

EL DORADO COUNTY



FEASIBILITY STUDY

PUBLIC ACCESS TO THE NORTH FORK OF THE COSUMNES MINE RIVER AT BUCKS BAR BRIDGE



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Prepared by the El Dorado County Department of Transportation

Contents

I. Introduction.....	2
II. Project Purpose.....	2
III. Project Background and Need.....	2
IV. Physical Environment.....	3
V. Bucks Bar Bridge Replacement Project Description	4
VI. Existing Public Access to Navigable River in Project Area	5
VII. Alternatives Considered	5
VIII. Preliminary Cost Estimates and Potential Funding Sources	6
X. Conclusion and Findings.....	6
Exhibit A: Vicinity Map	8
Exhibit B: Project Location.....	8
Exhibit C: Mosquito Bridge Replacement – Preferred Alignment	9
Exhibit D: Existing River Access Conditions	10
Exhibit G1- G6: Photos.....	12

I. Introduction

This study examines the feasibility of providing public access to the North Fork of the Cosumnes River (NFCR) in El Dorado County, California, at the existing Bucks Bar Road Bridge in conformance with California Streets and Highways Code 991, due to the proposed construction of a new bridge across a navigable river.

California Streets and Highway Code 991 states that “*Before any bridge on a county highway is constructed over any navigable river, the Board of Supervisors, after a study and public hearing on the question, shall determine and shall prepare a report on the feasibility of providing public access to the river for recreational purposes and a determination as to whether such public access shall be provided.*”

II. Project Purpose

The El Dorado County Department of Transportation has secured federal funding to replace the Bucks Bar Bridge. This bridge spans a steep gorge of the North Fork Cosumnes River, approximately 12 miles southeast of U.S. Highway 50 and 1.2 miles north of Somerset (see Exhibits A and B). The Bucks Bar Road at North Fork Cosumnes River Bridge Replacement Project aims to replace the existing bridge with a new structure that complies with current design and safety standards.

The following technical studies for this project have been completed, and or will be finalized during final bridge design:

- Hydraulic Study Report
- Natural Environmental Study
- Biological Study Area
- Final Feasibility Study Report
- Draft Environmental Impact Report
- Geotechnical Report

III. Project Background and Need

The Bucks Bar Road bridge is listed in both the National Bridge Inventory and the Caltrans Bridge Inventory as having been constructed in 1940. However, as-built plans and a newspaper article indicate that it was constructed in 1941. Historically, Bucks Bar Road may have originated as a Native American trail, evolving into a livestock and wagon trail. In 1854, the El Dorado County Board of Supervisors granted Daniel Hoag a franchise to operate a toll bridge at Bucks Bar, although it was not until 1857 that the county designated the road as a public right-of-way. The realignment of Bucks Bar Road in the project area has resulted in the abandonment of certain original road segments.

The bridge's approaches are constrained by hilly terrain, limiting vehicle speeds to between 20 and 40 mph, which is below the County's design standard of 45 mph for rural roads. The bridge features a curve radius of 150 feet, limiting the design speed to 16 mph due to sight distance requirements. It is a single-lane bridge, 19 feet wide, with a yield requirement for southbound traffic. The approaches range from 28 to 34 feet wide but narrow abruptly at the bridge, where non-standard-height barriers exist. AASHTO standards call for wider lanes and shoulders than those currently available.

In 2001 and 2013, Caltrans classified the bridge as functionally obsolete due to its narrow deck and non-compliant railings. The 2013 report identified the deck geometry as "intolerable" and recommended urgent replacement. The 2010 Final Feasibility Report by Dokken Engineering noted the need for sub-structural seismic retrofitting, although the bridge was otherwise in good condition. At 83-84 years old, the bridge has surpassed its typical lifespan.

Recent hydraulic analysis shows that the bridge cannot accommodate 100-year or 50-year storm events, with overtopping observed during major storms in 1997 and near-overtopping in subsequent years. Debris accumulation within the substructure during high-flow events further obstructs hydraulic flows.

Accident data from January 1, 2011, to August 2021 records 17 accidents, resulting in 10 injuries but no fatalities, within a 500-foot radius of the bridge. These incidents, including sideswipes and collisions with objects, are likely attributed to the abrupt transition from a two-lane road to a one-lane bridge with limited sight distance, contributing to driver confusion and accidents.

IV. Physical Environment

In the project area, the terrain is rocky and features moderate to steep slopes leading down to the North Fork Cosumnes River (see Exhibits D). The site ranges in elevation from 1,620 to 1,680 feet, with the bridge deck at approximately 1,665 feet. Vegetation includes a live oak-ponderosa pine forest, with dominant species such as canyon live oak (*Quercus chrysolepis*) and ponderosa pine (*Pinus ponderosa*), along with manzanita shrubs and willows (*Salix sp.*) in the riparian area near the North Fork Cosumnes River. Surrounding land uses consist of transportation (Bucks Bar Road), low-density residential areas, and natural landscapes. Three residential structures and a closed café are located within 600 feet of the bridge, though only one residence has a clear view of the Bucks Bar Road Bridge. Zoning is primarily residential, with some nearby rural land uses. The area contains a recognized Tribal Cultural Resource (TCR) under CEQA and a Traditional Cultural Property (TCP) listed under the National Register of Historic Places (NRHP).

V. Bucks Bar Bridge Replacement Project Description

Three alternatives were examined for the bridge replacement project: a 30-mph alternative, a 35-mph alternative, and a 40-mph alternative, to determine the most direct route over the river with the least environmental impact. The preferred alternative, the 30-mph option, was found to satisfy all the goals and objectives of the project. This preferred alternative follows the most direct alignment across the river with minimal skew, resulting in a main bridge length ranging from approximately 120 to 130 feet. The new bridge over the North Fork Cosumnes River (NFCR) is anticipated to be a single-span, steel girder structure with a concrete deck and an approximate width of 37 feet.

To meet the standards set by the American Association of State Highway and Transportation Officials (AASHTO) and El Dorado County, the lane widths for the new roadway sections on the bridge will be 12 feet. The bridge will maintain a similar alignment to the existing one across the river, with most of the widening occurring upstream at the abutments and downstream at midspan. This design helps reduce environmental impact. The road profile and bridge deck will be raised by about 5 to 8 feet above the current deck height.

New abutments will be positioned farther from the river to lower their height and minimize environmental impact. They will be supported by spread footings embedded in the underlying rock, with no need for rock slope protection since the abutments will sit above the high-water level and the dense rock is resistant to scour. The road approach work will extend 320 feet south and 350 feet north of the current bridge.

Existing Bridge: The new bridge will be built at the existing site, requiring the removal of the current bridge and a 10-month closure of Bucks Bar Road, as a temporary bridge is not feasible. During this closure, long-term detours will be implemented, and a traffic control plan will be created to manage incidental work once the road reopens.

Access to the construction site will be from both the north and south, with possible delays during partial closures due to equipment, materials, and construction activities. Detour signs will be placed at the intersections of Mount Aukum Road and Pleasant Valley Road with Bucks Bar Road, and public outreach will inform residents about the closure and detour routes.

Motorists traveling from Pleasant Valley Road to Mount Aukum Road will face an additional 2 minutes of travel time, with a detour route of 8.4 miles. Residents on the north side, such as those on Bucks Bar Circle, will experience an increase of 14 minutes and 10.5 miles to Somerset, while those on the south side, like Yosemite Place residents, will see an additional 8 minutes and 5.6 miles to the intersection of Bucks Bar Road and Pleasant Valley Road

VI. Existing Public Access to Navigable River in Project Area

Public access along the North Fork Cosumnes River in the Bucks Bar Road project area is highly restricted, with no designated facilities for boating, kayaking, or rafting due to adjacent private properties and limited public parking (see Exhibit D). A 1991 California State Lands

Commission study found that the river is only navigable for boaters approximately 7 miles downstream. The segment of river below the bridge is not considered to be a recreational resource.

The nearest accessible site for recreation is the Cosumnes River Gorge, located about 2,000 feet downstream owned by the Bureau of Land Management. Popular for rock climbing and whitewater rafting, the recreational area is not accessible from the project area, and the proposed construction will not impact its use. There is no direct link between Bucks Bar Road and the recreational area, so the project will not increase traffic or usage at the site.

Given that this stretch of the North Fork Cosumnes River is popular among kayakers and whitewater enthusiasts, as noted by American Whitewater (AW), a non-profit organization that advocates for whitewater recreation, there are challenges related to access. On its website, AW states, "This beautiful class 3 section with a single Class 4 (or portage) below the E16 bridge is complicated by takeout access at Buck's Bar Rd. There is currently no legal take-out option or convenient location to park cars." <https://www.americanwhitewater.org/content/River/view/river-detail/11664/main>.

Although AW classifies the North Fork run from Happy Valley Road to Bucks Bar Bridge as Class four (4), the bridge itself is not an official take-out site, and El Dorado County does not permit public river access there. The area lacks proper parking and trails, and the steep, rocky terrain inhibits safety and limits accessibility.

VII. Alternatives Considered

The County has considered the following alternatives on the feasibility of providing access to the NFCR from the existing Bucks Bar Road Bridge site for recreational purposes in accordance with California Streets and Highway Code 991:

- A. Public river access at Bucks Bar Road Bridge site on the south side of the NFCR.
- B. Public river access at Bucks Bar Road Bridge site on the north side of the NFCR.

Issues and potential impacts under Alternatives A and B include but are not limited to:

- a. The surrounding area contains tribal cultural resources that are protected under California law.
- b. El Dorado County will not own the property or have rights to the areas outside of the roadway prism.
- c. El Dorado County does not own the land adjacent to the river, or have rights to the river, and as such it does not have the authority to grant access.
- d. There will be no adequate location to provide parking at either approach to the bridge on Bucks Bar Road due to AASHTO-required guardrail and concrete barrier requirements.

- e. El Dorado County would need to acquire private land or expand property ownership on Bucks Bar Road to provide parking at or near the bridge. Site geometrics preclude the ability to create parking areas at the bridge.
- f. Due to the steep, rocky slopes between Bucks Bar Road and the NFCR, constructing pedestrian access would be extremely difficult, dangerous, and costly to build. If constructed, pedestrian access would be dangerous to use given the geology, topography, and the geometrics of the road and bridge at this site.
- g. Potential environmental impacts, protection of riparian habitats and best management practices would need to be considered to ensure compliance with local, state and federal regulations.
- h. Construction of a river access facility would require extensive maintenance and on-going costly repairs.
- i. Construction of a path, stairway or any other associated facility would require review and permits from various agencies, including the Bureau of Land Management, U.S. Army Corps of Engineers, U.S Fish and Wildlife, California Department of Fish and Wildlife, El Dorado County and others.

VIII. Preliminary Cost Estimates and Potential Funding Sources

The bridge replacement is funded through the Federal Highway Bridge Program Funds from the Federal Highway Administration (FHWA) and does not include funding for public access. Therefore, detailed cost estimates were not prepared for the installation of public facilities at the existing Bucks Bar Road Bridge site. Based on the engineering cost estimates for the bridge replacement, it can be assumed that the construction of river access and parking/turnaround facilities would entail a multimillion-dollar project. The lack of buildable area would require cutting into the existing granite slopes to develop these facilities.

The project scope for providing access would vary based on negotiations with property owners and permitting agencies to determine the project location, access route, mitigation measures, and accompanying facilities such as parking. Due to funding constraints associated with the Bucks Bar Bridge Project, future public access and maintenance efforts would need to be considered as separate projects, requiring separate funding sources. With limited funds for parks and recreation projects, the County would be required look to external resources to fund such projects, including the California Department of Boating and Waterways Program.

X. Conclusion and Findings

The combination of land acquisition, topographic limitations, dangerous conditions, environmental impacts, funding constraints, and construction costs makes the existing bridge site impractical for new public river access facilities. Any further discussions on this matter

should strongly consider the physical limitations, geological challenges, and environmental sensitivity of the site, along with variations in high water mark levels and the lack of space for parking and safe turnaround areas.

As a result of the study and its conclusions, the El Dorado County Transportation Division makes the following finding:

1. Due to physical constraints, potential environmental impacts, costs, safety issues, and other reasons cited in the Feasibility Study, it is not feasible or practical to construct additional public river access facilities as part of the Bucks Bar Bridge Replacement Project at the existing Bucks Bar Bridge.

Exhibit A: Vicinity Map

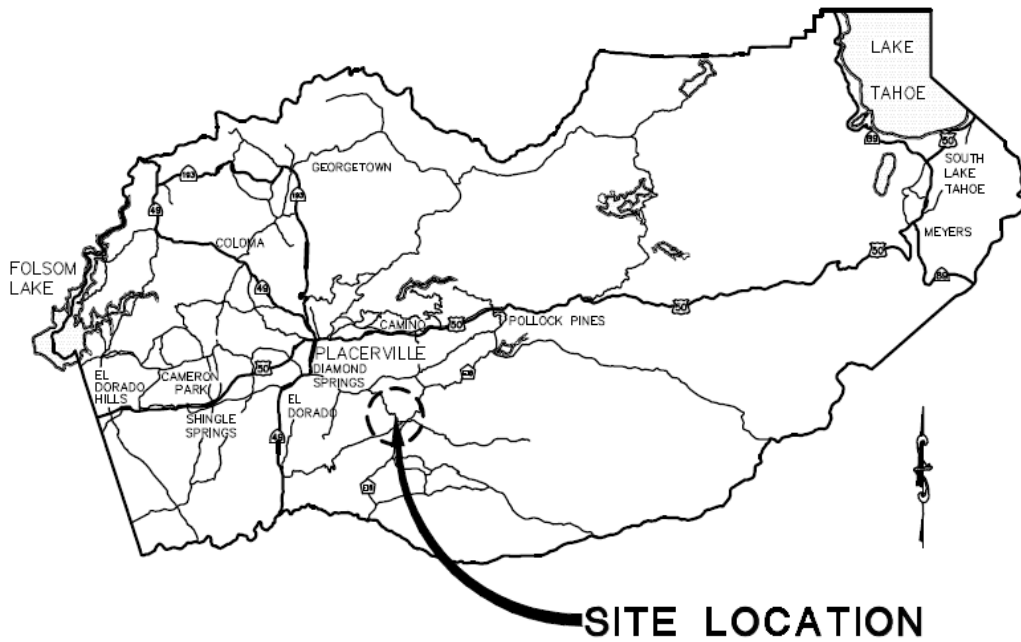


Exhibit B: Project Location

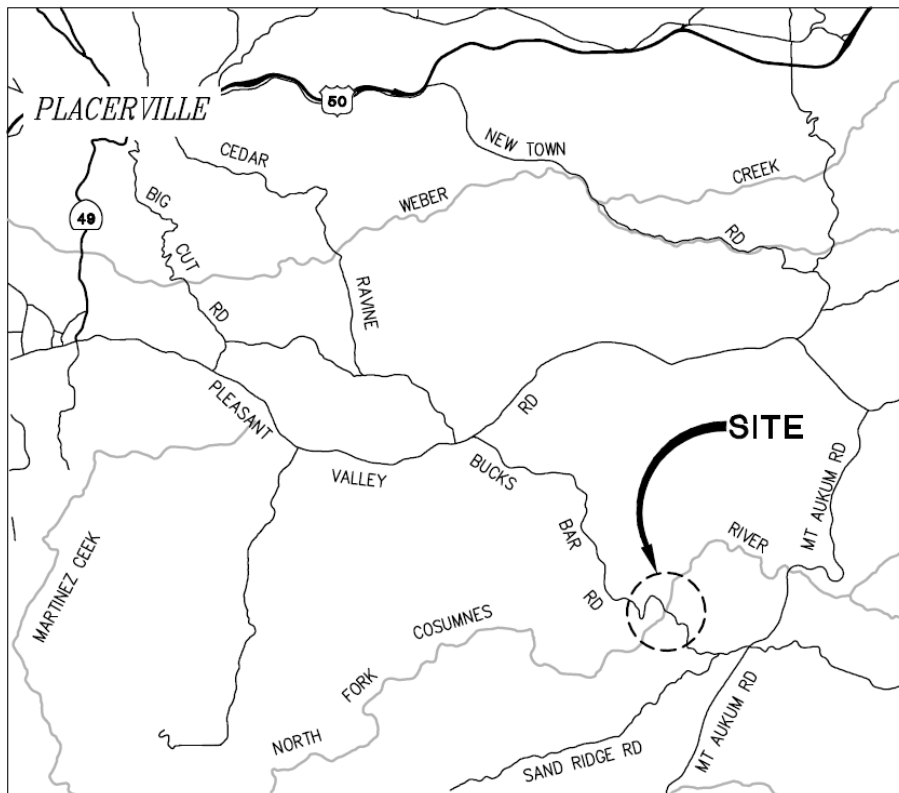


Exhibit C: Bucks Bar Bridge Replacement – Preferred Alignment



Exhibit D: Existing River Access Conditions

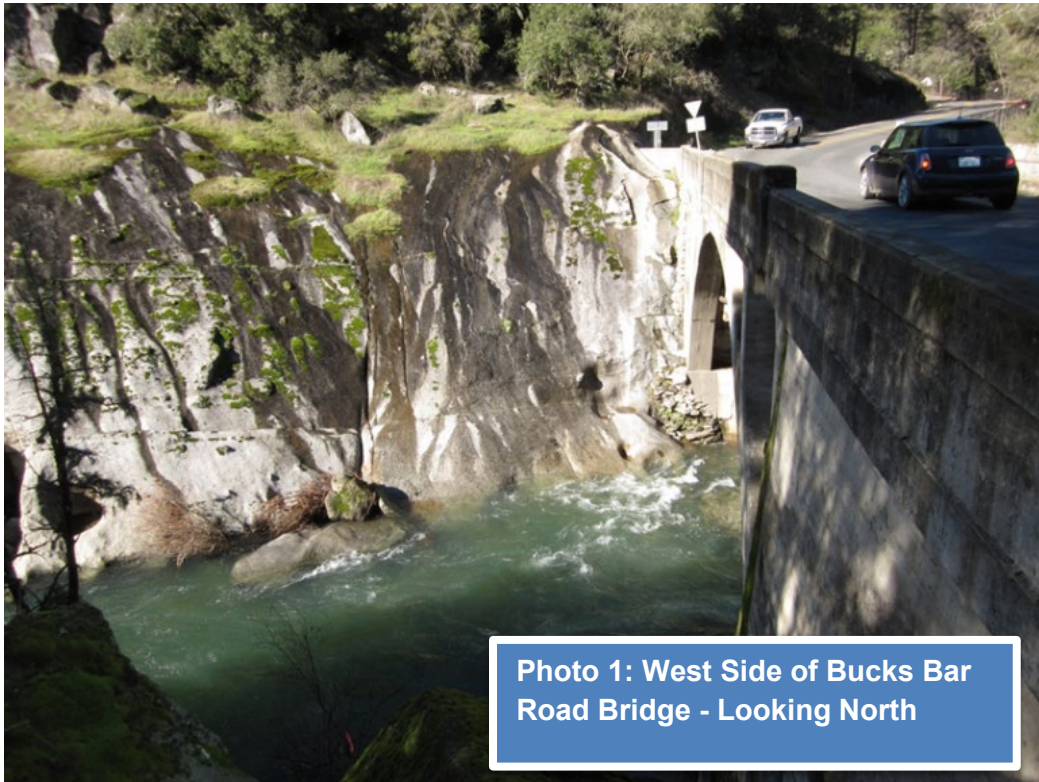


Photo 1: West Side of Bucks Bar Road Bridge - Looking North

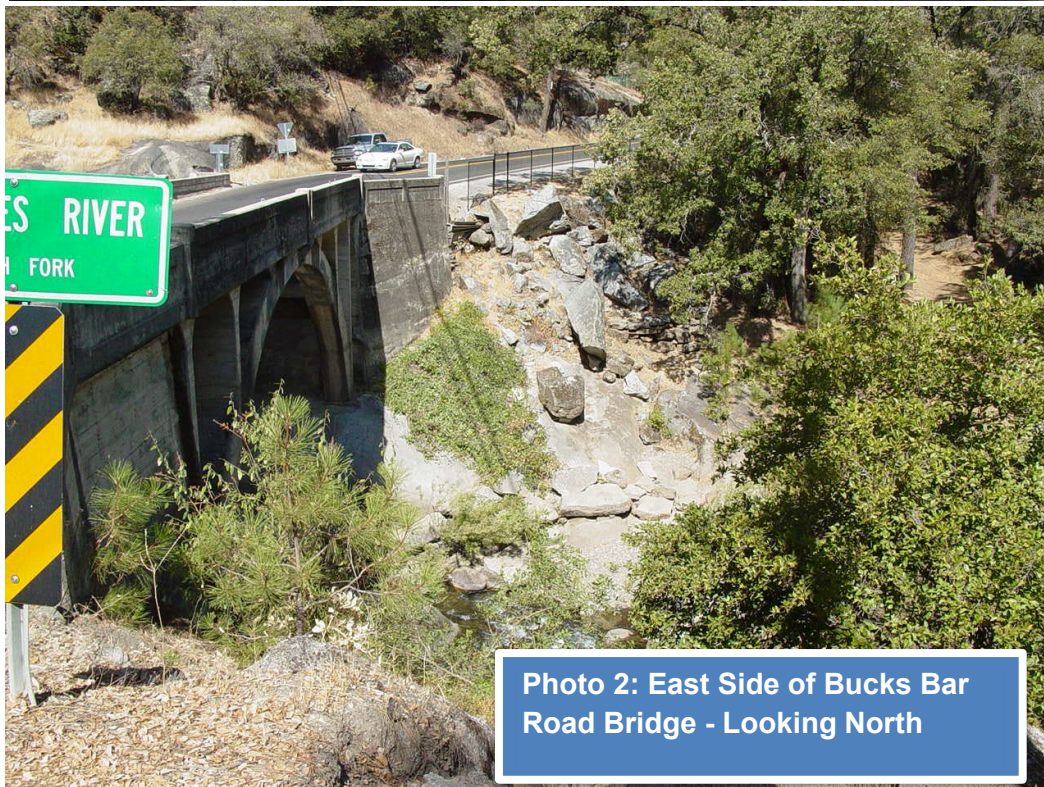


Photo 2: East Side of Bucks Bar Road Bridge - Looking North



Photo 3: East Side of Bucks Bar Road Bridge - Looking South

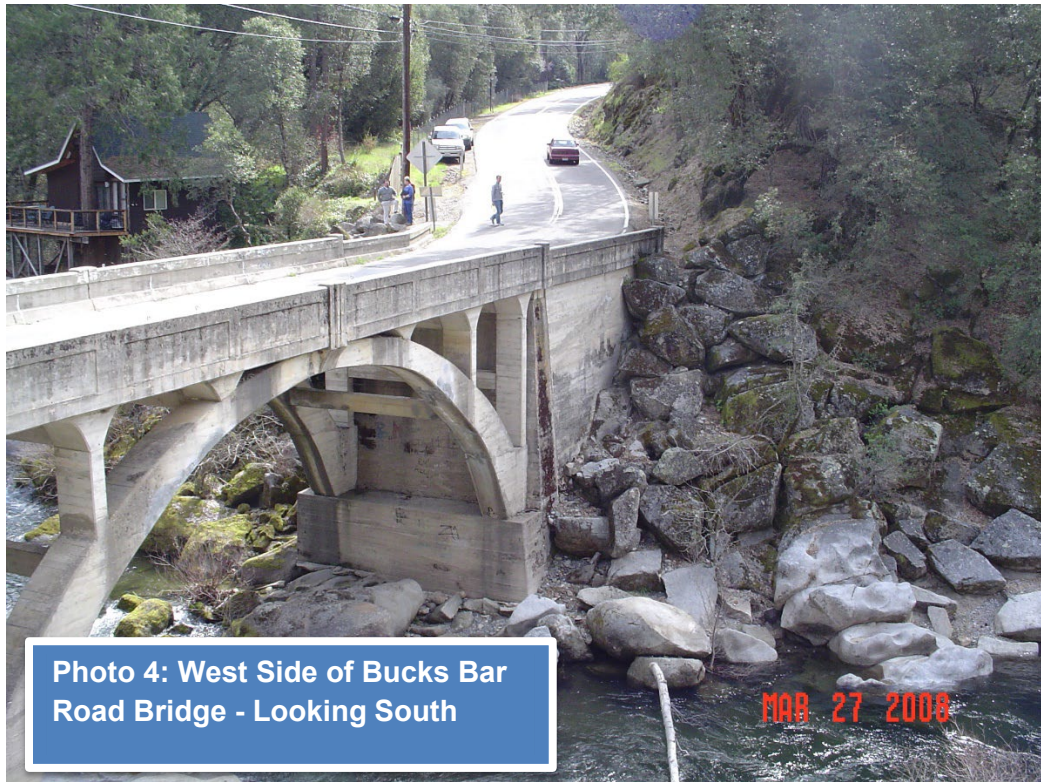
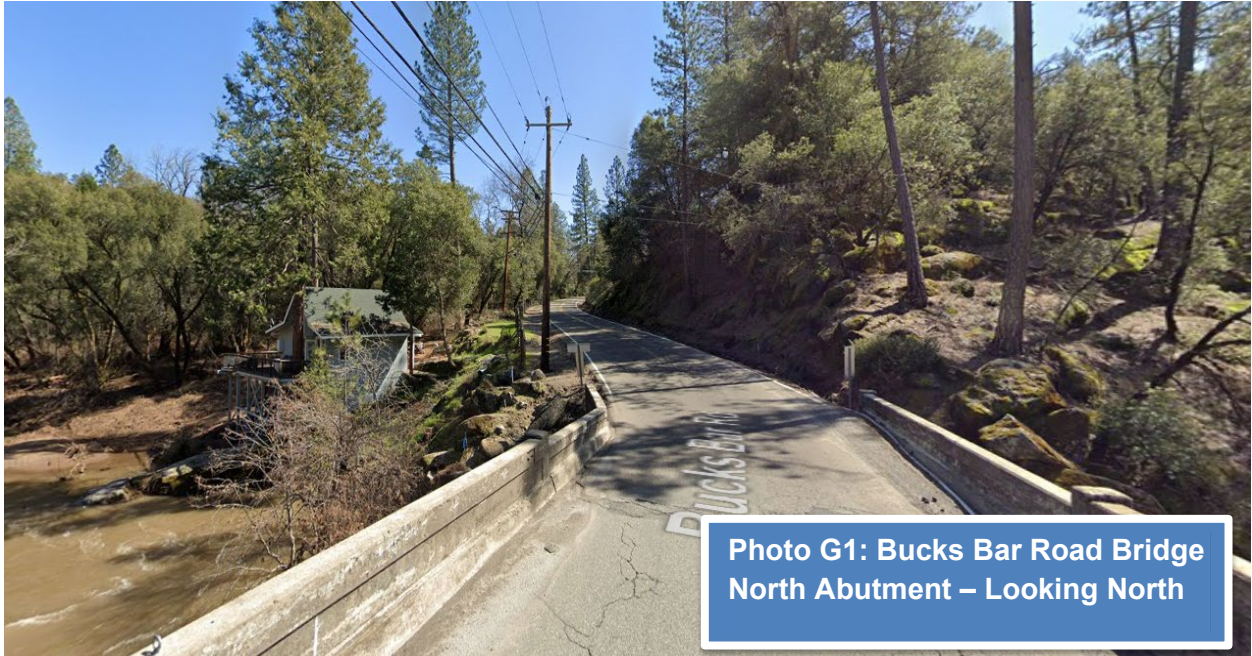


Photo 4: West Side of Bucks Bar Road Bridge - Looking South

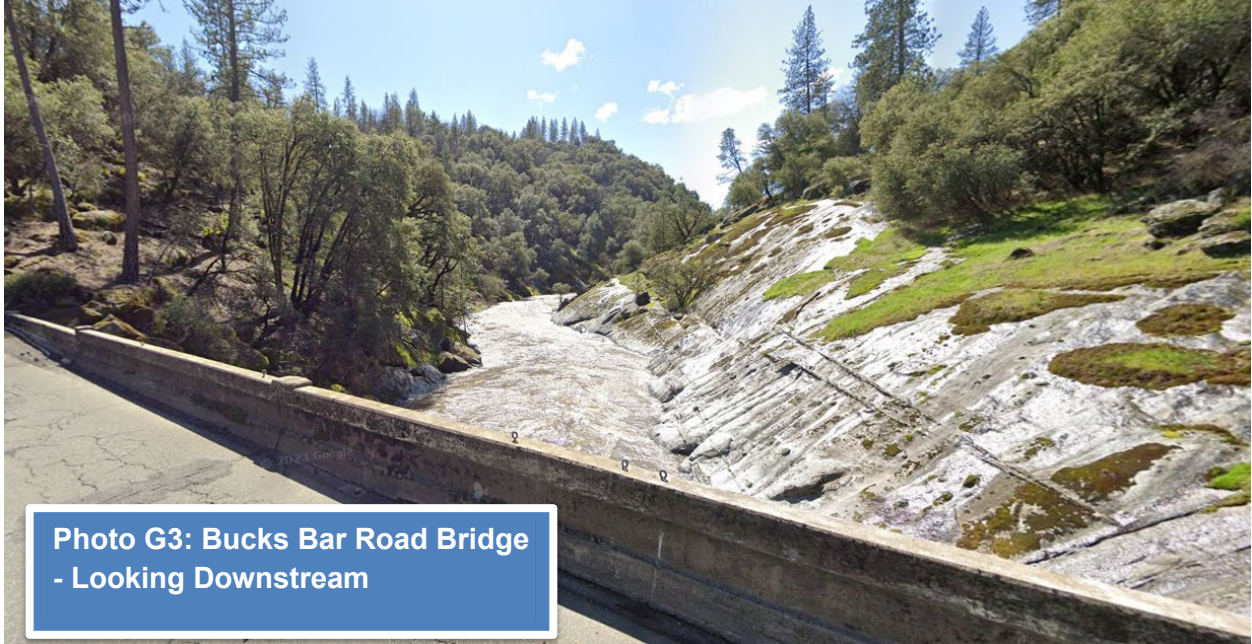
Exhibit G1- G5: Photos



**Photo G1: Bucks Bar Road Bridge
North Abutment – Looking North**



**Photo G2: Bucks Bar Road Bridge
South Abutment - Looking South**



**Photo G3: Bucks Bar Road Bridge
- Looking Downstream**



**Photo G4: Bucks Bar Road Bridge
- Looking Upstream**

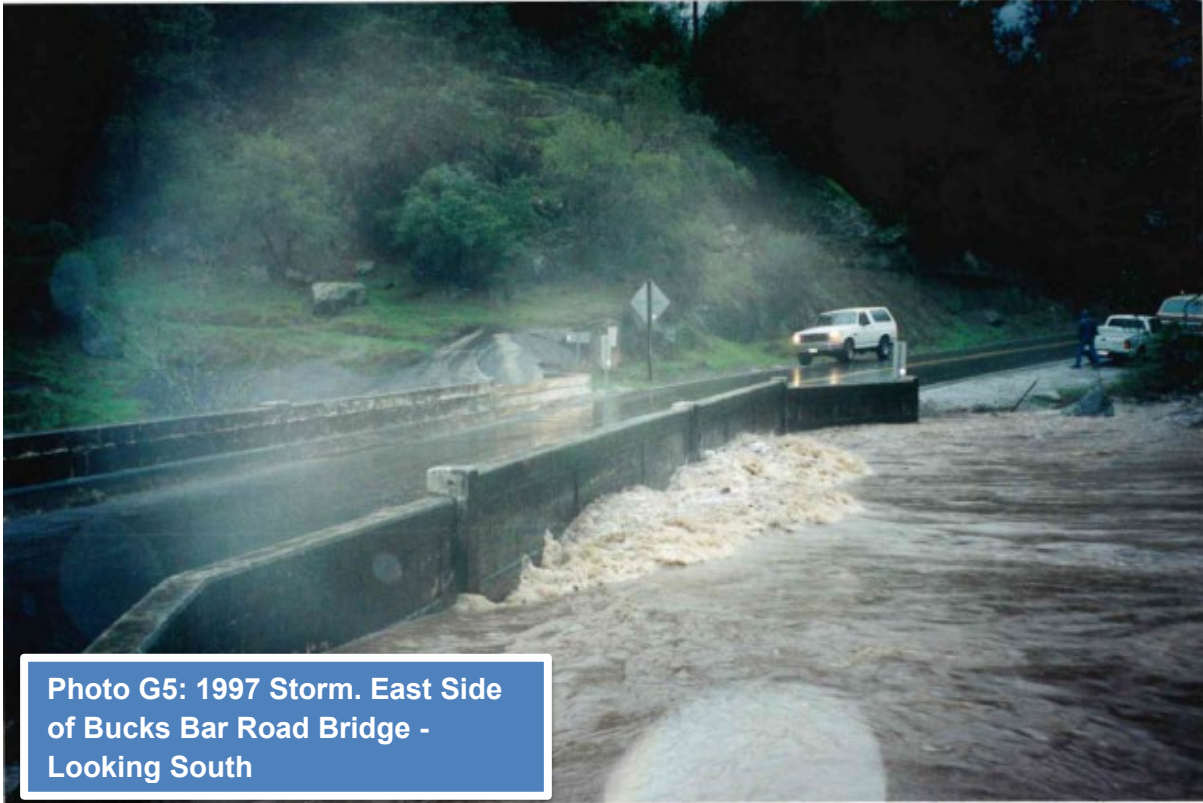


Photo G5: 1997 Storm. East Side of Bucks Bar Road Bridge - Looking South

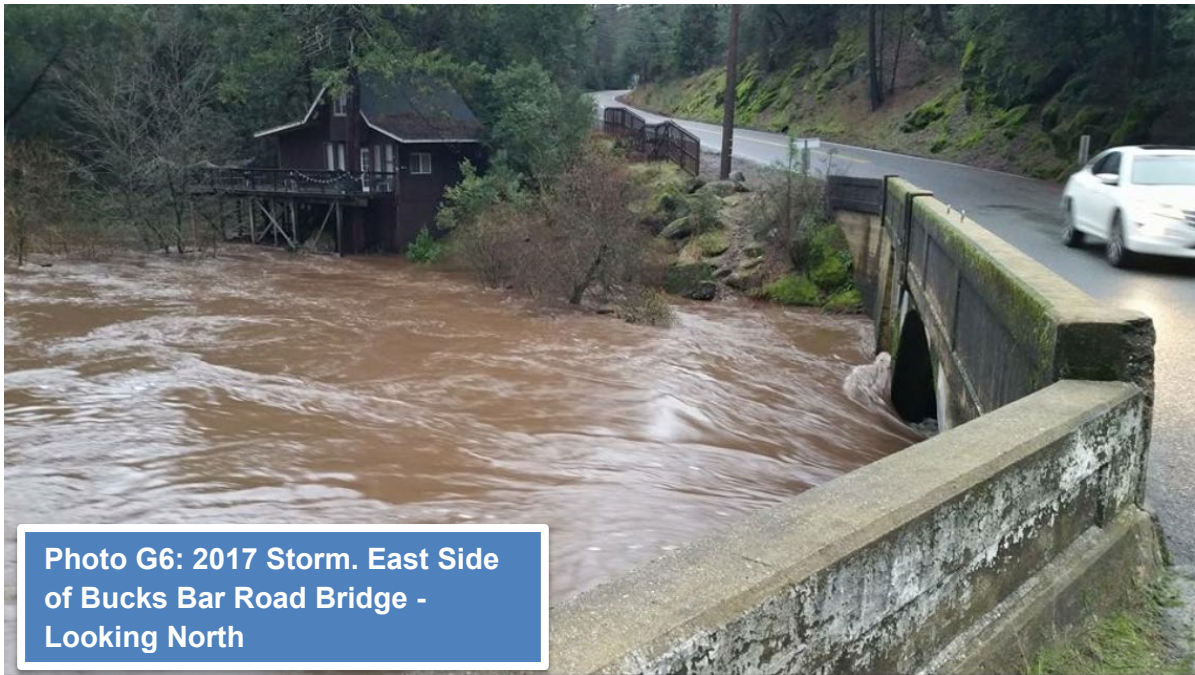


Photo G6: 2017 Storm. East Side of Bucks Bar Road Bridge - Looking North