



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

REPLY TO
ATTENTION OF:

19 JUL 2002

CECW-PM (10-1-7a)

SUBJECT: Pine Flat Dam Fish and Wildlife Habitat Restoration, Fresno County,
California

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on the study of environmental restoration at Pine Flat Dam and Reservoir and downstream along the lower Kings River in Fresno County, California. It is accompanied by the report of the district and division engineers. These reports are in partial response to the 1964 Congressional Resolution of the House Committee on Public Works. The 1964 Congressional Resolution requested the Board of Engineers for Rivers and Harbors to review the report on the Sacramento-San Joaquin Basin Streams, California, published as House Document No. 367, 81st Congress, 1st Session, and other reports, with a view to determining whether any modification of the recommendations contained therein are advisable at this time, with particular reference to further coordinated development of the water resources in the San Joaquin River basin, California. Preconstruction engineering and design activities for this project will be continued under this authority.

2. Construction of the Pine Flat Dam was completed by the U.S. Army Corps of Engineers in 1954. The dam and reservoir were constructed to provide flood damage reduction and water conservation. In addition to the dam, the project included penstocks for hydropower and downstream improvements to reduce flooding. Downstream improvements consisting of channel clearing and construction of levees were completed in 1976. Since construction of the project there has been a recurring problem of warm water temperatures in Pine Flat Lake and downstream in the lower Kings River. In addition, the lower Kings River has experienced loss of highly significant riparian habitat, shaded riverine aquatic habitat, and oak-woodland habitat.

3. The reporting officers recommend authorization of a plan for restoration of the native coldwater fishery habitat for about 13 miles of the lower Kings River and in the Pine Flat Lake reservoir, and restoration of about 143.5 acres of riparian and shaded riverine aquatic habitat at Byrd Slough. The recommended plan provides for construction of a multilevel intake structure on the upstream face of the dam to manage the temperature of downstream water releases to preserve the coldwater habitat in the reservoir and promote downstream

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water temperatures suitable to restore the native coldwater fish habitat throughout the year. The multilevel intake structure would consist of three separate steel structures that would fit over the three existing power penstock intakes. Each of the three structures would have three port openings and gates to control the release of water from the reservoir. The three port openings would be 25 feet high and 42 feet wide and would be staggered at seven different elevations to permit selective water withdrawal. The recommended plan would also reestablish historic floodplain riparian vegetation, shaded riverine aquatic habitat, and wildlife habitat on about 143.5 acres of land at Byrd Slough along the Kings River immediately south of the Friant-Kern Canal siphon. The restoration work would involve repairing perimeter fences and installing new fences to exclude cattle from the restored area, planting native restoration species such as valley oak, Fremont cottonwood, and California sycamore (250 plants per acre), constructing an irrigation system to ensure establishment of the planted trees, and installing wildlife habitat structures, such as brush piles, nesting boxes, bat boxes, raptor perches, and other structures to re-introduce wildlife species back to the area. The recommended plan also provides for monitoring and minor modifications of the Byrd Slough component as part of operation, maintenance, repair, rehabilitation and replacement (OMRR&R) activities, as may be required to ensure success of the project, as identified and described by the reporting officers. Since the recommended plan would not have any significant adverse effects, no mitigation measures (beyond management practices and avoidance) or compensation measures would be required. The recommended plan is the National Ecosystem Restoration plan.

4. Based on October 2001 price levels, the estimated total first cost for construction of the recommended plan is \$37,100,000. Following the cost sharing provisions of the Water Resources Development Act (WRDA) of 1986, as amended by Section 210 of WRDA 1996, the Federal share of total project cost would be about \$24,116,000 and the non-Federal share would be about \$12,984,000. Cultural resource preservation costs of \$4,000 are included in the total cost of the project. Since these costs are less than one percent of the Federal share of project cost, pursuant to Section 7(a) of Public Law 93-291 this cost is a 100 percent Federal cost and is included in the Federal share of total project costs. The Kings River Conservation District (KRCD) is the non-Federal sponsor for the recommended plan. The KRCD would also be responsible for the OMRR&R of the project after construction, a cost currently estimated at \$56,000 per year. Average annual costs, including initial construction and OMRR&R, are \$2,726,000 based on an interest rate of 6.125 percent and a 50-year period of analysis.

5. To ensure that an efficient plan was recommended, cost effectiveness and incremental cost analysis techniques were used to evaluate the alternative environmental restoration plans. The cost of the recommended environmental restoration features is justified by the restoration of 65 average annual habitat units of terrestrial habitat (based on acres of



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terrestrial habitat) in the Byrd Slough restoration area, and 40 weighted usable area aquatic habitat units (based on thousands of square feet of riverine habitat) in Pine Flat Lake and in the 13 mile length of Kings River that will be benefited by the multilevel intake structure. The restored habitats are considered especially valuable due to scarcity and dependence of certain species on these resources. The species of particular concern in the Kings River is the wild stock of rainbow trout endemic to the river. The cold and cool water species of interest in Pine Flat Reservoir are rainbow trout, brown trout, kokanee salmon, small-mouth and large-mouth bass, catfish, and a variety of panfish species such as bluegill and black crappie. All these fisheries will be benefited by management of the cold water releases with the project.

6. Washington level review indicates that the plan recommended by the reporting officers is environmentally justified, technically sound, cost effective and socially acceptable. The plan conforms with essential elements of the U.S. Water Resources Council's Economic and Environmental Principles 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.

7. I concur in the findings, conclusions and recommendations of the reporting officers. Accordingly, I recommend that the recommended plan described herein for environmental restoration be authorized for implementation as a Federal project, with such modifications as in the discretion of the Chief of Engineers may be advisable, and subject to cost sharing and financing and other applicable requirements of Federal and State laws and policies, including WRDA 1986, as amended by Section 210 of WRDA 1996, and in accordance with the following requirements which the non-Federal Sponsor must agree to prior to project implementation:

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

(1) Enter into an agreement that 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 ensure the performance of all

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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, 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

(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.

b. 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.

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 provide 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 from 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.

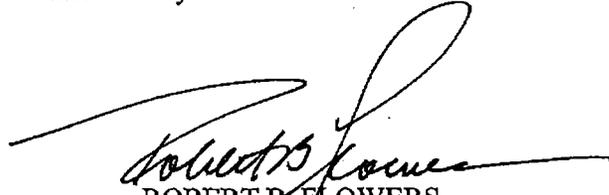
g. Perform, or cause to be performed, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances

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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.

8. The recommendations contained herein reflect 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 or 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 of California, interested Federal agencies, and other parties will be advised of any modifications and will be afforded an opportunity to comment further.



ROBERT B. FLOWERS
Lieutenant General, U.S. Army
Chief of Engineers