



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

REPLY TO
ATTENTION OF:

22 DEC 2004

CEMP-SPD (1105-2-10a)

SUBJECT: Rillito River (El Rio Antiguo), Pima County, Arizona

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on the study of ecosystem restoration, recreation, and incidental flood damage reduction opportunities on the Rillito River (El Rio Antiguo), Pima County, Arizona. It is accompanied by the report of the district and division engineers. These reports are in partial response to Section 6 of the Flood Control Act of 1938 and a resolution adopted by the Committee on Public Works and Transportation of the House of Representatives on 17 May 1994. The statute and the resolution requested a review of reports for the State of Arizona to determine whether modifications of the recommendations contained therein are advisable at the present time in the interest of flood damage reduction, environmental protection and restoration, and related purposes. Pre-construction engineering and design activities would continue under these authorities.

2. The reporting officers recommended authorization of a plan to restore ecosystem functions and values to about a 4.8-mile reach of the Rillito River, on the northern edge of the City of Tucson, at the confluence of Tanque Verde Creek and Pantano Wash at Craycroft Road downstream to Campbell Avenue. Restoration of these resources in this urban setting is significant because riparian areas in the Southwest represent only 1 percent of the landscape, yet the survival of 75 to 90 percent of life in the West is dependant on riparian areas. In Arizona, over 90 percent of riparian areas have been lost due to impacts from European settlement and urbanization. The recommended plan includes the following measures to support restoration plantings:

- 8 water harvesting retention basins at tributary confluences.
- Terracing of approximately 4600 feet of soil cement banks.
- Removal of Dodge bridge in the terraced reach.
- Water harvesting high- and low-flow channels.
- 12 gabions to protect in-channel vegetation and increase sinuosity.
- A ditch and pipe water harvesting system supporting vegetation behind soil cement banks between Craycroft and Swan Roads.
- An irrigation system to establish vegetation and provide reclaimed water during drought conditions.
- Maintenance roads and ramps for safety and river access.
- A passive recreation plan consisting of approximately 7.5 miles of multi-use, non-motorized, decomposed granite trails, a pedestrian bridge across the river, parking lots, two comfort stations, and interpretive signs.

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3. The recommended plan would restore a significant ecosystem resource along the Pacific Flyway for neo-tropical birds, reconnect wildlife corridors, restore wildlife habitat for species significant to Pima County, provide potential habitat for threatened and endangered species, and restore threatened plant communities of cottonwood/willow riparian forest, seasonal cienega, and Mesquite Bosque. To insure recommendation of an efficient plan, the alternative environmental restoration plans were evaluated using functional assessment, cost effectiveness and incremental analysis techniques. Additionally, the recommended plan includes cost-shared monitoring and minor modifications, as may be required to ensure success of the project, as identified and described within the Monitoring and Adaptive Management Plan of the report.

4. Based on October 2003 price levels, the estimated total first cost for the Rillito River (El Rio Antiguo), Pima County, Arizona, project is \$66,657,000 with an estimated Federal cost for restoration of \$42,906,000 and an estimated non-Federal cost of \$23,751,000. The first cost for the ecosystem restoration portion of the plan would be \$63,852,000. This cost includes approximately \$1,868,000 for 5 years of monitoring and adaptive management necessary to ensure success of the project. The recreational features have projected first costs of \$2,805,000. Based upon the requirements of the Water Resources Development Act of 1986, as amended, restoration measures are cost shared at 65 percent Federal and 35 percent non-Federal and recreation measures are cost shared at 50 percent Federal and 50 percent non-Federal. Thus, the Federal share for ecosystem restoration would be \$41,503,500 and the non-Federal share would be \$22,348,500. The Federal and non-Federal shares for recreation features each would be \$1,402,500. The total estimated annual operation and maintenance costs for the Rillito River (El Rio Antiguo), Pima County, Arizona project, which are the responsibility of the non-Federal sponsor, are estimated to be \$391,000 with an associated non-Federal sponsor water cost of \$852,000 annually. The Pima County, Arizona, Flood Control District has agreed to be the non-Federal sponsor for the project.

5. The recommended plan is the national ecosystem restoration plan and is the plan that is locally preferred. The project would restore and improve approximately 391 acres of habitat, including 99 acres of Cottonwood/willow community, 116 acres of Mesquite Bosque, 62 acres of riparian strand (desert wash), and 114 acres of seasonal cienega. The cost of the recommended environmental restoration features would be justified by the restoration of about 120 average annual functional capacity units and by achieving ecosystem function increases in the most cost effective manner. This plan would provide an increase in ecosystem function of about 3.5 times over the expected without-project future condition. Recreational development features appropriate to an ecosystem restoration project have also been included in the plan. Average annual recreation benefits associated with the recreation plan as compared to average annual costs result in a benefit-to-cost ratio of 1.56 to 1.0 and \$107,000 in net national economic development (NED) benefits. Average annual flood damage reduction benefits associated with

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high- and low-flow water harvesting channels on the Finger Rock Wash tributary in the recommended plan will provide annual incidental flood damage reduction benefits of \$260,000.

6. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the Rillito River, Pima County, Arizona project be constructed in accordance with the reporting officers' recommended plan. My recommendation is subject to cost sharing, financing and other applicable requirements of Federal and State laws and policies, including the Water Resources Development Act (WRDA) of 1986, as amended. Federal implementation of the authorized project would be subject to the non-Federal sponsor agreeing to comply with applicable Federal laws and policies, including but not limited to:

a. Provide 35 percent of the separable project costs allocated to environmental restoration and 50 percent of the separable project costs allocated to recreation, as further specified below:

(1) Enter into an agreement, which provides, prior to execution of a project cooperation agreement for the project, 25 percent of design costs;

(2) Provide, during construction, any additional funds needed to cover the non-federal share of design costs;

(3) 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;

(4) Provide or pay to the Government the cost of providing all retaining dikes, waste weirs, 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

(5) Provide, during construction, any additional costs as necessary to make its total contribution equal to 35 percent of the separable project costs allocated to environmental restoration and 50 percent of the separable project costs allocated to recreation.

b. For so long as the project remains authorized, operate, maintain, repair, replace, and rehabilitate the completed project, or functional portion of the project, including mitigation features, 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 in the OMRR&R manual and any subsequent amendments thereto.

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c. 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.

d. 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.

e. 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 the Government's contractors.

f. 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.

g. Perform, or cause to be performed, any investigations for hazardous substances that 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 USC 9601-9675, that may exist in, on, or under lands, easements or rights-of-way necessary for the construction, operation, and maintenance of the project; except that the non-Federal sponsor shall not perform such investigations on lands, easements, or rights-of-way that the Government determines to be subject to the navigation servitude without prior specific written direction by the Government.

h. Assume complete financial responsibility 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 Government determines necessary for the construction, operation, or maintenance of the project.

i. To the maximum extent practicable, operate, maintain, repair, replace, and rehabilitate the project and otherwise perform its obligations in a manner that will not cause liability to arise under CERCLA.

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j. Prevent future encroachments on project lands, easements, and rights-of-way, which might interfere with the proper functioning of the project.

k. 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 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR part 24, in acquiring lands, easements, and rights-of-way, and performing relocations for construction, operation, and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

l. 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 Defense Directive 5500.11 issued pursuant thereto; Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable federal labor standards requirements including, but not limited to, 40 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a *et seq.*), the Contract Work Hours and Safety Standards Act (formerly 40 U.S.C. 327 *et seq.*) and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c)).

m. Provide the non-Federal share of that portion of the costs of archeological data recovery activities associated with historic preservation, that are in excess of 1 percent of the total amount authorized to be appropriated for the project, in accordance with cost sharing provisions of the agreement;

n. 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 authorized.

o. Provide and maintain necessary access roads, parking areas, and other public use facilities, open and available to all on equal terms.

7. The reporting officers further recommend that the plans, recommended herein, be exempt from regulations of the Clean Water Act, pursuant to Section 404(r) of the Clean Water Act. The 404(r) exemption covers the construction phase and the operation and maintenance phase of the project, as described in the feasibility report and environmental impact statement.

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8. The recommendation contained herein reflects the information available at this time and current departmental policies governing formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of a national civil works construction program, nor the perspective of higher review levels within the executive branch. Consequently, the recommendation may be modified before it is transmitted to the Congress as a proposal for authorization and implementation funding. However, prior to transmittal to the Congress, the sponsor, the State, interested Federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.



CARL A. STROCK
Lieutenant General, U.S. Army
Chief of Engineers