

PSP Cover Sheet

99C-106
Place in
Group

Proposal Title: Identification and Characterization of Aquatic Habitat and Water Quality Factors Affecting Priority Species and Beneficial Uses in the Butte Creek Watershed

Applicant Name: Gerald Boles

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Amount of funding requested: \$ \$297,296 for 2 years (\$148,648 per year)

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

- | | |
|---|---|
| <input type="checkbox"/> Fish Passage/Fish Screens | <input type="checkbox"/> Introduced Species |
| <input type="checkbox"/> Habitat Restoration | <input type="checkbox"/> Fish Management/Hatchery |
| <input checked="" type="checkbox"/> Local Watershed Stewardship | <input type="checkbox"/> Environmental Education |
| <input type="checkbox"/> Water Quality | |

Does the proposal address a specified Focused Action? Yes No

What county or counties is the project located in? Butte, Sutter

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

- | | |
|--|---|
| <input type="checkbox"/> Sacramento River Mainstem | <input type="checkbox"/> East Side Trib: _____ |
| <input checked="" type="checkbox"/> Sacramento Trib: <u>Butte Cr/Sutter Bypass</u> | <input type="checkbox"/> Suisun Marsh and Bay _____ |
| <input type="checkbox"/> San Joaquin River Mainstem | <input type="checkbox"/> North Bay/South Bay: _____ |
| <input type="checkbox"/> San Joaquin Trib: _____ | <input type="checkbox"/> Landscape (entire Bay-Delta watershed) |
| <input type="checkbox"/> Delta: _____ | <input type="checkbox"/> Other: _____ |

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

- | | |
|--|---|
| <input type="checkbox"/> San Joaquin and East-side Delta tributaries fall-run chinook salmon | |
| <input type="checkbox"/> Winter-run chinook salmon | <input checked="" type="checkbox"/> Spring-run chinook salmon |
| <input type="checkbox"/> Late-fall run chinook salmon | <input checked="" type="checkbox"/> Fall-run chinook salmon |
| <input type="checkbox"/> Delta smelt | <input type="checkbox"/> Longfin smelt |
| <input type="checkbox"/> Splittail | <input checked="" type="checkbox"/> Steelhead trout |
| <input type="checkbox"/> Green sturgeon | <input type="checkbox"/> Striped bass |
| <input type="checkbox"/> Migratory | <input type="checkbox"/> All chinook species |
| <input type="checkbox"/> Other: _____ | <input type="checkbox"/> 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:

This proposal addresses the strategic objectives of the ERPP (February 1999) by:
1) protecting existing and restoring and increasing the quality of essential fish habitat (Volume 1, page 158, 162); 2) reducing the concentrations and loadings of contaminants in all aquatic environments in the CalFed region (Volume 1, page 506);

3) developing regional plans to reduce the effects of non-point source contaminants through implementation of watershed management plans (Volume 1, pages 506-507); 4) reducing contaminant levels in harvested organisms by identifying sources of contaminants in flesh of harvested fish and invertebrates (Volume 1, page 507); and 5) reducing to acceptable levels the release of oxygen-depleting substances into aquatic systems (Volume 1, page 507).

Strategic targets that are addressed are: 1) improve the quality and extent of flowing water habitats (Volume 1, page 159); 2) develop and implement comprehensive watershed management programs to protect water quality (Volume 2, page 267); and 3) maintain and improve existing freshwater fish habitat and essential fish habitat through the integration of actions for ecological processes habitats, and stressor reduction or elimination (Volume 2, page 270).

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

- | | |
|--|---|
| <input checked="" type="checkbox"/> State agency | <input type="checkbox"/> Federal agency |
| <input type="checkbox"/> Public/Non-profit joint venture | <input type="checkbox"/> Non-profit |
| <input type="checkbox"/> Local government/district | <input type="checkbox"/> Private party |
| <input type="checkbox"/> University | <input type="checkbox"/> Other: _____ |

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

- | | |
|--|---|
| <input type="checkbox"/> Planning | <input type="checkbox"/> Implementation |
| <input checked="" type="checkbox"/> Monitoring | <input type="checkbox"/> Education |
| <input type="checkbox"/> Research | |

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.

Gerald Boles
Printed Name of Applicant

Gerald Boles
Signature of Applicant

**Identification and Characterization of
Aquatic Habitat and Water Quality Factors
Affecting Priority Species and Beneficial Uses**

in the

Butte Creek Watershed

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Northern District
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**Implementation Participants and Collaborators
Butte Creek Watershed Conservancy
Western Canal Water District
County of Butte
Department of Fish and Game
Sacramento River Watershed Program**

**Type of Organization: State Government
(Tax Exempt)**

April 16, 1999

Executive Summary

Project Description: The proposed project is an aquatic habitat and water quality assessment program for the Butte Creek watershed (including Butte Slough and Sutter Bypass). The purpose of the program is to determine: suitability of the aquatic habitat to support priority and other aquatic species; stream water quality; suitability of the water to support beneficial uses; and factors which may be contributing to aquatic habitat or water quality degradation. This program will also establish baseline conditions to gauge effectiveness of restoration activities for adaptive management. Information from the project will be incorporated into the Butte Creek Watershed Conservancy's Watershed Management Plan for aquatic habitat and water quality protection and improvement.

Study Area: Butte Creek originates in the Jonesville Basin in the Lassen National Forest and enters the Sacramento Valley southeast of Chico, draining a watershed of about 150 square miles in the northeast portion of Butte County. The original mouth of the creek was at the present Butte Slough southwest of Chico. Most of the creek is now diverted to the Sutter Bypass which drains to the Sacramento River through the Sacramento Slough near Verona, about 100 miles downstream from Chico.

Biological and Ecological Objectives: The decline of Butte Creek's chinook salmon and steelhead populations have been attributed to inadequate flows (which subsequently affect water temperature and other habitat conditions) and poor water quality (ERPP, Vol. 2, page 256). The primary biological and

ecological objectives of this proposal are to determine water quality and other environmental factors that may be adversely affecting aquatic life and their habitats in the Butte Creek watershed, especially for spring-run salmon, fall-run salmon, and steelhead trout. This information will be used by the Butte Creek Watershed Conservancy, Western Canal Water District, Department of Fish and Game, and other groups to protect and improve habitat conditions for these important fish species and other aquatic life in the Butte Creek watershed.

Costs: The total annual cost for this project is \$202,157. Cost sharing from the Department of Water Resources and Sacramento River Watershed Program reduces the needed contribution from CalFed to \$148,648 per year, for a total CalFed project cost of \$297,296 for the two year project. There are no third party impacts associated with conductance of this project.

Applicant Qualifications: The project manager and field staff have many years of experience with the Department of Water Resources conducting similar projects. Similar assessments are currently being conducted on Deer, Mill, Big Chico, and Clear creeks in cooperation with local environmental and governmental groups, and the Sacramento River Watershed Program. The Department has all necessary staff, equipment, training, and experience to conduct the project.

Monitoring and Data Evaluation: Data will be used to determine present effects from stressors to instream aquatic habitat and priority species, and to

determine effectiveness of watershed management and mitigation activities. Data from the proposed project will be compared to the sparse historic data that is available to determine long-term changes that may have occurred. Data will also be compared with criteria established for protection of aquatic life and assessment results from the Sacramento River Watershed Program, which is assessing similar parameters in the mainstem of the Sacramento River.

A quality assurance project plan will be developed to ensure that data are accurate. All staff will be familiar with the QA project plan and receive appropriate training in data collection techniques.

Local Support and Coordination with other Programs: The Butte Creek Watershed Conservancy, Western Canal Water District, County of Butte, Department of Fish and Game, Regional Water Quality Control Board, and Sacramento River Watershed Program all support this project. This project was designed in consultation with these groups, who will serve as advisors and provide guidance. Data acquisition efforts will also be coordinated with other groups and agencies collecting environmental data in the basin, including the Department of Fish and Game, Department of Pesticide Regulation, and County of Butte to avoid redundancy and fill data gaps. This project was designed to provide data comparable to the data acquisition efforts by the Sacramento River Watershed Program along the mainstem of the Sacramento River and other tributaries.

Compatibility with CalFed Objectives: This project addresses habitat and water quality conditions which may adversely

effect high-risk aquatic species and their habitats in the Butte Creek basin, including spring-run and fall-run chinook salmon, steelhead trout, and instream aquatic habitat. The project provides information necessary for actions to protect and improve the quality of essential aquatic habitat and ecological functions. Information developed from the project is necessary to identify and reduce concentrations and loadings of contaminants, assist in development of a watershed management plan to protect essential habitats and water quality, and identify and reduce contaminant levels in harvested organisms consistent with the objectives in the Ecosystem Restoration Program Plan.

Project Description

Proposed Scope of Work: The proposed project is an aquatic habitat and water quality assessment program for the Butte Creek watershed (including Butte Slough and Sutter Bypass). The purpose of the program is to determine: suitability of the aquatic habitat to support priority and other aquatic species; stream water quality conditions; suitability of the water to support beneficial uses; and factors which may contribute to aquatic habitat or water quality degradation. This program will also establish baseline conditions to gauge effectiveness of restoration activities for adaptive management. Information from the project will be incorporated into the Butte Creek Watershed Conservancy's Watershed Management Plan for aquatic habitat and water quality protection and improvement.

Butte Creek has many diversions and receives inflows from numerous sources, including the Feather River. In addition, the creek flows through undeveloped mountainous regions, sparsely though increasingly populated urban areas, and intense agricultural areas, with a major tributary emanating from a heavily urbanized area relying on septic systems and leachfields for disposal of domestic waste. Monitoring stations will be established to bracket effects of major discharges and land use activities to Butte Creek (Table 1). Additional monitoring stations will be added as data indicate the need to determine sources and effects of detected adverse habitat or water quality conditions.

Water temperature will be assessed since this parameter controls the rate of chemical and biological processes, has been significantly altered from stream

management activities including numerous dams, diversions, and accretions on Butte Creek, and is of utmost importance in determining the suitability of the creek for survival and reproduction of anadromous fish. Continuously recording temperature loggers will be placed at each monitoring station; additional loggers will be placed along the creek or tributaries as needed to document thermal conditions affecting salmonids (such as in spawning, rearing, or migration areas), and to identify sources of thermal change or stress. Temperature loggers will be serviced and data downloaded to lap top computers at intervals not exceeding monthly.

Basic water quality parameters including dissolved oxygen, pH, turbidity, and conductivity will be measured with properly calibrated field instrumentation at each visit to every monitoring station. At some stations where data indicate potential water quality degradation, water quality parameters may be expected to experience wide diurnal variations, or due to key environmental considerations (such as anadromous fish spawning areas), the basic water quality parameters will be recorded with data loggers. Logging instrumentation will be calibrated no less frequently than monthly, or more often if data indicate instrument drift.

Water inorganic chemistry will be assessed since these parameters determine the beneficial uses of water and may become elevated due to pollution, which often results in deleterious effects to aquatic life and other beneficial uses. Water samples will be collected monthly for chemical analyses at the

nine primary monitoring stations. Analytes analyzed will include minerals (calcium, sodium, potassium, magnesium, sulfate, chloride, boron, and alkalinity), nutrients (nitrate plus nitrite, ammonia, dissolved orthophosphate, and total phosphorus), and metals (aluminum, arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, selenium, and zinc). Additional analyses will be conducted at other locations to determine sources of any analytes found at the primary monitoring stations that degrade the beneficial uses of the water in Butte Creek.

Chemical analyses for minerals and nutrients will be performed at the DWR Bryte Chemical Laboratory in West Sacramento using U.S. EPA approved techniques, equipment, and methods. Samples for metals analyses will be collected using protocols in U.S. EPA Method 1669 for ultra-clean sample collection and preservation. Analyses of samples for trace metals EPA water quality criteria levels will be performed at Frontier Geosciences Environmental Research Corporation in Washington using cold vapor atomic fluorescence spectrometry (EPA method 1631) for mercury, hydride generation-atomic fluorescence spectroscopy (EPA method 1632) for arsenic, colorimetry for iron (Standard Method 3500-Fe D), and inductively coupled plasma-mass spectrometry (EPA method 1638) for the other trace metals.

Aquatic macroinvertebrates form the basis of the aquatic food web and are excellent indicators of long-term water quality conditions since specific communities develop in response to specific stream conditions and perturbations. These organisms will be assessed throughout the watershed at the nine

primary monitoring stations during the fall season using the rapid bioassessment protocols developed by the U.S. EPA. Descriptive stream condition/habitat assessments will be conducted at each site. Organisms from samples will be identified at the DWR Aquatic Macroinvertebrate Laboratory in Red Bluff. Identifications will be confirmed through inter-laboratory exchanges with the Department of Fish and Game Water Pollution Control Laboratory in Rancho Cordova.

Fecal coliform bacteria in aquatic ecosystems are indicative of fecal contamination. Though these bacteria generally do not themselves pose adverse risks, their presence indicates the possible presence of far more serious microorganisms which may impact human health and nutrient loading that may adversely affect the aquatic environment. Coliform levels will be assessed monthly using a certified laboratory at the nine primary monitoring stations using membrane filter procedures for both fecal (Standard Method 9222 D) and total (Standard Method 9222 B) coliform bacteria. Analyses will be conducted at additional sites to identify sources of fecal contamination indicated by the presence of these bacteria.

The direct measurement of toxicity to aquatic organisms of stream water or streambed sediments is indicative of the ability of the stream to support aquatic life. Water column toxicity assessment will identify direct impacts to fish and zooplankton from toxic substances that are either dissolved or suspended in the water column. Toxicity assessment in streambed sediments will identify effects to the benthic community forming the basis of the food web.

Water column testing will use *Ceriodaphnia* and the fathead minnow. Bed sediment toxicity assessment will use the amphipod *Hyalella*. Monthly water samples and biannual sediment samples will be collected for toxicity analyses from four sites within the watershed representing the reach upstream from most potential toxicant sources, near the transition from the canyon to the valley portion of the creek, at the former mouth of the creek upstream from agricultural return flows, and at the lowest portion of the system at the Sacramento Slough just upstream from the confluence with the Sacramento River. Toxicity tests will be conducted at the U.C. Davis Aquatic Toxicology Laboratory and the DFG Pesticide Laboratory in Elk Grove using the U.S. EPA's Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA/600/4-90/027F) and Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates (EPA/600/R-94/024).

Sedimentation is a major impairment in streams which adversely impacts salmonid reproduction and survival of organisms (aquatic macroinvertebrates) important as food for fish. Stream gravels from riffle areas from the eight monitoring stations in Butte Creek will be analyzed for laboratory determination of particle size distribution. Subsequently, additional sites will be analyzed to identify specific sources of sediments in impacted reaches. Samples for sediment analyses will be collected during the fall months and analyzed at the Department of Water Resources Soils Laboratory in West Sacramento using standard gradation analysis.

Fish tissues accumulate certain toxic substances, often in higher concentrations than found in the environment. Though these substances may not be directly lethal, bioaccumulation may result in death of the fish, impairment of life function such as reproduction, and adverse effects to higher trophic levels (including people) which ingest the fish. Analyses of fish tissues will determine the presence of toxic substances which may not be identifiable through other means. The Department of Fish and Game will be consulted to identify the species of fish that may be collected and time of year that collection may occur so as not to interfere with listed species of salmonids. Potential candidate species for tissue analyses include the riffle sculpin, largemouth or smallmouth bass, white catfish, and rainbow trout. Tissue will be analyzed at the DFG Water Pollution Laboratory in Rancho Cordova for chlorinated pesticide, polychlorinated biphenyls, polynuclear aromatic hydrocarbons, and trace elements (metals).

This monitoring schedule will continue for two years. Additional stations or parameters may be added as data analyses identifies problem reaches within the watershed. Following the two years of aquatic habitat and water quality assessment, a base level of monitoring to identify long-term changes will be developed as well as a program to further identify sources of adverse effects and develop remedial actions.

Project Location: The project includes the entire reach of Butte Creek and the Sutter Bypass, into which Butte Creek now drains, in Butte County and Sutter counties.

Ecological/Biological Benefits

Objectives: Objectives of this project are to determine aquatic habitat and water quality factors affecting aquatic life and their habitats in Butte Creek, especially for spring and fall-run salmon and steelhead trout. The decline of Butte Creek's salmon and steelhead have been attributed to inadequate flows (which affect water temperature, habitat, etc.) and poor water quality (ERPP, Vol. 2, page 256). Information from this project will be used by the Butte Creek Watershed Conservancy, Butte County, DFG, and others to protect and improve habitat conditions for these important fish species and other aquatic life in Butte Creek.

The project will provide information about system stressors in Butte Creek which affect priority aquatic species and their habitats including: alteration of flows and other effects of water management, including hydrograph alterations, migration barriers and straying; water quality; water temperature; and land use, including hydropower production, grazing, urbanization, and forestry and agricultural practices. Strategic objectives of the ERPP addressed are: protecting existing and restoring and increasing the quality of essential fish habitat (Vol. 1, page 158, 162); reducing concentrations and loadings of contaminants in all aquatic environments in the CalFed region (Vol. 1, page 506); developing regional plans to reduce the effects of non-point source contaminants through implementation of watershed management plans (Vol. 1, pages 506-507); reducing contaminant levels in harvested organisms by identifying sources of contaminants in flesh of harvested fish and invertebrates (Vol. 1, page 507); and reducing to acceptable levels the release

of oxygen-depleting substances into aquatic systems (Vol. 1, page 507).

Strategic targets addressed are: improve the quality and extent of flowing water habitats (Vol. 1, page 159); develop and implement comprehensive watershed management programs to protect water quality (Vol. 2, page 267); and maintain and improve existing and essential freshwater fish habitat through the integration of actions for ecological processes, habitats, and stressor reduction or elimination (Vol. 2, page 270).

The project also contributes to goals and objectives the CalFed Watershed Program Plan by facilitating assistance between agencies and local watershed groups; developing watershed monitoring and assessment protocols (WPP, page 1-7); providing stewardship activities in concert with local needs and desires by supporting on-the-ground activities related to water quality enhancement (WPP, page 2-1); emphasizing activities that improve the diversity and reliability of information generation, analysis, distribution, and use; supporting partnerships through support of technical and other assistance; and identifying and controlling contaminants (WPP, page 2-2). "Watershed activities that reduce the pollutant loads in streams ... could measurably improve downstream water quality conditions" (WPP page 2-2), with subsequent benefits to the Delta in conformance with goals and objectives of the CalFed Water Quality Program.

Natural flows in Butte Creek are altered by diversion dams, agricultural drains, and water imported from three adjacent watersheds. These alterations

to the natural flow may affect water quality and sediment transport. Habitat, water quality, and temperature conditions affected by flow modification may result in delaying or blocking migration of anadromous fish, and mortality to juvenile fish. Urban and agricultural runoff, mines, and other contaminants may be sources of toxicity to aquatic organisms in Butte Creek. Water temperatures, especially during lower flows, may affect the ability of the creek to provide suitable migration, spawning, and nursery habitat for anadromous fish and other aquatic species.

The habitat type and priority species affected by stressors in the Butte Creek watershed are primarily instream aquatic habitat and spring and fall-run salmon and steelhead trout. This project will provide primary benefits to this habitat type and these species by identifying impairments that may be limiting the quality of the habitat and reducing survival of these species, and provide secondary benefits for adaptive management by establishing baseline conditions to evaluate the effects of mitigation and restoration activities occurring in the watershed. The project also fosters efforts by the Conservancy by providing basic data for watershed planning and management.

Linkages: An Existing Conditions Report, funded by CalFed, identified aquatic habitat and water quality information as data gaps for the watershed. Development of a Watershed Management Strategy is underway, of which a key feature is aquatic habitat and water quality improvement. Diversions have been modified, fish ladders have been improved, riparian habitat restoration has begun, and other actions are planned. This project will provide aquatic habitat and water quality information necessary for

evaluation of the benefits from these actions and adaptive management.

This project conforms to ERPP implementation strategy goals, which include indicators to determine ERPP effectiveness and comprehensive monitoring to determine status of the indicators. This project will monitor water resource indicators to determine present ecological conditions and health, provide a benchmark to determine effectiveness of future restoration efforts, and identify ecosystem stressors. An ERPP Implementation Objective for the Butte Basin is to restore ecological processes in the upper watershed to maintain and improve water quality. The ERPP vision for contaminants is to ensure that all waters of mainstem rivers and tributaries entering the Bay-Delta are free of high concentrations of toxic substances. Ecosystem restoration would be initiated by implementing actions to prevent, control, and reduce contaminant sources that represent hazards to ecosystem processes. This project will aid this objective by identifying of stressors in the watershed.

The CalFed Water Quality Program goal is to provide good water quality for environmental, agricultural, drinking, industrial, and recreational uses. "Monitoring programs that identify long-term trends in contaminants found in ecosystem biota have helped to guide restoration efforts." Similarly, this program will identify contaminants and guide restoration in Butte Creek by the Conservancy, Butte County, DFG, CVPIA, and others.

The 1997 Draft AFRP identifies development of a watershed management plan as a high priority for the Butte Creek watershed. Paramount for this effort is data for analysis of current conditions

against which future restoration activities can measure progress. The Conservancy's Existing Conditions Report identified current data collection and analyses for Butte Creek as a data gap that should be addressed. The AFRP draft Restoration Plan recommends monitoring long-term changes in water quality. This project will provide information vital for development of the watershed management plan, and is a high priority of the Conservancy.

The ERPP Proposal Solicitation Package states that tributary water quality is better than the mainstem. While significant problems have been identified for the mainstem, little documentation is available for most tributaries. Mines also exist in the Butte Creek watershed that may affect water quality, while other stressors that affect water quality and aquatic habitat in the main stem also occur along Butte Creek. The ERPP-PSP also states that pesticides and urban runoff in lower portions of tributaries are a risk to rearing for spring and fall-run salmon and steelhead trout. This project will provide data for identifying and evaluating stressors in Butte Creek.

The DFG report "Restoring Central Valley Streams: A Plan for Action" attributed the decline of salmon and steelhead fisheries in Butte Creek to poor water quality and other habitat issues. But, very little water quality data are available for the watershed. Without water quality data, environmental effects to salmon and steelhead cannot be realistically determined, nor can mitigation measures be developed until the scope of the problem is defined.

Multi-agency efforts are addressing aquatic habitat, water quality, fisheries restoration, and stream flow manage-

ment in the watershed. DFG has identified a water quality study as a high priority evaluation action to determine habitat needs for Butte Creek. The Conservancy was formed to develop a comprehensive stream management strategy, for which water quality is a major consideration. This project is important to water resource managers and will provide a strong basis for better decision making by federal, State, and local agencies and environmental groups.

Aquatic habitat and water quality assessment and monitoring are necessary to characterize existing conditions within the watershed, determine contaminants and their origins, and understand the interactions of toxicants and biological components of the ecosystem. Data will be developed by the proposed program that identify current conditions of various resource issues related to water quality, and provide a baseline to determine the effectiveness of mitigation activities in the watershed. This assessment plan will address historic as well as current aquatic habitat and water quality conditions to define those factors that most affect the conditions within the Butte Creek watershed.

Technical Feasibility and Timing

Monitoring water resources is essential to document pollution, continually assess water quality, and determine water resource health. The most reliable way to determine if changes in land activities have affected water quality is to monitor water resources before, during, and after a change in land management or restoration. Detailed tracking of water quality is essential to provide information to decision makers about the effectiveness of pollution control efforts. At a watershed scale, this relationship between changes in land management and water quality can only be determined by following a strict monitoring protocol. There are no other alternatives for determining aquatic habitat and water quality factors that affect the suitability of Butte Creek for beneficial uses.

Since the activity of the proposed project is monitoring and does not involve any disturbance of sensitive habitat or species, CEQA, NEPA, and other environmental compliance documents are not needed. Collection of fish samples for tissue analyses will require a Scientific Collection Permit, which DWR field personnel already possess. The fish species and period of the year suitable for collection will be determined in discussions with the Regional Manager of DFG. Access through private property for monitoring activities on Butte Creek will be arranged with local landowners with assistance from the Butte Creek Watershed Conservancy.

Monitoring and Data Collection Methodology

Biological/Ecological Objectives: The biological and ecological objectives of this project are to determine aquatic habitat and water quality factors affecting aquatic life and their habitats in Butte Creek, especially for spring and fall-run salmon and steelhead trout, and provide secondary benefits for adaptive management by establishing baseline conditions to evaluate the effects of mitigation and restoration activities occurring in the watershed. The decline of Butte Creek's salmon and steelhead have been attributed to habitat modification, including flow modification and poor water quality. The project fosters efforts by the Butte Creek Watershed Conservancy by providing basic data for watershed planning and management, and will develop information for use by the Conservancy, Butte County, DFG, and others to protect and improve habitat conditions for these important fish species and other aquatic life in Butte Creek.

The project is a monitoring program to determine aquatic habitat and water quality factors affecting beneficial uses. All monitoring protocols will follow acceptable methodologies and techniques, which are generally those of Standard Methods for the Examination of Water and Wastewater (Standard Methods) or the U.S. Environmental Protection Agency. The specific methods used to collect and analyze samples, collection frequency, locations, and other relevant factors were discussed in the Project Description section of this proposal. Key personnel that will be responsible for the data collection activities are from the Department of Water Resources in Red Bluff, but may also include participation from members of the Butte Creek Water-

shed Conservancy or other groups or individuals, under supervision of DWR staff, that are interested in learning about environmental data collection and analyses techniques.

Prior to initiation of monitoring from this program, other agencies, companies, groups, and individuals currently conducting any data acquisition activities in the Butte Creek watershed will be consulted. Data collection activities will be coordinated to avoid duplication of effort and to share results. Monitoring parameters and protocols are consistent with those of the Sacramento River Watershed Program, with whom results from this program will also be provided for comparison to the mainstem of the Sacramento River.

Results from the project will be provided to the Butte Creek Watershed Conservancy and other interested parties in quarterly reports. Reports will discuss activities completed, results, implication, and planned activities. Data will be stored in a DWR computer database, and can be made available to other databases. Data will be evaluated using numerical water quality goals, objectives, criteria, and standards developed by the Central Valley Regional Water Quality Control Board, Department of Health Services, Office of Environmental Health Hazard Assessment, and U.S. Environmental Protection Agency National Ambient Water Quality Criteria and Proposed California Toxics Rule.

As required by CalFed, quarterly progress and financial reports, annual monitoring report, annual oral presentation, and final report will be prepared.

Table 2. Monitoring and Data Collection Information

Biological/Ecological Objective: Determine aquatic habitat and water quality factors affecting aquatic life and their habitats in Butte Creek

<u>Hypothesis*</u>	<u>Monitoring/Collection</u>	<u>Data Evaluation</u>	<u>Data Priority</u>
Water temperature	temperature recorder	temperature objective	high
Dissolved oxygen	grab sample or recorder	DO objective	high
pH	grab sample	pH objective	low
Conductivity	grab sample or recorder	conductivity criteria	medium
Turbidity	grab sample or recorder	turbidity criteria	high
Alkalinity	grab sample	alkalinity criteria	low
Minerals	grab sample	cooperative extension, mineral objectives	medium
Nutrients	grab sample	nutrient objectives	medium
Metals	grab sample	metal criteria	high
Macroinvertebrates	grab sample	biometrics	high
Coliform bacteria	grab sample	bacteria criteria	medium
Toxicity tests	grab sample	toxicity/TIE	high
Sediment particle	grab sample	sediment size objective	high
Fish tissue	grab sample	comparison to other watersheds/data	high
Pesticides	grab samples	comparison to DPR database	high

*The basic hypothesis is whether the habitat and water quality parameters are suitable for beneficial uses in Butte Creek

Local Involvement

Several agencies or organizations are involved in this proposed project. All agencies and organizations contacted have expressed support for this project.

This project has been coordinated with representatives from the Butte Creek Watershed Conservancy, Sierra Pacific Industries, and Western Canal Water District. The Sacramento River Watershed Program is also aware and very supportive of the project.

The proposed project has been discussed and will be coordinated with the County of Butte. Richard Price, Agricultural Commissioner and interim chief of the County's Water Division, and Tom Reed, Director of Environmental Health, have both been involved in discussions about the project. The Board of Supervisors and Planning Department in both Butte County and Sutter County have been notified by letter of the project and provided copies of the proposal.

The project has been discussed and is being coordinated with staffs from the Department of Fish and Game and Regional Water Quality Control Board.

Prior to commencement of the project, a public meeting open to landowners, government representatives, local schools, and other interested groups and individuals will be held to discuss the project goals, objectives, methodology, and opportunities to participate. Additional public meetings will be held to present project progress. Project status and findings will also be presented at meetings of the Butte Creek Watershed Conservancy. Interested groups and individuals will be provided the opportunity

to assist project staff in collection and analyses of aquatic habitat and water quality samples. This will provide an opportunity for public involvement and learning experiences for members of the public and local schools.

Cost

Costs requested from CalFed associated with the project are shown according to task in Table 3a and b. Table 3a shows costs associated with overhead rates charged for State agencies, while Table 3b shows costs associated with overhead rates charged to programs funded with federal dollars. The budget for each task are shown on a quarterly basis in Table 4.

Project management costs are those that would be incurred for oversight of the project to insure completion of tasks. Project management includes assigning and supervising staff, preparation of contracts for contracted services, acquisition of materials and supplies, review of work in progress and completed work for completion and accuracy, budget oversight, and periodic reports and public meetings.

The overhead and indirect costs associated with this project include staff benefits (26.2%) for OASDI disability insurance, employer PERS retirement contribution, State employee's health, vision, and dental plans, unemployment insurance, and employee assistance program. General administration overhead costs (72.7%) include State proration of administrative costs of central agencies (Legislature, Controller, Treasurer, State Personnel Board, Secretary of State, Department of General Services, State Board of Control, and State Department of Finance), general communications (telephone, radio, postage), general expenses (Resources Library support, General Services charges), utilities, automotive equipment, general Department management, staff specialists, line management, and program control.

Schedule: Tasks would begin upon approval and execution of a contract between the Department of Water Resources and CalFed. Since the project would continue for a two year period, the project could start in any quarter in which funding was made available. CalFed would be billed for payment for completed work at agreed upon intervals, such as monthly or quarterly.

Cost Sharing: The Northern District of the Department of Water Resources has funds available from the Northern California Water Management Program that will be used to partially offset costs of this project. In addition, the Sacramento River Watershed Program has also agreed to provide partial funding for the project. The total of these matching funds is \$53,509 for each year of the project. CalFed's share of the project is, therefore, \$148,648 per year for a two year project total of \$297,296.

Applicant Qualifications

The project will be conducted by staff of the Northern District of the California Department of Water Resources. The project will be directed by Gerald Boles, who is Chief of the Water Quality and Biology Section in the Northern District. Gail Kuenster, an Environmental Specialist II in the Water Quality and Biology Section, will be the lead investigator responsible for field sample collection and data archiving and analyses under direction of the project director. Perry LeBeouf, an Environmental Specialist I in the same section, will be responsible for overseeing laboratory work for aquatic macroinvertebrate and coliform bacteria analyses. General administrative functions, such as accounting, billing, and contract administration, will be conducted by the Northern District's Administrative Officer, Barbara Polson.

The Butte Creek Watershed Conservancy is the primary participant that will help guide the program. The Conservancy is comprised of landowners in the Butte Creek watershed, and meets regularly with representatives from the Department of Fish and Game, Regional Water Quality Control Board, California State University (Chico), and other environmental groups and concerned citizens. Some of the members of the Conservancy are also members of the Western Canal Water District which is composed of agricultural interests along the lower watershed. The Conservancy and Water District will review project progress and results, and make recommendations concerning direction for the project.

Currently, the Northern District has similar programs to that proposed for

Butte Creek in several other major tributaries to the Sacramento River, including Deer, Mill, Big Chico, and Clear creeks. Staff have worked closely with the Deer and Mill Creek conservancies, Big Chico Creek Watershed Alliance, and Clear Creek Coordinated Resource Management group.

Biosketches: Gerald Boles has been the supervisor of the Water Quality and Biology Section in the Northern District of the Department of Water Resources since 1990, and has been conducting water quality studies for the Department since 1975. He has a B.A. degree in Microbiology (minor in Chemistry) and a M.A. degree in Biological Sciences. In addition to years of experience with budgets and general supervisory functions, he has supervised and conducted numerous water quality investigations. He is responsible for both the Water Quantity and Quality Measurement Program and the Water Quality Evaluation Program in the Northern District. His duties have required him to develop and implement studies and research projects to determine environmental effects on water quality, wildlife, plants, and fisheries associated with future water supply projects, geothermal development, weather modification, water transfers, and other projects. Some of the projects for which he has been directly responsible include assessment of impacts to the aquatic macroinvertebrate community following the metam sodium chemical spill in the upper Sacramento River in 1991, development and implementation of a water quality assessment program at Lake Almanor in cooperation with Plumas County, long-term water quality monitoring at both Clear and

Eagle lakes, evaluation of effects to aquatic resources from cloudseeding in the upper Feather River area, groundwater quality assessments in the Sacramento Valley, Eagle Lake, and Cady Springs areas, and assessment of factors affecting the water quality of a drinking water supply reservoir.

Gail Kuenster has been employed by the Department of Water Resources since 1995. With both a B.A. and M.S. degree, she has been extensively involved in the District's water quality monitoring program, as well as thermograph maintenance and data acquisition, aquatic macroinvertebrate collection, and database administration. She currently is responsible for the collection and processing of water quality, toxicological, and biological samples and data that the Department is collecting from the Sacramento River and its tributaries, including Big Chico Creek. She is the Water Quality and Biology Section's liaison to the Big Chico Creek Watershed Alliance.

Perry LeBeouf earned a B.S. degree in Biology from California State University, Chico and has been employed since 1996 by the Department of Water Resources. He has been involved in all phases of the District's extensive aquatic macroinvertebrate program, including field sampling, taxonomy, program design, and QA/QC. He currently is responsible for the macroinvertebrate and coliform bacteria programs in the District. He is also currently receiving extensive database development training in Oracle database design and administration. Some of his projects have involved identification and enumeration of macroinvertebrates from surface water quality monitoring sites, several lake water quality monitoring programs, and

assisting other Environmental Specialists with water quality related projects. He also participates as a docent to local schools in conducting field trips in stream and vernal pool ecology. He is a member of the California Inland Invertebrate Working Group.

In addition to this core of staff specialists, students from local colleges and universities will be employed to assist in field and laboratory activities under direct supervision of staff. This provides on-hand training for students who wish to pursue careers in environmental resource management.

Standard Terms and Conditions

The project proponent (Department of Water Resources) is a State of California agency. According to Attachment D, Table D-1, the only Standard Contract Clause and related proposal submittal requirements is completion of a Standard Agreement, Form 4187. Table D-1 also indicates that this form can be submitted at the time of final contract. Therefore, no State forms are required to be submitted with this proposal.

Federal forms SF 424, SF 424A, and SF 424B are attached.

Table 1. Proposed Aquatic Habitat and Water Quality Monitoring Schedule for Butte Creek

Station	Temperature Recorder	Field	Chemical	Aquatic Macroinvertebrates	Coliform Bacteria
		DO, pH, EC, Turbidity, Alkalinity	Minerals, Nutrients, Minor Elements, TSS		
Sacramento Slough nr Knights Landing	c	m	m	September	m
Butte Cr at Butte Slough	c	m	m	September	m
Butte Cr below Western Canal	c	m	m	September	m
Western Canal at Butte Cr	c	m	m	September	m
Cherokee Canal at Butte Cr	c	m	m	September	m
Little Butte Cr ab Butte Cr	c	m	m	September	m
Butte Cr nr Chico	c	m	m	September	m
Butte Cr at Centerville	c	m	m	September	m
Butte Cr ab DeSabra PH	c	m	m	September	m

Station	Toxicity Tests		Sediment Particle size	Fish Tissue	Pesticides
	Water Column	Bed Sediment			
	Fathead minnow and Ceriodaphnia	Hyaella			
Sacramento Slough nr Knights Landing	m	biannually		September	fall & winter
Butte Cr at Butte Slough	m	biannually	September	September	fall & winter
Butte Cr below Western Canal			September		
Western Canal at Butte Cr			September		
Cherokee Canal at Butte Cr			September		
Little Butte Cr ab Butte Cr			September		
Butte Cr nr Chico	m	biannually	September	September	fall & winter
Butte Cr at Centerville			September		
Butte Cr ab DeSabra PH	m	biannually	September	September	fall & winter

c - continuously temperature recorder; serviced monthly

m - monthly sampling and analyses

Table 3a. Annual Cost distribution for Butte Creek Watershed Assessment (State Overhead rate)

Project Task	Direct Labor Hours	Direct Salary & Benefits	Service Contracts	Material & Acquisition	Miscellaneous	Overhead & Indirect Costs	Total Cost
Thermographs	108	3,290	0	1,550	0	3,855	8,694
Water Sampling (1)	432	13,159	0	1,000	500	15,418	30077*
Inorganic Analysis (2)	0	0	42,000	2,000	0	0	44,000
Aquatic Macroinvertebrates	216	6,579	0	1,000	0	7,709	15288*
Coliform bacteria (3)	108	3,290	0	1,000	0	3,855	8144*
Water Column Toxicity (4)	0		41,280	0	300	0	41,580
Bed Sediment Toxicity (5)	0		6,400	0	0	0	6,400
Sediment Analysis (6)	108	3,290	4,500	200	0	3,855	11,844
Fish Tissue Analysis (7)	80	2,437	10,000	100	0	2,855	15,392
Pesticide Analysis (8)	32	975	4,000	0	0	1,142	6,117
Project Management	192	6,733	0	0	0	7,888	14,621
Total Project Costs		39,752	108,180	6,850	800	46,575	202,157
Total CalFed Costs		16,724	108,180	3,850	300	19,594	148,648

1 - includes collection of field measurements and water samples for other analyses

2 - monthly analyses for minerals, nutrients, and minor elements at 9 sites

3 - total and fecal coliform analyses at 9 sites each month

4 - monthly assessment at 4 sites

5 - twice per year at 4 sites

6 - annual assessment at 9 sites

7 - annual assessment at 4 sites

8 - analysis at 4 sites during fall and mid-winter

* - asterisked items are being funded by matching funds from DWR and SRWP

Table 3b. Annual Cost distribution for Butte Creek Watershed Assessment (Federal Overhead Rate)

Project Task	Direct Labor Hours	Direct Salary & Benefits	Service Contracts	Material & Acquisition	Miscellaneous	Overhead & Indirect Costs	Total Cost
Thermographs	108	3,290	0	1,550	0	3,200	8,039
Water Sampling (1)	432	13,159	0	1,000	500	12,799	27,458*
Inorganic Analysis (2)	0	0	42,000	2,000	0	0	44,000
Aquatic Macroinvertebrates	216	6,579	0	1,000	0	6,399	13,979*
Coliform bacteria (3)	108	3,290	0	1,000	0	3,200	7,489*
Water Column Toxicity (4)	0		41,280	0	300	0	41,580
Bed Sediment Toxicity (5)	0		6,400	0	0	0	6,400
Sediment Analysis (6)	108	3,290	4,500	200	0	3,200	11,189
Fish Tissue Analysis (7)	80	2,437	10,000	100	0	2,370	14,907
Pesticide Analysis (8)	32	975	4,000	0	0	948	5,923
Project Management	192	6,733	0	0	0	6,548	13,281
Total Project Costs		39,752	108,180	6,850	800	38,663	194,245
Total CalFed Costs		16,724	108,180	3,850	300	16,265	145,320

1 - includes collection of field measurements and water samples for other analyses

2 - monthly analyses for minerals, nutrients, and minor elements at 9 sites

3 - total and fecal coliform analyses at 9 sites each month

4 - monthly assessment at 4 sites

5 - twice per year at 4 sites

6 - annual assessment at 9 sites

7 - annual assessment at 4 sites

8 - analysis at 4 sites during fall and mid-winter

* - asterisked items are being funded by matching funds from DWR and SRWP

Table 4a. Annual Cost distribution for Butte Creek Watershed Assessment for CalFed funds (State Overhead Rate)

Project Task	Quarterly Budget	Quarterly Budget	Quarterly Budget	Quarterly Budget
	Oct-Dec 99	Jan-Mar 00	Apr-Jun 00	Jul-Sep 00
Thermographs	2173.5	2173.5	2173.5	2173.5
Water Sampling (1)	0	0	0	0
Inorganic Analysis (2)	11000	11000	11000	11000
Aquatic Macroinvertebrates	0	0	0	0
Coliform bacteria (3)	0	0	0	0
Water Column Toxicity (4)	10395	10395	10395	10395
Bed Sediment Toxicity (5)	3200	0	3200	0
Sediment Analysis (6)	0	0	0	11844
Fish Tissue Analysis (7)	0	0	0	15392
Pesticide Analysis (8)	3058.5	3058.5	0	0
Project Management	3655.25	3655.25	3655.25	3655.25
Total Project Costs	33482.25	30282.25	30423.75	54459.75
Grand Total			One-Year Total	148648

Project Task	Quarterly Budget	Quarterly Budget	Quarterly Budget	Quarterly Budget
	Oct-Dec 00	Jan-Mar 01	Apr-Jun 01	Jul-Sep 01
Thermographs	2173.5	2173.5	2173.5	2173.5
Water Sampling (1)	0	0	0	0
Inorganic Analysis (2)	11000	11000	11000	11000
Aquatic Macroinvertebrates	0	0	0	0
Coliform bacteria (3)	0	0	0	0
Water Column Toxicity (4)	10395	10395	10395	10395
Bed Sediment Toxicity (5)	3200	0	3200	0
Sediment Analysis (6)	0	0	0	11844
Fish Tissue Analysis (7)	0	0	0	15392
Pesticide Analysis (8)	3058.5	3058.5	0	0
Project Management	3655.25	3655.25	3655.25	3655.25
Total Project Costs	33482.25	30282.25	30423.75	54459.75
Grand Total			Two-Year Total	297296

**Table 4b. Annual Cost distribution for Butte Creek Watershed Assessment for CalFed funds
(Federal Overhead Rate)**

Project Task	Quarterly Budget	Quarterly Budget	Quarterly Budget	Quarterly Budget
	Oct-Dec 99	Jan-Mar 00	Apr-Jun 00	Jul-Sep 00
Thermographs	2010	2010	2010	2010
Water Sampling (1)	0	0	0	0
Inorganic Analysis (2)	11000	11000	11000	11000
Aquatic Macroinvertebrates	0	0	0	0
Coliform bacteria (3)	0	0	0	0
Water Column Toxicity (4)	10395	10395	10395	10395
Bed Sediment Toxicity (5)	3200	0	3200	0
Sediment Analysis (6)	0	0	0	11189
Fish Tissue Analysis (7)	0	0	0	14908
Pesticide Analysis (8)	2962	2962	0	0
Project Management	3320	3320	3320	3320
Total Project Costs	32887	29687	29925	52822
Grand Total			One-Year Total	145320

Project Task	Quarterly Budget	Quarterly Budget	Quarterly Budget	Quarterly Budget
	Oct-Dec 00	Jan-Mar 01	Apr-Jun 01	Jul-Sep 01
Thermographs	2010	2010	2010	2010
Water Sampling (1)	0	0	0	0
Inorganic Analysis (2)	11000	11000	11000	11000
Aquatic Macroinvertebrates	0	0	0	0
Coliform bacteria (3)	0	0	0	0
Water Column Toxicity (4)	10395	10395	10395	10395
Bed Sediment Toxicity (5)	3200	0	3200	0
Sediment Analysis (6)	0	0	0	11189
Fish Tissue Analysis (7)	0	0	0	14908
Pesticide Analysis (8)	2962	2962	0	0
Project Management	3320	3320	3320	3320
Total Project Costs	32887	29687	29925	52822
Grand Total			Two-Year Total	290640

U.S. Department of the Interior

Certifications Regarding Debarment, Suspension and
Other Responsibility Matters, Drug-Free Workplace
Requirements and Lobbying

Persons signing this form should refer to the regulations referenced below for complete instructions:

Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions - The prospective primary participant further agrees by submitting this proposal that it will include the clause titled, "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions. See below for language to be used; use this form for certification and sign; or use Department of the Interior Form 1954 (DI-1954). (See Appendix A of Subpart D of 43 CFR Part 12.)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions - (See Appendix B of Subpart D of 43 CFR Part 12.)

Certification Regarding Drug-Free Workplace Requirements - Alternate I. (Grantees Other Than Individuals) and Alternate II. (Grantees Who are Individuals) - (See Appendix C of Subpart D of 43 CFR Part 12)

Signature on this form provides for compliance with certification requirements under 43 CFR Parts 12 and 18. The certifications shall be treated as a material representation of fact upon which reliance will be placed when the Department of the Interior determines to award the covered transaction, grant, cooperative agreement or loan.

PART A: Certification Regarding Debarment, Suspension, and Other Responsibility Matters - Primary Covered Transactions

CHECK IF THIS CERTIFICATION IS FOR A PRIMARY COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:
 - (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
 - (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and
 - (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
- (2) Where the prospective primary participant is unable to certify to any of the statements in this certification such prospective participant shall attach an explanation to this proposal.

PART B: Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

CHECK IF THIS CERTIFICATION IS FOR A LOWER TIER COVERED TRANSACTION AND IS APPLICABLE.

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

PART C: Certification Regarding Drug-Free Workplace Requirements

CHECK IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS NOT AN INDIVIDUAL.

Alternate I. (Grantees Other Than Individuals)

A. The grantee certifies that it will or continue to provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing an ongoing drug-free awareness program to inform employees about:
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);
- (d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will -
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- (e) Notifying the agency in writing, within ten calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification numbers(s) of each affected grant;
- (f) Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted -
 - (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a) (b), (c), (d), (e) and (f).

B. The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance (Street address, city, county, state, zip code)

Department of Water Resources
2440 Main Street
Red Bluff, CA 96080

Check if there are workplaces on file that are not identified here.

PART D: Certification Regarding Drug-Free Workplace Requirements

CHECK IF THIS CERTIFICATION IS FOR AN APPLICANT WHO IS AN INDIVIDUAL.

Alternate II. (Grantees Who Are Individuals)

- (a) The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance in conducting any activity with the grant;
- (b) If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to the grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant

PART E: Certification Regarding Lobbying
Certification for Contracts, Grants, Loans, and Cooperative Agreements

CHECK IF CERTIFICATION IS FOR THE AWARD OF ANY OF THE FOLLOWING AND THE AMOUNT EXCEEDS \$100,000: A FEDERAL GRANT OR COOPERATIVE AGREEMENT, SUBCONTRACT, OR SUBGRANT UNDER THE GRANT OR COOPERATIVE AGREEMENT.

CHECK IF CERTIFICATION IS FOR THE AWARD OF A FEDERAL LOAN EXCEEDING THE AMOUNT OF \$150,000, OR A SUBGRANT OR SUBCONTRACT EXCEEDING \$100,000, UNDER THE LOAN.

The undersigned certifies, to the best of his or her knowledge and belief, that:

- (1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
- (3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

As the authorized certifying official, I hereby certify that the above specified certifications are true.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL

Gerald Boles

TYPED NAME AND TITLE *Gerald Boles, Chief, Water Quality + Biology Sect.*

DATE

4/16/99

**APPLICATION FOR
FEDERAL ASSISTANCE**

OMB Approval No. 0348-0040

1. TYPE OF SUBMISSION: Application <input type="checkbox"/> Construction <input checked="" type="checkbox"/> Non-Construction Preapplication <input type="checkbox"/> Construction <input type="checkbox"/> Non-Construction	2. DATE SUBMITTED <i>4/16/99</i>	Applicant Identifier
	3. DATE RECEIVED BY STATE	State Application Identifier
	4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

5. APPLICANT INFORMATION

Legal Name: <i>California Department of Water Resources</i>	Organizational Unit: <i>Northern District</i>
Address (give city, county, State, and zip code): <i>2440 Main Street Red Bluff, CA 96080</i>	Name and telephone number of person to be contacted on matters involving this application (give area code): <i>Gerald Boles (530) 529-7326</i>

6. EMPLOYER IDENTIFICATION NUMBER (EIN): <i>52-1692634</i>	7. TYPE OF APPLICANT: (enter appropriate letter in box) <input checked="" type="checkbox"/> A A. State B. County C. Municipal D. Township E. Interstate F. Intermunicipal G. Special District H. Independent School Dist. I. State Controlled Institution of Higher Learning J. Private University K. Indian Tribe L. Individual M. Profit Organization N. Other (Specify) _____
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8. TYPE OF APPLICATION:
 New Continuation Revision
If Revision, enter appropriate letter(s) in box(es)
A. Increase Award B. Decrease Award C. Increase Duration
D. Decrease Duration Other (specify): _____

9. NAME OF FEDERAL AGENCY:
Cal Fed

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER:
 -
TITLE:
2. AREAS AFFECTED BY PROJECT (Cities, Counties, States, etc.):
Butte and Sutter counties

3. PROPOSED PROJECT
Start Date: *2/1/99* Ending Date: *Sept 2001*
14. CONGRESSIONAL DISTRICTS OF:
a. Applicant: *4th District*
b. Project: *Butte District*

5. ESTIMATED FUNDING:		16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?	
Federal	\$ <i>297,296</i> .00	a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON: DATE _____	
Applicant	\$ <i>97,018</i> .00	b. No. <input checked="" type="checkbox"/> PROGRAM IS NOT COVERED BY E. O. 12372 <input type="checkbox"/> OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW	
State	\$ _____ .00	17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT? <input type="checkbox"/> Yes If "Yes," attach an explanation. <input checked="" type="checkbox"/> No	
Local	\$ _____ .00		
Other	\$ <i>10,000</i> .00		
Program Income	\$ _____ .00		
TOTAL	\$ <i>404,314</i> .00		

TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.

Type Name of Authorized Representative <i>Gerald Boles</i>	b. Title <i>Chief, Water Quality Sect.</i>	c. Telephone Number <i>530-529-7326</i>
Signature of Authorized Representative <i>Gerald Boles</i>	e. Date Signed <i>4/16/99</i>	

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Authorized for Local Reproduction

Standard Form 424 (Rev. 7-97)
Prescribed by OMB Circular A-102

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET INFORMATION

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Cal Fed ERPP - Butte Cr.		\$	\$	\$ 297,296	\$ 107,018	\$ 404,314
2.						
3.						
4.						
5. Totals		\$	\$	\$ 297,296	\$ 107,018	\$ 404,314

SECTION B - BUDGET INFORMATION

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1) Cal Fed ERPP	(2)	(3)	(4)	
a. Personnel	\$ 79,504	\$	\$	\$	\$
b. Fringe Benefits					
c. Travel					
d. Equipment	1,600				
e. Supplies	13,700				
f. Contractual	216,360				
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a-6h)	311,164				
j. Indirect Charges	93,150				
k. TOTALS (sum of 6i and 6j)	\$ 404,314	\$	\$	\$	\$
7. Program Income	\$ 0	\$	\$	\$	\$

1-017084

SECTION D - NON-FEDERAL RESOURCES				
(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e) TOTALS
8. <i>CalFed ERPP- Butte Creek</i>	\$ <i>97,018</i>	\$	\$ <i>10,000</i>	\$ <i>107,018</i>
9.				
10.				
11.				
12. TOTAL (sum of lines 8 - 11)	\$ <i>97,018</i>	\$	\$ <i>10,000</i>	\$ <i>107,018</i>

SECTION D - FORECASTED AS NEEDED					
	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	\$ <i>148,648</i>	\$ <i>33,482²⁵</i>	\$ <i>30,282²⁵</i>	\$ <i>30,423⁷⁵</i>	\$ <i>54,459⁷⁵</i>
14. NonFederal	<i>53,509</i>	<i>13,377²⁵</i>	<i>13,377²⁵</i>	<i>13,377²⁵</i>	<i>13,377²⁵</i>
15. TOTAL (sum of lines 13 and 14)	<i>202,157</i>	<i>46,859⁵⁰</i>	<i>43,659⁵⁰</i>	<i>43,807</i>	<i>67,837</i>

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT				
(a) Grant Program	FUTURE FUNDING PERIODS (Years)			
	(b) First	(c) Second	(d) Third	(e) Fourth
16. <i>CalFed ERPP- Butte Creek</i>	\$ <i>33,482²⁵</i>	\$ <i>30,282²⁵</i>	\$ <i>30,423⁷⁵</i>	\$ <i>54,459⁷⁵</i>
17.				
18.				
19.				
20. TOTAL (sum of lines 16-19)	\$ <i>33,482²⁵</i>	\$ <i>30,282²⁵</i>	\$ <i>30,423⁷⁵</i>	\$ <i>54,459⁷⁵</i>

SECTION F - OTHER SUPPLEMENTAL DATA	
21. Direct Charges:	22. Indirect Charges: <i>fixed, applied to personnel cost</i>
23. Remarks: <i>indirect charges cover general administration, office space, vehicles, phone, etc.</i>	

1-017084

ASSURANCES - NON-CONSTRUCTION PROGRAMS

Public reporting burden for this collection of information is estimated to average 15 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0040), Washington, DC 20503.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THE OFFICE OF MANAGEMENT AND BUDGET. SEND IT TO THE ADDRESS PROVIDED BY THE SPONSORING AGENCY.

NOTE: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant, I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project cost) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States and, if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§4728-4763) relating to prescribed standards for merit systems for programs funded under one of the 19 statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. §794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee 3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and, (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.

- Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
 11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
 12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
 13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. §470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469a-1 et seq.).
 14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
 15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. §§2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
 16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§4801 et seq.) which prohibits the use of lead-based paint in construction or rehabilitation of residence structures.
 17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
 18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations, and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL <i>Gerald Bole</i>	TITLE <i>Chief, Water Quality & Biology Section</i>
APPLICANT ORGANIZATION <i>Department of Water Resources</i>	DATE SUBMITTED <i>4/16/89</i>

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