



DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

07 DEC 1999

CECW-PC (10-1-7a)

SUBJECT: Dallas Floodway Extension, Trinity River Basin, Texas

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on flood damage reduction, environmental restoration and recreation in the area of the Trinity River Basin, Dallas, Texas. It is accompanied by the report of the district and division engineers. These reports address modification of the Dallas Floodway Extension project that was authorized by Section 301 of the 1965 Rivers and Harbors Act (Public Law 89-298). Section 356 of the Water Resources Development Act (WRDA) 1999 (Public Law 106-53) authorized environmental restoration and recreation as project purposes. Preconstruction engineering and design activities for the modified project will be continued under the above authorities.
2. The reporting officers recommend construction of the Federally Supportable Plan (FSP) that is eligible for Federal cost sharing of all elements. The Recommended FSP would restore the Standard Project Flood (SPF) level of protection to the existing Dallas Floodway and would provide protection for the SPF to portions of the city of Dallas downstream of the existing Dallas Floodway that are currently unprotected. Major flood control features include a chain of wetlands consisting of an upper swale about 1.5 miles long with an average bottom width of 400 feet and a lower swale about 2.2 miles long with an average bottom width of 600 feet; the Lamar Levee on the left bank about 3.1 miles long with an average height of 17.6 feet; the Cadillac Heights Levee on the right bank about 2.2 miles long with an average height of 14.9 feet; appropriate drainage facilities for each levee; portions of two levees constructed by the non-Federal sponsor, Rochester Park Levee on the left bank and Central Wastewater Treatment Plant (CWWTP) Levee on the right bank that are integral to the Federal project as authorized. Recreation features would consist of 31.5 miles of recreation trails (18 miles hike and bike, 8.5 miles equestrian, and 5 miles nature trails) and related facilities. Environmental restoration would provide 123 acres of emergent wetlands habitat with four constructed wetlands cells in the upper swale and three constructed wetlands cells in the lower swale. Environmental mitigation

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for the flood control features involves acquisition of 1,179 acres of additional project lands (acquisition, improvement and management of 926 acres of bottomland hardwood forest; and acquisition of 253 acres of mixed grassland and forblands, of which 223 acres would be converted to bottomland hardwood forest and 30 acres would be managed as grassland).

3. The total first cost of the Recommended FSP based on October 1998 price levels is estimated at \$127,154,300, of which \$83,557,600 would be Federal and \$43,596,700 would be non-Federal. The total first costs of the project allocated by purpose are as follows: flood damage reduction, \$113,958,300; environmental restoration, \$5,638,600; and recreation, \$6,757,400. In addition, total project cost includes \$800,000 (Federal) for cultural resources preservation. Based on an interest rate of 6 7/8 percent, amortized over 50 years and including annual operation, maintenance, repair, replacement, and rehabilitation, average annual flood control costs are \$8,685,000. Average annual benefits attributed to the flood damage reduction plan are estimated at \$13,285,100, and the flood control benefit-cost ratio is 1.5 to 1. Average annual recreation costs are \$571,300 and average annual recreation benefits are \$5,777,200, for a recreation benefit-cost ratio of 10.1 to 1. The net annual flood control and recreation benefits for this plan are \$9,806,000. The environmental restoration features will provide 184 average annual habitat units.

4. The Recommended FSP is not the plan originally authorized by Section 301 of the 1965 Rivers and Harbors Act, nor is it the National Economic Development (NED) plan that would produce the greatest net economic benefits for flood damage reduction. The originally authorized plan consisted of levees and channels, some of which are no longer economically justified under current conditions. In regard to the channel conveyance system, a fully mitigated 1,200 foot wide swale plan would produce the greatest net economic benefits, but this plan would also require the removal of a large portion of the existing bottomland hardwood forested area below the existing Dallas Floodway System. The portion of the Recommended FSP for flood control purposes includes a chain of wetlands rather than the 1200-foot swale. In comparison to the Swale Plan, the Chain of Wetlands Plan provides for a narrower conveyance system that is aligned in a fashion to greatly reduce impacts on the forested area, it is economically justified, represents a reduction in scale and cost, and is fully supported by the sponsor, state of Texas, and Federal agencies. As such, the chain of wetlands was selected as the recommended conveyance system for the reduction of flood damages. In accordance with 33 U.S.C 701(m), this smaller plan can be fully cost shared. In addition to the chain of wetlands, the Recommended FSP would include SPF levees for the Lamar Street area and the Cadillac Heights Community. The levee that would produce the greatest NED benefits for the Cadillac Heights Community would protect against what is commonly referred to as the 100-year flood; in terms of risk, this levee would protect against the flood that would have a 1.0 percent annual

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chance of exceedance. However, it was found that this levee would not meet Federal Emergency Management Agency standards for protecting the area from the 1.0 percent annual chance of exceedance flood; it would not provide an acceptable level of reliability, particularly when compared with other project elements; and it would expose the Cadillac Heights Community to increased flooding due to construction of other project levees. As a result, the Assistant Secretary of the Army (Civil Works) concurred in the recommendation to provide SPF protection for the entire Dallas Floodway Extension project. This is consistent with the level of protection provided by the originally authorized project. The Recommended FSP is fully supported by the non-Federal sponsor, the state of Texas and other Federal agencies. All project features of the Recommended FSP are either specifically authorized by Congress, or can be implemented within the discretionary authority of the Chief of Engineers [33 U.S.C. 701(m)] and no additional project authorization is needed.

5. The report of the district and division engineers, which contains an integrated Environmental Impact Statement (EIS), is hereby submitted to Congress to satisfy the requirements of Section 404(r) of the Clean Water Act [33 U.S.C. 1344(r)]. Section 404(r) waives the requirement to obtain the state water quality certification and requires that the project EIS be submitted to Congress prior to appropriation of funds for project construction.

6. As provided in Section 351 of WRDA 1996, the reporting officers recommend that the non-Federal sponsor receive credit for work carried out which is integral with the project as authorized and as currently recommended. The city of Dallas constructed the Rochester Park and CWWTP Levees at a total cost of \$26,958,000. Only a portion of the Rochester Park Levee was found to be an integral part of the Federal project, therefore the total cost of creditable non-Federal work was estimated at \$23,120,000. This total includes construction for \$22,174,000, and lands, easements, rights of way, relocations, and disposal areas (LERRD) for \$946,000; LERRD is a non-Federal responsibility by law. Both the Section 351 construction credit of \$22,174,000 and related LERRD credit are reflected in the Federal/non-Federal cost sharing shown above for the Recommended FSP. The amount of construction credit will be the lesser of the actual cost of the work incurred by the sponsor, or the cost had the Federal Government constructed the same portion of the project at the time the work was done.

7. I concur in the findings, conclusions and recommendations of the reporting officers. Accordingly, I recommend implementation of improvements for flood damage reduction, environmental restoration, and recreation as described for the Dallas Floodway Extension, Trinity River Basin, Texas. Cost sharing for the previously authorized flood control will be a non-Federal share of at least 25 percent and a Federal share of no more than 75 percent, as required by WRDA 1986. The environmental restoration and recreation features will be subject

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to cost sharing as required by WRDA 1986, as amended by Section 210 of WRDA 1996. Further, the non-Federal sponsor would be responsible for 100 percent of the operation, maintenance, repair, replacement, and rehabilitation for the entire project. This recommendation is also subject to the non-Federal sponsor agreeing to comply with all applicable Federal laws and policies. I further recommend that the non-Federal sponsor receive credit under Section 351 of WRDA 1996, subject to an audit of the sponsor's actual expenditures. The amount of credit will be the lesser of the actual cost of the work incurred by the sponsor or the cost had the Federal Government constructed the same portion of the project at the time the work was done. My recommendation is subject to the non-Federal sponsor agreeing to comply with applicable Federal laws and policies, including the following requirements:

- a. Provide a minimum of 25 percent, but not to exceed 50 percent, of total project costs allocated to structural flood control, 50 percent of total project costs allocated to recreation, and 35 percent of total project costs allocated to environmental restoration, as further specified below:
 - (1) Provide, during construction, a cash contribution equal to 5 percent of total project structural flood control costs;
 - (2) Provide all lands, easements, 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;
 - (3) 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;
 - (4) Provide, during construction, any additional costs as necessary to make its total contribution equal to 25 percent of the separable project costs allocated to structural flood control costs, 50 percent of the total project recreation costs, and 35 percent of the total project environmental restoration costs; and
- b. In addition, credit for work performed by the non-Federal sponsor and approved by the Assistant Secretary of the Army (Civil Works) will be applied toward the contributions of additional cash and lands, easements, rights-of-way, relocations, and borrow and dredged or excavated material disposal areas (LERRD) for flood control. The amount of credit will be the

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lesser of the cost that the Government would have incurred for the work or the actual cost subject to audit for reasonableness, allowableness, and allocability. However, in no instance will the credit applied exceed the value of additional cash and LERRD contributions or 45 percent of total project costs for flood control, whichever is the lesser.

c. For so long as the project remains authorized, operate, maintain, repair, replace, and rehabilitate the completed project, or functional portion of the project, at no cost to the Government, in accordance with applicable Federal and State laws and any specific directions prescribed by the Government.

d. Give the Government a right to enter, at reasonable times and in a reasonable manner, upon land which the local sponsor owns or controls for access to the project for the purpose of inspection, and, if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the project.

e. Assume responsibility for operating, maintaining, replacing, repairing, and rehabilitating (OMRR&R) the project or completed functional portions of the project, including mitigation features without cost to the Government, in a manner compatible with the project's authorized purposes and in accordance with applicable Federal and State laws and specific directions prescribed by the Government in the OMRR&R manual and any subsequent amendments thereto.

f. Comply with Section 221 of the Flood Control Act of 1970, as amended, and Section 103 of the Water Resources Development Act of 1986, 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.

g. Hold and save the Government free from all damages arising for the construction, operation, maintenance, repair, replacement, and rehabilitation of the project and any project related betterments, except for damages due to the fault or negligence of the Government or its contractors.

h. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project to the extent and in such detail as will properly reflect total project costs.

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- p. Prescribe and enforce regulations to prevent obstruction of or encroachment on the project that would reduce the level of protection it affords or that would hinder operation and maintenance of the project.

- q. Not less than once each year, inform affected interests of the extent of the protection afforded by the project.

- r. Publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in preventing unwise future development in the floodplain and in adopting such regulations as may be necessary to prevent unwise future development and to ensure compatibility with protection levels provided by the project.

- s. Do not use Federal funds to meet the non-Federal sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is expressly authorized by statute.



JOE N. BALLARD

Lieutenant General, U.S. Army
Chief of Engineers