

# Fountain Ranch Road Sediment Reduction Project

## Final Report

### Contract #02-DG-11051400-008

#### **Introduction**

Fountain Ranch Road is located in the western part of Trinity County near Salyer. It runs immediately above, and parallel to, the Trinity River and is used mainly to access private residences (refer to location map on page 3). The county owned and maintained portion is nearly 0.5 mi long and is surfaced with asphalt-concrete. The road begins near Highway 299 at the intersection of Salyer Loop Rd and Campbell Ridge Rd. There was a Class II stream crossing at about milepost 0.3 that consisted of an undersized rusted and mangled 18" x 35' corrugated metal pipe (CMP). It drained a large pasture and inboard ditch and had a 6+ foot deep cut at the outlet with noticeable erosion and a significant potential to fail. The outlet delivers directly into the Trinity River, several hundred feet below. This road was identified through "Direct Inventory of Roads and Treatments" (DIRT), a program designed to identify and prescribe treatments for significant sources of sediment to local streams from county roads. During this inventory, the crossing was estimated to have the potential to deliver about 924 yd<sup>3</sup> of sediment into the River over a ten year period. This project was determined to be a high priority sediment reduction project due to its proximity to the River, likelihood to deliver, and its high level of maintenance. Being adjacent to USFS lands, a RAC grant to upgrade the crossing was successfully submitted by the Trinity County Natural Resources Division of the Planning Department. The project is part of a larger effort to restore anadromous fisheries and improve water quality by implementing restoration work on county facilities and by improving county policies and practices, known as the Five Counties Salmonid Conservation Program (5C). Trinity County has been a member since the Program's inception in 1997.

#### **Timeframe**

This grant contract became effective September 20, 2002 and was originally set to expire on December 30, 2003. Because of various considerations described below, a contract extension was approved and construction was completed in the fall of 2005.

#### **Project Description**

Original recommended treatments were as follow: replace the culvert with a 30" x 60' CMP with filter fabric; install a critical dip; and rip-rap the outlet gully with ≤ 12" rock. These prescriptions were modified as a result of subsequent consultations between the Project Manager in the Natural Resources Division and the Trinity County Department of Transportation (TCDoT) as well as multiple field visits. In January 2003, the TCDoT said that it was considering relocating the road because of potential for road failure as evidenced by tension and settling cracks above and below the project site. Another contributing factor was that this part of the road required constant maintenance. Project work was suspended pending that determination, as road relocation would render the project unnecessary. In late summer 2003, the TCDoT decided to not relocate the road. However, it was too late into the construction season to complete permitting and hire a contractor to perform the work.

During this time, the Project Manager and TCDoT representatives participated in discussions with the adjacent landowner, McCullough family, and Natural Resources Conservation Service (NRCS). The landowner's property contains a pasture that largely drained into the county culvert proposed for upgrade. McCullough worked with the NRCS to build a detention pond on part of his property upslope of the county road and project site. The pond would irrigate his

pasture and provide wildlife habitat. The landowner also installed two culverts at the lower end of the pond – one draining into the ditch towards the county culvert on Fountain Ranch Road and the other into the ditch towards another county culvert on Salyer Loop Rd. To relieve some of the burden on the Fountain Ranch Road culvert and minimize instability of that bank, McCullough agreed to install a larger pipe to Salyer Rd placed such that the runoff during average size storms into the Fountain Ranch Road pipe was minimized, as proposed by local TCDOT district foreman DJ Fullerton. Although the Fountain Ranch Road site still receives runoff during high flows, this allows normal flows to be directed to the Salyer Loop county pipe. This work was completed in October 2003. While this work on McCullough's property was not funded under this contract, a portion of it is considered an in-kind contribution as it reduced total runoff to the project site and thus contributes to its long term stability and decreases sediment delivery from that private property.

Based on field visits and consultations with TCDOT, the original treatment prescriptions were modified to replace the old crossing with a 24" x 40' smooth bore high density polyethylene (HDPE) plastic pipe, rip-rap the outlet, and line the outlet ditch with rock. It was determined that the smooth bore plastic pipe would have the same capacity as the 30" CMP originally recommended. The increased erosive force that results with a smooth plastic pipe as compared to a CMP was decided to be negligible considering the placement of large rip-rap boulders at the outlet, which would dissipate those increased erosive forces.

In October 2004, a local contractor, R Brown Construction Co., was hired. However, final permit clearance was not obtained until after the dry 2003 season. Final California Department of Fish and Game (CDFG) 1602 authorization was not received until 2005. The Project Manager met with the contractor and a TCDOT representative in June 2005 to review the workplan, design, and TCDOT road standards.

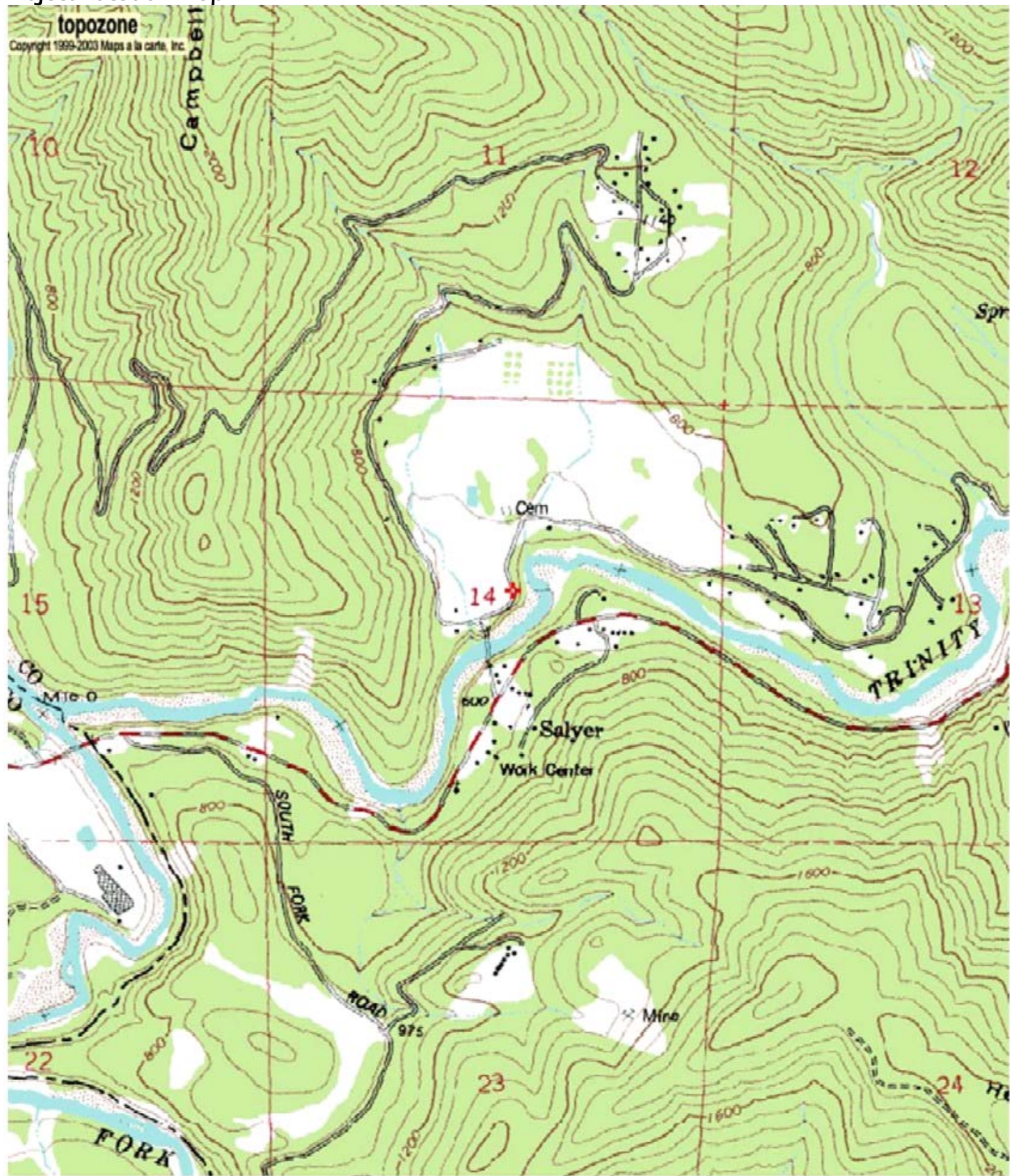
### **Construction Summary**

The project was largely completed on June 28 and 29, 2005. Final placement of rip-rap was placed in October 2005. Final treatments were as follow:

- upgrading the existing rusted, mangled pipe with a 24" x 40' smooth bore plastic pipe (sufficient capacity for the crossing);
- placement of slurry mix around the entire length of the pipe;
- clearing both the inlet and the ditch above it of vegetation;
- rock lining both the ditch 20' upstream and 40' downstream of the pipe with small cobble sized material;
- placing approximately 15 yd<sup>3</sup> of rip-rap at the outlet gully discharge point;
- repaving and returning to original grade and county standards, the disturbed road section.

Much of the work described above is photo documented as shown in Attachment A. The contract manager was present to observe and photo document the bulk of the work as it happened. Photos showing pre- and post project conditions and construction work are described in Attachment A.

# Project Location Map



0 0.3 0.6 0.9 1.2 1.5 km  
0 0.2 0.4 0.6 0.8 1 mi  
Map center is UTM 10 450787E 4527122N (WGS84/NAD83)  
**SALYER** quadrangle  
Projection is UTM Zone 10 NAD83 Datum

\* M  
G  
M=16.221  
G=-0.382

## Summary

Overall, \$17,661 was spent from all sources on this project under the period of this contract. A breakdown of the funding sources is shown in the table below.

Source	Amount Contributed	Type of Contribution	Description
Contract - USFS RAC	\$10,000	Grant funding	Crossing Upgrade
CDFG Fisheries Restoration Grant Program	\$2,075	Grant funding	Project Management
TCDOT	\$586	In-kind	Project Design, Labor, Materials, Equipment
NRCS Environmental Quality Incentives Program	\$5,000	Grant funding	Portion of work on private property that reduced runoff to project crossing
TOTAL	\$17,661		

† CDFG: California Department of Fish & Game  
NRCS: Natural Resources Conservation Service

As noted above, all of the project management work was contributed by the CDFG Fisheries Restoration Grant Program via a 5C Program grant contracts. A nominal additional amount (not reflected in the above table) was contributed by the Proposition 204 Program administered by the State Water Resources Control Board.

The in-kind work on the adjacent private landowner's property, contributes to the overall success of this project. McCullough himself contributed in-kind work to the project that is not reflected above. The TCDOT district foreman Fullerton has confirmed that the new crossing receives a lot less water during normal, low flows due to the detention of private pasture runoff in the wildlife pond and release to Salyer Loop Rd. During high flows, the pipe still receives lots of water, but overall it handles less runoff throughout the year.

Through the replacement of the old, undersize, and rusted pipe, the likelihood of both failure of and sedimentation from the crossing is expected to be greatly decreased. Reduced sediment delivery will also improve water quality and salmonid habitat conditions in the Trinity River, which runs just below the site. Consequently, recreational uses of the River will also benefit from this work. This project will also help keep the road, homes, and public lands accessible.