



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20310-2600

REPLY TO
ATTENTION OF

CECW-P (1105-2-10a)

02 JUN 2003

SUBJECT: Corpus Christi Ship Channel, Texas, Channel Improvement Project

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on navigation improvements and ecosystem restoration for the Corpus Christi Ship Channel (CCSC). It is accompanied by the report of the district and division engineers. The study responds to a congressional resolution adopted on 1 August 1990 by the Committee on Public Works and Transportation of the House of Representatives. The committee requested a review of the reports on the Port Aransas-Corpus Christi Ship Channel, Texas (45-Foot Project), and other pertinent reports to determine the feasibility of modifying the Corpus Christi Ship Channel, with particular emphasis on the La Quinta Channel and on Harbor Island, in the interest of commercial navigation and related purposes. Pre-construction engineering and design activities for this proposed project will be continued under the authority provided by the section cited above.
2. The reporting officers recommend a plan to modify the existing projects for Corpus Christi and La Quinta channels and provide ecosystem restoration to areas near the navigation channel. The plan consists of the following improvements:
 - a. Deepen the CCSC from Viola Turning Basin to the end of the jetties in the Gulf of Mexico (approximately 34 miles) to -52 feet mean low tide (MLT); deepen the remainder of the channel into the Gulf of Mexico (approximately 2 miles) to -54 feet MLT; and widen the Upper Bay and Lower Bay reaches (approximately 20 miles) to 530 feet.
 - b. Construct barge shelves (channels) 200-foot-wide and 12-foot-deep MLT on both sides of the CCSC from its junction with the La Quinta Channel to the entrance of the Inner Harbor (approximately 10 miles).
 - c. Extend the La Quinta Channel approximately 1.4 miles beyond its current limit at a depth of -39 feet MLT. The channel will measure 400 feet wide and include a second turning basin. The turning basin will be constructed at the end of the proposed channel extension with a diameter of 1200 feet, to a depth of -39 feet, MLT. The existing La Quinta Channel will remain at the existing 45-foot depth. The creation of 15 acres of seagrass adjacent to the La Quinta extension will mitigate for project impacts to approximately 5 acres of seagrass.

CECW-P

SUBJECT: Corpus Christi Ship Channel, Texas, Channel Improvement Project

d. Construct two ecosystem restoration features, including rock breakwaters and geo-tubes to protect 1,200 acres of an existing high quality, complex wetland ecosystem that is comprised of a valuable mix of subtidal habitat, saltmarsh, blue-green algae flats, sandflats and associated uplands. Additionally, protect 40 acres of highly productive seagrass. Both components are adjacent to the CCSC in the Lower Bay reach of the channel.

3. Based on October 2002 prices, the estimated total first cost of the project is about \$153,808,000 with the Federal cost of \$73,554,000 and a non-Federal cost of \$80,254,000. This total first cost includes about \$128,658,000 for cost shared general navigation features (GNF); \$7,852,000 for lands, easements, rights-of-way, and relocations (LERR); \$13,016,000 for non-Federal share of deep draft utility relocations; and \$4,282,000 for two cost shared ecosystem restoration features. Total project implementation costs of approximately \$203,480,000 include total project cost, plus \$49,672,000 in non-Federal costs associated with dredging of berthing areas and development of other local service facilities. In accordance with Section 101(a)(4) of WRDA 1986, one-half of the cost of deep-draft utility relocations shall be borne by the facility owners and one-half by the non-Federal sponsor. These costs for the facility owners are estimated to be \$13,016,000 and are excluded from the total cost cited above. Additionally, for those utilities and facilities which must be removed by the owners, such owners would incur costs of about \$5,022,000. However, the non-Federal sponsor has stated that it does not have the authority to require the owners to remove lines at the owners' sole expense and the sponsor has not requested the State to join in a request for the Federal Government to direct removals. Therefore, the sponsor would perform or assure the performance of the removals and costs incurred therefor (currently estimated about \$5,022,000) will not be credited nor otherwise shared with the Federal Government. The incremental annual cost for operation and maintenance of the recommended plan is estimated at \$2,247,000. In accordance with Section 101(b) of WRDA 1986, the non-Federal interest will be responsible for 50 percent of the costs attributable to maintenance dredging to a depth in excess of -45 feet below MLT.

4. The total first cost of the separable elements of recommended plan for commercial navigation will be apportioned in accordance with the cost sharing provisions of Section 101 of the Water Resources Development Act (WRDA) of 1986, as amended:

a. The cost of GNF for the CCSC (\$104,337,000) will be cost shared 50 percent Federal and 50 percent non-Federal. As such, the estimated Federal and non-Federal share of the CCSC GNF cost will be about \$52,275,000 and \$52,062,000, respectively, with the difference of \$213,000 being a Federal cost for historic resources mitigation.

b. The cost of GNF for the barge shelves (\$911,000) will be cost shared 90 percent Federal and 10 percent non-Federal. As such, the estimated Federal and non-Federal share of the barge shelf GNF will be about \$819,900 and \$91,100, respectively.

CECW-P

SUBJECT: Corpus Christi Ship Channel, Texas, Channel Improvement Project

c. The cost of GNF for the La Quinta Extension (\$23,410,000) will be cost shared 75 percent Federal and 25 percent non-Federal. As such, the estimated Federal and non-Federal share of the La Quinta Extension GNF cost will be about \$17,557,000 and \$5,853,000, respectively. The first cost of mitigating unavoidable environmental impacts is estimated to be \$64,000 and is included in the La Quinta Extension GNF cost.

5. Following the cost sharing provisions of Section 103(c) of WRDA 1986, as amended by Section 210 of WRDA 1996, the ecosystem restoration components of the recommended plan will be cost shared 65 percent Federal and 35 percent non-Federal. As such, the estimated Federal and non-Federal share of the ecosystem restoration will be about \$2,783,000 and \$1,499,000, respectively, excluding the cost of land interests.

6. Based on October 2002 price levels, a discount rate of 5 7/8 percent, and a 50-year period of economic analysis, the project average annual benefits and costs for the separable elements are as follows:

a. Average annual benefits and costs for the CCSC are estimated at \$32,607,000 and \$12,305,000, respectively, with a resulting net benefit of \$20,302,000 and a benefit-to-cost ratio of 2.6 to 1.

b. Average annual benefits and costs for the barge shelf feature are estimated at \$134,200 and \$84,600, respectively, with a resulting net benefit of \$49,600 and a benefit-to-cost ratio of 1.6 to 1.

c. Average annual benefits and costs for the La Quinta extension, are estimated at \$9,264,000 and \$4,996,000, respectively, with a resulting net benefit of \$4,268,000 and a benefit-to-cost ratio of 1.8 to 1.

d. Average annual costs for ecosystem restoration at sites L and P are estimated at \$160,600 and \$106,400, respectively. It is estimated that the two sites will generate 144 and 16 average annual habitat units (AAHU), respectively, resulting in average annual costs of \$1,120 and \$6,650 per AAHU, respectively. The combination of breakwater/geo-tubes construction, represents the most cost-effective measures in protecting these valuable resources. The ecosystem restoration components including identification of any necessary land interests, and the sustainability of the project will be reconfirmed prior to execution of the Project Cooperation Agreement to assure that these features have been optimized.

7. The recommended navigation project is not the national economic development (NED) plan. The recommended CCSC component is shallower and will be less costly than the NED plan. The recommended La Quinta channel element is the NED Plan. The recommended barge shelves were designed in coordination with pilots and the U.S. Coast Guard. The width of 200 feet was selected as the most cost effective plan to meet safety objectives.

CECW-P

SUBJECT: Corpus Christi Ship Channel, Texas, Channel Improvement Project

8. The recommended plan contains preliminary conclusions regarding the identification of removals, deep draft utility relocations, and dredged material disposal facilities necessary to implement the commercial navigation components of the project. Additionally, the recommended plan contains preliminary conclusions regarding the lands, easements, and rights-of-way that must be provided by the Non-Federal Sponsor to implement the ecosystem restoration components of the project. In coordination with the Non-Federal Sponsor, the Government will conduct further analysis and finalize its conclusions on these matters prior to execution of the Project Cooperation Agreement to implement the project.

9. Dredged material placement for this project is provided in accordance with the Dredged Material Management and Beneficial Use Plan developed during the study. Deepening and widening of the CCSC, as well as the extension of the La Quinta Channel, will generate approximately 41 million cubic yards of new work material and 208 million cubic yards of maintenance over the 50-year period of economic evaluation. Beneficial use of suitable material removed from the CCSC and the La Quinta Channel constitutes the least-cost disposal plan. Material from the Entrance Channel will be placed offshore, either in existing placement areas or newly designated beneficial use sites. Material from the Lower Bay reach is suitable for use in several new and existing beneficial use sites. Material from the Upper Bay reach will be placed in unconfined placement areas adjacent to the CCSC, while material from the Inner Harbor will be placed in confined, upland sites adjacent to that reach.

10. I generally concur in the findings, conclusions, and recommendations of the reporting officers. The plan developed is technically sound, and environmentally and socially acceptable. In addition, the navigation components are economically justified. The plan conforms with essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and complies with other administration and legislative policies and guidelines. Also, the views of interested parties, including Federal, State, and local agencies, have been considered.

11. Accordingly, I recommend that navigation improvements and ecosystem restoration for the Corpus Christi Ship Channel be authorized subject to further analyses and refinements specified herein and as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost sharing, financing, and other applicable requirements of WRDA 1986, as amended. This recommendation is subject to the non-Federal sponsor agreeing to comply with all applicable Federal laws and policies, including the following requirements:

- a. Enter into an agreement which provides, prior to execution of the project cooperation agreement, 25 percent of design costs;
- b. Provide, during construction, any additional funds needed to cover the non-federal share of design costs;

CECW-P

SUBJECT: Corpus Christi Ship Channel, Texas, Channel Improvement Project

c. Provide, during the period of construction, a cash contribution equal to the following percentages of the total cost of construction of the general navigation features (which include the construction of land-based and aquatic dredged material disposal facilities that are necessary for the disposal of dredged material required for project construction, operation, or maintenance of the navigation improvements and for which a contract for the federal facility's construction or improvement was not awarded on or before October 12, 1996;):

(1) 10 percent of the costs attributable to dredging to a depth not in excess of 20 feet;
plus

(2) 25 percent of the costs attributable to dredging to a depth in excess of 20 feet, but not in excess of 45 feet; plus

(3) 50 percent of the costs attributable to dredging to a depth in excess of 45 feet;

d. Pay with interest, over a period not to exceed 30 years following completion of the period of construction of the project, up to an additional 10 percent of the total cost of construction of general navigation features. The value of lands, easements, rights-of-way, relocations, and deep-draft utility relocations provided by the non-Federal sponsor for the general navigation features, described below, may be credited toward this required payment. The value of deep-draft utility relocations for which credit may be afforded shall be that portion borne by the non-Federal sponsor, but not to exceed 50 percent, of deep-draft utility relocation costs. If the amount of credit equals or exceeds 10 percent of the total cost of construction of the general navigation features, the non-Federal sponsor shall not be required to make any contribution under this paragraph, nor shall it be entitled to any refund for the value of lands, easements, rights-of-way, relocations, and deep-draft utility relocations in excess of 10 percent of the total cost of construction of the general navigation features;

e. Provide all lands, easements, and rights-of-way, and perform or ensure the performance of all relocations and deep-draft utility relocations determined by the Federal Government to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features (including all lands, easements, and rights-of-way, relocations, and deep-draft utility relocations necessary for dredged material disposal facilities).

f. Provide, operate, maintain, repair, replace, and rehabilitate, at its own expense, the local service facilities (Oil Docks 1, 4, 7, 8, 11, Bulk Dock 2, and Corpus Christi Public Elevator); in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and regulations and any specific directions prescribed by the Federal Government;

g. Accomplish all removals determined necessary by the Federal Government other than those removals specifically assigned to the Federal Government;

CECW-P

SUBJECT: Corpus Christi Ship Channel, Texas, Channel Improvement Project

h. Provide 35 percent of the separable project costs allocated to ecosystem restoration as further specified below:

(1) Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocations determined by the Government to be necessary for the construction, operation, and maintenance of the project;

(2) Provide or pay to the Government the cost of providing all retaining dikes, wasteweirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for the construction, operation, and maintenance of the project; and

(3) Provide, during construction, any additional costs as necessary to make its total contribution equal to 35 percent of the separable project costs allocated to ecosystem restoration.

i. For so long as the ecosystem restoration portions of the project remain authorized, operate, maintain, repair, replace, and rehabilitate such ecosystem restoration portions, at no cost to the Government, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and any specific directions prescribed by the Government.

j. Give the Federal Government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-Federal sponsor owns or controls for access to the project for the purpose of inspection, and, if necessary, for the purpose of operating, maintaining, repairing, replacing, and rehabilitating the general navigation features;

k. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project, any betterments, and the local service facilities, except for damages due to the fault or negligence of the United States or its contractors;

l. Keep, and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as will properly reflect total cost of construction of the general navigation features, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to State and local governments at 32 CFR, Section 33.20;

CECW-P

SUBJECT: Corpus Christi Ship Channel, Texas, Channel Improvement Project

m. Perform, or cause to be performed, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, or rehabilitation of the general navigation features. However, for lands that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigation unless the Federal Government provides the non-Federal sponsor with prior specific written direction, in which case the non-Federal sponsor shall perform such investigations in accordance with such written direction;

n. Assume complete financial responsibility, as between the Federal Government and the non-Federal sponsor, for all necessary cleanup and response costs of any CERCLA regulated materials located in, on, or under lands, easements, or rights-of-way that the Federal Government determines to be necessary for the construction, operation, maintenance, repair, replacement, and rehabilitation of the project;

o. To the maximum extent practicable, perform its obligations in a manner that will not cause liability to arise under CERCLA;

p. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element.

q. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987, and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way, required for construction, operation, maintenance, repair, replacement, and rehabilitation of the general navigation features, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

r. Comply with all applicable Federal and State laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army." The State is also required to comply with all applicable Federal labor standards requirements including, but not limited to, the