Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

Project Information

1. **Proposal Title:**

   Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

2. **Proposal applicants:**

   Tom Stokely, Trinity County Planning Dept
   Arnold Whitridge, Trinity County Planning Dept

3. **Corresponding Contact Person:**

   Tom Stokely
   Trinity County Planning Dept
   P.O. Box 156 Hayfork, CA 96041
   530 628-5949
   tstokely@trinityalps.net

4. **Project Keywords:**

   Anadromous salmonids
   Flow, Instream
   Habitat Restoration, Instream

5. **Type of project:**

   Implementation_Full

6. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   No

7. **Topic Area**:

   Natural Flow Regimes

8. **Type of applicant:**

   Local Agency

9. **Location - GIS coordinates:**

Latitude: 40.712

Longitude: -122.836

Datum:

Describe project location using information such as water bodies, river miles, road intersections, landmarks, and size in acres.

The four subject bridges cross the Trinity River approximately 5, 7, 9, and 13 river miles downstream from Lewiston Dam. Latitude & longitude given above are for Salt Flat Bridge, the closest to Lewiston Dam. The others, working downstream in order, are at Bucktail subdivision (lat 40.704 long -122.847); at Poker Bar (lat 40.680 long -122.882); and at the Treadwell property (lat 40.667 long -122.907).

10. **Location - Ecozone:**

    3.1 Keswick Dam to Red Bluff Diversion Dam, 3.2 Red Bluff Diversion Dam to Chico Landing, 3.3 Chico Landing to Colusa, 3.4 Colusa to Verona, 3.5 Verona to Sacramento, 4.1 Clear Creek, 1.1 North Delta, 1.4 Central and West Delta

11. **Location - County:**

    Trinity

12. **Location - City:**

    Does your project fall within a city jurisdiction?

    No

13. **Location - Tribal Lands:**

    Does your project fall on or adjacent to tribal lands?

    No

14. **Location - Congressional District:**

    2

15. **Location:**

    California State Senate District Number: 4

    California Assembly District Number: 2

16. **How many years of funding are you requesting?**

    2

17. **Requested Funds:**
    a) Are your overhead rates different depending on whether funds are state or federal?

No

If no, list single overhead rate and total requested funds:

Single Overhead Rate: 10

Total Requested Funds: $5,397,046

b) Do you have cost share partners already identified?

Yes

If yes, list partners and amount contributed by each:

CVPIA Restoration Fund $550,000

c) Do you have potential cost share partners?

Yes

If yes, list partners and amount contributed by each:

California Dept of Fish & Game, CCSSRP $1.9 million requested

d) Are you specifically seeking non-federal cost share funds through this solicitation?

No

If the total non-federal cost share funds requested above does not match the total state funds requested in 17a, please explain the difference:

18. **Is this proposal for next-phase funding of an ongoing project funded by CALFED?**

No

Have you previously received funding from CALFED for other projects not listed above?

No

19. **Is this proposal for next-phase funding of an ongoing project funded by CVPIA?**

No

Have you previously received funding from CVPIA for other projects not listed above?

No

20. **Is this proposal for next-phase funding of an ongoing project funded by an entity other than CALFED or CVPIA?**

    Yes

    If yes, identify project number(s), title(s) and funding source.

    P0010337 Trinity River Bridges Replacement Design DFG- CCSSRP

    Please list suggested reviewers for your proposal. (optional)

21. **Comments:**

Environmental Compliance Checklist

Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

1. **CEQA or NEPA Compliance**
   a) Will this project require compliance with CEQA?

      Yes
   b) Will this project require compliance with NEPA?

      Yes
   c) If neither CEQA or NEPA compliance is required, please explain why compliance is not required for the actions in this proposal.

      N/A

2. **If the project will require CEQA and/or NEPA compliance, identify the lead agency(ies).** *If not applicable, put "None".*

   CEQA Lead Agency: Trinity County
   NEPA Lead Agency (or co-lead:) US Bureau of Reclamation
   NEPA Co-Lead Agency (if applicable): None

3. **Please check which type of CEQA/NEPA documentation is anticipated.**

   CEQA
   -Categorical Exemption
   -Negative Declaration or Mitigated Negative Declaration
   XEIR
   -none

   NEPA
   -Categorical Exclusion
   XEnvironmental Assessment/FONSI
   -EIS
   -none

   If you anticipate relying on either the Categorical Exemption or Categorical Exclusion for this project, please specifically identify the exemption and/or exclusion that you believe covers this project.

   N/A

4. **CEQA/NEPA Process**
   a) Is the CEQA/NEPA process complete?

      No

      If the CEQA/NEPA process is not complete, please describe the dates for completing draft and/or final CEQA/NEPA documents.

Fall, 2002 (estimated)

b) If the CEQA/NEPA document has been completed, please list document name(s):

5. **Environmental Permitting and Approvals** (*If a permit is not required, leave both Required? and Obtained? check boxes blank.*)

LOCAL PERMITS AND APPROVALS

Conditional use permit	Required
Variance	
Subdivision Map Act	
Grading Permit	
General Plan Amendment	
Specific Plan Approval	
Rezone	
Williamson Act Contract Cancellation	
Other	

STATE PERMITS AND APPROVALS

Scientific Collecting Permit	
CESA Compliance: 2081	Required
CESA Compliance: NCCP	
1601/03	Required
CWA 401 certification	Required
Coastal Development Permit	
Reclamation Board Approval	
Notification of DPC or BCDC	
Other	

FEDERAL PERMITS AND APPROVALS

ESA Compliance Section 7 Consultation	Required
ESA Compliance Section 10 Permit	
Rivers and Harbors Act	
CWA 404	Required
Other	

PERMISSION TO ACCESS PROPERTY

Permission to access city, county or other local agency land. Agency Name: County of Trinity	Required, Obtained
Permission to access state land. Agency Name:	
Permission to access federal land. Agency Name:	
Permission to access private land. Landowner Name: Salt Flat Property Owners Assoc; Poker Bar Property Owners Assoc; Richard and Patricia Treadwell	Required, Obtained

6. **Comments.**

#5- landowner permission letters included in uploaded main proposal

Land Use Checklist

Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

1. **Does the project involve land acquisition, either in fee or through a conservation easement?**

   No

2. **Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?**

   Yes

3. **Do the actions in the proposal involve physical changes in the land use?**

   No

   If you answered no to #3, explain what type of actions are involved in the proposal (i.e., research only, planning only).

   The proposal is to replace existing bridges, no change in land use would result.

4. **Comments.**

Conflict of Interest Checklist

Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

Please list below the full names and organizations of all individuals in the following categories:

- Applicants listed in the proposal who wrote the proposal, will be performing the tasks listed in the proposal or who will benefit financially if the proposal is funded.
- Subcontractors listed in the proposal who will perform some tasks listed in the proposal and will benefit financially if the proposal is funded.
- Individuals not listed in the proposal who helped with proposal development, for example by reviewing drafts, or by providing critical suggestions or ideas contained within the proposal.

The information provided on this form will be used to select appropriate and unbiased reviewers for your proposal.

Applicant(s):

Tom Stokely, Trinity County Planning Dept
Arnold Whitridge, Trinity County Planning Dept

Subcontractor(s):

Are specific subcontractors identified in this proposal? No

Helped with proposal development:

Are there persons who helped with proposal development?

No

Comments:

None

Budget Summary

Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

Please provide a detailed budget for each year of requested funds, indicating on the form whether the indirect costs are based on the Federal overhead rate, State overhead rate, or are independent of fund source.

Independent of Fund Source

Year 1												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
1	develop & award subcontracts	290	7031	2464						9495.0	949	10444.00
2	administer construction subcontract(s)	140	2882	1073			2089000			2092955.0	209296	2302251.00
3	administer construction engineering subcontract(s)						355500.00			355500.0	35550	391050.00
		430	9913.00	3537.00	0.00	0.00	2444500.00	0.00	0.00	2457950.00	245795.00	2703745.00

Year 2												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
2	administer construction subcontract(s)	140	2882	1073			2089000			2092955.0	209296	2302251.00
3	administer construction engineering subcontract(s)						355500			355500.0	35550	391050.00
		140	2882.00	1073.00	0.00	0.00	2444500.00	0.00	0.00	2448455.00	244846.00	2693301.00

Year 3												
Task No.	**Task Description**	**Direct Labor Hours**	**Salary *(per year)***	**Benefits *(per year)***	**Travel**	**Supplies & Expendables**	**Services or Consultants**	**Equipment**	**Other Direct Costs**	**Total Direct Costs**	**Indirect Costs**	**Total Cost**
		0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Grand Total=5397046.00

Comments.

Budget Justification

Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

Direct Labor Hours. Provide estimated hours proposed for each individual.

engineer 60 hours assistant engineer 240 engineering technician 100 county counsel 20 senior planner 40 assistant planner 110

Salary. Provide estimated rate of compensation proposed for each individual.

engineer 33.28/hour assistant engineer 22.34 engineering technician 19.05 county counsel 41.50 senior planner 24.97 assistant planner 15.46

Benefits. Provide the overall benefit rate applicable to each category of employee proposed in the project.

engineer 41% assistant engineer 41% engineering technician 41% county counsel 0% senior planner 30% assistant planner 30%

Travel. Provide purpose and estimate costs for all non-local travel.

none requested

Supplies & Expendables. Indicate separately the amounts proposed for office, laboratory, computing, and field supplies.

none requested

Services or Consultants. Identify the specific tasks for which these services would be used. Estimate amount of time required and the hourly or daily rate.

Task 2- Construction subcontract(s) Task 3- Construction engineering subcontract(s) Figures are from Omni-Means, 2000

Equipment. Identify non-expendable personal property having a useful life of more than one (1) year and an acquisition cost of more than $5,000 per unit. If fabrication of equipment is proposed, list parts and materials required for each, and show costs separately from the other items.

none requested

Project Management. Describe the specific costs associated with insuring accomplishment of a specific project, such as inspection of work in progress, validation of costs, report preparation, giving presentatons, reponse to project specific questions and necessary costs directly associated with specific project oversight.

Construction engineering (includes inspection): 711,000 Other tasks: 8,701 (all labor costs in Task 2 are for project management)

Other Direct Costs. Provide any other direct costs not already covered.

none requested

Indirect Costs. Explain what is encompassed in the overhead rate (indirect costs). Overhead should include costs associated with general office requirements such as rent, phones, furniture, general office staff, etc., generally distributed by a predetermined percentage (or surcharge) of specific costs.

Service and oversight from other County departments (Auditor, County Administrative Office, Information Technology, Risk Management, General Services); rent, utilities, furniture, office supplies, clerical support.

Executive Summary

Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

This project would replace four bridges on the Trinity River in order to permit implementation of prescribed fishery restoration flows and removal of the Trinity River from Californias Clean Water Act 303(d) impaired waterbodies list. Because the maximum prescribed flows are more effective at accomplishing required restoration tasks than the lower magnitude flows currently available, the project could make an annual average of 254,000 acre-feet of otherwise unavailable water available for use in the Bay-Delta region. In addition, the project would allow managers to reduce dam safety releases to the Trinity River. Losses to CVP storage from such releases averaged 266,000 acre-feet per year in the period 1993-2000. Salmon and steelhead populations in the Trinity declined dramatically after 1964, largely as a result of flow reductions, habitat degradation, and hydrograph disruptions associated with diversion of Trinity water to the Sacramento River via the CVP. Restoration of Trinity fisheries is legally required, by repeated Congressional mandates, by Californias Public Trust Doctrine, by the sediment-impaired status of the Trinity River, and by federal trust responsibility to downstream Indian tribes. Intensive peer-reviewed scientific investigation has established that effective restoration measures should include a flow regime capable of restoring salmonid habitat and re-establishing functional river processes; the recommended regime specifies peak releases of 11,000 cfs in "extremely wet" years. Currently, maximum releases are constrained by the condition of the subject bridges to 6,000 cfs, but the prescribed peaks up to 11,000 cfs are much more effective at some critical tasks than releases of 6,000 cfs. The legally required sediment transport tasks to unimpair the Trinity River from harmful sedimentation can be accomplished with an average of 254,000 acre-feet per year less total water if the recommended peak rates are available. Thus the proposed project is at once a full-scale implementation measure for restoration of the CVP-damaged Trinity River, a pilot/demonstration project that will allow testing and refinement of scientific ability to design effective "natural" flow regimes and stimulate healthy geofluvial processes, and a protection measure for the CVPs water supply, which directly affects the Delta water supply for numerous beneficial uses This project would subcontract construction tasks and oversee four bridge replacements to completion. The Trinity River restoration effort for which this project is a prerequisite is a formal Adaptive Environmental Assessment and Management Program established by an Interior Secretarys Record of Decision dated December 19, 2000.

Proposal

Trinity County Planning Dept

Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

Tom Stokely, Trinity County Planning Dept
Arnold Whitridge, Trinity County Planning Dept

Trinity River Fishery Restoration and Protection of Delta Water Supply Through Replacement of Four Trinity River Bridges

Proposed by Trinity County Planning Department, Natural Resources Division

A. Project Description

1. **Problem :** The Trinity River is a significant source of the Delta's fresh water supply- since completion of the Central Valley Project's Trinity River Division in 1964, an average of 989,000 acre-feet per year of Trinity water (approximately 70% of the total flow at the diversion point) has been diverted to the Sacramento basin. This massive interbasin transfer is ongoing, but is likely to be decreased in the future. This proposal is for actions which could minimize the decrease, by making 254,000 acre-feet of water per year available for use in the Delta which might otherwise be required for restoration duty in the Trinity River, and by reducing the frequency and magnitude of dam-safety releases into the Trinity River.

   Salmonid populations in the Trinity system declined drastically after the CVP diversions began, and have not recovered. A 1980 EIS determined that chinook salmon populations in the Trinity had declined 80% and steelhead populations 60% since the commencement of CVP diversions, and that total salmonid habitat in the Trinity River Basin had declined by 80-90% (USFWS 1980). In more recent years, returns of naturally produced fall chinook, spring chinook, coho, and steelhead have averaged 20%, 40%, 14%, and 5% respectively of inriver spawner escapement goals established by the Trinity River Restoration Program (USFWS et al. 2000).

   Association of the fishery declines on the Trinity with the reduced flow volumes and disrupted hydrograph caused by CVP operations has been noted in numerous analyses since the 1970s, including the 1980 EIS on Trinity River Flows, which recognized streambed sedimentation and inadequate regulation of fish harvest but concluded that insufficient streamflow was the most critical limiting factor for fish populations (USFWS 1980). Congress found in the Trinity River Fish and Wildlife Management Act of 1984 (P.L. 98-541) that the CVP diversion "has substantially reduced the streamflow in the Trinity River Basin thereby contributing to damage to pools, spawning gravels, and rearing areas and to a drastic reduction in the anadromous fish populations." A multi-agency Mainstem Trinity River Watershed Analysis (BLM 1995) presented as its first management recommendation "Restore stream flows of sufficient magnitude and duration to initiate dynamic fluvial processes similar to those which existed prior to dam construction." (The other recommendations were "Remove a significant portion of the sediment berms which have accumulated in the stream channel as a result of flow regulation and water diversion…"; "Reduce the sediment supply originating from various tributary watersheds…"; and "Restore a fire regime which approximates the frequency and intensity of the natural regime.")

   The most recent, comprehensive, and authoritative study is the Trinity River Flow Evaluation (USFWS and Hoopa Valley Tribe, 1999), which was commissioned by Interior Secretary Cecil Andrus in 1981 to evaluate the effectiveness of increased flows and other measures (including intensive stream and watershed management programs) for rebuilding Trinity River salmon and steelhead stocks, and to make associated recommendations. This peer-reviewed report recommends re-institution of healthy alluvial river attributes through: 1) a modified

flow regime, 2) coarse sediment (>5/16") replenishment actions, 3) fine sediment (<5/16") reduction actions in tributary watersheds, and 4) mechanical rehabilitation of the river channel, all to be implemented, monitored, and adjusted as necessary in a formal Adaptive Environmental Assessment and Management (AEAM) program. The recommended flow regime consists of five different dam release schedules for five different water-year types, with crucial peak releases of 11,000 cubic-feet-per-second (cfs) for five days in "extremely wet" years and 8,500 cfs for five days in "wet" years.

Under the current flow regime, maximum controlled dam releases are 6,000 cfs. Preliminary studies indicated, and a more thorough study has confirmed (Omni-Means 2000) that releases of 8,500 cfs or more cannot be implemented without jeopardizing the four downstream bridges which are the subjects of this proposal. These bridges cross the river at Salt Flat, the Bucktail subdivision, Poker Bar, and the Treadwell property, roughly 5, 7, 9, and 13 river miles downstream from Lewiston Dam respectively.

The recommendations from the Flow Evaluation (with added watershed rehabilitation actions) form the Preferred Alternative presented in the Trinity River Mainstem Fishery Restoration EIS/EIR (USFWS et al 2000) and specified in the Record of Decision. The ROD indicates that Lewiston Dam releases will be limited to 6,000 cfs until such time as the subject bridges are removed from flood jeopardy.

The Trinity EIS/R and ROD note that effective restoration action on the Trinity is compelled by Congressional mandates and by federal trust responsibility to protect the fishery resources of dependent Indian tribes. The Congressional mandate was first articulated in the 1955 Trinity River Division Act (P.L. 86-386) which "authorized and directed" the Secretary of the Interior Department "to adopt appropriate measures to insure the preservation and propagation of fish and wildlife". In the 1984 Trinity River Basin Fish and Wildlife Management Act (P.L.98-541), Congress directed the Interior Secretary to "formulate and implement a fish and wildlife management program for the Trinity River Basin designed to restore fish and wildlife populations in such basin to the levels approximating those which existed immediately prior to construction…[of the CVP Trinity River Division]…and to maintain such levels.". In 1992, the Central Valley Project Improvement Act (P.L. 102-575) declared an intention to restore and enhance fish, wildlife, and associated habitats in the Trinity River Basin (Sec.3402(a), the CVPIA's first stated purpose, and specifically ordered that the recommendations of the Flow Evaluation be implemented, provided that the Interior Secretary and the Hoopa Valley Tribe are in concurrence (Section 3406(b)(23)). The Interior Secretary and the Hoopa Valley Tribe formally concurred by jointly executing the Record of Decision on December 19, 2000.

The federal trust responsibility to protect the fishery resources of affected Indian tribes would apparently be sufficient to compel effective fishery restoration action in the Trinity River even if Congress had given no direction. This trust responsibility has been thoroughly explored in numerous court cases; for a discussion, see Solicitor's Opinion M-36979 of October 4, 1993 (DOI 1993). In one recent judgment (KWUPA v. Patterson, 191 F.3d 1115 (9th Cir.1999)), the Court noted: "We have held that water rights for the Klamath Basin tribes 'carry a priority date of time immemorial.' Adair, 723 F.2d at 1414. Because Reclamation maintains control of the Dam, it has a responsibility to divert the water and resources needed to fulfill the Tribes' rights, rights that take precedence over any alleged rights of the Irrigators."

Another authority which could prove independently sufficient to compel an increase in Trinity River flows and flow rates is the federal Clean Water Act. The Trinity River has been listed

by the North Coast Regional Water Quality Control Board (NCRWQCB) as an "impaired waterbody" because of sediment. The NCRWQCB's Water Quality Control Plan states that "*Flow alteration (coupled with sediment from mining, road construction, and natural causes) is blamed for reduction of Trinity River steelhead runs downstream from Lewiston Dam and adverse changes in channel morphology and stream vegetation."* (NCRWQCB, p I-15). In response to the listing and a subsequent lawsuit settlement (Pacific Coast Federation of Fishermen's Associations et al v. Marcus, 1997), and in accordance with Section 303(d) of the Clean Water Act, the U.S. EPA has committed to establish a sediment Total Maximum Daily Load (TMDL) in 2001. The technical investigation conducted for EPA's Trinity TMDL indicates that releases of 6,000 cfs are relatively ineffective at mobilizing and transporting sediment in the Trinity. It further finds that even if all human activity in the Trinity River basin were to cease, the Trinity River would still be impaired by sediment without increased instream flows (Graham Matthews, pers. comm.)

Still other authorities which could individually or collectively compel flow increases are the Public Trust Doctrine; temperature standards in the Hoopa Valley Tribe's Water Quality Plan (EPA certification pending); California Fish and Game Code Section 5937 ("The owner of a dam shall allow sufficient water at all times to pass…to keep in good condition any fish that may be planted or exist below the dam…"; California's watershed protection and area-of-origin statutes (Water Code Sections 11460 and 10505); and Fish and Game Code Section 1505.

In short, Trinity River fishery restoration is legally required, and the best available (and now very substantial) scientific information indicates that fishery restoration requires a modified flow regime including maximum dam releases of 11,000 cfs in extremely wet years and 8,500 cfs in wet years. Releases of these magnitudes cannot currently be implemented because of the condition of four downstream bridges, even though flows of 11,000 cfs at Lewiston Dam are 12 times more efficient per acre-foot than flows of 6,000 cfs at mobilizing sediment. If restoration managers are constrained to existing maximum dam releases of 6,000 cfs, restoration efforts may be impaired, but they must still be pursued, and an average of 254,000 acre feet of water per year which would otherwise be available for diversion to the Bay-Delta may be needed to perform the required sediment management tasks (calculation presented in Attachment A).

2. Justification- Intensive scientific investigation since 1984 into the causes of and possible remedies for fishery declines in the Trinity River Basin has included studies (presented in USFWS and Hoopa Valley Tribe, 1999) of: (1) habitat preferences of salmon and steelhead and relative amounts of preferred habitats resulting from various dam releases; (2) habitat availability and channel processes at several mechanical channel-rehabilitation pilot projects; (3) water and sediment interactions and fluvial geomorphology; (4) water temperature needs of salmon and steelhead and dam releases necessary to meet those needs; and (5) a juvenile salmon production model. Prominent among the findings: habitat conditions (particularly rearing habitat) in the current Trinity River channel severely limit salmonid production potential, and: flow reductions and hydrograph disruptions since 1963 have profoundly impaired the processes identified as essential attributes of a healthy alluvial river.

These attributes are: (1) spatially complex channel morphology; (2) variable, "predictably unpredictable" flows and water quality; (3) frequent mobilization of channel-bed surfaces; (4) periodic scour and refilling of channel-bed surfaces; (5) approximately balanced fine and coarse sediment budgets; (6) periodic channel migration; (7) a functional floodplain; (8)

occasional channel "reset" during very large floods; (9) diverse, self-sustaining riparian plant communities; and (10) fluctuation of groundwater levels with changing streamflows.

The Trinity River Flow Evaluation Final Report (June 1999) recommends, and the Trinity River Mainstem Fishery Restoration EIS/EIR (October 2000) proposes, and the Record of Decision directs, reestablishment in the Trinity of these characteristic attributes of a healthy alluvial river by means of sediment-management actions (particularly, gravel replenishment), mechanical channel rehabilitation projects, and a modified flow regime that provides favorable spawning and rearing microhabitat (including suitable temperatures) and re-shapes and maintains the river channel in a healthy, dynamic condition.

More narrowly as to this proposal, the concept is that successful re-establishment of healthy conditions in the Trinity requires the full range of prescribed flows, including the critical peak dam releases of 11,000 cfs for 5 days in "extremely wet" years and 8,500 cfs for 5 days in "wet" years which are not possible to implement until the proposed bridge replacements are accomplished. Specific hypotheses are that, in the forty river miles below Lewiston Dam, where tributary inflow combined with dam releases has proved insufficient to maintain a healthy river channel, releases of 11,000 cfs and 8,500 cfs will stimulate periodic channel migration and occasional channel avulsion, which 6,000 cfs releases (the current maximum) cannot accomplish satisfactorily. Further, 11,000 cfs and 8,500 cfs releases are expected to cause bed scour greater than 2 D_{84} and 1 D_{84} respectively on exposed alluvial surfaces, discouraging encroachment by riparian vegetation, and to transport coarse sediment at a rate equal to tributary input in extremely wet and wet years, replenishing alluvial deposits. In conjunction with prescribed efforts to reduce fine sediment supply to the river, bed scour to a depth greater than 2 D_{84} is expected to improve spawning and rearing habitat quality; which in turn is predicted to improve egg emergence and fry-rearing success, which in turn is expected to increase salmonid production.

Finally among hypotheses most relevant here, the subject peak flows are expected to transport fine sediment at a rate greater than input in extremely wet and wet years, thus reducing storage of fine sediment in the river channel, which in turn will increase adult holding habitat and improve rearing, overwintering, and spawning habitat.

The proposed project is at once a pilot/demonstration project for the Bay-Delta system and a full-scale implementation of restoration action in the Trinity River watershed. For the Trinity, the fifteen-year long, peer reviewed Trinity River Flow Evaluation (USFWS and Hoopa Valley Tribe, 1999) has quantified instream flow rates necessary to improve salmonid habitats and re-establish critical river processes. Scientific uncertainty as to the necessity for the recommended peak flows is relatively small. Some uncertainty remains as to their duration, timing and adequacy, but adjustments are possible with the project design and expected within the prescribed Adaptive Environmental Assessment and Management program. (Upward adjustments in peak magnitude will be possible because replacement bridges must be designed to accommodate a 100-year flood, which is considerably larger than the subject peak flows.)

As a demonstration project for the larger Bay-Delta system, implementation and monitoring of recommended Trinity River restoration measures will permit evaluation of scientific ability to design natural flow regimes (particularly, mimicry of peak flows and the historic hydrograph, and inter-annual flow variability) and foster healthy channel dynamics. Also, because the project could make an average of 254,000 acre-feet per year of water available for use in the Bay-Delta system which might otherwise be required for restoration duty in the Trinity (plus

an additional volume saved by minimizing dam-safety releases- see "Expected Outcomes" below), it will serve both research and management needs regarding natural flow regimes, channel dynamics, X2, and flow-related stressors for at-risk species.

3. Approach and 4. Feasibility - Feasibility of the bridge replacements is documented in Omni-Means 2000, which provides hydraulic studies, preliminary environmental evaluations, preliminary designs, and construction cost estimates for each site. Please see above regarding appropriateness of the peak flows which would be facilitated and the necessity of the proposed bridge replacements. Final bridge designs are being developed by the United States Bureau of Reclamation, with design completion scheduled near the end of federal FY 2002. Funding has been arranged for permitting and environmental documentation through Reclamation and the California Department of Fish and Game's California Coastal Salmon Recovery Program. Under this project, applicant would develop, advertise, award, and administer construction subcontract(s) to replace four Trinity River bridges. Applicant is willing to have the Bureau of Reclamation receive the funding and assume all of those duties.

Some uncertainty exists regarding the length of time necessary to complete environmental studies and obtain required permits and approvals (Streambed alteration permit, CWA 401 certification, CWA 404 permit, ESA consultation, and Trinity County Floodplain Development Permit). These permits must be secured in conjunction with rather than in advance of final construction designs. Based on discussions with the U.S. Bureau of Reclamation, Omni-Means, and the Trinity County Department of Transportation, all of which are experienced in securing such permits, applicant believes construction will not be delayed by permitting problems.

The proposed bridge replacements have been requested by bridge owners- letters included below.

Several smaller flood hazard reduction actions (for one residence, several accessory structures, and several road segments) are not proposed here but must also be accomplished prior to implementation of prescribed peak flows. Total cost for these measures is estimated at $350,000 (USBR, February, 2000), and applicant believes the tasks will be funded from other sources and accomplished prior to completion of bridge replacements.

5. Performance measures- Specific performance measures for this project are development and award of bridge-replacement construction subcontract(s) and construction of four replacement bridges. Progress would be reported in quarterly and final project reports. For the effects of the project on Trinity River restoration, including effects of increased flows on geofluvial processes, sediment management, habitat quantity, quality, diversity, and utilization, and salmonid population trends, comprehensive monitoring will be conducted in a formal adaptive management program which is not part of this proposal (USFWS and Hoopa Valley Tribe 1999, Chapter 8 and Appendix N, referenced in the Trinity EIS/EIR and specified in the Record of Decision at p.15). Effects of the project in the Sacramento River basin will be detectable in ongoing monitoring for compliance with the upper Sacramento River temperature requirements contained in the Biological Opinion for winter-run chinook and SWRCB Water Right Orders 90-05 and 91-01, and ongoing X2 monitoring in the Delta.

6. Data Handling and Storage- Project information will be maintained by applicant and presented in quarterly and final project reports. Monitoring information will be collected and

maintained by monitoring agencies as part of planned or ongoing activities which are not part of this proposal.

7. Expected Products/Outcomes- Direct product would be four replacement bridges which allow implementation of recommended restoration flows in the Trinity River. Implementation of prescribed flows is in turn expected to improve ecological conditions at this source for Delta water, and make an average of 254,000 acre-feet per year of relatively clean and cool Trinity River water which may otherwise be required for restoration duty in the Trinity basin available for use in the Sacramento River, Delta, and Suisun Marsh/ San Francisco Bay ecozones.

In addition, the replacement bridges would improve management flexibility in the CVP's Trinity Division and reduce the losses of CVP water supply to dam-safety releases. At present, the CVP Operations Criteria and Protocol (OCAP) limits releases from Lewiston Dam to 6000 cubic-feet-per-second, to protect downstream improvements, including most notably the subject bridges, that could be damaged or destroyed by higher releases. The watershed above the dams can produce runoff at a much greater rate than 6000 cfs- on some occasions, including January 1997, reservoir inflow has exceeded 100,000 cfs. The controllable outlet capacity of the Trinity Dam is approximately 12,000 cfs, and the uncontrollable "morning glory" spillway will release an additional 20,000 cfs when the water surface elevation rises high enough.

Because inflow potential so far exceeds outlet capacity at the earthfill Trinity Dam, managers are required by adopted dam safety criteria and by common-sense safety considerations to regulate storage levels to prevent dam overtopping, using (at present) maximum 6000 cfs releases. In practice, this sometimes results in water being released relatively far in advance of potential large runoff events which do not materialize or else do not produce the expected runoff. Following heavy runoff in January 1997, for instance, sustained releases at 6000 cfs totaling 471,700 af in excess of mandated fishery flows were made to create flood storage space, but then the reservoir did not fill again that year due to lack of precipitation. (Such dam safety releases are typically lost to the CVP. The diversion tunnel to the Sacramento basin could in theory convey a fraction up to its maximum capacity of 3,600 cfs, but the Sacramento basin usually experiences flooding conditions at the same times that water must be released from Trinity Lake, and the diversion is not used at all. Released water flows down the natural course of the Trinity, beyond CVP control.) Trinity dam safety releases lost to the CVP during water years 1993-2000 (10/1/92 through 9/30/00) totaled 2,127,700 af, an average of 266,000 af/year!

If the operational outlet capacity of the Trinity dams can be increased from 6,000 cfs to 12,000 cfs by removal of the subject bridges from flood jeopardy, managers will enjoy increased flexibility, allowing them to delay reservoir drawdown prior to possible large runoff events and thus minimize releases which under current circumstances are prudent but which sometimes prove to be unnecessary.

Indirectly (not as part of this proposal) the project would provide valuable data and hypothesis-testing through ongoing and planned monitoring and adaptive management programs.

8. Work Schedule- Develop, advertise, award, and execute construction subcontract(s) and construction engineering (primarily inspection) subcontract(s) within 180 days from funding approval. Administer construction subcontract(s) and construction engineering

subcontract(s), and oversee four bridge replacements to completion, within 240 construction-season days from completion of subcontract(s) execution, probably divided over two summers.

The four bridge replacements could be funded and built individually, though the benefits discussed herein cannot occur before all four are accomplished. By bridge, estimated construction-phase costs (from Omni-Means, 2000) are:

	Construction	Inspection	Total
Salt Flat Bridge	1,017,000	153,000	1,170,000
Bucktail	1,720,000	258,000	1,978,000
Poker Bar	1,461,000	220,000	1,681,000
Treadwell	530,000	80,000	610,000
Total	4,728,000	711,000	5,439,000

Proposal budget is for these amounts, less $550,000 already committed from CVPIA funds, plus applicant's subcontracting and project management costs.

B. Applicability to CALFED ERP and Science Program Goals and Implementation Plan and CVPIA priorities

1. **ERP, Science Program, and CVPIA Priorities** In the Trinity River portion of the Bay-Delta watershed (the Trinity River is officially a Bay-Delta Watershed under Proposition 204), this project directly serves the first stated purpose of CVPIA ("Protect, restore, and enhance fish, wildlife, and associated habitats in the Central Valley and Trinity River Basins of California"). The information generated by the scientifically developed Trinity River flow regime, for which this project is a prerequisite, will demonstrate, test, and allow refinement of scientific understanding, thereby serving PSP priorities MR-6 ("Ensure recovery of at-risk species by developing conceptual understanding and models that cross multiple regions"), SR-3 ("Conduct adaptive management experiments in regard to natural and modified flow regimes…"), SR-4 ("Restore geomorphic processes in stream and riparian corridors"), and SR-7 ("Develop conceptual models to support restoration of river, stream, and riparian habitat").

   254,000 acre-feet per year of otherwise unavailable water (plus an undetermined savings of water from reduced Dam Safety releases) made available for use in the Sacramento River, Delta, and Suisun Marsh/S.F. Bay ecozones would improve Bay-Delta ecosystem management flexibility, directly address CVPIA Highly Significant Stressor #2 (Instream Flows and Temperatures), and assist implementation of CVPIA's goals to attempt anadromous fish doubling, provide water to wildlife refuges and other wildfowl habitat, and "Mitigate for other identified adverse fish and wildlife impacts of the CVP".

2. **Relationship to Other Ecosystem Restoration Projects-** The subject bridge replacements are prerequisite for implementation of the flow regime prescribed (based on 20 years of scientific investigation and experiment) for restoration of Trinity River anadromous fisheries. Implementation of the prescribed flow regime in this source of Bay-Delta fresh water will protect the Bay-Delta water supply, advance scientific understanding of river restoration requirements and techniques, and develop adaptive

management capability.

3. **Requests for next-phase funding**- n/a

4. **Previous Recipients of CALFED or CVPIA funding-** Applicant has not received CALFED or CVPIA funding. However, CVPIA has previously approved a contribution of $1.5 million to the Trinity River Restoration Program (administered by the U.S. Bureau of Reclamation) for the bridge replacement task. The Trinity Management Council which was formed pursuant to the December, 2000, Record of Decision has tentatively allocated $750,000 of this funding to bridge design, $200,000 to the associated NEPA/CEQA process, and $550,000 to the construction tasks that are the subject of this proposal. CALFED has declined to date to fund Trinity River restoration efforts in spite of the historic (989,000 acre-feet per year, average) and ongoing contribution of Trinity River water to the Bay-Delta ecosystem.

5. **System-wide ecosystem benefits**- As discussed above, the subject bridge replacements will allow more efficient use of flows for legally-required restoration efforts in the CVP-damaged Trinity River, and this in turn might make up to 254,000 acre-feet per year of otherwise unavailable Trinity River water available for diversion to the Sacramento River basin. As also discussed, increasing the rate at which water can safely be released will contribute to reduced losses from dam safety releases, making more water available for beneficial use in the Sacramento River basin and the Bay-Delta.

6. **Additional information re Land Acquisition**- n/a

C. Qualifications- This project will be administered by Tom Stokely, Senior Planner and manager of the Natural Resources Division of the Trinity County Planning Department. Construction will be performed by subcontractors selected by formal County contracting procedures.

Mr. Stokely graduated from UC Santa Cruz in 1979 with honors in Biology and Environmental Studies. He has worked as a Trinity County Planner in various capacities since 1985, focusing exclusively on Trinity River issues since 1992. He has administered numerous federal and state grants totaling more than $4 million, and since 1989 has managed the Trinity River Basin Fish and Wildlife Restoration Program Grant Program, with funds provided by the Trinity River Task Force through the USDI Bureau of Reclamation. He was staff assistant to the Chairman of the Trinity River Task Force's Technical Advisory Committee from 1988-2000. He was Trinity County's lead agency representative on the "*Trinity River Mainstem Fishery Restoration EIS/EIR."* Mr. Stokely is the vice-chairman of the California Advisory Committee on Salmon and Steelhead Trout and a member of the Salmon and Steelhead Restoration Account (SB 271) Citizens Advisory Committee, which evaluates fishery restoration grant proposals for the Department of Fish and Game.

The Natural Resources Division operates with the cooperation and/or oversight of other County departments experienced in public works contracting (including contracting for bridge replacements), auditing, and accounting.

D. Cost

1. Budget- displayed in web forms

2. Cost Sharing- Of $1.5 million already committed by CVPIA to the bridge replacement effort, $550,000 has tentatively been allocated to the subject construction tasks. (The balance is tentatively budgeted for design and NEPA/CEQA work. Final FY 2002 budget decisions will be made by the Trinity Management Council and the Department of the Interior subsequent to the submittal deadline for this proposal but prior to scheduled award decisions.) No other funds have been committed to bridge replacement construction, but applicant has applied to the California Department of Fish and Game's California Coastal Salmon and Steelhead Recovery Program (CCSSRP) for $1.93 million in construction funding- decision pending.

Bridge design, permitting, and NEPA/CEQA work have been funded to date by a previous $350,000 grant to applicant from CCSSRP and a $350,000 Congressional appropriation to the Trinity River Restoration Program through the budget of the Bureau of Reclamation. Preceding studies and assessments were funded by Congressional appropriations.

E. Local Involvement The proposed project has been requested by owners/users of the subject bridges, which serve a total of 168 parcels. Funding for preceding studies has been provided by the 21-member Trinity River Task Force (members: federal and state agencies, two counties, three tribes, and affected industries and user groups, through appropriations to the Bureau of Reclamation. The widely publicized Trinity River Mainstem Fishery Restoration EIS/EIR identifies the project as a prerequisite for the flow regime it proposes.

F. Compliance- Applicant will comply with state and federal standard terms.

G. Literature cited

BLM (U.S. Bureau of Land Management) 1995. Mainstem Trinity River Watershed Analysis. BLM Redding Resource Area, Redding, CA

Graham Matthews, Personal Communication. TMDL Presentation at the Douglas City Fire Hall, 8/22/01.

NCRWQCB (North Coast Regional Water Quality Control Board), 1989. Water Quality Control Plan for the North Coast Region, Santa Rosa, CA.

Omni-Means, Ltd 2000. Structure Planning Study for Treadwell, Poker Bar, Salt Flat, and Bucktail Bridges For County of Trinity Planning Department & Trinity River Restoration Program of the United States Department of the Interior. Redding, CA

USBR (U.S. Bureau of Reclamation) 2000. Draft Mainstem Trinity River Habitat and Floodplain Modifications Information Report. Bureau of Reclamation, Office of Regional Engineer, Sacramento, CA

U.S. Department of the Interior December, 2000 Record of Decision from Trinity River Mainstem Fishery Restoration EIS/R

USFWS (U.S. Fish and Wildlife Service) 1980. Environmental Impact Statement on the Management of River Flows to Mitigate the Loss of the Anadromous Fishery of the Trinity River, California. U.S. Fish and Wildlife Service, Division of Ecological Services. Sacramento, CA

USFWS (U.S. Fish and Wildlife Service) and Hoopa Valley Tribe 1999. Trinity River Flow Evaluation Final Report. USFWS Arcata Fish and Wildlife Office. Arcata, CA

USFWS (U.S. Fish and Wildlife Service), et al. (U.S. Bureau of Reclamation, Hoopa Valley Tribe, and Trinity County), October, 1999. Trinity River Mainstem Fishery Restoration EIS/R. Available from USFWS Arcata Fish and Wildlife Office, Arcata, CA

Attachment A

Trinity River Sediment Transport Comparisons[1]

Releasing 11,000cfs for 5 days (as recommended by the Preferred Flow Alternative in extremely wet water years) is **12 times** more efficient than releasing 6,000 cfs. Releasing 8,500cfs for 5 days (as recommended for wet water years) is **5 times** more efficient than 6,000cfs.

Extremely Wet Years (12% Recurrence)

Flow Regime	Amount of Bedload Moved	Necessary Duration
11,000 cfs[2]	53,000 tons[3]	5 days
6,000 cfs[4]	53,000 tons	118 days

- In five days, 11,000 cfs will move the same amount of bedload that 6,000 cfs will take 118 days to move.
- 11,000 cfs for 5 days uses only 108,900 af, whereas 6,000 cfs for 118 days uses 1,401,800 af.
- Releasing 11,000 cfs in extremely wet years to scour the river actually **saves** 1,292,900 af of water! (1,401,800 af – 108,900 af = 1,292,900 af)

Wet Years (28% Recurrence)

Flow Regime	Amount of Bedload Moved	Necessary Duration
8,500 cfs[5]	16,500 tons	5 days
6,000 cfs	16,500 tons	37 days

- In five days, 8,500 cfs will move the same amount of bedload that 6,000 cfs will take 37 days to move.
- 8,500 cfs for 5 days uses only 84,100 af, whereas 6,000 cfs for 37 days uses 439,500 af.
- Releasing 8,500 cfs in wet years to scour the river actually **saves** 355,400 af of water!

Average Annual Savings = (1,292,900 x .12) + (355,400 x .28) **= 254,600 af/year**

[1] All data is taken from the Trinity River Flow Evaluation Final Report (TRFE), page 163, Table 5.7.
[2] 11,000 cfs is the recommended peak release for extremely wet years in the TRFE.
[3] Mainstem bedload transport is in tons. All material is > 5/16''.
[4] 6,000 cfs is the current limit on Lewiston Dam releases to the Trinity River.
[5] 8,500 cfs is the recommended peak release for wet years in the TRFE

Francis W. Kohlberg, President
Salt Flat Property Owners Association
P. O. Box 638
Lewiston, CA 96052
(530) 778-3234

Arnold Whitridge,
Trinity County Planning Dept. Project Specialist
P. O. Box 128
Douglas City, CA 96024

Dear Mr. Whitridge,

The Salt Flat Property Owners Association requests that the Salt Flat bridge be elevated or otherwise modified as necessary to protect against inundation or damage resulting from higher Trinity River flows prescribed by the upcoming Secretary of the Interior Flow Decision. The Salt Flat Property Owners Association grants the County and its subcontractors reasonable access to survey the existing bridge and its approaches, and, provided that we are consulted about proposed modifications and that access to our parcels is not unreasonably obstructed during construction, to implement necessary modifications. Please keep us informed of any developments.

Sincerely,

Francis W. Kohlberg

Dated: 11/16/97

TRINITY COUNTY

DEPARTMENT OF TRANSPORTATION
303 TRINITY LAKES BLVD.
P.O. DRAWER 2490
WEAVERVILLE, CA 96093-2490
(530) 623-1365
FAX (530) 623-5312

April 27, 2000

Tom Stokely, Senior Planner
Trinity County Planning Department
P.O. Box 156
Hayfork, CA. 96041-0156

RE: Replacement of Trinity River Bridge No. 207 (AKA Bucktail Bridge)

Dear Mr. Stokely,

I am familiar with the proposal to replace Bucktail bridge to accommodate increases in river flows.

Trinity County is the owner of said bridge and the Trinity County Department of Transportation is the agency responsible for operations, maintenance and repair. I hereby declare the Department of Transportation's willing participation in the action to replace said bridge.

If you have any questions, please feel free to contact me at the above number.

Sincerely,

CARL A. BONOMINI
DIRECTOR

Janet Barabe, President
Poker Bar Homeowners Association
P. O. Box 237
Douglas City, CA 96024

Arnold Whitridge,
Trinity County Planning Dept. Project Specialist
P. O. Box 128
Douglas City, CA 96024

Dear Mr. Whitridge,

The Poker Bar Homeowners Association requests that the Poker Bar bridge and road system be elevated or otherwise modified as necessary to protect against inundation or damage resulting from higher Trinity River flows prescribed by the upcoming Secretary of the Interior Flow Decision. The Poker Bar Homeowners Association grants the County and its subcontractors reasonable access to survey the existing bridge and road system, and, provided that we are consulted about proposed modifications and that access to our parcels is not unreasonably obstructed during construction, to implement necessary modifications. Please keep us informed of any developments.

Sincerely,

Janet A Barabe

Dated: 11/21/97

Richard and Patricia Treadwell
P. O. Box 339
Douglas City, CA 96024

Arnold Whitridge,
Trinity County Planning Dept. Project Specialist
P. O. Box 128
Douglas City, CA 96024

Mr. Whitridge:

I do not favor higher flows in the Trinity River. However, if the upcoming Flow Decision prescribes higher flows, I expect the bridge to be elevated to protect it from inundation or damage. I grant the County and its subcontractors reasonable access to my parcels 24-32-13 and 24-32-09 to survey the existing bridge and (provided that proposed improvements are acceptable to me and that access to my parcels is not unreasonably obstructed during construction) to implement necessary modifications. Please keep me informed of any developments.

Sincerely,

Richard Treadwell

Dated: 11-25-97