

FY2005 PROJECT DESCRIPTIONS

PROGRAM ADMINISTRATION

AEAM Team – Weaverville Office

Personnel	Salary and benefits of TRRP staff (Weaverville office).
Office Operations	Office lease, utilities, supplies, equipment, vehicles.
RIC/OIC	Reclamation indirect costs: NCAO and MP.
Public Information/Outreach	Publications, quarterly newsletter articles, graphics and audio-visual support, displays, and other information and public contact activities.

Trinity Management Council

Bureau of Reclamation Fish & Wildlife Service Forest Service NOAA Fisheries Hoopa Valley Tribe Yurok Tribe CA Department of Fish & Game CA Department of Water Resources Trinity County	Travel and per diem costs for 8 principle TMC members to attend four 1-2 day meetings per year for purposes of directing TRRP activities. Administrative and technical support costs for TMC alternates and technical representatives to participate in meetings, review documents, coordinate with TRRP staff. Support for vehicles, computers, equipment, and other items needed to conduct TRRP related activities. Costs will vary by TMC member depending on specific types of assistance provided. Does not include technical and support costs for specific projects.
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Trinity Adaptive Management Working Group

Administration and Support	Travel and per diem costs for 19 TAMWG members to attend four 1-2 day meetings per year for purposes of reviewing and advising on TRRP activities and four 1-2 day subcommittee meetings per member per year; also includes administrative support costs of designated federal official (FWS).
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Independent Review Committees

Science Advisory Board	Travel and per diem costs plus review time at current salary rates for 5 independent scientists to assist with TRRP science program activities, including annual assessments.
RFP Review Panel	Travel and per diem costs plus review time

	at current salary rates for independent technical reviewers to evaluate proposals for TRRP activities.
Science Workshops	Planning and implementation costs, including travel/per diem for selected professional experts, for three science workshops (fisheries, sediment, riparian).

Information Management

Integrated Information Management System	As part of the initial Science Framework contract (FY04), design and develop prototype relational database consistent with conceptual models and monitoring plans. In out-years, acquire, format, and populate database with relevant and necessary information for adaptive management purposes.
Evaluation of Techniques for Data Acquisition	As part of the initial Science Framework contract (FY04), work with TRRP staff and partners to define data holdings and existing systems, user needs, and functional requirements.
Scientific Framework/Research Strategy/Study Design	As part of the initial Science Framework contract (FY04), review past models and hypotheses, review/revise conceptual models developed by TRRP staff and partners, facilitate workshops to develop adaptive management protocol, finalize monitoring and modeling plans. For option year (FY05), initiate implementation of the relational database including loading of highest priority data, system documentation, test and refine database, and finalize database templates for use by partner agencies.

Supplemental EIS

Contracts/Amendments	Amendments to the CH2MHill contract for completion of the draft and final SEIS/EIR required by US District Court.
Co-Lead Participation	Personnel costs of the four co-leads (Reclamation, Fish & Wildlife Service, Hoopa Valley Tribe, and Trinity County) for purposes of contract administration, coordination, document preparation and review. Also involves some travel costs for meetings.

REHABILITATION AND RESTORATION

Bridges and Structures

Environmental Compliance and Permits

Poker Bar Roads NEPA/CEQA	Internal NEPA/CEQA preparation with supplemental funding provided for permit fees, consultation with private contractors, and support to CEQA leads.
Floodplain Structures NEPA/CEQA	Internal NEPA/CEQA preparation with supplemental funding provided for permit fees, consultation with private contractors, and support to CEQA leads.

Implementation

Construction Salt Flat/Biggers Bridges	Only funding required in FY05 will be for contract modifications and construction management.
Construction Poker Bar/Bucktail Bridges	Includes \$800k carryover from contract award amount that could not be obligated with FY04 funds.
Poker Bar Road	Raising approximately 1.1 miles of roads within the subdivision which are inundated at high flows.
Floodplain Structures Relocation	Miscellaneous planning/design/implementation
Hydrology Study (40 miles)	Develop flood frequency curves for all major tributaries and the upper 40 miles of the mainstem Trinity River. Needed for rehab site design and hydraulic modeling (see DWR HEC-RAS model)
DWR HEC – RAS Model (40 miles)	Develop a 1-dimensional hydraulic model for the upper 40 miles to determine infrastructure impacts, and facilitate rehab site design and FEMA compliance.

Channel Restoration

Environmental Compliance and Permits

Channel Rehab NEPA/CEQA	Includes contract work for sites below Canyon Creek and for remaining 19 sites below Lewiston Dam.
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Implementation

Hocker Flat Site Rehab Contract	Full contract plus non-contract costs of reconstructing approximately 1 mile of river below Canyon Creek.
Canyon Creek Complex Designs/Construction	Includes full contract plus non-contract costs of constructing 4 rehab sites below Canyon Creek.
Revegetation of Implementation Sites	Implementation of re-vegetation design for

	bridge sites and proposed rehabilitation sites. Includes clearing, harvesting, plant materials, planting, and irrigation.
Sites Below Lewiston Dam Designs/Construction	Includes design costs above existing contracts.
Invasive Plant Species Study	Provide comprehensive species-specific recommendations for applied control and management of exotic/invasive species that the TRRP can use as part of the short- and long-term management of constructed bridge and mechanical rehabilitation sites along the mainstem . . .
Mainstem Mercury Impact Study	Baseline distribution/speciation of mercury in water, sediment, and biota in various habitats, hydrologic regimes, and trophic levels will be determined, and where methyl-Hg is anomalous, parameters that contribute to Hg methylation and biological transfer will be identified and integrated with other ongoing watershed studies to formulate a model for Hg methylation, biotic uptake and impact . . .

Sediment Management

Environmental Compliance and Permits

Coarse Sediment Introductions NEPA/CEQA	NEPA/CEQA will be performed and implemented with the rehab sites below Lewiston Dam in accordance with the gravel management plan.
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Implementation

GVC Watershed Monitoring, Hamilton Ponds O & M	Data collected under this agreement will facilitate evaluation of operation, implementation, and maintenance aspects of Grass Valley Creek and Hamilton Ponds; and facilitate implementation, operation, and maintenance of O&M projects.
Hamilton Ponds Efficiency Study	Determine required level of protection and recommend upgrade designs and maintenance plans to ensure adequate sediment trap efficiency and total storage.
Hamilton Ponds Upgrade	Implement any upgrades recommended in the Hamilton Ponds Efficiency Study.
Pilot LIDAR Mapping	Pilot application of LIDAR bathymetric mapping technology to determine usefulness for future mapping.
Bathymetric/Topographic Mapping (fall) of Upper 40 Miles	Develop combined topographic and bathymetric map of the upper 40 miles. Map will be used to track geomorphic, riparian, and habitat change, and facilitate hydraulic

	and sediment modeling.
Coarse Sediment Introductions	Implement short and long term coarse sediment augmentation projects as described in the ROD and preliminary Coarse Sediment Management Plan.

Watershed Planning and Implementation

USGS: Watershed Strategy and technical Support	Develop comprehensive strategy and guidelines to develop sediment source control plans to prioritize watershed restoration projects for implementation. Strategy will be consistent with the Northwest Forest Plan and Sediment TMDL and be coordinated with TRRP watershed partners and stakeholders.
Watershed Sediment Source Analysis	Refine the 2001 "Sediment source analysis for the Mainstem Trinity River, Trinity County, CA" to break out total sediment loads based on size class. Needed because TRRP objectives vary based on size class not total load. This document will be developed following the guidelines laid out in the watershed strategy and provide the baseline information for development of the watershed sediment source control plans.
Rush Creek Watershed Sediment Source Control Plan	Develop sediment source control plan to recommend watershed restoration projects for implementation in rush creek watershed using the guidelines in the watershed strategy and information from the sediment source analysis.
Other Watershed Sediment Source Control Plans	Same as the rush creek sediment source control plan but applied to the other priority watersheds in the upper 40 miles.
Watershed Restoration Project Implementation	Provide seed money for partner agencies and TAMWG watershed subcommittee to obtain grants / matching funds to implement projects recommended in the sediment source control plans.
RCD Watershed Coordinator	Coordinate activities of all parties involved from strategy development through project implementation.
Trinity County Watershed Grants	Same as RCD watershed restoration project implementation but administered through Trinity County.
GVC Tree Planting (RCD Placeholder)	Fall 2004 and Spring 2005 will be the last year to complete the 10 year revegetation plan for Grass Valley Creek watershed. BLM has funded the growing contract

	<p>(\$50,000) at the Tsemeta (Hoopa) nursery. Seedlings must be planted while they are less than 2 year old seedlings. Fish & Game did not approve funding the last year for upslope planting. RCD has about \$40,000 left in the existing DFG agreement that will start the Fall planting. This item is a placeholder requested by RCD to fund the last of the planting, while they keep trying to find other sources [e.g., Global Releaf (due July 1st)] so that it could be reduced or dropped from the TRRP budget.</p>
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MONITORING AND ANALYSIS

Stream Gaging

Stream Flow Gaging (mainstem, tribs)	USGS to operate and maintain 16 streamgages in the Trinity River basin. Includes USGS publication of real-time and daily records.
Stream Gage Upgrades	Upgrade 12 streamgages to USGS standards.
Cableway Construction	Install cableways at various gages to facilitate high flow measurements and sediment sampling.
Water Temperature Modeling	Develop and maintain a temperature model for the Trinity River capable of seamlessly integrating with existing Klamath River water temperature model.

Sediment Management

Sediment Monitoring	Collect and analyze sediment samples to quantify sediment transport for winter storms and dam releases. All activities to meet applicable USGS standards.
USGS Sediment Monitoring QA	USGS provides independent oversight of sediment monitoring and analysis to ensure USGS quality data is obtained. USGS to publish and archive all sediment data meeting USGS standards.
Sediment Budget Calculations	Use sediment transport data to develop sediment budgets for the size classes of interest to understand system changes in response to natural events and restoration actions.

GSTARS Sediment Transport Model	Develop and maintain a sediment transport model used to inform restoration design and annual flow scheduling.
Finalize Coarse Sediment Management Plan	Update and finalize the 2003 "preliminary coarse sediment management plan" incorporating findings and recommendations (including additional analysis) from the sediment budget plan, coarse sediment augmentation review, and 2004 Trinity River sediment symposium.
Comprehensive Sediment Management Plan	Incorporate coarse sediment management, fine sediment management, and watershed source control plans into 1 comprehensive document.
Geomorphic Planform/EHM Mapping (upper 40 miles)	Map pertinent geomorphic features in the upper 40 miles to track geomorphic change and inform sediment, riparian, and biologic models and analysis. Quantification of geomorphic anadromous salmonid habitat is a vital component of the Trinity River Adaptive Management Program. SALMOD predictions of annual smolt production, evaluation of channel reconstruction projects, and prescription of instream flows either directly, or indirectly, rely on habitat quantification for the mainstem. Expert habitat mapping (EHM) accounts for spatial and hydraulic complexity by mapping habitat at known streamflows onto a scaled channel basemap generated by low altitude aerial photography. EHM is an alternative to more traditional methods of quantifying habitat. Long segments of the mainstem can be sampled directly, at low cost, and within a short timeframe.
Substrate Mapping	Characterize surface and subsurface sediment size distributions to inform sediment, riparian, and biologic models and analysis.

Smolt Health Studies

Smolt Response to Thermal Conditions	Laboratory temperature tolerance investigations for Trinity River juvenile salmonids. Help determine actual temperature requirement for Trinity River smolts.
Develop model input for SALMOD (previously	In river investigations of fry and juvenile

Timing of Fry Emergence, Smolt Production)	salmonid habitat use to update and improve SALMOD.
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Adult Health Studies

Thermal History/Tolerance; Egg Viability	Investigations of reproductive success of spring Chinook salmon at various thermal regimes. Will provide information to indicate how flow management actions that may influence in-river temperatures could affect egg viability and reproductive potential.
Quick Response, Mortality Monitoring (FWS Pathology lab)	Intermittent monitoring by multiple organizations to help determine if adult mortality even is imminent or occurring in river.

Migration Studies

Emigration Estimates (rotary trapping)	Develop population and migration statistics for juvenile salmonids. Will help determine if rehab projects improve survival of juveniles and provides information on smolts per adult produced in river.
Green Sturgeon Monitoring (life history profile)	Life history investigations of green sturgeon in lower Trinity. Baseline information for a species that we have little knowledge of in this basin, and which might be greatly affected by flow management actions.
Adult Chinook Salmon Migration	Radio tracking of adult Chinook salmon in the lower river to determine migration rates, movement patterns and holding areas.
Review of Outmigration Methodologies and Needs	Determine best methods to determine statistics for outmigrating juvenile salmonids. Determine information necessary for juvenile outmigrants.

Hatchery Practices

Fish Marking at Hatchery, Chinook-CWT, Coho, Steelhead	Population, in-river distribution and return statistics for hatchery produced salmon.
Improved Methods at TRH (previously Fingerling vs. Yearng Releases (otolith marking)	Ongoing investigations to develop improvements in TRH practices.
Radio Tracking, Juveniles	Determine movement and residualization rates for TRH steelhead and coho salmon. Information useful for determining effects of hatchery release timing for these species, and how this may impact naturally produced salmon in-river.

Run Size/Angler Harvest

Tribal Harvest Survey, Lower Klamath	Estimate number of adults harvested by tribal members. Added to mega table statistics for total in-river returns. Aids in
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	validation of run size estimates.
Angler Harvest	Sport harvest rate in lower river. Numbers added to mega table statistics for total in-river returns. Aids in validation of run size estimates.
Run Size/Harvest Estimates, incl. Reward Tags (Weirs)	Weir recovery of returning adults for population statistics in river above Willow Creek. Data for mega table; aids in validation of run size estimates.
Carcass Surveys	In-river spawner distributions (potentially affected by flow management actions). Determine hatchery vs. natural produced fish spawning in-river. Determine pre-spawning mortality rate in upper river.
Fall and Spring Run Scale Analysis, Age Composition	Age structure determination of returning adult salmon. Mega table data input.
Chinook Tag Decoding at Hatchery	Hatchery return success, used in combination with weir recoveries and other recovery components for population structure, hatchery vs. natural production. Data for mega-table.
Review of Adult Migration/Run Size Estimate Components	Review to determine necessary information, and best methods to efficiently collect data for all components of this category.

Riparian Vegetation

Vegetation and Geomorphic Response Mapping	Produce a high quality, high definition, map of the riparian and adjacent upland stands growing along the Trinity River mainstem between Lewiston Dam and the North Fork of the Trinity River with accompanying metadata . . .
Riparian Recruitment Model	Not provided by Hoopa
Bank Rehab Site Data Evaluation/Report (old sites)	Not provided by Hoopa
Aerial Photography (summer)	Conduct aerial photography of the upper 40 miles to facilitate documentation of river changes, and riparian and habitat mapping.
Satellite Imagery (pilot)	Purchase photographs and assemble materials: current 4 m pixel Ikonos scenes for the project area, stand maps from earlier tasks, topographic coverages (1/3" DEM), and 1-foot contour layer. Validate results of riparian habitat classifications from the Ikonos image using a reserve set of stands from the map . . .

Wildlife Studies

Riparian/Aquatic Herptofauna Monitoring	Conduct pre-construction monitoring of herpetofauna at a third set of proposed restoration sites; and monitor spring and fall hydrographs to measure response of herps and overall effect of the managed annual flow regime . . .
Riparian/Aquatic Avian Species Monitoring	Continue developing predictive models of response of birds to implementation of TRRP. Estimate annual variation in bird abundance ; and estimate pre-construction breeding bird abundance at 3 bank rehabilitation sites and 2 reference sites . .
Bats Species at Rehabilitation Sites (NEPA-CEQA Compliance)	Provide TRRP information on bat community composition of mainstem, presence of at-risk species, and evaluate specific effects of riparian habitat restoration designs/manipulations on riparian and adjacent bat communities to assess success of design . . .
Benthic Macroarthropods Availability (Salmonid Habitat Quality)	Measure habitat/water quality in conjunction with macroinvertebrate samples to quantify community relationships with environmental gradients (e.g. riparian habitat, channel structure, substrate + water quality, etc.). Sample benthic macroinvertebrates (3 yrs) to estimate variation in environmental gradients . . .
Bullfrog Ecology	Provide a comprehensive study of distribution, reproductive ecology, and dispersal biology of bullfrogs along the Mainstem and adjacent lentic habitats used by frogs for oviposition, rearing, and dispersal. All proposed restoration sites will be examined and recommendations for best design for construction sites will be made for reducing habitat for bullfrogs . . .