

SCOPE OF WORK

BACKGROUND AND GOALS

Sediment delivery in the Garcia River has resulted in a loss or reduction in the quantity and quality of instream habitat capable of supporting coldwater fish, particularly coho salmon and steelhead. Pursuant to Section 303 (d) of the federal Clean Water Act, the Garcia River has been identified as a high-priority waterbody due to excessive sedimentation. In response, the Regional Water Quality Control Board identified a Total Maximum Daily Load (TMDL) for the Garcia of 552 tons/square mile/year, which is a 60 percent reduction of the average annual sediment load to the Garcia River Watershed (1,380 ton/mi²).

How and to what extent are sediment related instream conditions improving for anadromous salmonids in the Garcia River? The intention of this project is to assist the Regional Water Quality Control Board (RWQCB) and the Garcia River landowners in answering this question. Our approach will be to conduct monitoring of some sediment related and biological parameters and track them to determine whether and to what extent the Garcia River watershed is moving toward the target conditions identified in the TMDL. Objectives include tracking some instream sediment trends to compare with baseline conditions measured there previously and to those conditions targeted by the TMDL. The project will also track whether measurable improvements to these conditions can be expected when subwatershed areas are managed according to the Action Plan for the Garcia River Watershed Sediment TMDL – specifically the response to road erosion control projects.

The Mendocino County Resource Conservation District (MCRCD) is uniquely positioned to collect data in response to these research questions due to their prior involvement with the California Department of Forestry and Fire Protection (CDF) in the implementation of the 1998-2001 Garcia River Instream Monitoring Project (by Michael Maahs and Teri Jo Barber) which followed from the Garcia River Instream Monitoring Plan (by Fred Euphrat, et al.). These endeavors created permanent, monumented monitoring stations on 12 Class I Garcia River tributaries of the 2nd and 3rd stream orders; established a set of measured sediment related baseline conditions; and created trusting working relationships with landowners in the Garcia River Basin. These factors when coupled with the implementation of the proposed scope of work will assist RWQCB, CDF and the Garcia landowners in their quest to determine whether numeric targets are being attained in the Garcia River.

WORK TO BE PERFORMED

The Contractor shall be responsible for the performance of the work as set forth herein below and for the preparation of products and a final report as specified in this Exhibit. The Contractor's Project Representative shall promptly notify the SWRCB Project Representative of events or proposed changes that could affect the scope, budget, or schedule of work performed under this agreement.

Task 1. Project Administration

- 1.1 Provide all technical and administrative services as needed for agreement completion; review all work performed and coordinate budgeting and scheduling to assure that the agreement is completed within budget, on schedule, and in accordance with approved procedures, applicable laws, and regulations.
- 1.2 Ensure that the agreement requirements are met through completion of quarterly progress reports submitted to the SWRCB's Project Representative by the 10th of the month following the end of the calendar quarter (March, June, September, and December) and through regular communication with the State Water Resources Control Board's (SWRCB) Project Representative. The progress reports shall describe activities undertaken and accomplishments of each task during the quarter, milestones achieved, and any problems encountered in the performance of the work under this agreement. The description of activities and accomplishments of each task during the quarter shall be in sufficient detail to provide a basis for payment of invoices and shall be translated into percent of task work completed for the purpose of calculating invoice amounts.
- 1.3 Federal Disclosure Requirements - Include the following disclosure statement in any document, written report, or brochure prepared in whole or in part pursuant to this agreement:

“Funding for this project has been provided in part by the U.S. Environmental Protection Agency (USEPA) pursuant to Assistance Agreement No. C98969700-0 and any amendments thereto which has been awarded to the SWRCB for the implementation of California’s Nonpoint Source Pollution Control Program. The contents of this document do not necessarily reflect the views and policies of the USEPA or the SWRCB, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.”

The Contractor shall include in each of its subcontracts for work under this agreement a provision that incorporates the requirements stated within this subtask.

1.4 The Contractor shall notify the SWRCB's Project Representative at least ten (10) working days prior to any public or media event publicizing the accomplishments and/or results of this agreement and provide the opportunity for attendance and participation by SWRCB representatives.

1.5 Complete a one page contract summary form within three months of the agreement execution.

1.6 Minority- and Women-Owned (MBE/WBE) Business Enterprise Participation Requirement

All recipients of federal funds are subject to MBE/WBE Participation Requirements. The procedures to ensure compliance with federal regulations are outlined in the SWRCB's "Minority- and Women-owned Business Enterprise (MBE/WBE) Participation Guide for Federally Funded Contracts". The following steps shall be completed to ensure compliance with these federal regulations:

1.6.1 Develop a list of project tasks that shall be subcontracted out.

1.6.2 Carry out the "Good Faith" Effort described in the Participation Guide. Complete the forms provided, and indicated on the Participation Guide's checklist, and submit them to the SWRCB's Project Representative quarterly.

1.6.3 Compile and submit the Participation Report form provided in the Participation Guide to document actual participation quarterly throughout the life of the project.

1.6.4 Include this "Good Faith" Effort task in all procurement and subcontracting documents related to this project.

1.7 Award subcontract(s) to appropriate organization(s) to perform tasks as outlined in this agreement. Document steps taken in soliciting and awarding the subcontract and submit them to the SWRCB's Project Representative for review prior to subcontract award. Provide SWRCB's Project Representative with a copy of the awarded subcontract. Document all subcontractor activities in and expenditures in progress reports.

1.8 At the completion of this project and prior to final payment, the Contractor's Project Representative shall fill out and provide a survey form to the SWRCB's Project Representative.

Task Deliverables:

1.2 Progress Reports

1.5 Contract Summary Form

1.6 MBE/WBE Documentation

1.7 Subcontractor Agreements, solicitation documents

1.8 Project Survey Form

Task 2. CEQA/NEPA Documents and Permits

- 2.1 No work subject to CEQA shall proceed under this agreement until documents that satisfy the CEQA process are received by the SWRCB Project Representative.
- 2.2 Secure all required permits for project work. No work that is subject to permitting shall proceed under this agreement until documents that satisfy the permitting process(es) are received by the SWRCB's Project Representative.

Task Deliverables:

- 2.1 CEQA/NEPA Documentation – N/A
- 2.2 Permits

Task 3. Quality Assurance Project Plan (QAPP)

The Garcia River Instream Monitoring Plan, previously developed in 1998, will serve as a foundation document in the development of the project specific monitoring plan and an updated QAPP tied to the project specific monitoring plan. The GRIMP (1998) is a 200 page comprehensive document that specifies a series of parameters, protocols, and location maps. Work in this project will be to select a subset of those parameters and previously monitored sites to continue monitoring activity with a focus on TMDL (sediment) sensitive parameters (e.g. embeddedness, turbidity). The previously approved Garcia and Gualala River QAPP documents will also be consulted and incorporated into an updated version to reduce duplication.

- 3.1 Using the Garcia River Instream Monitoring Plan (1998) as the foundation, a project specific monitoring plan will be developed to specify the water quality parameters to be monitored. The map locating the sites of the monitoring activities and a brief rational on why the specific sites were selected will be developed.
- 3.2 Prepare and maintain a QAPP. The QAPP shall be approved by the RWQCB or SWRCB QA officer prior to implementation of any sampling or monitoring activities. No monitoring shall occur prior to QAPP approval. Any costs related to monitoring data collected prior to and not supported by the approved QAPP will not be reimbursed.

Task Deliverables: 3.1 Monitoring Plan w/Map of Sites 3.2 Approved and Signed QAPP

Task 4. Outreach

All monitoring occurs on private property; therefore meeting with the affected landowners is critical to the successful conduct of a cooperative monitoring program. Since both landowners and stakeholders are interested in the results of the data collected, a means to inform all of the project progress and results is critical.

- 4.1 Update landowner contact list from county recorder's office and notify landowners and interested members of the community of this project by letter and through the publication and distribution of the RCD Newsletter. Once completed, notify the SWRCB Project Representative, in writing, that the adjoining landowner notification has occurred. The agreement applicant (RCD) shall notify, in writing, adjoining landowners of its request for funding under this article and the scope of the project for which the funding is requested. Upon completion of the notification required under this paragraph, notify the SWRCB Project Representative that this notification has occurred.
- 4.2 Conduct a pre-project meeting with landowners and stakeholders of the monitoring sites chosen in the development of the project specific monitoring plan (Task 3.1) prior to data collection to discuss the plan with them. Record the minutes of this pre-project meeting.

- 4.3 Obtain Written Landowner Access Agreements documents in order to access monitoring sites and to insure communication with special landowner requests, such as locked gates, seasonal use, termination terms, etc.
- 4.4 Update and distribute to Garcia landowners and interested stakeholder community a MCRCD newsletter that includes information on the Garcia Monitoring Project.
- 4.5 Conduct a post-project community meeting to present the data learned from the monitoring activities about the current status of some tributaries in relation to the TMDL targets. Record post-project meeting minutes.

Task Deliverables: 4.1 Updated landowner contact list, notification letters, 4.2 Pre-Project Meeting Minutes, 4.3 Copies of written landowner access agreements, 4.4 MCRCD newsletter articles, 4.5 Minutes of post-project meeting

Task 5. Develop Computer Database

This task will transform paper versions of data and maps to a digital format and will bring together data gathered in 1998-99 with the new data gathered in Task 7.

- 5.1 Develop and maintain a computer database at MCRCD. Compile and input all previously collected monitoring data generated from the GRIMP Final Report (2001) effort in addition to the data generated in Task 7. The database will contain names, phone numbers, mailing addresses and e-mail addresses of landowners on the 12 previously monitored tributaries to the Garcia River to facilitate contact for the current and continuing monitoring efforts in the future.
- 5.2 Input Geographic Positioning System points of monitored sites and develop GIS files and layers to provide a mapping or geographic context for data that has been or will be collected to facilitate interpretations.

Task Deliverables: 5.1 - compact disc with complete database

Task 6. Blue Waterhole Sediment Control Treatment

Since a major part of this project is to help the RWQCB and landowners understand the effectiveness of road sediment treatments in moving towards the Garcia River Sediment TMDL targets, 5 miles of sediment control treatments will be implemented in Blue Waterhole Creek prior to post project data collection described in Task 7. Pre project baseline conditions were monitored in this tributary in 1998-99 as reported in the Final Report (2001).

- 6.1 Repair a minimum of 11 priority erosion sites as determined by students during a Jack Monschke workshop and revised/finalized by Jack Monschke, including: 1 instream landing, and several stream crossings, as well as road outcropping on 5 miles of road in the Bluewaterhole Subwatershed as identified in the road assessment in SWRQCB Agreement No. 02-123-251-0
- 6.2 Implement erosion control and revegetation projects during and immediately following construction to significantly reduce short-term erosion of fine sediments from newly disturbed, bare soils. All such bare soils will be seeded with annual grasses and/or other identified native grasses with application to the cutbank above the inboard ditch, reshaped streambanks, and any other bare or disturbed soils encountered or created during the project. All such bare soils will be dressed with a weed-free straw mulch to protect them from rainfall impact. Lastly, streambanks will also be revegetated with a combination of local willow cuttings, alder seedlings, and if deemed necessary, local rush and sedge.
- 6.3 Perform pre- and post-implementation evaluations, including photo-documentation, with the Contractor's Project Representative and the SWRCB Project Representative.
- 6.4 Develop a project evaluation summary including, but not limited to, before and after photos.

Task Deliverables: 6.4 Project Evaluation Summary

Task 7. Effectiveness and Trend Monitoring

2 years of data were collected on 12 tributaries measuring 10 separate water quality parameters in late 1999. No substantial monitoring efforts have been undertaken since then. Collection of effectiveness and trend monitoring data is critically important in determining how landowners are proceeding in the control of sediment, and how the individual tributaries are responding to upslope treatments, particularly road related ones. This task will help determine if receiving waters are measurably responding to the TMDL targets in the RWQCB's Action Plan for the Garcia. A subset of tributaries where baseline conditions were measured has been selected based on geographic distribution rate and age of road related sediment treatment. A subset of water quality parameters (previously measured) that are sensitive to sediment movement and impact the beneficial water use— anadromous salmonid habitat-- has been selected in accordance with the Project Monitoring Plan and QAPP (Task 3

- 7.1 Measure bulk instream gravel composition, embeddedness, and permeability at five tributaries(South Fork, Mill, Pardaloe, Whitlow, and Blue Waterhole) for one summer season.
 - a. Compare with baseline conditions measured in 1998,
 - b. Correlate with gravel sediment embeddedness measured at the same locations to determine trend
 - c. Correlate gravel composition and embeddedness to redd-egg survival-to-emergence through equations available in the literature. (Tappel, P.d. and Bjornn, T.C., 1983. *North American Journal of Fisheries Management* 3:123-135, McCuddin, M.E. 1977 *Survival of Salmon and Trout Embryos and Fry in Gravel-Sand Mixtures*, Tagart, J.V. 1976. *The Survival from Egg Deposition to Emergence of Coho Salmon in the Clearwater River, Jefferson County, Washington.*)
 - d. Determine whether the percent of in-gravel fines has been reduced to date following implementation of road-related sediment prevention measures at Blue Waterhole Creek.

- 7.2 Continuously monitor instream turbidity with recording turbidimeters at the above listed tributaries to:
 - a. Locate sediment sources by viewing spikes in turbidimeter readings to determine potential future treatments
 - b. Observe cause and effect relationships between hillslope activities, hydrologic triggers, and instream conditions (i.e., forensic monitoring) by observing turbidity spikes and making cursory channel/hillslope inspections to determine the source of turbidity and determine appropriate remediation/corrective actions, and
 - c. Determine both the total and consecutive days turbidity is sustained over 60 NTUs, as well as other biologically related turbidity thresholds.

Task 8. Draft and Final Project Report

- 8.1 Prepare a draft project report that includes the results of the tasks listed above. The report shall include the following narrative sections:
 - a. A brief introduction section including a statement of purpose, the scope of the project, and a description of the approach and techniques used during the project.
 - b. A list of task products previously submitted as outlined in the Schedule of Completion.
 - c. Any additional information that is deemed appropriate by the Contractor's Project Representative.
- 8.2 Submit copies of the draft project report to the SWRCB Project Representative for review and comment.
- 8.3 Prepare a final project report that addresses, to the extent feasible, comments made by the SWRCB Project Representative on the draft project report. Submit one reproducible master and 2 copies of the final project report to the SWRCB Project Representative for review and acceptance.

Task Deliverables: 8.2 Draft Project Report and 8.3 Final Project Report

SCHEDULE OF COMPLETION DATES

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| Task 1 – Administration | |
| 1.2 Monthly Progress Reports | monthly starting 9/10/03 |
| 1.5 Contract Summary Form | 11/10/03 |
| 1.6 MBE/MWE Documentation | 1/10/03 |
| 1.7 Subcontractor Award Information | 9/15/03 |
| 1.8 Project Survey Form | 12/01/04 |
| Task 2. -- CEQA/NEPA, Permits | |
| N/A | |
| Task 3 -- QAPP/Monitoring Plan | |
| 3.1 Monitoring plan with map of sites | 9/10/03 |
| 3.2 QAPP | 9/30/03 |
| Task 4 – Outreach | |
| 4.1 Landowner contact list | 11/15/03 |
| 4.2 Copy of minutes from pre-project meeting, notification letters | 11/15/03 |
| 4.3 Copies of Written Landowner Access Agreements | 11/15/03 |
| 4.4 RCD newsletter with articles | 2/01/04 |
| 4.5 Post project meeting minutes | 10/15/04 |
| Task 5 – Develop Computer Database | |
| 5.1 CD with Database | 6/01/05 |
| Task 6 – Blue Waterhole Sediment Control Treatment | |
| 6.4 Project | 3/01/04 |
| Task 7 – Effectiveness and Trend Monitoring | |
| 7.1 – 7.2 Summary Report | 06/01/05 |
| Task 8 – Draft and Final Project Report | |
| 6.2 Draft final report | 10/15/04 |
| 6.3 Final report | 12/01/05 |

REPORTS

1. Not later than the September 15, 2003 and quarterly during the life of this agreement, the Contractor's Project Representative shall provide a written progress report to the SWRCB Project Representative describing activities undertaken, accomplishment of milestones, and any problems encountered in the performance of the work under this agreement, and delivery of intermediate products, if any.
2. The Contractor's Project Representative shall submit to the SWRCB Project Representative for approval the reports containing the results of the work performed in accordance with the schedule of this Exhibit.
3. Not later than October 15, 2004 the Contractor's Project Representative shall submit to the SWRCB Project Representative 1 copy of a draft project report describing the work performed pursuant to Section C of this Exhibit for review and comment.
4. Within 2 weeks of receipt of the draft project report, the SWRCB Project Representative shall submit final comments to the Contractor's Project Representative.
5. Not later than December 1, 2004, the Contractor's Project Representative shall submit to the SWRCB Project Representative for approval one (1) reproducible master and two (2) copies of the final report containing the results of the work performed and addressing the comments submitted to the Contractor's Project Representative by the SWRCB Project Representative.
6. The project report shall not be considered final until accepted and approved by the SWRCB Project Representative.