

Erosion Control in Mountain Recreation Areas

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Camp Sacramento Erosion Control and Habitat Restoration Project



Camp Sacramento

What is Camp Sacramento?

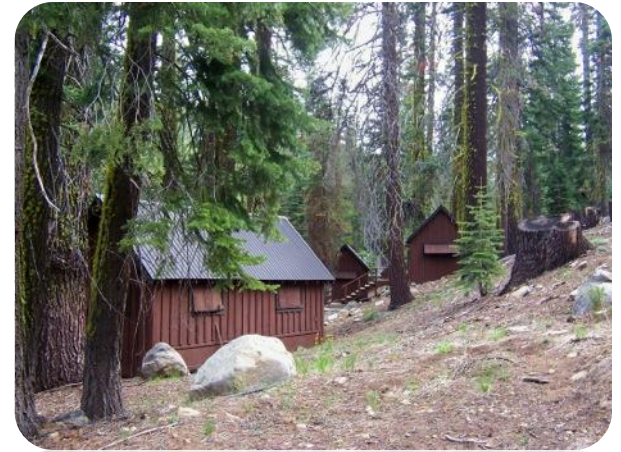
- > City Park Located within Eldorado National Forest
- > Leased by City from the U.S. Forest Service
- > Started Operations in 1920 as a Family Camp
- > Used by about 2,500 Visitors per Summer
- > Operates from June through September



Camp Sacramento

What is Camp Sacramento?

- > Located at 6,500' Elevation
- > Guests Stay in Cabins
- > Recreation Program for All Ages
- > Adjacent to South Fork American River
- > Near Lake Tahoe, Desolation Wilderness



Project Location



Camp Layout



Problem Statement

Erosion and Soil Loss from Several Problem Areas

- > Hillslopes
- > Entry Road and Camp Roads
- > Highway Shoulder
- > Camp Visitor Parking
- > Volunteer Trails
- > Heavy Use Area



Erosion Problems are Common to Camps, Cabin Tracts, urban areas, and Campgrounds in the Sierras

Erosion Problems

Hillslopes



Erosion Problems

Highway
Shoulder



Erosion Problems

Highway Shoulder



Erosion Problems

Highway Runoff



Erosion Problems

Parking



Erosion Problems

Roads



Erosion Problems

Roads



Erosion Problems

Sheet Flow



Facilities



Project Development

Goals and Objectives

- > Reduce Erosion from Exposed Surfaces
- > Reduce Sediment Loading to River
- > Control Runoff Volume
- > Control Runoff Pattern
- > Improve Riparian Condition
- > Create Habitat for Small Animals/Birds

Funding Source

- > Grant from Sierra Nevada Conservancy



Project Development

Stakeholder Process

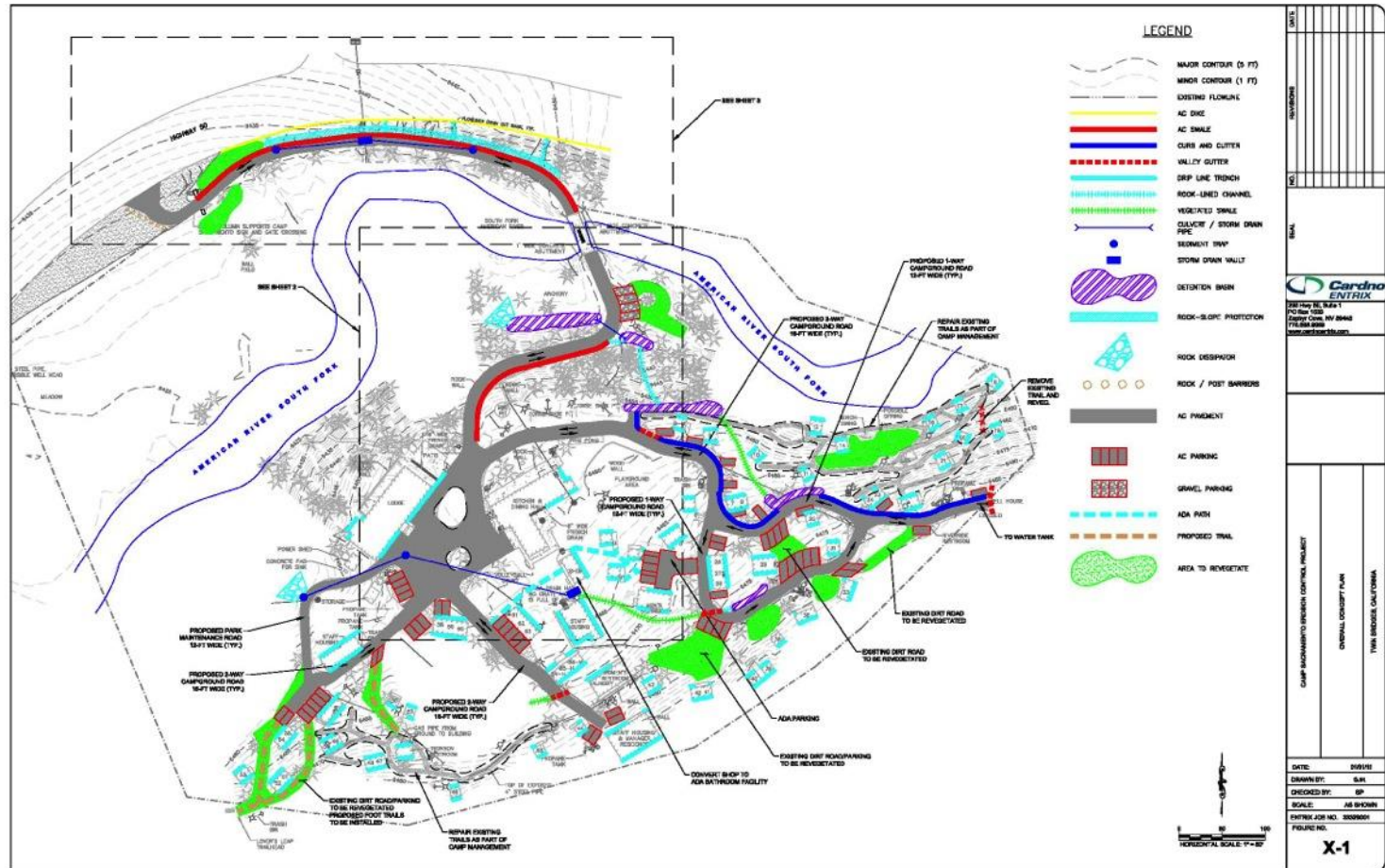
- > City of Sacramento
- > Eldorado National Forest
- > Sierra Nevada Conservancy
- > Caltrans
- > El Dorado County Resource Conservation District
- > Friends of Camp Sacramento

Project Development

Initial Phase

- > Ground Survey
- > Stakeholder Involvement
- > Prepare Erosion Control Master Plan
 - Balance Proposed Facilities with Recreation Use
 - Blend with Aesthetic Characteristics of Camp
 - Provide Low Maintenance Facilities
 - Withstand Winter Forces
 - Use Native Materials
 - Include ADA Compliant Facilities

Erosion Control Master Plan



Erosion Control Plan Features

- > Paved Roadway with Rolled Curb
- > Limited Underground Storm Drains
- > Multi-use Detention Basins
- > Defined Parking
- > Rock Slope Protection
- > Revegetation
- > Dripline Trenches

Phase One Construction

U.S. Forest Service grant

- > \$62,000 Available for Construction
- > Fall 2012

Constructed Features

- > Paved Entry Road from Bridge to Camp
- > Two Detention Basins to Receive Camp Runoff
- > Revegetation
- > Parking for Lover's Leap Trailhead



Facility Examples-Entry Road

Before



Facility Examples-Entry Road

After



Facility Examples-Parking

Before



Facility Examples-Parking

After



Facility Examples-Revegetation

Before



Facility Examples-Revegetation

After



Facility Examples-Basin

Before



Facility Examples-Basin

After



Facility Examples-Basin



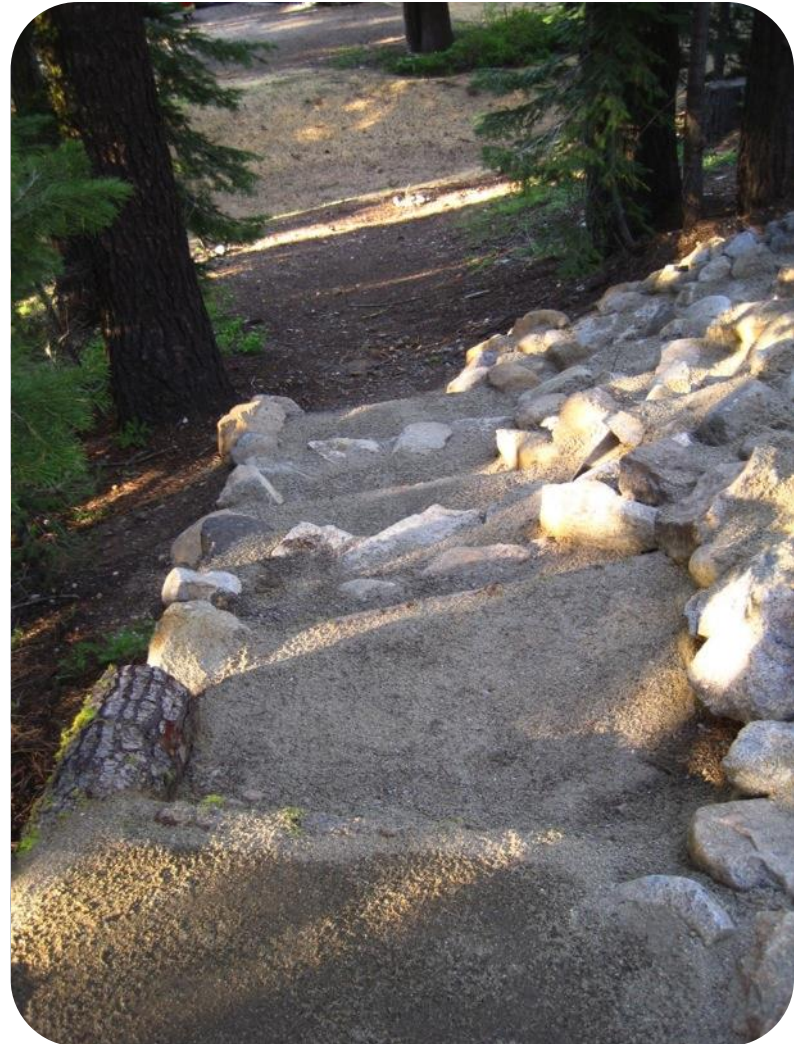
Facility Examples-Basin



Field Adjustments



Field Adjustments



Field Adjustments



Field Adjustments



Temporary Measures



Temporary Measures



Temporary Measures



Is it Working?



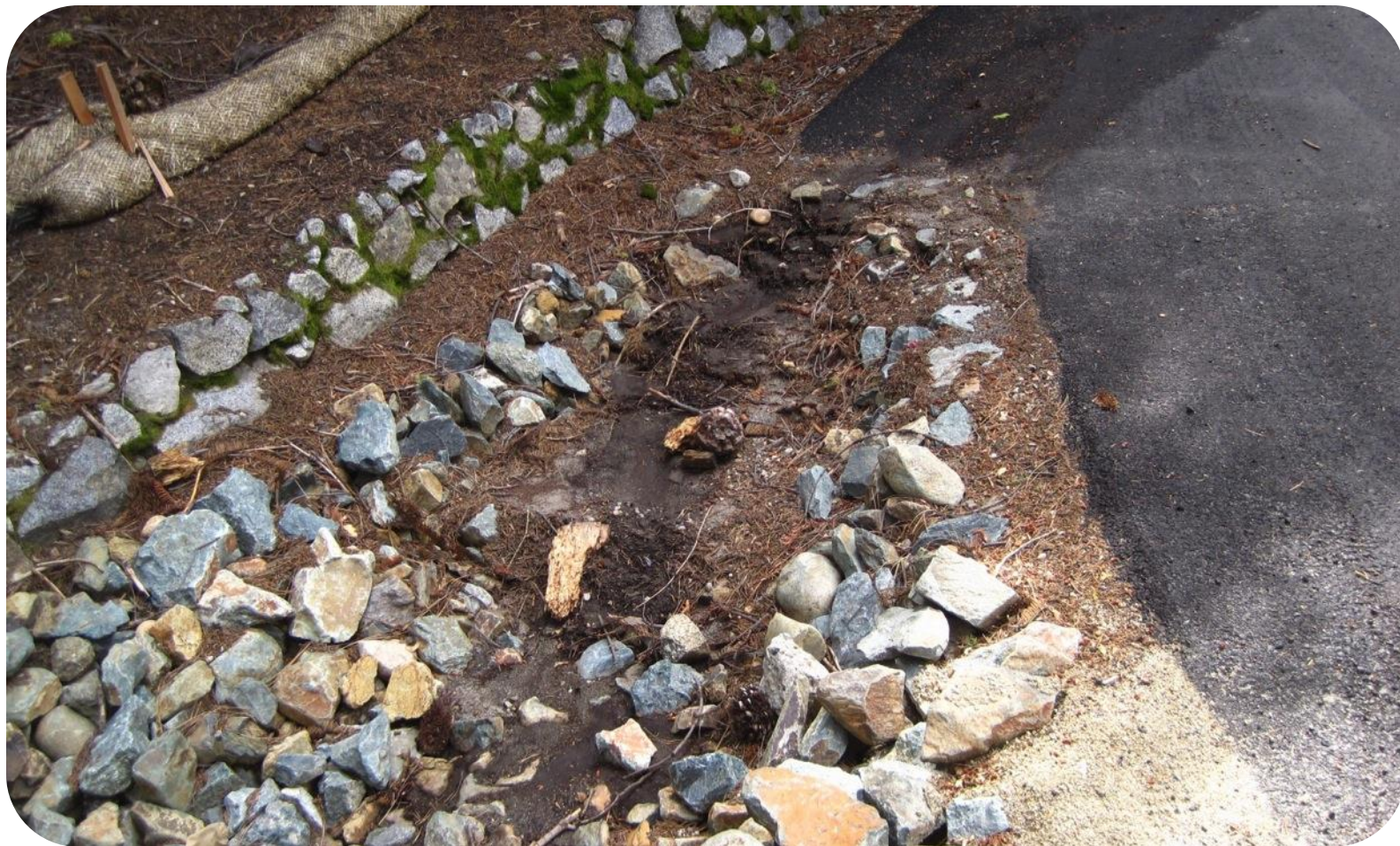
Is it Working?



Is it Working?



Is it Working?



Next Steps

Additional Facilities

- > Pave Entry Road from Highway to Bridge
- > Pave Camp Roads and Parking
- > Revegetation-Remove Parking and Trails
- > Multi-use Basins
- > Dripline Trenches
- > Runoff Control
- > Blend with Camp Environment and Use



Next Steps



Acknowledgments

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