964	0.32	304.32	290.45
20	964	0.57	550.59	8121.68
			AAHU's	420.61

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	420.61
B. Future Without Project AAHU's =	271.51
Net Change (FWP – FWOP) =	149.09

COASTAL WETLANDS PLANNING, PROTECTION AND RESTORATION ACT

Wetland Value Assessment Worksheet

2.5 ac 100

Project: PTV-19

Date: 5-4-94

Condition:

Project A = 964
March = 67
Water = 897

	TY	V_1	V_2	V_3	V_4	V_5	V_6
FWOP	0	67ac 7%	1%	100%-4	85%	5_{ppt}	1.0
	1	~~130~~ 64ac 7%	1%	100%-4	85%	5_{ppt}	1.0
	20	160ac 2% 0	1%	100%-4	90%	4_{ppt}	1.0
FWP	1	99ac 10%	5%	3-20 4-80	81%	5_{ppt}	1.0
	20	457ac 47%	25%	2/3 - 50 1/3 - 50	90%	4_{ppt}	1.0

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Little Vermilion Bay Sediment Trapping (PTV–19)

Wetland Type: Intermediate

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	964	67	7	67	7	--
1	964	64	7	99	10	35
2	964	61	6	118	12	56
3	964	59	6	137	14	78
4	964	56	6	156	16	99
5	964	54	6	174	18	120
6	964	51	5	193	20	142
7	964	49	5	212	22	163
8	964	46	5	231	24	185
9	964	44	5	250	26	206
10	964	41	4	269	28	227
11	964	39	4	287	30	249
12	964	36	4	306	32	270
13	964	34	3	325	34	291
14	964	31	3	344	36	313
15	964	29	3	363	38	334
16	964	26	3	382	40	356
17	964	24	2	400	42	377
18	964	21	2	419	43	398
19	964	19	2	438	45	420
20	964	16	2	457	47	441
Total Years 1–20		800		5,560		
Average Annual Acres		40		278		**238**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL

MULTIPLE AREA BENEFITS SUMMARY SHEET

Project: Black Bayou Culverts (CS-16)

:The WVA analysis for project CS-16 consists of 6 areas: Area 1, consisting of wetlands between Black Bayou (Calcasieu Parish) and Willow Lake; Area 2A, consisting of wetlands in and around Sweet Lake and Willow Lake; Area 2B, consisting of wetlands in the western portion of the "Big Burn" ; Area 3A, made up of wetlands in the eastern part of the Big Burn as well as "interior" marshes south of Lake Misere and west of Grand Lake; Area 3B, consisting of wetlands adjacent to the south shoreline of Lake Misere and Grand Lake; and Area 4, made up of wetlands west of Black Bayou to Calcasieu Lake. Areas 1, 2A, 2B, 3A, and 3B were assessed using the Fresh WVA model, and Area 4 was assessed with the Brackish WVA model. Total WVA benefits (AAHU's) for this project are obtained by adding the benefits calculated for each area, as summarized below:

Area	AAHU's
1	200.71
2A	198.23
2B	56.55
3A	73.51
3B	51.58
4	11.74

TOTAL BENEFITS = 592 AAHU'S

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Black Bayou Culverts (CS-16)
Area 1 - Black Bayou to Willow Lake
Condition: Future Without Project

Marsh type acres:
Fresh..... 5127
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	78	0.80	77	0.79	70	0.73
V2	% Aquatic	10	0.19	10	0.19	10	0.19
V3	Interspersion	%		%		%	
	Class 1	75	0.85	75	0.85	67	0.82
	Class 2					8	
	Class 3	25		25		25	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	48	0.64	48	0.64	48	0.64
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.63	HSI =	0.62	HSI =	0.60

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Black Bayou Culverts (CS-16)
Area 1 - Black Bayou to Willow Lake
Condition: Future With Project

Marsh type acres:
Fresh..... 5127
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	78	0.80	77	0.79	71	0.74
V2	% Aquatic	10	0.19	17	0.25	17	0.25
V3	Interspersion	%		%		%	
	Class 1	75	0.85	75	0.85	68	0.82
	Class 2					7	
	Class 3	25		25		25	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	48	0.64	55	0.72	55	0.72
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.63	HSI =	0.66	HSI =	0.64

AAHU CALCULATION

Project: Black Bayou Culverts (CS–16)
Area 1 – Black Bayou to Willow Lake

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	5127	0.63	3212.41	
1	5127	0.62	3196.14	3204.27
20	5127	0.60	3068.16	59510.83
			AAHU's =	3135.75

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	5127	0.63	3212.41	
1	5127	0.66	3396.75	3304.58
20	5127	0.64	3279.54	63424.80
			AAHU's	3336.47

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	3336.47
B. Future Without Project AAHU's =	3135.75
Net Change (FWP – FWOP) =	200.71

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: CS-16 Black Bayou Culverts
Area 1 - Black Bayou to Willow Lake

Date: 11 May 1994

Marsh Acreage: 3,977ac

Wetland Type: Fresh

Water Acreage: 1,150 ac

Land Loss Rate: 0.518%/yr FWOP, 0.444%/yr FWP

Total Acreage: 5,127ac

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	3,977ac 78%	10%	Class 1 - 75% Class 3 - 25%	48%	0 ppt	1.0
FWOP	1	3,956ac 77%	↓	↓	↓	↓	↓
	20	3,565ac 70%	↓	1 - 67% 2 - 8% 3 - 25%	↓	↓	↓
FWP	1	3,961ac 77%	17%	1 - 75% 3 - 25%	55%	0 ppt	1.0
	20	3,647ac 71%	↓	1 - 68% 2 - 7% 3 - 25%	↓	↓	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Black Bayou Culverts (CS–16)
Area 1– Black Bayou to Willow Lake
Wetland Type: Fresh

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	5,127	3,997	78	3,997	78	--
1	5,127	3,956	77	3,961	77	5
2	5,127	3,935	77	3,944	77	9
3	5,127	3,915	76	3,928	77	13
4	5,127	3,894	76	3,911	76	17
5	5,127	3,874	76	3,895	76	21
6	5,127	3,853	75	3,878	76	25
7	5,127	3,833	75	3,862	75	29
8	5,127	3,812	74	3,845	75	33
9	5,127	3,791	74	3,829	75	37
10	5,127	3,771	74	3,812	74	41
11	5,127	3,750	73	3,796	74	46
12	5,127	3,730	73	3,779	74	50
13	5,127	3,709	72	3,763	73	54
14	5,127	3,688	72	3,746	73	58
15	5,127	3,668	72	3,730	73	62
16	5,127	3,647	71	3,713	72	66
17	5,127	3,627	71	3,697	72	70
18	5,127	3,606	70	3,680	72	74
19	5,127	3,586	70	3,664	71	78
20	5,127	3,565	70	3,647	71	82
Total Years 1–20		75,210		76,080		
Average Annual Acres		3,760		3,804		**44**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Black Bayou Culverts (CS–16)
Area 2A– Sweet and Willow Lakes
Condition: Future Without Project

Marsh type acres:
Fresh..... 12,902
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	53	0.58	52	0.57	47	0.52
V2	% Aquatic	45	0.51	45	0.51	45	0.51
V3	Interspersion	%		%		%	
	Class 1	20	0.42	20	0.42	15	0.38
	Class 2						
	Class 3	30		30		30	
	Class 4	50		50		55	
	Class 5						
V4	%OW <= 1.5ft	45	0.61	45	0.61	45	0.61
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.61	HSI =	0.61	HSI =	0.58

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Black Bayou Culverts (CS–16)
Area 2A– Sweet and Willow Lakes
Condition: Future With Project

Marsh type acres:
Fresh..... 12,902
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	53	0.58	52	0.57	48	0.53
V2	% Aquatic	45	0.51	50	0.55	50	0.55
V3	Interspersion	%		%		%	
	Class 1	20	0.42	20	0.42	16	0.39
	Class 2						
	Class 3	30		30		30	
	Class 4	50		50		54	
	Class 5						
V4	%OW <= 1.5ft	45	0.61	49	0.65	49	0.65
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.61	HSI =	0.62	HSI =	0.60

AAHU CALCULATION

Project: Black Bayou Culverts (CS-16)
Area 2A- Sweet and Willow Lakes

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	12902	0.61	7870.07	
1	12902	0.61	7810.82	7840.44
20	12902	0.58	7471.12	145178.43
			AAHU's =	7650.94

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	12902	0.61	7870.07	
1	12902	0.62	7983.26	7926.66
20	12902	0.60	7706.93	149056.77
			AAHU's	7849.17

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	7849.17
B. Future Without Project AAHU's =	7650.94
Net Change (FWP - FWOP) =	198.23

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: CS-16 Black Bayou Culverts
Area 2A-Sweet & Willow Lakes

Date: 11 May 1994

Marsh Acreage: 6,784ac.

Wetland Type: Fresh

Water Acreage: 6,118 ac

Land Loss Rate: FWOP - 0.525%/yr.
FWP - 0.446%/yr.

Total Acreage: 12,902ac.

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	6784ac 53%	45%	Class 1 - 20% Class 3 - 30% Class 4 - 50%	45%	$\emptyset_{pp}$	1.0
FWOP	1	6748ac 52%	↓	↓	↓	↓	↓
	20	6072ac 47%	↓	1 - 15% 3 - 30% 4 - 55%	↓	↓	↓
FWP	1	6754ac 52%	50%	1 - 20 3 - 30 4 - 50	49%	$\emptyset_{pp}$	1.0
	20	6179ac. 48%	↓	1 - 16% 3 - 30% 4 - 54%	↓	↓	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Black Bayou Culverts (CS–16)
Area 2A– Sweet and Willow Lakes
Wetland Type: Fresh

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	12,902	6,784	53	6,784	53	--
1	12,902	6,748	52	6,754	52	6
2	12,902	6,712	52	6,724	52	11
3	12,902	6,677	52	6,693	52	17
4	12,902	6,641	51	6,663	52	22
5	12,902	6,606	51	6,633	51	27
6	12,902	6,570	51	6,603	51	33
7	12,902	6,535	51	6,572	51	38
8	12,902	6,499	50	6,542	51	43
9	12,902	6,463	50	6,512	50	49
10	12,902	6,428	50	6,482	50	54
11	12,902	6,392	50	6,451	50	59
12	12,902	6,357	49	6,421	50	64
13	12,902	6,321	49	6,391	50	70
14	12,902	6,285	49	6,361	49	75
15	12,902	6,250	48	6,330	49	80
16	12,902	6,214	48	6,300	49	86
17	12,902	6,179	48	6,270	49	91
18	12,902	6,143	48	6,240	48	96
19	12,902	6,108	47	6,209	48	102
20	12,902	6,072	47	6,179	48	107
Total Years 1–20		128,200		129,330		
Average Annual Acres		6,410		6,467		**57**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project..... Black Bayou Culverts (CS–16)
Area 2B– Western Big Burn
Condition: Future Without Project

Marsh type acres:
Fresh..... 21,768
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	70	0.73	70	0.73	70	0.73
V2	% Aquatic	90	0.91	90	0.91	90	0.91
V3	Interspersion	%		%		%	
	Class 1	50	0.72	50	0.72	50	0.72
	Class 2	10		10		10	
	Class 3	40		40		40	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.82	HSI =	0.82	HSI =	0.82

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project..... Black Bayou Culverts (CS–16)
Area 2B– Western Big Burn
Condition: Future With Project

Marsh type acres:
Fresh..... 21,768
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	70	0.73	70	0.73	71	0.74
V2	% Aquatic	90	0.91	90	0.91	90	0.91
V3	Interspersion	%		%		%	
	Class 1	50	0.72	50	0.72	52	0.73
	Class 2	10		10		8	
	Class 3	40		40		40	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.82	HSI =	0.82	HSI =	0.83

AAHU CALCULATION

Project: Black Bayou Culverts (CS-16)
Area 2B- Western Big Burn

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	21768	0.82	17905.82	
1	21768	0.82	17905.82	17905.82
20	21768	0.82	17905.82	340210.61
			AAHU's =	17905.82

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	21768	0.82	17905.82	
1	21768	0.82	17905.82	17905.82
20	21768	0.83	18024.88	341341.66
			AAHU's	17962.37

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	17962.37
B. Future Without Project AAHU's =	17905.82
Net Change (FWP - FWOP) =	56.55

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: CS-16 Black Bayou Culverts
Area 2B - Western Big Burn

Date: 11 May 1994

Marsh Acreage: 15,236 ac

Wetland Type: Fresh

Water Acreage: 6,532 ac

Land Loss Rate: FWOP - No loss
FWP - + 5%/yr. gain

Total Acreage: 21,768 ac

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	15,236 70%	90%	Class 1 - 50% Class 2 - 10% Class 3 - 40%	90%	0 ppt	1.0
FWOP	1	15,236ac 70%	↓	↓	↓	↓	↓
	20	15,236ac 70%	↓	↓	↓	↓	↓
FWP	1	15,252ac 70%	90%	1-50 2-10 3-40	90% ~~91%~~	0 ppt	1.0
	20	15,563ac 71%	↓	1-52 2-8 3-40	↓	↓	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Black Bayou Culverts (CS–16)
Area 2B– Western Big Burn
Wetland Type: Fresh

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	21,768	15,236	70	15,236	70	--
1	21,768	15,236	70	15,252	70	16
2	21,768	15,236	70	15,268	70	32
3	21,768	15,236	70	15,285	70	49
4	21,768	15,236	70	15,301	70	65
5	21,768	15,236	70	15,317	70	81
6	21,768	15,236	70	15,334	70	98
7	21,768	15,236	70	15,350	71	114
8	21,768	15,236	70	15,367	71	131
9	21,768	15,236	70	15,383	71	147
10	21,768	15,236	70	15,399	71	163
11	21,768	15,236	70	15,416	71	180
12	21,768	15,236	70	15,432	71	196
13	21,768	15,236	70	15,448	71	212
14	21,768	15,236	70	15,465	71	229
15	21,768	15,236	70	15,481	71	245
16	21,768	15,236	70	15,498	71	262
17	21,768	15,236	70	15,514	71	278
18	21,768	15,236	70	15,530	71	294
19	21,768	15,236	70	15,547	71	311
20	21,768	15,236	70	15,563	71	327
Total Years 1–20		304,720		308,150		
Average Annual Acres		15,236		15,407		**171**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project..... Black Bayou Culverts (CS–16)
Area 3A– Eastern Big Burn, Interior Marsh
Condition: Future Without Project

Marsh type acres:
Fresh..... 31,117
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	80	0.82	80	0.82	80	0.82
V2	% Aquatic	90	0.91	90	0.91	90	0.91
V3	Interspersion	%		%		%	
	Class 1	70	0.84	70	0.84	70	0.84
	Class 2	10		10		10	
	Class 3	20		20		20	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.88	HSI =	0.88	HSI =	0.88

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project..... Black Bayou Culverts (CS–16)
Area 3A– Eastern Big Burn, Interior Marsh
Condition: Future With Project

Marsh type acres:
Fresh..... 31,117
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	80	0.82	80	0.82	81	0.83
V2	% Aquatic	90	0.91	90	0.91	90	0.91
V3	Interspersion	%		%		%	
	Class 1	70	0.84	70	0.84	71	0.84
	Class 2	10		10		9	
	Class 3	20		20		20	
	Class 4						
	Class 5						
V4	%OW <= 1.5ft	90	1.00	90	1.00	90	1.00
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.88	HSI =	0.88	HSI =	0.88

AAHU CALCULATION

Project: Black Bayou Culverts (CS-16)
Area 3A- Eastern Big Burn, Interior Marsh

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	31117	0.88	27361.42	
1	31117	0.88	27361.42	27361.42
20	31117	0.88	27361.42	519867.07
			AAHU's =	27361.42

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	31117	0.88	27361.42	
1	31117	0.88	27361.42	27361.42
20	31117	0.88	27516.18	521337.27
			AAHU's	27434.93

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	27434.93
B. Future Without Project AAHU's =	27361.42
Net Change (FWP – FWOP) =	73.51

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: CS-16 Black Bayou Culverts
Area 3A - Eastern Big Burn, Interior marsh

Date: 11 May 1994

Marsh Acreage: 24,894ac

Wetland Type: Fresh

Water Acreage: 6,223ac

Land Loss Rate: FWOP- no net loss
FWP- +3%/yr. gain

Total Acreage: 31,117ac

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	24,894ac 80%	90%	Class 1 - 70% Class 2 - 10% Class 3 - 20%	90%	$\emptyset_{ppt}$	1.0
FWOP	1	24,894ac 80%	↓	↓	↓	↓	↓
	20	24,894ac 80%	↓	↓	↓	↓	↓
FWP	1	24,903ac 80%	90%	1-70 2-10 3-20	90% 91%	$\emptyset_{ppt}$	1.0
	20	25,081ac 81%	↓	1-71 2-4 3-20	↓	↓	1.0

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Black Bayou Culverts (CS–16)
Area 3A– Eastern Big Burn, Interior Marsh
Wetland Type: Fresh

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	31,117	24,894	80	24,894	80	--
1	31,117	24,894	80	24,903	80	9
2	31,117	24,894	80	24,912	80	18
3	31,117	24,894	80	24,922	80	28
4	31,117	24,894	80	24,931	80	37
5	31,117	24,894	80	24,940	80	46
6	31,117	24,894	80	24,950	80	56
7	31,117	24,894	80	24,959	80	65
8	31,117	24,894	80	24,969	80	75
9	31,117	24,894	80	24,978	80	84
10	31,117	24,894	80	24,987	80	93
11	31,117	24,894	80	24,997	80	103
12	31,117	24,894	80	25,006	80	112
13	31,117	24,894	80	25,015	80	121
14	31,117	24,894	80	25,025	80	131
15	31,117	24,894	80	25,034	80	140
16	31,117	24,894	80	25,044	80	150
17	31,117	24,894	80	25,053	81	159
18	31,117	24,894	80	25,062	81	168
19	31,117	24,894	80	25,072	81	178
20	31,117	24,894	80	25,081	81	187
Total Years 1–20		497,880		499,840		
Average Annual Acres		24,894		24,992		**98**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Black Bayou Culverts (CS–16)
Area 3B– Grand Lake/Lake Misere shorelines
Condition: Future Without Project

Marsh type acres:
Fresh..... 3,043
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	77	0.79	73	0.76	0	0.10
V2	% Aquatic	20	0.28	20	0.28	5	0.15
V3	Interspersion	%		%		%	
	Class 1	80	0.84	80	0.84		0.10
	Class 2						
	Class 3						
	Class 4	20		20			
	Class 5					100	
V4	%OW <= 1.5ft	34	0.48	34	0.48	20	0.33
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.66	HSI =	0.64	HSI =	0.21

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Black Bayou Culverts (CS–16)
Area 3B– Grand Lake/Lake Misere shorelines
Condition: Future With Project

Marsh type acres:
Fresh..... 3,043
Intermediate..

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	77	0.79	74	0.77	4	0.14
V2	% Aquatic	20	0.28	20	0.28	5	0.15
V3	Interspersion	%		%		%	
	Class 1	80	0.84	80	0.84		0.20
	Class 2						
	Class 3						
	Class 4	20		20		100	
	Class 5						
V4	%OW <= 1.5ft	34	0.48	34	0.48	21	0.34
V5	Salinity (ppt)						
	fresh	0	1.00	0	1.00	0	1.00
	intermediate						
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.66	HSI =	0.65	HSI =	0.25

AAHU CALCULATION

Project: Black Bayou Culverts (CS-16)
Area 3B- Grand Lake/Lake Misere shorelines

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	3043	0.66	1998.24	
1	3043	0.64	1955.15	1976.69
20	3043	0.21	653.67	24783.74
			AAHU's =	1338.02

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	3043	0.66	1998.24	
1	3043	0.65	1965.99	1982.11
20	3043	0.25	750.84	25809.85
			AAHU's	1389.60

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	1389.60
B. Future Without Project AAHU's =	1338.02
Net Change (FWP - FWOP) =	51.58

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: CS-16 Black Bayou Culverts
Area 3-B - Grand Lake, Lake Misere shorelines
Date: 11 May 1994 Marsh Acreage: 2 349ac

Wetland Type: Fresh Water Acreage: 694ac < 570ac, lake / 124ac, pond

Land Loss Rate: FWOP - shoreline erosion = 117ac/yr Total Acreage: 3 043ac
FWOP - reduce FWOP loss by 10%

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	2,349ac 77%	20%	Class 1-80% Class 4-20%	34%	Φ ppt	1.0
FWOP	1	2232ac 73%	↓	↓	↓	↓	↓
	20	Φac Φ%	5%	5-100%	20%	↓	↓
FWP	1	2237ac 74%	20%	1-80 4-20	34%	Φ ppt	1.0
	20	123ac 4%	5%	4-100	21%	↓	↓

Remarks: 94 miles of shoreline

FWOP erosion: 16mi × 5'/yr. → 194ac/20yr
94mi × 10'/yr. → 2279ac/20yr
2473ac/20yr → 124ac/yr

2349
- 2232
117

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Black Bayou Culverts (CS–16)
Area 3B– Grand Lake/Lake Misere Shorelines
Wetland Type: Fresh

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	3,043	2,349	77	2,349	77	--
1	3,043	2,232	73	2,237	74	5
2	3,043	2,115	69	2,126	70	11
3	3,043	1,997	66	2,014	66	17
4	3,043	1,880	62	1,903	63	24
5	3,043	1,762	58	1,792	59	30
6	3,043	1,645	54	1,681	55	36
7	3,043	1,527	50	1,569	52	42
8	3,043	1,410	46	1,458	48	48
9	3,043	1,292	42	1,347	44	55
10	3,043	1,175	39	1,236	41	61
11	3,043	1,057	35	1,124	37	67
12	3,043	940	31	1,013	33	73
13	3,043	822	27	902	30	80
14	3,043	705	23	791	26	86
15	3,043	587	19	679	22	92
16	3,043	470	15	568	19	98
17	3,043	352	12	457	15	104
18	3,043	235	8	346	11	111
19	3,043	117	4	234	8	117
20	3,043	0	0	123	4	123
Total Years 1–20		22,320		23,600		
Average Annual Acres		1,116		1,180		**64**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Black Bayou Culverts (CS-16) Marsh type acres..... 1464
Area 4- Black Bayou to Calcasieu Lake
Condition: Future Without Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	57	0.61	57	0.61	54	0.59
V2	% Aquatic	0	0.30	0	0.30	0	0.30
V3	Interspersion	%		%		%	
	Class 1	40	0.52	40	0.52	37	0.50
	Class 2						
	Class 3						
	Class 4	60		60		63	
	Class 5						
V4	%OW <= 1.5ft	25	0.42	25	0.42	25	0.42
V5	Salinity (ppt)	10	1.00	10	1.00	10	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.60	HSI =	0.60	HSI =	0.59

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Brackish Marsh

Project.....Black Bayou Culverts (CS-16) Marsh type acres..... 1464
Area 4- Black Bayou to Calcasieu Lake
Condition: Future With Project

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	57	0.61	57	0.61	55	0.60
V2	% Aquatic	0	0.30	1	0.31	5	0.34
V3	Interspersion	%		%		%	
	Class 1	40	0.52	40	0.52	38	0.50
	Class 2						
	Class 3						
	Class 4	60		60		62	
	Class 5						
V4	%OW <= 1.5ft	25	0.42	25	0.42	25	0.42
V5	Salinity (ppt)	10	1.00	8	1.00	8	1.00
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.60	HSI =	0.60	HSI =	0.60

AAHU CALCULATION

Project: Black Bayou Culverts (CS–16)
Area 4– Black Bayou to Calcasieu Lake

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	1464	0.60	877.81	
1	1464	0.60	877.81	877.81
20	1464	0.59	857.41	16484.60
			AAHU's =	868.12

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	1464	0.60	877.81	
1	1464	0.60	880.89	879.35
20	1464	0.60	878.87	16717.78
			AAHU's	879.86

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	879.86
B. Future Without Project AAHU's =	868.12
Net Change (FWP – FWOP) =	11.74

Coastal Wetland Planning, Protection and Restoration Act
Wetland Value Assessment Worksheet

Project: CS-16 Black Bayou Culverts
Area 4 - Black Bayou to Calcasieu Lake

Date: 11 May 1994

Marsh Acreage: 828 ac

Wetland Type: Brackish

Water Acreage: 636 ac

Land Loss Rate:

Total Acreage: 1,464 ac

	Target Year	V1 % Marsh	V2 % SAV	V3 Marsh Edge	V4 Water <= 1.5'	V5 Salinity	V6 Fish Access
	TY0	828 ac 57%	0%	Class 1 - 40% Class 4 - 60%	25%	10 ppt	1.0
FWOP	1	826 ac 57%	↓	↓	↓	↓	↓
	20	797 ac 54%	↓	1 - 37% 4 - 63%	↓	↓	↓
FWP	1	827 ac 57%	1%	1 - 40 4 - 60	25%	8 ppt	1.0
	20	808 ac. 55%	5%	1 - 38 4 - 62	↓	↓	↓

Remarks:

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Black Bayou Culverts (CS–16)
Area 4– Black Bayou to Calcasieu Lake
Wetland Type: Brackish

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	1,464	828	57	828	57	--
1	1,464	826	56	827	56	1
2	1,464	824	56	826	56	2
3	1,464	823	56	825	56	2
4	1,464	821	56	824	56	3
5	1,464	820	56	823	56	3
6	1,464	818	56	822	56	4
7	1,464	817	56	821	56	4
8	1,464	815	56	820	56	5
9	1,464	814	56	819	56	5
10	1,464	812	55	818	56	6
11	1,464	811	55	817	56	6
12	1,464	809	55	816	56	7
13	1,464	808	55	815	56	7
14	1,464	806	55	814	56	8
15	1,464	805	55	813	56	8
16	1,464	803	55	812	55	9
17	1,464	802	55	811	55	9
18	1,464	800	55	810	55	10
19	1,464	799	55	809	55	10
20	1,464	797	54	808	55	11
Total Years 1–20		16,230		16,350		
Average Annual Acres		811		818		**6**

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Perry Ridge GIWW Bank Protection (PCS–26i) Marsh type acres:
(Increment 1) Fresh.....
Condition: Future Without Project Intermediate.. 5945

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	55	0.60	54	0.59	35	0.42
V2	% Aquatic	55	0.60	53	0.58	25	0.33
V3	Interspersion	%		%		%	
	Class 1		0.35		0.35		0.30
	Class 2	15		15		10	
	Class 3	45		45		30	
	Class 4	40		40		60	
	Class 5						
V4	%OW <= 1.5ft	60	0.78	59	0.76	45	0.61
V5	Salinity (ppt)						
	fresh		1.00		1.00		0.60
	intermediate	4		4		6	
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.65	HSI =	0.64	HSI =	0.44

WETLAND VALUE ASSESSMENT COMMUNITY MODEL
Fresh/Intermediate Marsh

Project.....Perry Ridge GIWW Bank Protection (PCS–26i) Marsh type acres:
(Increment 1) Fresh.....
Condition: Future With Project Intermediate.. 5945

Variable		TY 0		TY 1		TY 20	
		Value	SI	Value	SI	Value	SI
V1	% Emergent	55	0.60	55	0.60	55	0.60
V2	% Aquatic	55	0.60	55	0.60	60	0.64
V3	Interspersion	%		%		%	
	Class 1		0.35		0.35		0.35
	Class 2	15		15		15	
	Class 3	45		45		45	
	Class 4	40		40		40	
	Class 5						
V4	%OW <= 1.5ft	60	0.78	60	0.78	60	0.78
V5	Salinity (ppt)						
	fresh		1.00		1.00		1.00
	intermediate	4		4		4	
V6	Access Value	1.00	1.00	1.00	1.00	1.00	1.00
		HSI =	0.65	HSI =	0.65	HSI =	0.66

AAHU CALCULATION

Project: Perry Ridge GIWW Bank Protection (PCS–26i)
(Increment 1)

Future Without Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	5945	0.65	3843.23	
1	5945	0.64	3787.64	3815.44
20	5945	0.44	2642.93	61090.41
			AAHU's =	3245.29

Future With Project			Total	Cummulative
TY	Acres	x HSI	HU's	HU's
0	5945	0.65	3843.23	
1	5945	0.65	3843.23	3843.23
20	5945	0.66	3897.86	73540.42
			AAHU's	3869.18

NET CHANGE IN AAHU'S DUE TO PROJECT	
A. Future With Project AAHU's =	3869.18
B. Future Without Project AAHU's =	3245.29
Net Change (FWP – FWOP) =	623.89

Coastal Wetlands Planning, Protection, and Restoration Act
Fourth Priority Project List

Average Annual Acres of Emergent Marsh

Project: Perry Ridge GIWW Bank Protection (PCS–26i)
Increment 1
Wetland Type: Intermediate

Project Year	Project Area (acres)	Emergent Marsh				
		Without Project		With Project		
		Acres	%	Acres	%	Net Acres
0	5,945	3,270	55	3,270	55	--
1	5,945	3,210	54	3,270	55	60
2	5,945	3,151	53	3,271	55	120
3	5,945	3,091	52	3,271	55	180
4	5,945	3,032	51	3,272	55	240
5	5,945	2,972	50	3,273	55	301
6	5,945	2,913	49	3,274	55	361
7	5,945	2,853	48	3,274	55	421
8	5,945	2,794	47	3,275	55	481
9	5,945	2,735	46	3,276	55	541
10	5,945	2,675	45	3,277	55	601
11	5,945	2,616	44	3,277	55	662
12	5,945	2,556	43	3,278	55	722
13	5,945	2,497	42	3,279	55	782
14	5,945	2,438	41	3,280	55	842
15	5,945	2,378	40	3,280	55	902
16	5,945	2,319	39	3,281	55	962
17	5,945	2,259	38	3,282	55	1,023
18	5,945	2,200	37	3,283	55	1,083
19	5,945	2,140	36	3,283	55	1,143
20	5,945	2,081	35	3,284	55	1,203
Total Years 1–20		52,910		65,540		
Average Annual Acres		2,646		3,277		**632**

Coastal Wetlands Planning, Protection and Restoration Act

4th Priority Project List Report

Appendix C

Engineering Appendix

APPENDIX C

ENGINEERING APPENDIX

TABLE OF CONTENTS

Table C-1
Estimated Construction Cost
Eden Isles East Marsh Restoration (PPO-4)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	2 30-inch Flap-Gated Culverts	Lump Sum	LS	75,000.00	75,000
Total Construction Cost					75,000

Table C-2
Estimated Construction Cost
Grand Bay Crevasse (PBS-6)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	35,000.00	35,000
2	Rock Removal	1,500	Tons	4.50	7,000
3	Excavation	12,000	CY	2.10	25,000
4	Rip Rap	22,850	Tons	18.25	417,000
5	Relocations				
5a	1 16" Gas Line, Remove 380 lf	Lump Sum	LS	140,000.00	140,000
5b	2 16" Gas Line, Install 450 lf	Lump Sum	LS	280,000.00	280,000
Total Construction Cost					904,000

Table C-3
Estimated Construction Cost
Pass-a-Loutre Sediment Mining (PMR-8)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	125,000.00	125,000
2	Excavation	800,000	CY	0.85	680,000
Total Construction Cost					805,000

Table C-4
Estimated Construction Cost
Naomi Outfall Management (BA-3c)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	30,000.00	30,000
2	Rock	20,350	Tons	26.00	529,000
3	Geotextile	9,200	SY	1.20	11,000
Total Construction Cost					570,000

Table C-5
Estimated Construction Cost
Barataria Bay Waterway Bank Protection, West (PBA-12a)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	30,000.00	30,000
2	Geotextile	31,300	SY	3.00	94,000
3	Earth Backfill	50,000	CY	2.00	100,000
4	Rock	46,650	Tons	20.00	933,000
Total Construction Cost					1,157,000

Table C-6
Estimated Construction Cost
Barataria Bay Waterway Bank Protection, East (PBA-12b)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	30,000.00	30,000
2	Geotextile	34,000	SY	3.00	102,000
3	Earth Backfill	54,400	CY	2.00	109,000
4	Rock	50,700	Tons	20.00	1,014,000
Total Construction Cost					1,255,000

Table C-7
Estimated Construction Cost
Bayou L'ours Ridge Hydrologic Restoration (PBA-34)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	175,000.00	175,000
2	Structure 6, Earth Plug	Lump Sum	LS	18,000.00	18,000
3	Structure 7, Earth Plug	Lump Sum	LS	18,000.00	18,000
4	Structure 8, Sheet Pile Weir	Lump Sum	LS	240,000.00	240,000
5	Structure 9, Earth Plug	Lump Sum	LS	18,000.00	18,000
6	Structure 10, Earth Plug	Lump Sum	LS	18,000.00	18,000
7	Structure 11, Sheet Pile Weir	Lump Sum	LS	222,000.00	222,000
8	Structure 12, Earth Plug	Lump Sum	LS	9,600.00	10,000
9	Structure 13, Earth Plug	Lump Sum	LS	23,000.00	23,000
Total Construction Cost					742,000

Table C-8
Estimated Construction Cost
Grand Bayou/GIWW Freshwater Diversion (TE-10/XTE-49)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Excavation	70,000	CY	2.60	182,000
2	Cutoff Canal Structure	Lump Sum	LS	900,000.00	900,000
3	Embankment Fill	38,000	CY	7.90	300,000
4	Rock Armor	18,000	Tons	20.00	360,000
Total Construction Cost					1,742,000

Table C-9
Estimated Construction Cost
East Timbalier Barrier Island Restoration (XTE-45/67b)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Excavation	1,875,000	CY	1.80	3,375,000
2	Rock	21,600	Tons	18.50	400,000
Total Construction Cost					3,775,000

Table C-10
Estimated Construction Cost
Marsh Island Marsh Creation and Hydrologic Restoration (TV5/7)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	200,000.00	200000
2	Canal No. 1, Closure @ Mouth Earthen Closure w/ Filter Fabric & 2 ft. Cover of Armor Stone				
2a	Earthen Core, Elevation 3.0	400	CY	2.00	800
2b	Geotextile	685	SY	2.50	1700
2c	2 ft Armor Stone	478	Tons	22.60	10800
3	Canal No. 2, Closure @ Mouth Earthen Closure w/ Filter Fabric & 2 ft. Cover of Armor Stone				
3a	Earthen Core, Elevation 5.0	1600	CY	2.00	3200
3b	Geotextile	1240	SY	2.50	3100
3c	2 ft Armor Stone	885	Tons	22.60	20000
4	Canal No. 3, Backfill				
4a	1,000 ft (L) x 120 ft (W) x 4 ft (D)	30000	CY	1.30	39000
4b	Repair Dikes Adjacent to Canal	2000	LF	5.05	10100
4c	Rear Closure (Earth)	120	LF	9.90	1200
4d	Closure @ Mouth (Earth)	1565	CY	2.00	3100

Table C-10 (Continued)
Estimated Construction Cost
Marsh Island Marsh Creation and Hydrologic Restoration (TV5/7)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
5	Canal No. 4, Backfill				
5a	900 ft (L) x 300 ft (W) x 3 ft (D)	26000	CY	1.30	33800
5b	Repair Dikes Adjacent to Canal	1800	LF	5.05	9100
5c	Rear Closure (Earth)	130	LF	6.75	900
5d	Closure @ Mouth (Earth)	1340	CY	2.70	3600
6	Canal No. 5. Closure @ Mouth Earthen Closure w/ Filter Fabric & 2 ft. Cover of Armor Stone				
6a	Earthen Core, Elevation 5.0	16980	CY	2.00	34000
6b	Geotextile	9345	SY	2.50	23400
6c	2 ft Armor Stone	4550	Tons	22.60	102800
7	Canal No. 6, Closure @ Mouth Earthen Closure w/ Filter Fabric & 2 ft. Cover of Armor Stone				
7a	Earthen Core, Elevation 3.0	750	CY	2.00	1500
7b	Geotextile	950	SY	2.50	2400
7c	2 ft Armor Stone	675	Tons	22.60	15300
8	Canal No. 7, Closure @ Mouth Earthen Closure w/ Filter Fabric & 2 ft. Cover of Armor Stone				
8a	Earthen Core, Elevation 3.0	1550	CY	2.00	3100
8b	Geotextile	1480	SY	2.50	3700
8c	2 ft Armor Stone	1075	Tons	22.60	24300
9	Canals 8 & 9, Closure @ Mouth 1,500 ft above the intersection Earthen Closure w/ Filter Fabric & 2 ft. Cover of Armor Stone				
9a	Earthen Core, Elevation 3.0	775	CY	2.00	1600
9b	Geotextile	950	SY	2.50	2400
9c	2 ft Armor Stone	675	Tons	22.60	15300
10	Canal No. 9, Backfilled				
10a	1,800 ft (L) x 100 ft (W) x 4 ft (D)	47000	CY	1.70	79900
10b	Repair Dikes Adjacent to Canal	3700	LF 5	5.05	18700
11	Closure @ Lake Sands 3,000 ft (L) x 1,000 ft (W)				
11a	Closure Retention Dikes El 5.0, w/ 3ft crown, 1V on 3H	8000	LF	5.05	40400
11b	Dredging Closure	585000	CY	1.30	760500
12	Shoreline Protection				
12a	Filter Fabric	27200	SY	2.50	68000
12b	12-inch Armor Stone	16150	Tons	22.60	365000
Total Construction Cost					1,903,000

Table C-11
Estimated Construction Cost
Little Vermilion Bay Sediment Trapping

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	1	LS	20,000.00	20,000
2	Excavation	340,000	CY	1.35	459,000
3	Vegetative Planting	39,500	LF	2.28	90,000
Total Construction Cost					569,000

Table C-12
Estimated Construction Cost
Black Bayou Culverts (CS-16)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	100,000.00	100,000
2	Cellular Cofferdam	Lump Sum	LS	900,000.00	900,000
3	Dewatering	Lump Sum	LS	200,000.00	200,000
4	Excavation, Structural (Dry)	1,500.00	CY	2.50	3,750
5	Excavation, Closure (Wet)	45,000.00	CY	3.00	135,000
6	Excavation, Stone (Wet)	5,500.00	CY	5.00	27,500
7	Backfill, Structural (Sand)	1,500.00	CY	8.00	12,000
8	Backfill, Fully Compacted Clay	4,500.00	CY	5.00	22,500
9	Backfill, Semi-Compacted	40,000.00	CY	3.50	140,000
10	Piling, Steel Sheet (PZ-22)	7,200.00	SF	11.50	82,800
11	Stone	10,000.00	Tons	20.00	200,000
12	Shell	3,500.00	CY	30.00	105,000
13	Concrete Bottom Slab *	2,700.00	CY	200.00	540,000
14	Concrete Top Slab *	900.00	CY	250.00	225,000
15	Concrete Walls *	1,250.00	CY	330.00	412,500
16	Concrete Alignment Collars	125.00	CY	330.00	41,250
17	Waterstops	1,000.00	LF	10.00	10,000
18	Embedded Metal	17,000.00	Lbs	1.25	21,250
19	Instrumentation	Lump Sum	LS	20,000.00	20,000
20	Sluice Gates and Machinery	5.00	Ea	90,000.00	450,000
21	Concrete Stoplogs	10.00	CY	200.00	2,000
22	Electrical Work	Lump Sum	LS	60,000.00	60,000
23	Highway 384 Relocation	3,000.00	LF	150.00	450,000
Total Construction Cost					4,200,000

* Includes Reinforcement

Table C-13
Estimated Construction Cost
Perry Ridge Bank Protection (PCS-26)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	44,000.00	44,000
2	Loose Rip Rap	51,600	Tons	21.00	1,084,000
4	Geotextile	32,700	SY	1.50	49,000
5	Rock Weir	Lump Sum	LS	60,000.00	60,000
Total Construction Cost					1,237,000

Table C-14
Estimated Construction Cost
Flotant Marsh Fencing Demonstration (XTE-54b)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	30,000.00	30,000
2	Fencing	7250	LF	20.00	145,000
Total Construction Cost					175,000

Table C-15
Estimated Construction Cost
Compost Demonstration (XCS-36)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Rental Equipment to Collect Compos	Lump Sum	LS	30,000.00	30,000
2	Transportation to Site	Lump Sum	LS	99,500.00	100,000
3	Labor to Collect and Install	Lump Sum	LS	59,200.00	59,000
4	Misc Charges	Lump Sum	LS	28,300.00	28,000
Total Construction Cost					217,000

Table C-16
Estimated Construction Cost
Plowed Terraces Demonstraion (XCS-56)

Item	Description	Quantity	Unit	Unit Cost ($)	Amount ($)
1	Mob and Demob	Lump Sum	LS	7,500.00	8,000
2	Terrace	19,000	LF	1.00	19,000
3	Vegetative Planting	19,000	LF	6.00	114,000
Total Construction Cost					141,000

Coastal Wetlands Planning, Protection and Restoration Act

4th Priority Project List Report

Appendix D

Economics Appendix

APPENDIX D

ECONOMIC ANALYSIS

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Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Eden Isles East Marsh Restoration (PPO – 4)

Project Construction Years:	3	Total Project Years	23
Interest Rate	8.00%	Amoritization Factor	0.10185
Total First Costs	$2,130,800	Total Fully Funded Costs	$5,019,000

Annual Charges	Present Worth	Average Annual
Interest & Amortization	$2,664,700	$271,400
Monitoring	$177,800	$18,100
O & M Costs	$726,500	$74,000
Other Costs	$0	$0
Total	$3,569,000	$363,500
Average Annual Habitat Units		1,253
Cost Per Habitat Unit		$290
Average Annual Acres of Emergent Marsh		934

Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

EDen Isles East Marsh Restoration (PPO – 4)

First Costs and Annual Charges

Year	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5 Compound		$0	$0	$0	$0	$0	$0	$0
4 Compound		$0	$0	$0	$0	$0	$0	$0
3 Compound	1995	$43,077	$1,902,000	$12,727	$0	$0	$0	$1,957,804
2 Compound	1996	$26,923	$0	$19,091	$21,429	$13,393	$53,571	$134,407
1 Compound	1997	$0	$0	$3,182	$8,571	$5,357	$21,429	$38,539
Base Year								
TOTAL		$70,000	$1,902,000	$35,000	$30,000	$18,750	$75,000	$2,130,750

Year	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
1 Discount	1998	$18,110	$74,000	$0
2 Discount	1999	$18,110	$74,000	$0
3 Discount	2000	$18,110	$74,000	$0
4 Discount	2001	$18,110	$74,000	$0
5 Discount	2002	$18,110	$74,000	$0
6 Discount	2003	$18,110	$74,000	$0
7 Discount	2004	$18,110	$74,000	$0
8 Discount	2005	$18,110	$74,000	$0
9 Discount	2006	$18,110	$74,000	$0
10 Discount	2007	$18,110	$74,000	$0
11 Discount	2008	$18,110	$74,000	$0
12 Discount	2009	$18,110	$74,000	$0
13 Discount	2010	$18,110	$74,000	$0
14 Discount	2011	$18,110	$74,000	$0
15 Discount	2012	$18,110	$74,000	$0
16 Discount	2013	$18,110	$74,000	$0
17 Discount	2014	$18,110	$74,000	$0
18 Discount	2015	$18,110	$74,000	$0
19 Discount	2016	$18,110	$74,000	$0
20 Discount	2017	$18,110	$74,000	$0
Total		$362,200	$1,480,000	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

EDen Isles East Marsh Restoration (PPO – 4)

Present Valued Costs Total Discounted Costs $3,569,013 Amortized Costs $363,504

Year	Compound Rates	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5	1.469	0	$0	$0	$0	$0	$0	$0	$0
4	1.360	0	$0	$0	$0	$0	$0	$0	$0
3	1.260	1995	$54,265	$2,395,972	$16,033	$0	$0	$0	$2,466,269
2	1.166	1996	$31,403	$0	$22,268	$24,994	$15,621	$62,486	$156,772
1	1.080	1997	$0	$0	$3,436	$9,257	$5,786	$23,143	$41,622
		Total	$85,668	$2,395,972	$41,737	$34,251	$21,407	$85,629	$2,664,664

Year	Discount Rates	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
–1	0.926	1998	$16,769	$68,519	$0
–2	0.857	1999	$15,526	$63,443	$0
–3	0.794	2000	$14,376	$58,744	$0
–4	0.735	2001	$13,311	$54,392	$0
–5	0.681	2002	$12,325	$50,363	$0
–6	0.630	2003	$11,412	$46,633	$0
–7	0.583	2004	$10,567	$43,178	$0
–8	0.540	2005	$9,784	$39,980	$0
–9	0.500	2006	$9,060	$37,018	$0
–10	0.463	2007	$8,388	$34,276	$0
–11	0.429	2008	$7,767	$31,737	$0
–12	0.397	2009	$7,192	$29,386	$0
–13	0.368	2010	$6,659	$27,210	$0
–14	0.340	2011	$6,166	$25,194	$0
–15	0.315	2012	$5,709	$23,328	$0
–16	0.292	2013	$5,286	$21,600	$0
–17	0.270	2014	$4,895	$20,000	$0
–18	0.250	2015	$4,532	$18,518	$0
–19	0.232	2016	$4,196	$17,147	$0
–20	0.215	2017	$3,885	$15,877	$0
		Total	$177,807	$726,543	$0
		Average Annual	$18,110	$73,998	$0

Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

EDen Isles East Marsh Restoration (PPO-4)

Fully Funded Costs Total Fully Funded Costs $5,018,968 Amortized Costs $511,182

Year	Inflation Factor	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5		0	$0	$0	$0	$0	$0	$0	$0
4		0	$0	$0	$0	$0	$0	$0	$0
3	1.029	1995	$44,326	$1,957,158	$13,096	$0	$0	$0	$2,014,581
2	1.061	1996	$28,563	$0	$20,254	$22,734	$14,208	$56,834	$142,592
1	1.094	1997	$0	$0	$3,480	$9,375	$5,860	$23,438	$42,153
		TOTAL	$72,889	$1,957,158	$36,830	$32,109	$20,068	$80,272	$2,199,326

Year	Inflation Factor	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
-1	1.128	1998	$20,423	$83,449	$0
-2	1.163	1999	$21,056	$86,036	$0
-3	1.199	2000	$21,708	$88,703	$0
-4	1.236	2001	$22,381	$91,453	$0
-5	1.274	2002	$23,075	$94,288	$0
-6	1.314	2003	$23,790	$97,211	$0
-7	1.354	2004	$24,528	$100,225	$0
-8	1.396	2005	$25,288	$103,332	$0
-9	1.440	2006	$26,072	$106,535	$0
-10	1.484	2007	$26,881	$109,838	$0
-11	1.530	2008	$27,714	$113,243	$0
-12	1.578	2009	$28,573	$116,753	$0
-13	1.627	2010	$29,459	$120,372	$0
-14	1.677	2011	$30,372	$124,104	$0
-15	1.729	2012	$31,313	$127,951	$0
-16	1.783	2013	$32,284	$131,918	$0
-17	1.838	2014	$33,285	$136,007	$0
-18	1.895	2015	$34,317	$140,223	$0
-19	1.954	2016	$35,381	$144,570	$0
-20	2.014	2017	$36,477	$149,052	$0
		Total	$554,378	$2,265,265	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Grand Bay Crevasse (PBS-6)

Project Construction Years:	3	Total Project Years	23
Interest Rate	8.00%	Amortization Factor	0.10185
Total First Costs	$2,080,000	Total Fully Funded Costs	$2,468,900

Annual Charges	Present Worth	Average Annual
Interest & Amortization	$2,437,400	$248,200
Monitoring	$84,700	$8,600
O & M Costs	$0	$0
Other Costs	$0	$0
Total	$2,522,100	$256,800
Average Annual Habitat Units		257
Cost Per Habitat Unit		$999
Average Annual Acres of Emergent Marsh		333

Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Grand Bay Crevasse (PBS–6)

First Costs and Annual Charges

Year	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5 Compound		$0	$0	$0	$0	$0	$0	$0
4 Compound		$0	$0	$0	$0	$0	$0	$0
3 Compound	1995	$88,842	$594,000	$15,000	$0	$0	$0	$697,842
2 Compound	1996	$122,158	$0	$22,500	$50,000	$113,000	$452,000	$759,658
1 Compound	1997	$0	$0	$7,500	$50,000	$113,000	$452,000	$622,500
Base Year								
TOTAL		$211,000	$594,000	$45,000	$100,000	$226,000	$904,000	$2,080,000

Year	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
1 Discount	1998	$8,625	$0	$0
2 Discount	1999	$8,625	$0	$0
3 Discount	2000	$8,625	$0	$0
4 Discount	2001	$8,625	$0	$0
5 Discount	2002	$8,625	$0	$0
6 Discount	2003	$8,625	$0	$0
7 Discount	2004	$8,625	$0	$0
8 Discount	2005	$8,625	$0	$0
9 Discount	2006	$8,625	$0	$0
10 Discount	2007	$8,625	$0	$0
11 Discount	2008	$8,625	$0	$0
12 Discount	2009	$8,625	$0	$0
13 Discount	2010	$8,625	$0	$0
14 Discount	2011	$8,625	$0	$0
15 Discount	2012	$8,625	$0	$0
16 Discount	2013	$8,625	$0	$0
17 Discount	2014	$8,625	$0	$0
18 Discount	2015	$8,625	$0	$0
19 Discount	2016	$8,625	$0	$0
20 Discount	2017	$8,625	$0	$0
Total		$172,500	$0	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Grand Bay Crevasse (PBS–6)

Present Valued Costs Total Discounted Costs $2,522,127 Amortized Costs $256,879

Year	Compound Rates	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5	1.469	0	$0	$0	$0	$0	$0	$0	$0
4	1.360	0	$0	$0	$0	$0	$0	$0	$0
3	1.260	1995	$111,915	$748,269	$18,896	$0	$0	$0	$879,080
2	1.166	1996	$142,485	$0	$26,244	$58,320	$131,803	$527,213	$886,065
1	1.080	1997	$0	$0	$8,100	$54,000	$122,040	$488,160	$672,300
		Total	$254,400	$748,269	$53,240	$112,320	$253,843	$1,015,373	$2,437,445

Year	Discount Rates	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
–1	0.926	1998	$7,986	$0	$0
–2	0.857	1999	$7,395	$0	$0
–3	0.794	2000	$6,847	$0	$0
–4	0.735	2001	$6,340	$0	$0
–5	0.681	2002	$5,870	$0	$0
–6	0.630	2003	$5,435	$0	$0
–7	0.583	2004	$5,033	$0	$0
–8	0.540	2005	$4,660	$0	$0
–9	0.500	2006	$4,315	$0	$0
–10	0.463	2007	$3,995	$0	$0
–11	0.429	2008	$3,699	$0	$0
–12	0.397	2009	$3,425	$0	$0
–13	0.368	2010	$3,171	$0	$0
–14	0.340	2011	$2,936	$0	$0
–15	0.315	2012	$2,719	$0	$0
–16	0.292	2013	$2,518	$0	$0
–17	0.270	2014	$2,331	$0	$0
–18	0.250	2015	$2,158	$0	$0
–19	0.232	2016	$1,999	$0	$0
–20	0.215	2017	$1,850	$0	$0
		Total	$84,682	$0	$0
		Average Annual	$8,625	$0	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Grand Bay Crevasse (PBS–6)

Fully Funded Costs Total Fully Funded Costs $2,468,908 Amortized Costs $251,458

Year	Inflation Factor	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5		0	$0	$0	$0	$0	$0	$0	$0
4		0	$0	$0	$0	$0	$0	$0	$0
3	1.029	1995	$91,419	$611,226	$15,435	$0	$0	$0	$718,080
2	1.061	1996	$129,597	$0	$23,870	$53,045	$119,882	$479,526	$805,920
1	1.094	1997	$0	$0	$8,203	$54,689	$123,598	$494,392	$680,882
		TOTAL	$221,016	$611,226	$47,509	$107,734	$243,480	$973,918	$2,204,882

Year	Inflation Factor	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
–1	1.128	1998	$9,726	$0	$0
–2	1.163	1999	$10,028	$0	$0
–3	1.199	2000	$10,339	$0	$0
–4	1.236	2001	$10,659	$0	$0
–5	1.274	2002	$10,990	$0	$0
–6	1.314	2003	$11,330	$0	$0
–7	1.354	2004	$11,682	$0	$0
–8	1.396	2005	$12,044	$0	$0
–9	1.440	2006	$12,417	$0	$0
–10	1.484	2007	$12,802	$0	$0
–11	1.530	2008	$13,199	$0	$0
–12	1.578	2009	$13,608	$0	$0
–13	1.627	2010	$14,030	$0	$0
–14	1.677	2011	$14,465	$0	$0
–15	1.729	2012	$14,913	$0	$0
–16	1.783	2013	$15,376	$0	$0
–17	1.838	2014	$15,852	$0	$0
–18	1.895	2015	$16,344	$0	$0
–19	1.954	2016	$16,850	$0	$0
–20	2.014	2017	$17,373	$0	$0
		Total	$264,026	$0	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Pass a Loutre Sediment Mining (PMR-8)

Project Construction Years:	2	Total Project Years	22
Interest Rate	8.00%	Amoritization Factor	0.10185
Total First Costs	$1,425,300	Total Fully Funded Costs	$1,632,700

Annual Charges	Present Worth	Average Annual
Interest & Amortization	$1,556,600	$158,500
Monitoring	$42,500	$4,300
O & M Costs	$0	$0
Other Costs	$0	$0
Total	$1,599,100	$162,800
Average Annual Habitat Units		125
Cost Per Habitat Unit		$1,302
Average Annual Acres of Emergent Marsh		132

Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Pass a Loutre Sediment Mining (PMR-8)

First Costs and Annual Charges

Year	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5 Compound		$0	$0	$0	$0	$0	$0	$0
4 Compound		$0	$0	$0	$0	$0	$0	$0
3 Compound		$0	$0	$0	$0	$0	$0	$0
2 Compound	1995	$102,154	$78,000	$20,000	$0	$0	$0	$200,154
1 Compound	1996	$63,846	$0	$30,000	$125,000	$201,250	$805,000	$1,225,096
Base Year								
TOTAL		$166,000	$78,000	$50,000	$125,000	$201,250	$805,000	$1,425,250

Year	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
1 Discount	1997	$4,325	$0	$0
2 Discount	1998	$4,325	$0	$0
3 Discount	1999	$4,325	$0	$0
4 Discount	2000	$4,325	$0	$0
5 Discount	2001	$4,325	$0	$0
6 Discount	2002	$4,325	$0	$0
7 Discount	2003	$4,325	$0	$0
8 Discount	2004	$4,325	$0	$0
9 Discount	2005	$4,325	$0	$0
10 Discount	2006	$4,325	$0	$0
11 Discount	2007	$4,325	$0	$0
12 Discount	2008	$4,325	$0	$0
13 Discount	2009	$4,325	$0	$0
14 Discount	2010	$4,325	$0	$0
15 Discount	2011	$4,325	$0	$0
16 Discount	2012	$4,325	$0	$0
17 Discount	2013	$4,325	$0	$0
18 Discount	2014	$4,325	$0	$0
19 Discount	2015	$4,325	$0	$0
20 Discount	2016	$4,325	$0	$0
Total		$86,500	$0	$0

Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Pass a Loutre Sediment Mining (PMR-8)

Present Valued Costs Total Discounted Costs $1,599,027 Amortized Costs $162,861

Year	Compound Rates	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5	1.469	0	$0	$0	$0	$0	$0	$0	$0
4	1.360	0	$0	$0	$0	$0	$0	$0	$0
3	1.260	0	$0	$0	$0	$0	$0	$0	$0
2	1.166	1995	$119,152	$90,979	$23,328	$0	$0	$0	$233,459
1	1.080	1996	$68,954	$0	$32,400	$135,000	$217,350	$869,400	$1,323,104
		Total	$188,106	$90,979	$55,728	$135,000	$217,350	$869,400	$1,556,563

Year	Discount Rates	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
-1	0.926	1997	$4,005	$0	$0
-2	0.857	1998	$3,708	$0	$0
-3	0.794	1999	$3,433	$0	$0
-4	0.735	2000	$3,179	$0	$0
-5	0.681	2001	$2,944	$0	$0
-6	0.630	2002	$2,725	$0	$0
-7	0.583	2003	$2,524	$0	$0
-8	0.540	2004	$2,337	$0	$0
-9	0.500	2005	$2,164	$0	$0
-10	0.463	2006	$2,003	$0	$0
-11	0.429	2007	$1,855	$0	$0
-12	0.397	2008	$1,718	$0	$0
-13	0.368	2009	$1,590	$0	$0
-14	0.340	2010	$1,472	$0	$0
-15	0.315	2011	$1,363	$0	$0
-16	0.292	2012	$1,262	$0	$0
-17	0.270	2013	$1,169	$0	$0
-18	0.250	2014	$1,082	$0	$0
-19	0.232	2015	$1,002	$0	$0
-20	0.215	2016	$928	$0	$0
		Total	$42,463	$0	$0
	Average Annual		$4,325	$0	$0

Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Pass a Loutre Sediment Mining (PMR-8)

Fully Funded Costs Total Fully Funded Costs **$1,632,691** Amortized Costs **$166,290**

Year	Inflation Factor	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5		0	$0	$0	$0	$0	$0	$0	$0
4		0	$0	$0	$0	$0	$0	$0	$0
3		0	$0	$0	$0	$0	$0	$0	$0
2	1.029	1995	$105,116	$80,262	$20,580	$0	$0	$0	$205,958
1	1.060	1996	$67,669	$0	$31,796	$132,484	$213,299	$853,195	$1,298,443
		TOTAL	$172,785	$80,262	$52,376	$132,484	$213,299	$853,195	$1,504,401

Year	Inflation Factor	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
-1	1.093	1997	$4,726	$0	$0
-2	1.127	1998	$4,873	$0	$0
-3	1.162	1999	$5,024	$0	$0
-4	1.198	2000	$5,179	$0	$0
-5	1.235	2001	$5,340	$0	$0
-6	1.273	2002	$5,505	$0	$0
-7	1.312	2003	$5,676	$0	$0
-8	1.353	2004	$5,852	$0	$0
-9	1.395	2005	$6,033	$0	$0
-10	1.438	2006	$6,221	$0	$0
-11	1.483	2007	$6,413	$0	$0
-12	1.529	2008	$6,612	$0	$0
-13	1.576	2009	$6,817	$0	$0
-14	1.625	2010	$7,028	$0	$0
-15	1.675	2011	$7,246	$0	$0
-16	1.727	2012	$7,471	$0	$0
-17	1.781	2013	$7,703	$0	$0
-18	1.836	2014	$7,941	$0	$0
-19	1.893	2015	$8,188	$0	$0
-20	1.952	2016	$8,441	$0	$0
		Total	$128,290	$0	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Naomi Outfall Management (BA-3C)

Project Construction Years:	3	Total Project Years	23
Interest Rate	8.00%	Amoritization Factor	0.10185
Total First Costs	$1,025,500	Total Fully Funded Costs	$1,856,600

Annual Charges	Present Worth	Average Annual
Interest & Amortization	$1,121,300	$114,200
Monitoring	$192,100	$19,600
O & M Costs	$57,900	$5,900
Other Costs	$0	$0
Total	$1,371,300	$139,700
Average Annual Habitat Units		379
Cost Per Habitat Unit		$369
Average Annual Acres of Emergent Marsh		334

Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Naomi Outfall Management (BA-3C)

First Costs and Annual Charges

Year	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5 Compound		$0	$0	$0	$0	$0	$0	$0
4 Compound		$0	$0	$0	$0	$0	$0	$0
3 Compound	1995	$0	$0	$0	$0	$0	$0	$0
2 Compound	1996	$60,000	$80,000	$18,750	$0	$0	$0	$158,750
1 Compound	1997	$48,000	$0	$41,250	$65,000	$142,500	$570,000	$866,750
Base Year								
TOTAL		$108,000	$80,000	$60,000	$65,000	$142,500	$570,000	$1,025,500

Year	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
1 Discount	1998	$19,565	$0	$0
2 Discount	1999	$19,565	$25,000	$0
3 Discount	2000	$19,565	$0	$0
4 Discount	2001	$19,565	$0	$0
5 Discount	2002	$19,565	$25,000	$0
6 Discount	2003	$19,565	$0	$0
7 Discount	2004	$19,565	$0	$0
8 Discount	2005	$19,565	$0	$0
9 Discount	2006	$19,565	$0	$0
10 Discount	2007	$19,565	$25,000	$0
11 Discount	2008	$19,565	$0	$0
12 Discount	2009	$19,565	$0	$0
13 Discount	2010	$19,565	$0	$0
14 Discount	2011	$19,565	$0	$0
15 Discount	2012	$19,565	$25,000	$0
16 Discount	2013	$19,565	$0	$0
17 Discount	2014	$19,565	$0	$0
18 Discount	2015	$19,565	$0	$0
19 Discount	2016	$19,565	$0	$0
20 Discount	2017	$19,565	$0	$0
Total		$391,300	$100,000	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Naomi Outfall Management (BA-3C)

Present Valued Costs Total Discounted Costs $1,371,257 Amortized Costs $139,663

Year	Compound Rates	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5	1.469	0	$0	$0	$0	$0	$0	$0	$0
4	1.360	0	$0	$0	$0	$0	$0	$0	$0
3	1.260	1995	$0	$0	$0	$0	$0	$0	$0
2	1.166	1996	$69,984	$93,312	$21,870	$0	$0	$0	$185,166
1	1.080	1997	$51,840	$0	$44,550	$70,200	$153,900	$615,600	$936,090
		Total	$121,824	$93,312	$66,420	$70,200	$153,900	$615,600	$1,121,256

Year	Discount Rates	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
-1	0.926	1998	$18,116	$0	$0
-2	0.857	1999	$16,774	$21,433	$0
-3	0.794	2000	$15,531	$0	$0
-4	0.735	2001	$14,381	$0	$0
-5	0.681	2002	$13,316	$17,015	$0
-6	0.630	2003	$12,329	$0	$0
-7	0.583	2004	$11,416	$0	$0
-8	0.540	2005	$10,570	$0	$0
-9	0.500	2006	$9,787	$0	$0
-10	0.463	2007	$9,062	$11,580	$0
-11	0.429	2008	$8,391	$0	$0
-12	0.397	2009	$7,770	$0	$0
-13	0.368	2010	$7,194	$0	$0
-14	0.340	2011	$6,661	$0	$0
-15	0.315	2012	$6,168	$7,881	$0
-16	0.292	2013	$5,711	$0	$0
-17	0.270	2014	$5,288	$0	$0
-18	0.250	2015	$4,896	$0	$0
-19	0.232	2016	$4,533	$0	$0
-20	0.215	2017	$4,198	$0	$0
		Total	$192,092	$57,909	$0
	Average Annual		$19,565	$5,898	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Naomi Outfall Management (BA-3C)

Fully Funded Costs Total Fully Funded Costs $1,856,630 Amortized Costs $189,098

Year	Inflation Factor	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5		0	$0	$0	$0	$0	$0	$0	$0
4		0	$0	$0	$0	$0	$0	$0	$0
3	1.029	1995	$0	$0	$0	$0	$0	$0	$0
2	1.061	1996	$63,654	$84,872	$19,892	$0	$0	$0	$168,418
1	1.094	1997	$52,502	$0	$45,119	$71,096	$155,865	$623,459	$948,040
		TOTAL	$116,156	$84,872	$65,011	$71,096	$155,865	$623,459	$1,116,457

Year	Inflation Factor	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
-1	1.128	1998	$22,063	$0	$0
-2	1.163	1999	$22,747	$29,066	$0
-3	1.199	2000	$23,452	$0	$0
-4	1.236	2001	$24,179	$0	$0
-5	1.274	2002	$24,929	$31,854	$0
-6	1.314	2003	$25,702	$0	$0
-7	1.354	2004	$26,499	$0	$0
-8	1.396	2005	$27,320	$0	$0
-9	1.440	2006	$28,167	$0	$0
-10	1.484	2007	$29,040	$37,107	$0
-11	1.530	2008	$29,940	$0	$0
-12	1.578	2009	$30,869	$0	$0
-13	1.627	2010	$31,825	$0	$0
-14	1.677	2011	$32,812	$0	$0
-15	1.729	2012	$33,829	$43,227	$0
-16	1.783	2013	$34,878	$0	$0
-17	1.838	2014	$35,959	$0	$0
-18	1.895	2015	$37,074	$0	$0
-19	1.954	2016	$38,223	$0	$0
-20	2.014	2017	$39,408	$0	$0
		Total	$598,918	$141,255	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Barataria Bay Waterway Shoreline Protection (West Bank Only)

Project Construction Years:	4	Total Project Years	24
Interest Rate	8.00%	Amoritization Factor	0.10185
Total First Costs	$1,786,300	Total Fully Funded Costs	$2,192,400

Annual Charges	Present Worth	Average Annual
Interest & Amortization	$1,939,700	$197,600
Monitoring	$21,100	$2,100
O & M Costs	$46,300	$4,700
Other Costs	$0	$0
Total	$2,007,100	$204,400
Average Annual Habitat Units		63
Cost Per Habitat Unit		$2,323
Average Annual Acres of Emergent Marsh		40

Costs amortized over 20 year operation life (Revised December 7, 1994)

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Barataria Bay Waterway Shoreline Protection (West Bank Only)

First Costs and Annual Charges

Year	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5 Compound		$0	$0	$0	$0	$0	$0	$0
4 Compound	1995	$0	$0	$0	$0	$0	$0	$0
3 Compound	1996	$0	$0	$0	$0	$0	$0	$0
2 Compound	1997	$60,000	$40,000	$22,667	$0	$0	$0	$122,667
1 Compound	1998	$45,000	$0	$62,333	$110,000	$289,250	$1,157,000	$1,663,583
Base Year								
TOTAL		$105,000	$40,000	$85,000	$110,000	$289,250	$1,157,000	$1,786,250

Year	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
1 Discount	1999	$2,150	$0	$0
2 Discount	2000	$2,150	$20,000	$0
3 Discount	2001	$2,150	$0	$0
4 Discount	2002	$2,150	$0	$0
5 Discount	2003	$2,150	$20,000	$0
6 Discount	2004	$2,150	$0	$0
7 Discount	2005	$2,150	$0	$0
8 Discount	2006	$2,150	$0	$0
9 Discount	2007	$2,150	$0	$0
10 Discount	2008	$2,150	$20,000	$0
11 Discount	2009	$2,150	$0	$0
12 Discount	2010	$2,150	$0	$0
13 Discount	2011	$2,150	$0	$0
14 Discount	2012	$2,150	$0	$0
15 Discount	2013	$2,150	$20,000	$0
16 Discount	2014	$2,150	$0	$0
17 Discount	2015	$2,150	$0	$0
18 Discount	2016	$2,150	$0	$0
19 Discount	2017	$2,150	$0	$0
20 Discount	2018	$2,150	$0	$0
Total		$43,000	$80,000	$0

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Costs amortized over 20 year operation life (Revised December 7, 1994)

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Barataria Bay Waterway Shoreline Protection (West Bank Only)

Present Valued Costs Total Discounted Costs $2,007,185 Amortized Costs $204,432

Year	Compound Rates	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5	1.469	0	$0	$0	$0	$0	$0	$0	$0
4	1.360	1995	$0	$0	$0	$0	$0	$0	$0
3	1.260	1996	$0	$0	$0	$0	$0	$0	$0
2	1.166	1997	$69,984	$46,656	$26,438	$0	$0	$0	$143,078
1	1.080	1998	$48,600	$0	$67,320	$118,800	$312,390	$1,249,560	$1,796,670
		Total	$118,584	$46,656	$93,758	$118,800	$312,390	$1,249,560	$1,939,748

Year	Discount Rates	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
−1	0.926	1999	$1,991	$0	$0
−2	0.857	2000	$1,843	$17,147	$0
−3	0.794	2001	$1,707	$0	$0
−4	0.735	2002	$1,580	$0	$0
−5	0.681	2003	$1,463	$13,612	$0
−6	0.630	2004	$1,355	$0	$0
−7	0.583	2005	$1,255	$0	$0
−8	0.540	2006	$1,162	$0	$0
−9	0.500	2007	$1,076	$0	$0
−10	0.463	2008	$996	$9,264	$0
−11	0.429	2009	$922	$0	$0
−12	0.397	2010	$854	$0	$0
−13	0.368	2011	$791	$0	$0
−14	0.340	2012	$732	$0	$0
−15	0.315	2013	$678	$6,305	$0
−16	0.292	2014	$628	$0	$0
−17	0.270	2015	$581	$0	$0
−18	0.250	2016	$538	$0	$0
−19	0.232	2017	$498	$0	$0
−20	0.215	2018	$461	$0	$0
		Total	$21,109	$46,327	$0
	Average Annual		$2,150	$4,718	$0

Costs amortized over 20 year operation life (Revised December 7, 1994)

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Barataria Bay Waterway Shoreline Protection (West Bank Only)

Fully Funded Costs Total Fully Funded Costs $2,192,418 Amortized Costs $223,298

Year	Inflation Factor	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5		0	$0	$0	$0	$0	$0	$0	$0
4	1.029	1995	$0	$0	$0	$0	$0	$0	$0
3	1.060	1996	$0	$0	$0	$0	$0	$0	$0
2	1.093	1997	$65,564	$43,709	$24,768	$0	$0	$0	$134,041
1	1.127	1998	$50,697	$0	$70,225	$123,926	$325,869	$1,303,477	$1,874,194
		TOTAL	$116,261	$43,709	$94,993	$123,926	$325,869	$1,303,477	$2,008,235

Year	Inflation Factor	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
−1	1.162	1999	$2,497	$0	$0
−2	1.198	2000	$2,575	$23,951	$0
−3	1.235	2001	$2,655	$0	$0
−4	1.273	2002	$2,737	$0	$0
−5	1.312	2003	$2,822	$26,248	$0
−6	1.353	2004	$2,909	$0	$0
−7	1.395	2005	$2,999	$0	$0
−8	1.438	2006	$3,092	$0	$0
−9	1.483	2007	$3,188	$0	$0
−10	1.529	2008	$3,287	$30,576	$0
−11	1.576	2009	$3,389	$0	$0
−12	1.625	2010	$3,494	$0	$0
−13	1.675	2011	$3,602	$0	$0
−14	1.727	2012	$3,714	$0	$0
−15	1.781	2013	$3,829	$35,619	$0
−16	1.836	2014	$3,948	$0	$0
−17	1.893	2015	$4,070	$0	$0
−18	1.952	2016	$4,196	$0	$0
−19	2.012	2017	$4,326	$0	$0
−20	2.075	2018	$4,460	$0	$0
		Total	$67,790	$116,394	$0

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Costs amortized over 20 year operation life (Revised December 7, 1994)

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Barataria Bay Waterway Shoreline Protection (East Bank Only)

Project Construction Years:	4	Total Project Years	24
Interest Rate	8.00%	Amoritization Factor	0.10185
Total First Costs	$1,935,800	Total Fully Funded Costs	$2,360,600

Annual Charges	Present Worth	Average Annual
Interest & Amortization	$2,101,900	$214,100
Monitoring	$21,100	$2,100
O & M Costs	$46,300	$4,700
Other Costs	$0	$0
Total	$2,169,300	$220,900
Average Annual Habitat Units		128
Cost Per Habitat Unit		$1,726
Average Annual Acres of Emergent Marsh		251

Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Barataria Bay Waterway Shoreline Protection (East Bank Only)

First Costs and Annual Charges

Year	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5 Compound		$0	$0	$0	$0	$0	$0	$0
4 Compound	1995	$0	$0	$0	$0	$0	$0	$0
3 Compound	1996	$0	$0	$0	$0	$0	$0	$0
2 Compound	1997	$65,714	$40,000	$24,533	$0	$0	$0	$130,248
1 Compound	1998	$49,286	$0	$67,467	$120,000	$313,750	$1,255,000	$1,805,502
Base Year								
TOTAL		$115,000	$40,000	$92,000	$120,000	$313,750	$1,255,000	$1,935,750

Year	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
1 Discount	1999	$2,150	$0	$0
2 Discount	2000	$2,150	$20,000	$0
3 Discount	2001	$2,150	$0	$0
4 Discount	2002	$2,150	$0	$0
5 Discount	2003	$2,150	$20,000	$0
6 Discount	2004	$2,150	$0	$0
7 Discount	2005	$2,150	$0	$0
8 Discount	2006	$2,150	$0	$0
9 Discount	2007	$2,150	$0	$0
10 Discount	2008	$2,150	$20,000	$0
11 Discount	2009	$2,150	$0	$0
12 Discount	2010	$2,150	$0	$0
13 Discount	2011	$2,150	$0	$0
14 Discount	2012	$2,150	$0	$0
15 Discount	2013	$2,150	$20,000	$0
16 Discount	2014	$2,150	$0	$0
17 Discount	2015	$2,150	$0	$0
18 Discount	2016	$2,150	$0	$0
19 Discount	2017	$2,150	$0	$0
20 Discount	2018	$2,150	$0	$0
Total		$43,000	$80,000	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Barataria Bay Waterway Shoreline Protection (East Bank Only)

Present Valued Costs Total Discounted Costs $2,169,300 Amortized Costs $220,943

Year	Compound Rates	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5	1.469	0	$0	$0	$0	$0	$0	$0	$0
4	1.360	1995	$0	$0	$0	$0	$0	$0	$0
3	1.260	1996	$0	$0	$0	$0	$0	$0	$0
2	1.166	1997	$76,649	$46,656	$28,616	$0	$0	$0	$151,921
1	1.080	1998	$53,229	$0	$72,864	$129,600	$338,850	$1,355,400	$1,949,943
		Total	$129,878	$46,656	$101,480	$129,600	$338,850	$1,355,400	$2,101,863

Year	Discount Rates	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
−1	0.926	1999	$1,991	$0	$0
−2	0.857	2000	$1,843	$17,147	$0
−3	0.794	2001	$1,707	$0	$0
−4	0.735	2002	$1,580	$0	$0
−5	0.681	2003	$1,463	$13,612	$0
−6	0.630	2004	$1,355	$0	$0
−7	0.583	2005	$1,255	$0	$0
−8	0.540	2006	$1,162	$0	$0
−9	0.500	2007	$1,076	$0	$0
−10	0.463	2008	$996	$9,264	$0
−11	0.429	2009	$922	$0	$0
−12	0.397	2010	$854	$0	$0
−13	0.368	2011	$791	$0	$0
−14	0.340	2012	$732	$0	$0
−15	0.315	2013	$678	$6,305	$0
−16	0.292	2014	$628	$0	$0
−17	0.270	2015	$581	$0	$0
−18	0.250	2016	$538	$0	$0
−19	0.232	2017	$498	$0	$0
−20	0.215	2018	$461	$0	$0
		Total	$21,109	$46,327	$0
	Average Annual		$2,150	$4,718	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Barataria Bay Waterway Shoreline Protection (East Bank Only)

Fully Funded Costs Total Fully Funded Costs $2,360,588 Amortized Costs $240,426

Year	Inflation Factor	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5		0	$0	$0	$0	$0	$0	$0	$0
4	1.029	1995	$0	$0	$0	$0	$0	$0	$0
3	1.060	1996	$0	$0	$0	$0	$0	$0	$0
2	1.093	1997	$71,808	$43,709	$26,808	$0	$0	$0	$142,325
1	1.127	1998	$55,525	$0	$76,008	$135,192	$353,471	$1,413,884	$2,034,080
		TOTAL	$127,333	$43,709	$102,816	$135,192	$353,471	$1,413,884	$2,176,405

Year	Inflation Factor	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
−1	1.162	1999	$2,497	$0	$0
−2	1.198	2000	$2,575	$23,951	$0
−3	1.235	2001	$2,655	$0	$0
−4	1.273	2002	$2,737	$0	$0
−5	1.312	2003	$2,822	$26,248	$0
−6	1.353	2004	$2,909	$0	$0
−7	1.395	2005	$2,999	$0	$0
−8	1.438	2006	$3,092	$0	$0
−9	1.483	2007	$3,188	$0	$0
−10	1.529	2008	$3,287	$30,576	$0
−11	1.576	2009	$3,389	$0	$0
−12	1.625	2010	$3,494	$0	$0
−13	1.675	2011	$3,602	$0	$0
−14	1.727	2012	$3,714	$0	$0
−15	1.781	2013	$3,829	$35,619	$0
−16	1.836	2014	$3,948	$0	$0
−17	1.893	2015	$4,070	$0	$0
−18	1.952	2016	$4,196	$0	$0
−19	2.012	2017	$4,326	$0	$0
−20	2.075	2018	$4,460	$0	$0
		Total	$67,790	$116,394	$0

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Costs amortized over 20 year operation life

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Hydrologic Restoration of the Bayou L'Ours Ridge (PBA–34)

Project Construction Years:	5	Total Project Years	25
Interest Rate	8.00%	Amoritization Factor	0.10185
Total First Costs	$1,319,500	Total Fully Funded Costs	$2,418,700

Annual Charges	Present Worth	Average Annual
Interest & Amortization	$1,525,300	$155,400
Monitoring	$254,000	$25,900
O & M Costs	$27,700	$2,800
Other Costs	$0	$0
Total	$1,807,000	$184,100
Average Annual Habitat Units		467
Cost Per Habitat Unit		$394
Average Annual Acres of Emergent Marsh		737

Costs amortized over 20 year operation life (REVISED DECEMBER 2, 1994)

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Hydrologic Restoration of the Bayou L'Ours Ridge (PBA–34)

First Costs and Annual Charges

Year	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5 Compound	1995	$0	$0	$0	$0	$0	$0	$0
4 Compound	1996	$0	$0	$0	$0	$0	$0	$0
3 Compound	1997	$93,545	$50,000	$35,000	$0	$0	$0	$178,545
2 Compound	1998	$53,455	$0	$60,000	$56,667	$123,667	$494,667	$788,455
1 Compound	1999	$0	$0	$15,000	$28,333	$61,833	$247,333	$352,500
Base Year								
TOTAL		$147,000	$50,000	$110,000	$85,000	$185,500	$742,000	$1,319,500

Year	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
1 Discount	2000	$25,875	$0	$0
2 Discount	2001	$25,875	$0	$0
3 Discount	2002	$25,875	$0	$0
4 Discount	2003	$25,875	$0	$0
5 Discount	2004	$25,875	$19,000	$0
6 Discount	2005	$25,875	$0	$0
7 Discount	2006	$25,875	$0	$0
8 Discount	2007	$25,875	$0	$0
9 Discount	2008	$25,875	$0	$0
10 Discount	2009	$25,875	$19,000	$0
11 Discount	2010	$25,875	$0	$0
12 Discount	2011	$25,875	$0	$0
13 Discount	2012	$25,875	$0	$0
14 Discount	2013	$25,875	$0	$0
15 Discount	2014	$25,875	$19,000	$0
16 Discount	2015	$25,875	$0	$0
17 Discount	2016	$25,875	$0	$0
18 Discount	2017	$25,875	$0	$0
19 Discount	2018	$25,875	$0	$0
20 Discount	2019	$25,875	$0	$0
Total		$517,500	$57,000	$0

Costs amortized over 20 year operation life (REVISED DECEMBER 2, 1994)

Coastal Wetlands Conservation and Restoration Plan
Priority Project List

Hydrologic Restoration of the Bayou L'Ours Ridge (PBA–34)

Present Valued Costs Total Discounted Costs $1,807,035 Amortized Costs $184,047

Year	Compound Rates	Fiscal Year	Engineering & Design	Easements & Land Rights	Supervision & Administration	Supervision & Inspection	Contingency	First Cost Construction	Total First Cost
5	1.469	1995	$0	$0	$0	$0	$0	$0	$0
4	1.360	1996	$0	$0	$0	$0	$0	$0	$0
3	1.260	1997	$117,840	$62,986	$44,090	$0	$0	$0	$224,916
2	1.166	1998	$62,349	$0	$69,984	$66,096	$144,245	$576,979	$919,653
1	1.080	1999	$0	$0	$16,200	$30,600	$66,780	$267,120	$380,700
		Total	$180,190	$62,986	$130,274	$96,696	$211,025	$844,099	$1,525,269

Year	Discount Rates	Fiscal Year	Monitoring Costs	O&M Costs	Other Costs
–1	0.926	2000	$23,958	$0	$0
–2	0.857	2001	$22,184	$0	$0
–3	0.794	2002	$20,540	$0	$0
–4	0.735	2003	$19,019	$0	$0
–5	0.681	2004	$17,610	$12,931	$0
–6	0.630	2005	$16,306	$0	$0
–7	0.583	2006	$15,098	$0	$0
–8	0.540	2007	$13,979	$0	$0
–9	0.500	2008	$12,944	$0	$0
–10	0.463	2009	$11,985	$8,801	$0
–11	0.429	2010	$11,097	$0	$0
–12	0.397	2011	$10,275	$0	$0
–13	0.368	2012	$9,514	$0	$0
–14	0.340	2013	$8,809	$0	$0
–15	0.315	2014	$8,157	$5,990	$0
–16	0.292	2015	$7,553	$0	$0
–17	0.270	2016	$6,993	$0	$0
–18	0.250	2017	$6,475	$0	$0
–19	0.232	2018	$5,996	$0	$0
–20	0.215	2019	$5,551	$0	$0
		Total	$254,045	$27,721	$0
	Average Annual		$25,674	$2,823	$0

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Costs amortized over 20 year operation life (REVISED DECEMBER 2, 1994)