99A-102

CALFED PSP COVER SHEET

Proposal Title: Wildcat Creek Floodplain, Channel and Fisheries Restoration

Applicant Name: J. Michael Walford, Public Works Director and Chief Engineer

Mailing Address: 255 GLACIER DRIVE, MARTINEZ, CA 94553

Telephone: 925-313-2203

Fax: 925-313-2333

Email:

Amount of funding requested: $440,000 for 3 years

Indicate the topic for which you are applying (check only one box)

- ☒ Fish Passage/Fish Screens
- ☐ Habitat Restoration
- ☐ Local Watershed Stewardship
- ☐ Water Quality
- ☐ Introduced Species
- ☐ Fish Management/Hatchery
- ☐ Environmental Education

Does the proposal address a specified Focused Action? ✓ Yes ____ No

What county or counties is the project located in? Contra Costa County

Indicate the geographic area of your proposal (check only one box):

- ☐ Sacramento River Mainstem
- ☐ Sacramento Trib:
- ☐ San Joaquin River Mainstem
- ☐ San Joaquin Trib:
- ☐ Delta:
- ☐ East Side Trib:
- ☐ Suisun Marsh and Bay
- ☒ North Bay/South Bay: San Pablo Bay
- ☐ Landscape (entire Bay-Delta watershed)
- ☐ Other:

Indicate the primary species which the proposal addresses (check all that apply):

- ☐ San Joaquin and East-side Delta tributaries fall-run chinook salmon
- ☐ Winter-run chinook salmon
- ☐ Late-fall run chinook salmon
- ☐ Delta smelt
- ☐ Splittail
- ☐ Green sturgeon
- ☐ Migratory birds
- ☐ Other:
- ☐ Spring-run chinook salmon
- ☐ Fall-run chinook salmon
- ☐ Longfin smelt
- ☒ Steelhead trout
- ☐ Striped bass
- ☐ All chinook species
- ☐ All anadromous salmonids

Specify the ERP strategic objective and target(s) that the project addresses. Include page numbers from January 1999 version of ERP Volume I and II:
Stream and Floodplain Processes: Vol. I, pages 29-30, 76-90; Steelhead Restoration: Vol. I, pages 33, 225-237; Other Priority at Risk Species: Vol. I, pages 243-246, 259-262, 266-267, 297-299 and 334-335; San Pablo Bay Ecological Unit Vol. II, pages 130-131

Indicate the type of applicant (check only one box):

- ☐ State agency
- ☐ Public/Non-project joint venture
- ☒ Local government/district
- ☐ University
- ☐ Federal agency
- ☐ Non-profit
- ☐ Private party
- ☐ Other:_____

Indicate the type of project (check only one box):

- ☐ Planning
- ☐ Monitoring
- ☐ Research
- ☒ Implementation
- ☐ Education

By signing below, the applicant declares the following:

1. The truthfulness of all representations in their proposal;

2. The individual signing the form is entitled to submit the application on behalf of the applicant (if the applicant is an entity or organization); and

3. The person submitting the application has read and understood the conflict of interest and confidentiality discussion in the PSP (Section 2.4) and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant, to the extent as provided in the Section.

J. Michael Walford
Printed name of applicant

Signature of applicant

John M. Gioia
Supervisor, District I
Contra Costa County
Board of Supervisors

Contra
Costa
County

100 - 37th St. Room 270
Richmond, CA 94805
(510) 374-3231
(510) 374-3429

April 12, 1999

Calfed Bay-Delta Program Office
Attention: Wendy Halverson Martin
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear Ms. Martin:

Contra Costa County is submitting this grant to the Calfed Bay-Delta program for funding consideration in Spring 1999 to help implement the Ecosystem Restoration Program for the Bay-Delta ecosystem. The County is submitting this grant on behalf of the Wildcat-San Pablo Creeks Design Team, which is a watershed council composed of federal, state and local agencies, industries, businesses, residents and citizen organizations. This entity was first formed by the county in 1985 to address the need to design an environmentally acceptable flood control project on lower Wildcat and San Pablo Creeks. The "design team" has continued to meet for the past fourteen years and expanded its concerns to a watershed wide area and initiated many successful water quality, environmental education and habitat restoration projects. This council is co-chaired by the County Community Development Department and County Public Works Department.

The Wildcat-San Pablo Creek Design Team is submitting this proposal in an effort to raise the necessary non-federal share of funding to implement a project currently undergoing design with the Army Corps of Engineers. The Army Corps of Engineers project will restore the Wildcat Creek anadramous fisheries, riparian habitat, and floodplains, and protect the Wildcat-San Pablo Creeks salt marshes and endangered species habitat. The project is scheduled to begin implementation in 2001 with the participation of Contra Costa County, local non-profit groups and the Army Corps of Engineers. Because the inadequate non-federal match is the critical barrier to implementing this project, which is located in the impoverished area of North Richmond, we are requesting Calfed funds from a state source.

The County believes that the collaborative, consensus and interdisciplinary approach to addressing environmental protection and restoration, which has been pioneered by this team, has produced an impressive record and deserves the support of Calfed. The project is proposed on the basis of ten years of monitoring and data collection on Wildcat Creek after the original project was completed. Analysis of the collected data shows the need to adjust the original design of this multi-objective flood damage reduction-restoration project in order to meet the original objectives of the project, which is to have a sustainable and active, bankfull channel, floodplain, riparian forest, and fisheries migration.

Please refer all communications regarding this grant to Mitch Avalon, Deputy Chief Engineer of the Contra Costa County Flood Control and Water Conservation District at (925) 313-2203.

Sincerely,

John Goia
Contra Costa County Supervisor for District One

cc: Mike Walford, Contra Costa County Public Works Department
Dennis Barry, Contra Costa Community Development Department

C.15

TO: BOARD OF SUPERVISORS, AS THE GOVERNING BODY OF CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

FROM: J. MICHAEL WALFORD, CHIEF ENGINEER

DATE: MARCH 23, 1999

SUBJECT: AUTHORIZE THE CHIEF ENGINEER TO APPLY FOR A CALFED GRANT FOR WILDCAT CREEK IMPROVEMENTS, PROJECT NO. 7527-6D8619-99, NORTH RICHMOND AREA.

SPECIFIC REQUEST(S) OR RECOMMENDATION(S) & BACKGROUND AND JUSTIFICATION

I. Recommended Action:

AUTHORIZE the Chief Engineer to apply for a CALFED Grant for improvements to Wildcat Creek, as the local match for an existing Army Corps of Engineer's Grant.

II. Financial Impact:

No impact to the County General Fund. The Flood Control District will fund staff time involved in writing the Grant.

Continued on Attachment: X SIGNATURE: Dean H. Coleman

__ RECOMMENDATION OF COUNTY ADMINISTRATOR
__ RECOMMENDATION OF BOARD COMMITTEE
__ APPROVE __ OTHER

SIGNATURE(S):

ACTION OF BOARD ON March 23, 1999 APPROVED AS RECOMMENDED X [redacted]

VOTE OF SUPERVISORS
X UNANIMOUS (ABSENT None)
AYES:_____ NOES:_____
ABSENT:_____ ABSTAIN:_____

RMA:lv
g:\v\Bdord\3-23.doc

Orig. Div: Public Works (ADMIN)
Contact: R. Mitch Avalon (925) 313-2203
c: County Administrator's Office
Public Works - Accounting
Public Works – Flood Control
T. Jensen, Wildcat-San Pablo Design Team
C. Kutsuris, Community Development

I hereby certify that this is a true and correct copy of an action taken and entered on the minutes of the Board of Supervisors on the date shown.

ATTESTED: March 23, 1999
PHIL BATCHELOR, Clerk of the Board of Supervisors and County Administrator

By C. L. Turner, Deputy

I —012917

III. Reasons for Recommendations and Background:

In September 1998, the Flood Control District and the Wildcat-San Pablo Creek Design Team were successful in obtaining a Grant from the Army Corps of Engineers for modifications to the original improvements to Wildcat Creek. Ever since the improvements to Wildcat Creek have been completed, the down stream portion of the improvements have not functioned as planned. The low flow channel has migrated from the design location into the floodplain. In addition, the original project included a fish ladder through the concrete channel portion of the project. This fish ladder has never functioned properly. The Army Corps of Engineer's Grant that was received last year is to correct the deficiencies of the creek so that it will function properly in the low flow channel as originally intended, and provide passage for steelhead up Wildcat Creek.

The Army Corps of Engineer's Grant requires a local match of approximately $400,000. Unfortunately, there are no funds in Zone 7, the local Flood Control Zone, to pay for the local match. The Wildcat-San Pablo Design Team recommends that the Flood Control District apply for a CAL-FED Grant, which would provide the local match necessary for the Army Corps of Engineer's Grant. This grant application will be for the full $400,000 local match.

IV. Consequences of Negative Action:

The Chief Engineer would not apply for the CALFED Grant, and there is a possibility that we will lose the Army Corps of Engineer's Grant funds if we do not acquire the local match from CALFED.

Contra
Costa
County

Public Works Department

255 Glacier Drive
Martinez, CA 94553-4825
Telephone: (925) 313-2000
FAX: (925) 313-2333

J. Michael Walford
Public Works Director

R. Mitch Avalon
Deputy - Engineering

S. Clifford Hansen
Deputy - Administration

Patricia R. McNamee
Deputy - Operations

Maurice M. Shiu
Deputy - Transportation

April 14, 1999

Bay Conservation and Development Commission
30 Van Ness Ave., Room 2011
San Francisco, CA 94102

FCD:Wildcat Creek CALFED Proposal

Honorable Commissioners:

This letter is to inform you that the Contra Costa County Flood Control and Water Conservation District is applying for a CALFED grant for improvements to fish habitat on Wildcat Creek. The project is located in the community of North Richmond in the downstream portion of Wildcat Creek.

The project will be reestablishing an active channel on Wildcat Creek and correcting an existing non functional fish ladder. Improvements to the active channel and to the fish ladder will allow migration of steelhead up Wildcat Creek to spawn.

This project is a perfect match for CALFED funding. Monitoring of the project after construction will be performed by the Wildcat Creek/San Pablo Creek Design Team. The Design Team is a watershed council composed of Federal, State, local agencies, industries, businesses, and resident and citizen organizations. The Design Team was formed in 1985 to develop an environmentally acceptable design for lower Wildcat and San Pablo Creeks, and has been monitoring the creeks ever since.

If you have any questions regarding our project, please call me at 925\313-2203.

Very truly yours,

R. Mitch Avalon
Deputy Chief Engineer

RMA:cl
g\admin\mitch\calfed2

c: Grant Design Team

GEORGE MILLER
7TH DISTRICT, CALIFORNIA
2205 RAYBURN HOUSE OFFICE BUILDING
WASHINGTON, DC 20515-0507
(202) 225-2095
www.house.gov/george/miller
DANIEL WEISS
CHIEF OF STAFF

COMMITTEE ON RESOURCES
SENIOR DEMOCRAT

COMMITTEE ON EDUCATION
AND THE WORKFORCE

Congress of the United States
House of Representatives
Washington, DC 20515–0507

DISTRICT OFFICES:
1333 WILLOW PASS RD.
SUITE 203
CONCORD, CA 94520
(925) 602-1860
DAVID TUCKER
DISTRICT DIRECTOR

2220 BLUME DR.
SUITE 281
RICHMOND, CA 94806
(510) 262-6500

1410 GEORGIA ST.
VALLEJO, CA 94590
(707) 645-1888

TTY (202) 225-1964

April 5, 1999

Lester Snow, Director
CalFed Bay-Delta Program
California Resources Agency
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear Director Snow:

I am writing in strong support of the CalFed grant application submitted by Contra Costa County on behalf of the County's Wildcat-San Pablo Creeks Design Team for the restoration of Wildcat Creek.

My staff has actively participated in the Design Team since its inception in 1985. I have successfully secured federal funding for this restoration project through the Army Corps of Engineers Section 1139 program which needs to be cost-shared with 35% non-federal funds. Local non-profits and the County have contributed substantial in-kind services and funds to this effort and the California Department of Water Resources is currently assisting in funding planning efforts. Because this is a poverty area we are heavily dependent on seeking state assistance to fully fund the implementation costs.

This project is a perfect example of the kind of project CalFed was intended to fund because it can directly accomplish results in restoring a native steelhead population to the North Bay. The goal of the Wildcat-San Pablo Creek flood damage reduction project is to restore the migration of the recovering Wildcat Creek steelhead to San Pablo Bay. This grant will reverse the technical problems this project has experienced with a dysfunctional fish ladder and sediment basin so that the project can provide its intended benefits.

I urge your favorable consideration of this request.

Sincerely,

George Miller

George Miller
Member of Congress
7th District, California

PRINTED ON RECYCLED PAPER

Dion Louise Aroner ASSEMBLYWOMAN, FOURTEENTH DISTRICT
CALIFORNIA LEGISLATURE, STATE CAPITOL, SACRAMENTO, CA 95814 (916) 319-2014 FAX (916) 319-2114

CHAIR, ASSEMBLY HUMAN SERVICES
COMMITTEES:
JUDICIARY
REVENUE & TAXATION

SELECT COMMITTEES:
CALIFORNIA WOMEN
COASTAL PROTECTION

April 14, 1999

CalFed Bay-Delta Program Office
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear CalFed Managers:

I am writing to support the CalFed grant application for the restoration of Wildcat Creek and its threatened steelhead trout population submitted by Contra Costa County. This grant is being submitted on behalf of the Contra Costa County Wildcat-San Pablo Creeks Design Team to which my office sends a representative. This team has a reputation for pioneering in consensus problem solving and have an excellent record for results.

The application seeks state funding sources from CalFed to help provide the non-federal match for a collaborative project with the Army Corps of Engineers, Contra Costa County, and local non-profit organizations. The project benefits minority-poverty area of North Richmond which has limited resources to consider [illegible] environmental participation. This interest in environmental projects has historically been high in the North Richmond area, however, which is why the Wildcat-San Pablo Creek project is viewed nationally as a model flood damage reduction-restoration project. The Section 1135 Army Corps project this grant will assist has involved a broad array of stateholders which continues the tradition for planning on Wildcat Creek. Both the environment of Wildcat Creek, its marsh, its endangered and threatened species and this community deserves CalFed's assistance.

Sincerely,

Dion L. Aroner

DION LOUISE ARONER
Assemblymember
14th District

DISTRICT OFFICE: 918 PARKER, BERKELEY, CA 94710 (510) 540-3690 FAX (510) 540-3856
DISTRICT OFFICE: 101 BROADWAY, RICHMOND, CA 94804 (510) 234-0211 FAX (510) 234-0213

Printed on Recycled Paper

Title Page

WILDCAT CREEK FLOODPLAIN, CHANNEL AND FISHERIES RESTORATION PROJECT

Primary Contact:

Mr. Mitch Avalon
Deputy Public Works Director
Contra Costa County Flood Control and Water Conservation District
Contra Costa County Department of Public Works
255 Glacier Drive
Martinez, CA 94553

Participants and Collaborators:

Contra Costa County is submitting this grant at the request of the Contra Costa County Wildcat, San Pablo Creeks Design Team which serves as a watershed council for the watersheds of Wildcat and San Pablo Creeks. The two creeks share the same floodplain and marsh as they flow into San Pablo Bay. This Council is composed of representatives of the following government officials, agencies, organizations and residents of the watershed and meets regularly in Richmond, California

Representatives of Governmental Officials:

Congressman George Miller, State Senator Don Perata, Assembly Member Dion Aroner, County Supervisor John Gioia, City of Richmond City Manager, City of San Pablo Public Works Director, North Richmond Municipal Advisory Council.

Federal Agencies:

Army Corps of Engineers, Natural Resources Conservation Service, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service.

State Agencies:

California Department of Fish and Game, State Lands Commission, California Department of Water Resources, California Coastal Conservancy, San Francisco Bay Regional Water Quality Control Board.

Local Agencies

Contra Costa County Community Development Department, Contra Costa County Public Works Department, San Francisco Bay Conservation and Development Commission, East Bay Regional Park District, City of Richmond, City of San Pablo, unincorporated community of North Richmond, Richmond School District.

Businesses and Industry:

Aebi Nursery, Colorspot Nursery, Chevron Oil

Organizations:

League of Women Voters, West Contra Costa County Shoreline Committee, Urban Creeks Council of California, Community Youth Council for Leadership and Education, Save San Francisco Bay Association, East Bay Conservation Corps, Golden Gate Women Fly Fishers, Friends of Wildcat Canyon, Waterways Restoration Institute.

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99A-102

EXECUTIVE SUMMARY

The Wildcat-San Pablo Creeks Design Team-Watershed Council is applying for $440,000 of State Calfed funds for the restoration of anadromous fish migration from San Pablo Bay to the upstream Wildcat Creek spawning and rearing habitat located in Wildcat Canyon Regional Park about 10 miles upstream. The restoration project reach starts from the Wildcat-San Pablo Creeks marsh and ends 2.5 miles upstream in the unincorporated community of North Richmond. The project is sponsored by a council composed of federal, state and local agencies, citizen organizations, businesses and industries which has been active and effective for fourteen years. It was formed by Contra Costa County in 1985 to oversee the design and management of a county Army Corps flood damage reduction-stream restoration project.

This Wildcat Creek restoration project is expected to restore an estimated population of 500 to 1500 adults and as many as 10,000 juvenile threatened anadromous steelhead trout by linking lower Wildcat Creek to an existing spawning habitat in the upper watershed. The project will protect and restore a 5000 lineal feet of a now degraded riparian corridor, protect 350 acres of a high quality undisturbed pickelweed salt marsh and add an additional acre of riparian habitat at a sediment basin where an equilibrium active channel will be redesigned. The 2.5 mile project reach is contained within an innovative multi-objective flood damage reduction project that was a pioneering effort at replacing a standard channelization project with a project that is modeled after natural river processes. One of the institutional pressures for this innovation was the need to protect the Wildcat-San Pablo Creeks marshes which serve as habitat for the endangered clapper rail and salt marsh harvest mouse. The Army Corps also verified the existence of the rare San Pablo vole, a subspecies of very limited range to this area, and the California clapper rail.

The features of the restoration project include the restoration of the bankfull or active channel from Wildcat Creek Marsh to Verde Elementary School (two miles) including the restoration and protection of a 3.5 acre riparian corridor approximately 50 feet wide. A sediment basin designed to intercept extraordinarily high sediment loads delivered from the geologically unstable upper watershed in Wildcat Canyon will be redesigned to accommodate a self-maintaining active channel and riparian corridor to insure fish passage to an upstream fish ladder. The final component of the project will be to replace a dysfunctional 400 foot long fish ladder with a channel that will safely allow for fish passage. A weir at the downstream end of the sediment basin will be redesigned to better support the stability of the active channel.

The restoration project is sponsored by the Contra Costa County Public Works Department with the U.S. Army Corps of Engineers on behalf of the Wildcat-San Pablo Creeks Design Team. The Team described on the title page uses an interdisciplinary and consensus approach to arrive at annual management plans for Wildcat Creek to meet the flood damage reduction objectives and environmental protection objectives for the marsh, its endangered species, riparian corridor, and anadromous fisheries restoration. This restoration project proposal is the result of ten years of monitoring the flood damage reduction-restoration project by the Waterways Restoration Institute, the East Bay Regional Park District and California Department of Fish and Game to evaluate the project against its original multiple-objectives. The restoration approach has been guided through this period by some of the leading fluvial geomorphologists

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and hydraulic engineers in the country from the University of California, U.S. Geological Survey, Army Corps, Waterways Experiment Station and private consultants. The Army Corps of Engineer's National Flood Channel Research Program adopted the Wildcat Creek project as its logo because this project is considered its national "outdoor lab" or learning ground for understanding how to design the multi-objective flood damage reduction-river project of the future. The multi-objective Napa River flood damage reduction plan recently completed in 1998 was modeled after our experiences with this Wildcat-San Pablo Creeks project. Therefore, this project has unusual statewide and national implications because of its role as a model for both planning processes and advancing our technical knowledge in river restoration. The project directly addresses the CALFED objectives to recover the Bay-Delta steelhead fisheries, protect the endangered and threatened species associated with salt marshes and riparian environments, and applications of, most advanced science available to identify and emulate ecosystem processes and functions to meet restoration objectives.

This restoration project is currently underway in the design processes as a Section 1135 Army Corps of Engineer's continuing Authorities Project. The design plans and specifications are expected to be completed by December 1999 and construction is expected to occur in 2001 to 2002.

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I-012925

PROJECT DESCRIPTION

Proposed Scope of Work

The project will reevaluate what the correct slope and width-depth ratio of the Wildcat Creek active (bankfull) channel should be to sustain a dynamic equilibrium channel over time. The original project design used regional hydraulic geometry to design the bankfull channel attained from average values of San Francisco Bay Area streams, but we know now that these average values are not relevant to designing an equilibrium channel in a flat, tidal, alluvial fan near the mouth of a creek. The channel slope has been impacted by a sewer line near the mouth of the creek which acts as a grade control. Therefore, the restoration design and issues of floodplain capacity must accommodate this situation. A project output will be to reshape the bankfull channel as necessary to better reflect this low gradient channel type.

The sediment basin located upstream enables bedload and some suspended load to drop out and provides an accessible location for sediment removal. This project feature has performed well as a sediment trap but has obstructed successful migration of fish to the upstream fish ladder. According to fishery biologists, the basin obstructs successful migration of anadromous fish because winter flows and sediment deposition obliterates any passable channel through the basin at the time when the fish are migrating downstream. There is also no vegetative cover in the migration area. Project outputs include designing a sustainable active channel around the edge of the basin which links the fish ladder to the active channel below the basin. A channel and riparian zone will be provided on the periphery of the basin. A design option is to increase the size of the basin to accommodate more riparian vegetation and retain its sediment trapping function. This is feasible because the county owns the adjacent land to the basin. A four foot reinforced concrete weir located at the downstream outlet to the sediment basin will be replaced or modified to support the correct grade for the restored channel and allow for successful fish migration up and down the basin.

The final physical project output will be to modify or replace a 400 foot fish ladder which extends upstream from the sediment basin at a 20% slope and a vertical lift of approximately 12 feet. The current fish ladder obstructs migration because the baffle catches debris and sediment thereby clogging the route for fish passage.

The last but equally important project output will be the revision of the Operations and Maintenance Manual and the "Performance Maintenance Criteria" developed for Wildcat Creek. The project redesign in conjunction with the manual revisions will reduce the conflicts between the environmental outputs of the modifications and the existing maintenance requirements.

The Wildcat-San Pablo Creeks Design Team has procured through the cooperation of the San Francisco District of the Army Corps of Engineers some of the best restoration experts available from the Waterways Experiment Station. Dr. Craig Fischenich will lead an interdisciplinary team to evaluate the project design performance with various sediment basin, fish passage and active channel alternatives. A sediment budget will be developed for the basin using existing data; a sediment transport model will be used for sensitivity analyses in gauging the system response to various alternatives, regime relations will be applied to evaluate stable

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I-012926

configurations for the active channel, hydraulic analyses will be performed to assess the implications of various vegetation management alternatives, and performance criteria for fish will be used to develop and evaluate the feasibility of modifying the fish passage facilities.

The sediment basin will be numerically modeled to evaluate modification alternatives. The design phase is including a sediment transport study to determine deposition rates and sediment capacities of the basin and floodplains. A hydraulic analysis will be completed to ensure that the project modifications for the environment will also assure that the design level for flood damage reduction is maintained. Field surveys of fish populations and passage issues will be made. These analyses will be guided by the sediment discharge, and vegetation field data collected in the last ten years after the construction of the original flood control project. Fish surveys provided the East Bay Regional Park District fisheries biologist are also included in this data.

Schedule and Project Tasks

Task	Completion Date
• Conduct Initial Site Investigations with Design Team	5 March, 1999
• Develop Sediment Budget	15 April, 1999
• Refine Hydrologic & Hydraulic Models	15 April, 1999
• Evaluate Detention Basin Alternatives	30 April, 1999
• Mid-Course Design Team Overview of Study	30 April, 1999
• Evaluate Active Channel Alternatives	15 May, 1999
• Evaluate Fish Passage Alternatives	30 May, 1999
• Develop Vegetation Management Models	30 May, 1999
• Submit Draft Report	15 June, 1999
• Environmental Studies Report	2 July, 1999
• Design Meetings with the Design Team	30 July, 1999
• Fish and Wildlife Coordination Completed	3 September, 1999
• Complete Public Review of Draft Ecological Restoration Report	4 October, 1999 to 5 November, 1999
• Initiate Plans and Specifications	December, 1999
• Execute Project Cooperation Agreement	January, 2001
• Advertise Construction Contracts	April, 2001
• Complete Construction	October, 2002

Project studies and management are conducted by the Army Corps of Engineers with the ongoing participation of the Wildcat-San Pablo Creeks Design Team.

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I-012927

Location and Geographic Boundaries of the Project

The project location is in the unincorporated community of North Richmond on the edge of San Pablo Bay in Western Contra Costa County. See Figures 1, 2A and 2B which include a U.S. Geological Survey topographic map. The restoration project involves the lower 2.5 miles of the Wildcat Creek watershed which is about 11 square miles in total area. The upper portion of the creek is in the Wildcat Creek Canyon Regional Park and Tilden Regional Park which provides for a relatively protected environment for the upstream fisheries spawning and rearing habitat.

Ecological and Biological Benefits

Ecological and Biological Objectives

There are two primary restoration goals of this project, which are to return a viable anadramous steelhead fish population to Wildcat Creek, and to protect the Wildcat-San Pablo Creek marsh and its endangered species habitat from degradation by sedimentation. In this context, the restoration objectives include restoring a sustainable active channel and riparian corridor which can support fish passage over time without the disturbance of maintenance activities. The restored active channel will occur within a fifty foot wide riparian protection reserve which is a feature of the flood control project (Figure 3). The second restoration objective is to provide for a functional floodplain and sediment basin to trap the large sediment load originating in the upper watershed and being transported through the lower reaches of the creek. The combination of floodplain and sediment basin entrapment of sediment is intended to prevent the degradation of the Wildcat-San Pablo Creek marsh by sediment filling. The third restoration objective is to design a functioning equilibrium channel to one side of the sediment basin which is also designated as part of the undisturbed riparian preserve (Figures 4 and 5). The fourth restoration objective is to remove and redesign the dysfunctional fish ladder above the sediment basin. One of the alternatives being modeled for this feature is to remove a 400 foot super critical flow concrete chute and replace it with a more natural step-pool steep grade type of channel. In quantifiable terms, we intend to protect 350 acres of high quality salt marsh, restore 2.5 miles of stream channel and riparian corridor and restore an estimated population of 500-1500 adult steelhead and 10,000 juvenile threatened steelhead.

The stresses on the fisheries and Wildcat Creek marsh start in the upper watershed where two small dams at Lake Anza and Jewel Lake, constructed in the 1930's for a local water supply, reduced the range of the steelhead spawning and rearing habitat. Subsequent land use changes including grazing and nearby urbanization exacerbated the naturally unstable, landslide prone geology in the upper Wildcat Canyon. Recreational ponds constructed in Alvarado Park at the mouth of the Canyon also restricted fish passage. The creek has been remarkably stable through the urban portion of the cities of Richmond and San Pablo through the past twenty years. (Waterways Restoration Institute Report prepared for EPA, 1997.) A proposed channelization project for badly needed flood control for the residents of North Richmond and the loss of the marsh through sedimentation were threats to the ecology of the lower creek and marsh.

I-012929

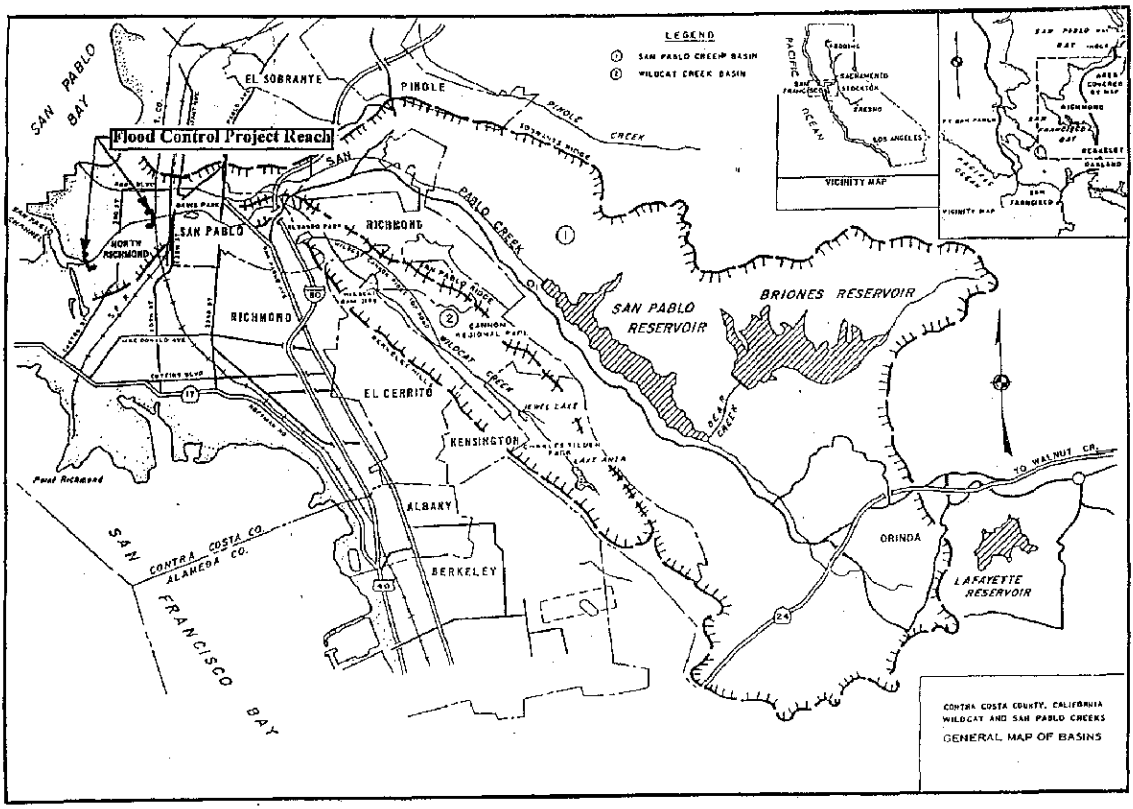


FIGURE 1 WILDCAT CREEK AND SAN PABLO CREEK WATERSHEDS

I-012929

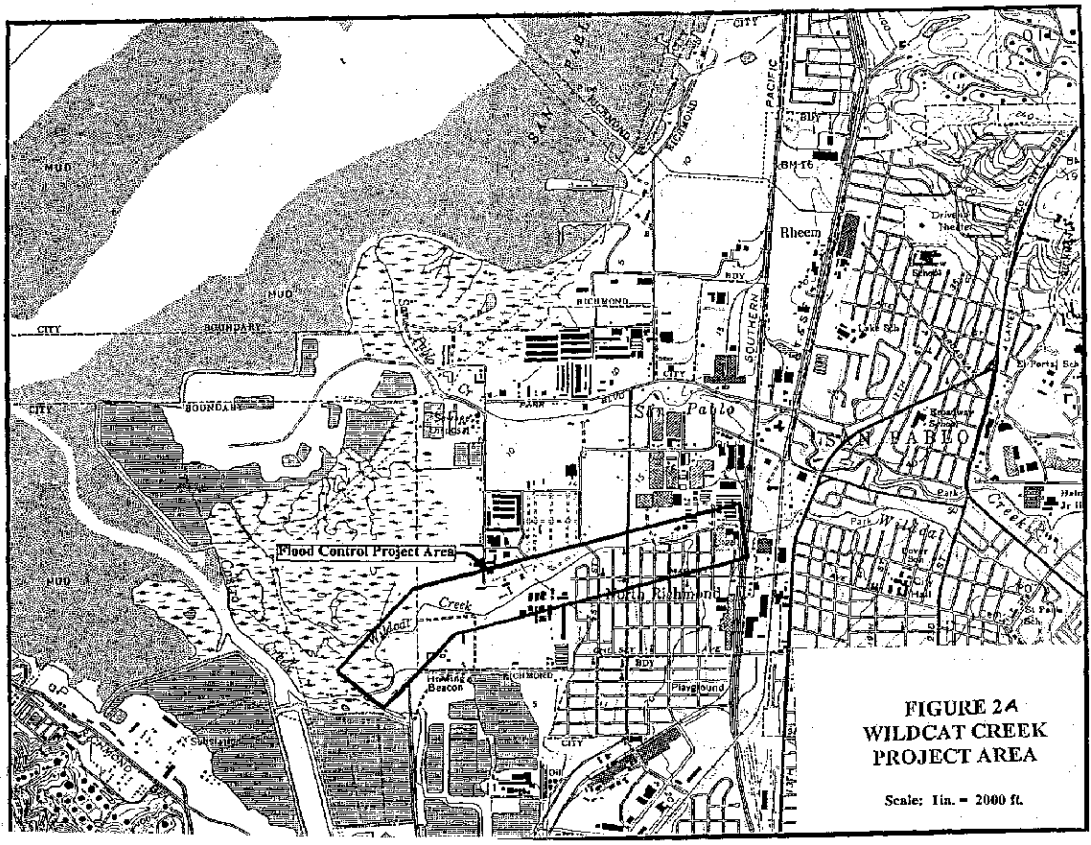


FIGURE 2A
WILDCAT CREEK
PROJECT AREA

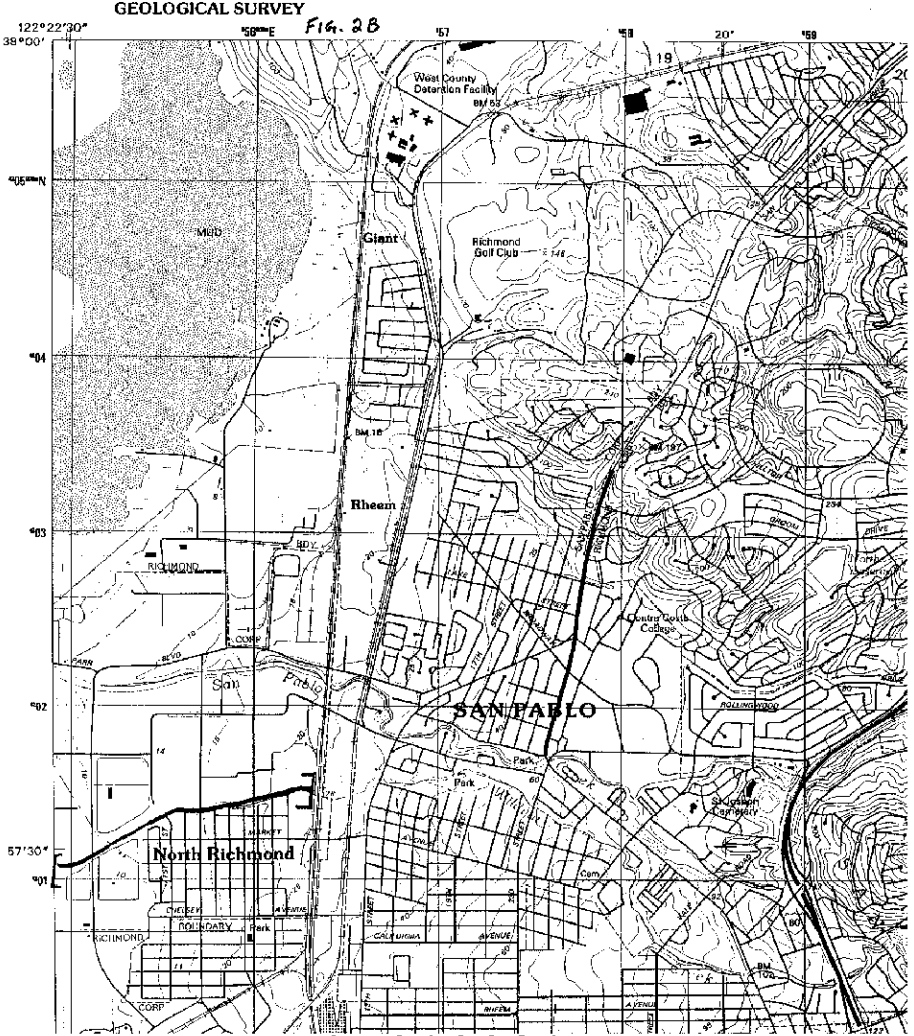
Scale: 1in. = 2000 ft.

I—012930

I-012930

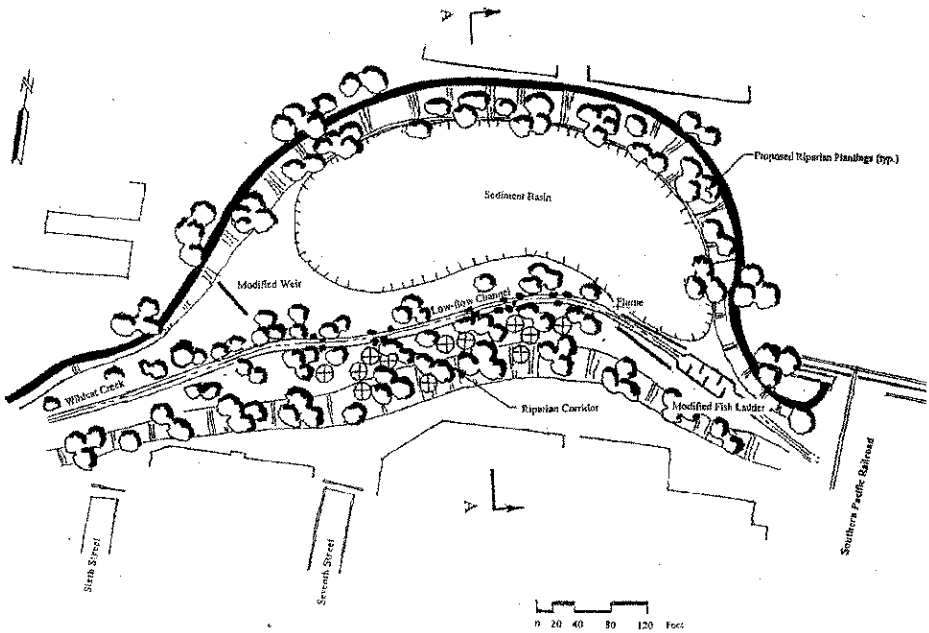
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

FIG. 2B



I—012931

FIGURE 3: EXISTING WILDCAT CREEK FLOOD CONTROL PROJECT



Existing Riparian

FIGURE 4: PROPOSED WILDCAT CREEK MODIFICATION

NTE: Volunteer riparian vegetation has established on the south side of the sediment basin. The restoration project would improve
1 expand the riparian vegetation in areas where it would not impact the 100 year flood conveyance needs.

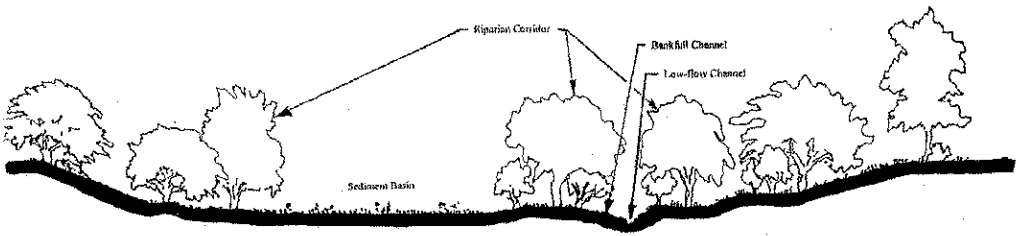


FIGURE 5: PROPOSED WILDCAT CREEK MODIFICATION
Cross Section A-A
Looking up stream
1 in. = approx. 300 ft.

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I-012934

An innovation in flood control project design was developed by the Wildcat-San Pablo Creeks Design Team in 1995 and construction of this project occurred between 1986 and 1989. The project features a self-maintaining bankfull or active channel in a riparian reserve, a floodplain to convey flows and trap sediment, and set-back berms. The project also includes the sediment basin and fish ladder. An important feature was the development of the first East Bay Regional District "flatlands" streamside trail through a poverty area and the subsequent development of a stream-based environmental education program at Verde School located on the creek. A Wildcat Creek restoration youth employment program was also established by the Richmond based Community Youth Council for Leadership and Education.

Regular monitoring of this project area has been provided by the Waterways Restoration Institute for the Wildcat-San Pablo Creeks Design Team. This monitoring and project evaluation involved consultation with river restoration experts outside of the Design Team familiar with the project. It was found that a combination of wholesale vegetation removal during project construction and an inadequately vegetated active channel, an incorrect width-depth ratio design for the active channel and incompatible maintenance activities destabilized lower Wildcat Creek. Earlier sediment transport modeling and channel hydraulic geometry studies did not anticipate these factors. No real quantifiable data was available on sediment loads which hampered the design of the sediment basin and "low flow" channel designed for the middle of it which never performed as a channel. The fish ladder design did not take into account the debris jams which have rendered it ineffective.

The rationale behind our restoration proposal is to correct these project design flaws to the best of our ability and to continue the ongoing monitoring effort to determine whether these adjustments to the project will meet our restoration and flood damage reduction efforts. We anticipate that future post project monitoring will suggest a variety of different management approaches over time but our pilot restoration projects on this system up to this point should bring us close to a sustainable system.

Linkages to Past and Future Projects and Systemwide Ecosystem Benefits

Monitoring and adjustments to the project area have been accomplished in the recent past which will contribute to the successful design of this restoration project. The riparian reserve was allowed to grow in the ten years since the flood control project was constructed. A new pilot project bankfull channel with a lower width-depth ratio was excavated through the riparian corridor providing for a restored and shaded channel. This reach of channel was surveyed for erosion or deposition after the 1997 floods and found to be very stable. This experimental project also established that it is technically possible to restore a new channel through an existing riparian corridor without unacceptable impacts to the riparian resources. Permanent markers were installed to designate the riparian protection zone so that any future maintenance activities will not unintentionally impact this zone.

A study by the San Francisco Estuary Institute verifies that the source of the large downstream sediment loads is from the geologically unstable upstream canyon. We have been able to quantify a sediment basin sediment capture rate from the sediment removal projects

between 1988 to 1997. A complimentary Calfed grant proposal is being submitted to start to address Canyon erosion issues to reduce the sediment transport rates.

The fisheries restoration was begun in 1983 as a project of the California Department of Fish and Game, East Bay Regional Park District, Grizzly Peak Fly Fishers, Urban Creeks Council of California and Sierra Club. Landlocked steelhead were moved from the adjacent San Leandro Creek watershed and reintroduced to the upper Wildcat Creek watershed. Monitoring has found the steelhead to thrive in the urban mid-portions of the watershed as well as the upper reaches. An April 1998 inventory done at the fish ladder found 15 5-7" smolts or steelhead ready to migrate to the bay and Chinook salmon. The salmon are believed to be hatchery fish which are now migrating up San Francisco Bay Area streams. (Bill Cox, California Department of Fish and Game personal communication 1999.) In 1998 the East Bay Conservation Corps and Waterways Restoration Institute, at the direction of the Design Team, removed 200 grates covering the fish ladder and removed the debris from the ladder. Monitoring has determined that this improved the condition of the ladder but that a redesign of the ladder or a fish passage corridor is required to ultimately solve the problem.

Upstream projects include a reach by reach stream channel shape restoration and revegetation projects by the City of San Pablo. The East Bay Regional Park District removed the fish blocking weirs and replaced them with a step-pool channel type in the Alvarado Park reach of Wildcat Creek. The San Francisco Estuary Project sponsored a grazing management plan with the upper watershed Wildcat Creek Resource Conservation District.

Funding for Wildcat Creek youth employment programs has been provided by the Natural Resources Conservation Service and Environmental Protection Agency. Stauffer Chemical, Coors Brewery and Philip Morris have funded the outdoor riparian classroom at Verde School. Chevron Oil has fenced out the red fox to protect the Wildcat-San Pablo Creek endangered birds from predation.

Compatibility with Calfed Ecosystem and Non-Ecosystem Benefits

This project is located in the San Pablo Bay Ecological Management Unit identified in page 130-131 of Vol. 2 of the Calfed Ecosystem Restoration Program Plan (February 1999). The project directly responds to this management unit's priorities to "... protect large, connected patches of tidal marsh habitat centered on existing populations of species of concern (e.g. salt marsh harvest mouse, California clapper rail), ...and tidal marshes associated with transition riparian areas... and to protect and restore continuous corridors of riparian habitat along streams tributary to the Bay." The project addresses the ecosystem processes targeted by Volume 1 of the Calfed restoration plan including stream meander, natural floodplains and flood processes and tidal processes (pages 29-30) (pages 76-90). The project benefits: priority group #1 at-risk native species dependent on the Bay-Delta system, the Steelhead Trout (page 33) (pages 225-235); priority group #2 at-risk native species salt marsh harvest mouse (pages 259-262); San Pablo California Vole (page 266-267), California Clapper Rail – the only remaining breeding populations in Contra Costa County (pages 243-246) (pages 34-35); priority groups #3 at-risk species, the Sacramento perch (pages 297-299) and Western Pond Turtle (pages 334-335);

(pages 36-37) and other State of California Species of Special Concern including the legless lizard, sharp skinned hawk and Cooper's hawk.

The restoration project is part of a multi-objective flood damage reduction project which uses the restored floodplain to provide flood protection to the residents of North Richmond.

Technical Feasibility and Timing

This restoration project is a Section 1135 Army Corps of Engineers project which is authorized to proceed as a Continuing Authorities Project. The project design is underway and is expected to be completed on schedule in December 1999. The alternative channel designs and fish ladder designs are being evaluated with a combination of fluvial geomorphology investigations and hydraulic modeling. The Preliminary Restoration Plan has determined a finding of no significant impacts and the final Ecosystem Restoration Report will contain an Environmental Assessment.

Regulatory agencies including the Environmental Protection Agency, U.S. Fish and Wildlife Service, California Department of Fish and Game, San Francisco Regional Water Resources Control Board are active members of the County Design Team sponsoring this effort, therefore, regulatory issues are being addressed during and not after the design process. Construction is scheduled to start in 2001 with no known constraints that could impact the schedule.

Monitoring and Data Collection Methodology

Geomorphic Stability of Channel and Sedimentation Role

Monitoring is considered a key component of this project and an intensive two year monitoring program is part of this project budget. Ongoing monitoring will be continued by the non-profit organizations of the Design Team as has occurred in the past ten years. An ongoing cumulative monitoring document is updated each year. The first monitoring objective is to determine if the restored bankfull channel is either excessively eroding or depositing sediment and whether its plan form appears to be in equilibrium. This has been measured in the past and will continue to be monitored using leveled surveys of the channel and floodplain profiles. Monumented cross-sections, selected by the Team as part of the O & M manual are surveyed before and after each flood season. Changes in channel shape and plan form are noted.

Another related monitoring objective is to determine the degree of sedimentation of the floodplain and sediment basins. Two surveys are done on ten monumented cross-sections in the project reach each year to record the changes in depth of sediment in these areas. Records of sediment removal from the sediment basin are being kept.

Riparian Corridor

Records of the original revegetation efforts associated with the 1986-87 flood control project construction provide a base condition. The Waterways Restoration Institute (WRI) field

studies in 1997 determined survival rates for container plantings and transects were used to measure species diversity caused by volunteer growth of native riparian species. Photography of hand-held survey rods is being used to record the height of the growing riparian canopy. The riparian corridor is contained within a marked 50 foot wide reserve area. Monitoring will continue to note species diversity and composition by the WRI.

Fisheries Restoration

The monitoring budget includes funding for the verification of the successful passage of fish through the channel, sediment basin and fish ladder replacement. The East Bay Regional Park District has conducted fisheries surveys of the project reach to verify the situation that there are steelhead-rainbow trout smolts inhabiting lower Wildcat Creek staged for migration to the ocean. Future monitoring will include fish surveys by the park district fisheries specialist in order to verify up and downstream migration. He has applied to the National Marine Fisheries Service for a permit to monitor and handle threatened steelhead.

Flood Protection

Because the project is supposed to provide flood damage reduction benefits for up to 2,300 cfs for the surrounding community of North Richmond the monitoring regime has included and will continue to entail the measurement of flood flows at lower Wildcat Creek. A USGS gage at a location of about a mile upstream (Vale Street) has a discharge record starting in 1978 and ending in 1996. (A gage in the project reach recorded flows from 1965-1982.) To continue a long-term discharge record and also to specifically understand what the channel capacity is in the project location a discharge monitoring station has been set up at 3rd street on lower Wildcat Creek by the Waterways Restoration Institute. High water stages and velocities are measured during flood flows at a surveyed cross-section. Stage measurements are read from a staff gage at the third street bridge and high water elevations are marked on the banks of the terrace. Channel capacity measurements are central to the performance based maintenance program on the creek. When 50% of the freeboard above the 1 in 100-year flood elevation is lost due to floodplain sedimentation or riparian growth, maintenance in the form of floodplain sediment removal is triggered.

Monitoring Table

Monitoring Questions	Monitoring Approach
1) Is the marsh being protected from sedimentation?	Survey of cross-sections near marsh to discern whether sediment slugs are present or approaching the area
2) Is the active channel at an equilibrium shape and plan form?	Survey of channel, floodplain profile and cross-sectional surveys over time
3) Is the sediment basin efficiently trapping sediment and at what rate?	Cross-sectional surveys located in basin and quantification of truck loads of sediment removed on maintenance dates
4) Is the riparian corridor recovering in the sediment basin?	Cross-sectional surveys and photos
5) Is the sediment basin active channel in an equilibrium shape and plan form?	Cross-section and profile surveys
6) Are fish migrating through the replaced fish ladder, sediment basin channel and downstream channel?	Stun studies during fall to spring migration season on the receding limb of the hydrograph
7) Does the project area provide enough floodplain space for flood protection?	Measurement of velocities and stages at surveyed cross-section

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I-012939

Local Involvement

Contra Costa County is applying for this grant on behalf of the Wildcat-San Pablo Creeks Design Team. The Design Team first established by the County in 1985 and has been acting as a watershed council for Wildcat and San Pablo Creeks. A County Board of Supervisors Resolution is expected to soon formalize this watershed wide role of the Design Team. This team initiated this proposed restoration project in 1997 under the Army Corps of Engineers Section 1135 program.

The membership of the Wildcat-San Pablo Creek Design Team is listed under Participants and Collaborators on the Title Page of the grant. The team includes representatives of federal, state and local agencies, cities and the unincorporated North Richmond Municipal Advisory Council. It includes federal, state and local representatives, local industries and businesses and residents. Numerous meetings of the team have been held in the past two years to develop and jointly write the description of this Section 1135 restoration project. The 1135 project proposal has been widely distributed to Team members and Design Team participants have tracked the progress of the project. The most recent Design Team meeting and field trip regarding this project was held on February 11, 1999 and included the usual mix of local landowners, environmental and citizen organizations, staffs of elected representatives and local, state and federal agency representatives. This planning effort has been supported by the California Department of Water Resources which awarded a grant to the team in 1998 to develop its multi-objective restoration proposal.

All lands impacted by this project are now in public ownership. If the sediment basin needs enlargement, the expansion can occur on county owned land. There is no public opposition to this project nor any conceivable opposition which could arise in the future.

Local involvement has included: citizen monitoring of discharges and water quality of Wildcat Creek, Restoration plantings by the Community Youth Council for Leadership and Education (CYCLE); trail expansion and stream channel restoration projects by the City of San Pablo with local schools; and pilot restoration projects and monitoring by the Waterways Restoration Institute, Urban Creeks Council of California, East Bay Conservation Corps and East Bay Regional Park District.

Costs and Budget and Cost-Sharing

This grant is applying for the unfunded portion of the non-federal costs for the Section 1135 Wildcat Creek restoration project. The California Department of Water Resources (DWR) has assisted with a $30,000 planning grant which is not counted as a contribution towards the non-federal planning costs by the federal government because the grant arrives before the Project Cooperation Agreement is signed. However, this grant has lowered the total project planning costs. There is a remaining $65,000 from the DWR grant to put towards project construction costs. Please refer to the Table for the Project Budget.

Wildcat Creek Restoration Project Budget
Ecosystem Restoration Design Documents
(Costs: $ x 1000)

Dates	Description	Total Cost
March 1999	HYDRAULICS	
	Numerical model of Fish Ladder	40
	Numerical model of Sediment Basin	40
	Numerical model of Channel Design	25
	Sediment transport study	60
	Fish passage analysis	15
	COST ESTIMATES	35
	CIVIL/GEOTECHNICAL DESIGN	50
	PLAN FORMULATION	60
	ENVIRONMENTAL PLANNING	15
	ECONOMICS	10
	QUALITY CONTROL	30
	PROGRAM AND PROJECT MANAGEMENT	40
	REAL ESTATE	50
December 1999	ECOSYSTEM RESTORATION REPORT	470
	SUBTOTAL	
Feb. 2001	PLANS & SPECIFICATIONS	120
	PLANNING AND DESIGN TOTAL	590

Cost Sharing

Federal Share:	$442,500
Non-Federal Share:	$147,500
Request from Calfed:	$147,500

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I-012941

Ecosystem Restoration Costs
(Costs $ x 1000)

Dates	Description	Total Cost
April 2001-October 2002	Sediment Basin Excavation	100
	Low Flow Channel Modifications (i.e.: recontouring, and revegetation of riparian corridor, etc)	70
	Fish Ladder	200
	Flume	175
	Weir	75
	CONSTRUCTION MANAGEMENT	65
	ENGINEERING DURING CONSTRUCTION	65
	Update Operations and Maintenance Manual	40
2002-2004	Monitoring	90
	CONSTRUCTION TOTAL	880
	PROJECT TOTAL	1,470

Cost-Sharing

Federal Share:	$1,102,500
Non-Federal Share:	$ 367,500
DWR Grant	$ - 75,000
Request from Calfed	$ 292,500
Request for Project Design Documents:	$ 147,500
Request for Project Construction:	$ 292,500

Total Request from Calfed: $ 440,000

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I-012942

Applicant Qualifications

The Wildcat, San Pablo Creek Design Team requested the involvement of the Army Corps of Engineers Waterways Experiment Station (W.E.S.) Environmental Laboratory in the design and oversight of this project. The Environmental Laboratory contains some of the nation's most recognized experts in river restoration. Because of the role of Wildcat Creek as a national model in flood control project design we have been able to attract their involvement.

The W.E.S. design team leader is Dr. Craig Fishenick who is a hydraulic engineer with a strong background in fluvial geomorphology. He is a national leader in advocating interdisciplinary approaches to river restoration and flood control projects design and chaired the recent American Society of Civil Engineers national conference on River and Wetland Restoration. The W.E.S. team will also include Dr. Ron Copland, another hydraulic engineer with extensive river restoration experience and Mike Channel who specializes in sediment transport functions. Dr. Richard Fischer of W.E.S, a national expert in riparian forest ecology, is also on the team. Wildcat Creek Design Team member include two fisheries experts; Margaret Roper, Department of Fish and Game Region 3 Area Fishery Biologist and Peter Alexander, the fisheries specialist for the East Bay Regional Park District. Mr. Alexander, in partnership with the California Department of Fish and Game has supervised the successful reintroduction of native, wild steelhead in Wildcat Creek since 1983. He manages wild fish and amphibian populations within the District's 90,000 acres of land holdings.

Other technical experts on the Design Team include Ann Riley, a stream restoration expert with the Waterways Restoration Institute; Jonathon Owens, a hydrologist with Balance Hydrologics; Laurel Collins, a fluvial geomorphologist who has provided important background data to the W.E.S. team on the Wildcat Creek watershed; and Diana Jacobs, a plant ecologist with the State Lands Commission. Government experts included E.P.A. biologist Becky Tuden, Water Quality Control Board hydrogeologist Jill Marshall; and Bob Sneickus, a landscape architect with N.R.C.S.

Contra Costa County staff include Mr. Mark Boucher, a senior civil engineer who serves as the county project manager for this project and has a long history as the Wildcat-San Pablo Creek Design Team Coordinator. He is supported by Dean Eckerson the Assistant Public Works Director who provides management and supervision for the flood damage reduction operations of the County Public Works Department. Catherine Kutseris, the Deputy Director of the Contra Costa County Community Development Department which manages community and land use planning for the county chairs the Wildcat-San Pablo Creeks Design Team.

Compliance with Standard Terms and Conditions

Table D-1 requests a Non Collusion Affidavit to be submitted by public entities. The county is submitting a signed statement with form 4206 which pledges compliance with the conditions described in this form for construction bidding.

Contra Costa County
FLOOD CONTROL
& Water Conservation District

J. Michael Walford
ex officio Chief Engineer
255 Glacier Drive, Martinez, CA 94553-4697
Telephone: (925) 313-2000
FAX (925) 313-2333

April 14, 1999

Lester Snow
Executive Officer
Calfed Bay-Delta Program Office
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

Dear Mr. Snow:

We are applying for a Calfed grant and note your requirements for our Public Works agency to comply with the non-collusion affidavit requirement (DWR form 4206).

The non-collusion affidavit form is to be filled out by bidders submitting bids to our department for work funded with the Calfed grant. When we have designed our project and it is ready for bid, we will insure that your form is included in our project specifications and that the bidders will have executed it before we award the contract for construction.

I have attached a copy of the DWR form 4206.

Thank you very much.

Very truly yours,

R. Mitch Avalon
Deputy Chief Engineer

RMA:lv
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Attachments

c: Design Team

State of California
The Resources Agency
Department of Water Resources

Agreement No. _____

Exhibit _____

NONCOLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID FOR PUBLIC WORKS

STATE OF CALIFORNIA)
)ss
COUNTY OF _____)

_____ (name), being first duly sworn, deposes and says that he or she is _____ (position title) of _____ (the bidder), the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

DATED: _____ By _____
(person signing for bidder)

Subscribed and sworn to before me on

_____

_____
(Notary Public)

(Notarial Seal)

DWR 4208 (New 4/90)