Trinity River Channel Rehabilitation Site: Deep Gulch (River Mile 82.4–82.9) and Sheridan Creek (River Mile 81.6–82.4)

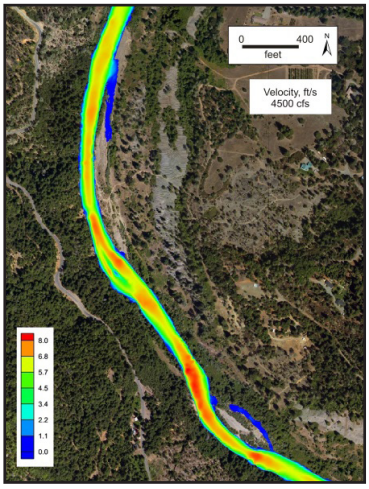
Environmental Assessment/Initial Study

DOI-BLM-CA-N060-2017-014-EA and TR-EA0117

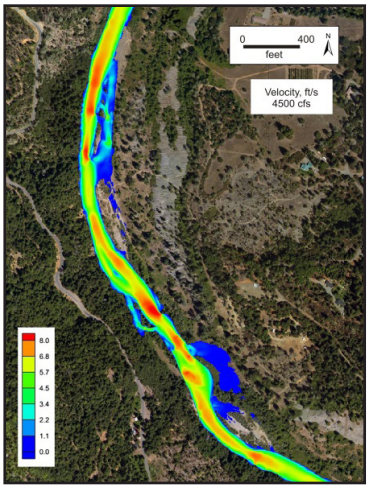
State Clearinghouse #2008032110

May 2017

Sheridan Reach



Deep Gulch Model, Existing Conditions



Deep Gulch Model, Design Conditions

California Lead Agency for CEQA
North Coast Regional Water Quality Control Board

Project Proponent and Federal Lead Agency for NEPA
Trinity River Restoration Program
U. S. Department of the Interior, Bureau of Reclamation

Federal Co-lead Agency for NEPA
U. S. Department of Interior, Bureau of Land Management

Project Proponent's Consultant
North State Resources, Inc.

Cover photos:
Sheridan Creek reach, courtesy of Ken DeCamp;
Deep Gulch model, existing velocity at 4,500 cfs (top), and
design velocity at 4,500 cfs (bottom).

Trinity River Channel Rehabilitation Site: Deep Gulch (River Mile 82.4–82.9) and Sheridan Creek (River Mile 81.6–82.4)

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Trinity River Channel Rehabilitation Site:
Deep Gulch (River Mile 82.4–82.9) and Sheridan Creek (River Mile 81.6–82.4)

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Tables

Figures

Appendices

(Note: All appendices are provided on a CD at the back of this report.)

Acronyms and Abbreviations

AEAM	Adaptive Environmental Assessment and Management
af	acre-feet
APE	Area of Potential Effect
Basin Plan	Water Quality Control Plan for the North Coast Region
BDA	beaver dam analog
BFE	base flood elevation
BLM	U.S. Bureau of Land Management
BMI	benthic macroinvertebrate
BMP	best management practice
BO	Biological Opinion
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CO_2	carbon dioxide
CWA	Clean Water Act
CWHR	California Wildlife Habitat Relationships
CY	cubic yard
dB	logarithmic decibel
DPS	distinct population segment
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELJ	engineered log jam
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESL	environmental study limit
ESU	evolutionarily significant unit
FEIS	Final Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIS	Flood Insurance Study
GHG	greenhouse gas
IS	Initial Study
L_{dn}	day-night average sound level
MMRP	Mitigation Monitoring and Reporting Program
msl	mean sea level

NAHC	Native American Heritage Commission
NCUAQMD	North Coast Unified Air Quality Management District
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NRHP	National Register of Historic Places
NSR	North State Resources, Inc.
NTU	nephelometric turbidity unit
ORV	outstanding remarkable value
PA	Programmatic Agreement
PM10	particulate matter less than 10 microns in aerodynamic diameter
PM2.5	particulate matter less than 2.5 microns in aerodynamic diameter
PRC	Public Resources Code
Reclamation	U.S. Bureau of Reclamation
Regional Water Board	North Coast Regional Water Quality Control Board
RM	River Mile
RMP	Resource Management Plan
ROD	Record of Decision
SMARA	Surface Mining and Reclamation Act
SONCC	Southern Oregon/Northern California Coast
SR	State Route
SWPPP	Storm Water Pollutant Prevention Plan
TMC	Trinity Management Council
TRD	Trinity River Division
TRRP	Trinity River Restoration Program
USACE	U.S. Army Corps of Engineers
USC	United States Code
USDI	U.S. Department of the Interior
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	visual resource management
WSE	water surface elevation
WSRA	Wild and Scenic Rivers Act
WUA	weighted usable area
YT	Yurok Tribe

Chapter 1. Introduction and Background

This Environmental Assessment/Initial Study (EA/IS) for the proposed Trinity River Channel Rehabilitation Sites – Deep Gulch (River Mile [RM] 82.4-82.9) and Sheridan Creek (RM 81.6-82.4) was prepared by the United States Department of the Interior (USDI), Bureau of Reclamation (Reclamation) and USDI Bureau of Land Management (BLM) to meet the requirements of the National Environmental Policy Act (NEPA) and by the North Coast Regional Water Quality Control Board (Regional Water Board) to meet the requirements of the California Environmental Quality Act (CEQA). Reclamation is the lead agency under NEPA, and BLM is a federal land manager at the sites and federal co-lead under NEPA. These federal agencies worked with the Regional Water Board to analyze the potential impacts of the proposed activities under NEPA (40 Code of Federal Regulations [CFR], Section 1508.9(a)) and CEQA (California Public Resources Code (PRC) Sections 21000 et seq.).

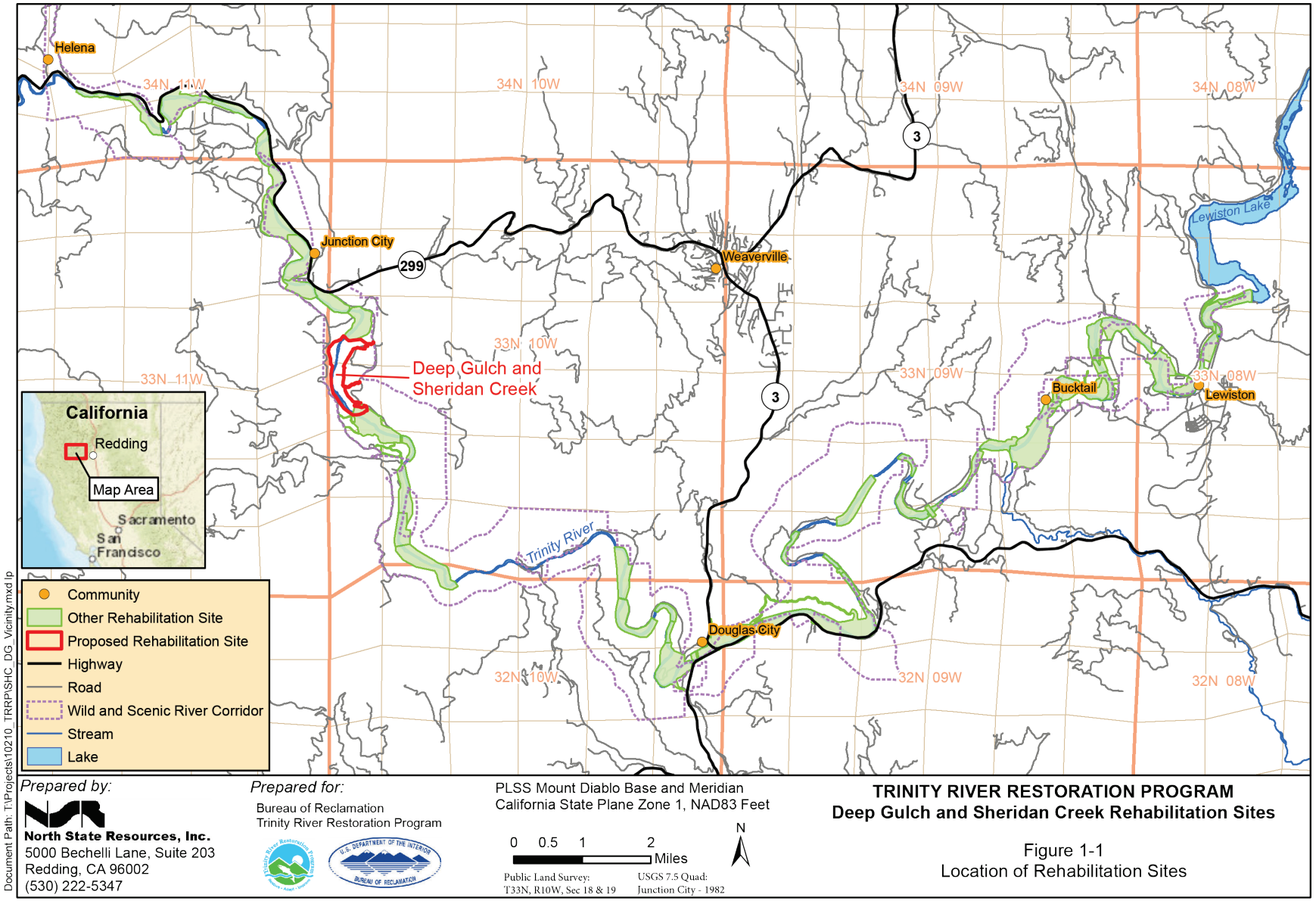
Appendix A1 to this EA/IS was prepared as an initial screening mechanism to identify the resource topics that were addressed in the *Channel Rehabilitation and Sediment Management Activities for Remaining Phase 1 and Phase 2 Sites, Part 1: Final Master Environmental Impact Report and Part 2: Environmental Assessment/Final Environmental Impact Report (Master EIR and EA/EIR, Regional Water Board and Reclamation 2009)* and considered in this document. Appendix A2 to this EA/IS is the CEQA environmental checklist prepared to partially satisfy CEQA requirements.

This EA/IS incorporates by reference, and is tiered from, two previous joint NEPA/CEQA documents, the *Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report* (Trinity River EIS/EIR; U.S. Fish and Wildlife Service et al. 2000) and the Master EIR and EA/EIR. The proposed Deep Gulch and Sheridan Creek Rehabilitation Sites (collectively referred to as the project area in this EA/IS) were identified in the Master EIR as Phase 2 sites and discussed at a programmatic level. The purpose of this EA/IS is to provide a site-specific analysis of the proposed rehabilitation activities at the two sites.

BLM is considering issuance of a Right of Way to Reclamation pursuant to Title V of the Federal Land Policy and Management Act (43 USC 1761 et seq.) for implementation of the rehabilitation activities on BLM-managed lands. BLM is also considering issuance of a Free Use Permit (FUP) pursuant to 43 CFR 3604 that would authorize Reclamation to use mineral materials for restoration activities at the Deep Gulch and Sheridan Creek rehabilitation sites. All environmental commitments, project design features, mitigation measures, and best management practices (BMPs) developed for this EA/IS would be considered for incorporation into the BLM authorization.

1.1 Location of Rehabilitation Sites

Reclamation proposes to conduct mechanical channel rehabilitation activities on the mainstem Trinity River downstream of Lewiston Dam in the project area, as illustrated on Figure 1-1. The Deep Gulch and Sheridan Creek rehabilitation sites share activity areas and have been combined into one project area for purposes of the analysis. The project area encompasses approximately 177 acres, which include 138 acres of BLM-managed land and 39 acres of private land.


Helena
Junction City
Weaverville
Lewiston Lake
Bucktail
Lewiston
Douglas City
Deep Gulch and
Sheridan Creek
Trinity River
299
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34N 08W
33N 10W
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33N 09W
33N 08W
32N 10W
32N 09W
32N 08W
California
Redding
Map Area
Sacramento
San Francisco
Community
Other Rehabilitation Site
Proposed Rehabilitation Site
Highway
Road
Wild and Scenic River Corridor
Stream
Lake
Prepared by:
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5000 Bechelli Lane, Suite 203
Redding, CA 96002
(530) 222-5347
Prepared for:
Bureau of Reclamation
Trinity River Restoration Program
PLSS Mount Diablo Base and Meridian
California State Plane Zone 1, NAD83 Feet
0 0.5 1 2
Miles
N
Public Land Survey:
T33N, R10W, Sec 18 & 19
USGS 7.5 Quad:
Junction City - 1982
TRINITY RIVER RESTORATION PROGRAM
Deep Gulch and Sheridan Creek Rehabilitation Sites
Figure 1-1
Location of Rehabilitation Sites
Document Path: T:\Projects\10210_TRRP\SHC_DG_Vicinity.mxd lp

Throughout this document, the terms river left and river right are used to refer to the river banks when looking downstream. For this project, the left is the west side of the river and the right is the east side.

The Deep Gulch rehabilitation site is located about 1.6 miles south of Junction City, California. This site is in Section 19 of Township 33 North, Range 10 West on the *Junction City, California* 7.5-minute U.S. Geological Survey (USGS) quadrangle, Mount Diablo Base and Meridian. The 0.5-mile-long reach of the Trinity River at this site is characterized by a relatively wide alluvial valley bottom, relatively low water-surface slopes, low sinuosity, and simple channel geometry. The river elevation at the site is approximately 1,480 feet above mean sea level (msl). Access to the site is via dirt roads west of Sky Ranch Road, which intersects State Route 299 southeast of Junction City and north of the site and through the Sheridan Creek site to the north.

The Sheridan Creek rehabilitation site abuts the downstream (northern) boundary of the Deep Gulch rehabilitation site. This site is in Section 18 of Township 33 North, Range 10 West on the *Junction City, California* 7.5-minute USGS quadrangle, Mount Diablo Base and Meridian. The 0.8-mile-long reach of the Trinity River at this site is characterized by a relatively wide alluvial valley bottom, relatively low water surface slopes, low sinuosity, and simple channel geometry with a major riffle feature that supports salmonid spawning. Access to the site from Sky Ranch Road is via Dredger Place, a private, unpaved lane that also provides access through private land to private parcels as well as to BLM land at the northeast corner of the site. The road continues into the Deep Gulch site to the south.

1.2 Trinity River Restoration Program Background

The fundamental purpose of the Trinity River Restoration Program (TRRP) is to restore historic river processes to the Trinity River through implementation of the 2000 Record of Decision (ROD) for the Trinity River EIS/EIR. It is the intent of the TRRP to restore a properly functioning river through rehabilitation activities at multiple locations in order to increase naturally spawning anadromous fish populations to levels that existed prior to construction of the Lewiston and Trinity Dams. The target reach for Trinity River restoration is the approximately 40-mile length of river downstream of Lewiston Dam to the confluence of the North Fork Trinity River.

For this reach, the ROD outlined six integral components for execution:

- implementation of a variable annual flow regime according to recommendations provided in the Trinity River Flow Evaluation Report prepared by the U.S. Fish and Wildlife Service (USFWS) and Hoopa Valley Tribe in 1999,
- mechanical channel rehabilitation,
- fine and coarse sediment management,
- watershed restoration,
- infrastructure improvement, and
- adaptive environmental assessment and management.

In general, the TRRP approach to channel rehabilitation is to reconnect the river with its floodplain. This reconnection requires selective removal of terraces and riparian berms (i.e., berms that are anchored with woody vegetation and consolidated sand deposits) that developed after the Lewiston and Trinity Dams were completed and peak scouring flows that occurred prior to completion of the

dams were lost. Along with berm removal, the approach involves physical alteration of floodplains so that they become inundated more frequently, placement of large wood, and removal of riparian vegetation at strategic locations to promote the alluvial processes necessary for the restoration and maintenance of complex riverine habitats. The ROD for the Trinity River EIS/EIR specified that mechanical channel rehabilitation activities would be implemented at 47 sites on the mainstem Trinity River between Lewiston Dam and the North Fork Trinity River. Since issuance of the ROD, the TRRP has completed rehabilitation activities at 32 sites and is currently planning activities at several other sites, including the upstream Dutch Creek rehabilitation site.

The Master EIR includes a brief chronology summarizing the most pertinent management actions that have occurred relevant to the Trinity River Basin between 1938 and 2008 (Section 1.4.4., pages 1-8). Additional details concerning the legislative and management history can be found in the Trinity River EIS/EIR and the EA/Final EIRs for TRRP projects constructed between 2005 and 2008[1]. These documents are on file at the TRRP office in Weaverville, California, and available on the TRRP website (www.trrp.net) and at the Weaverville public library. The Master EIR (Section 1.4.5, pages 1-10 through 1-15) also contains a summary of the various restoration activities that have been undertaken since the signing of the ROD, as well as brief discussions of other watershed restoration programs and activities occurring within the basin; additional information is available on the TRRP website[2].

1.3 Purpose and Need/Project Objectives

NEPA regulations require that an EA briefly specify the need that the agency is responding to in proposing an action (40 CFR 1508.9(a)). Similarly, a CEQA lead agency must describe the objectives to be achieved by a proposed project (California Code of Regulations (CCR), Title 14, Division 6, Chapter 3, Section 15124(b)).

The TRRP is working to provide increases in habitat for all life stages of naturally produced anadromous fish native to the Trinity River in the amounts necessary to reach congressionally mandated goals. The strategy is to create habitat for native anadromous fish, while also ensuring that habitat complexity and quantity increase as the alluvial processes of the Trinity River are enhanced or restored in a manner that would perpetually maintain fish and wildlife resources (including threatened and endangered species) and the river ecosystem. The proposed rehabilitation activities at Deep Gulch and Sheridan Creek are needed to support the TRRP's goals of restoring fish populations to pre-dam levels and restoring dependent fisheries, including those held in trust by the federal government for the Hoopa Valley and Yurok tribes, in compliance with the 2000 ROD.

Specifically, the primary rehabilitation objective for the Deep Gulch rehabilitation site is to re-establish a functioning, topographically complex floodplain, while also increasing in-channel habitat diversity. The existing pool-riffle features at the site provide opportunities to increase channel and hydraulic complexity by expanding the channel, excavating adjacent overbank areas, adding large woody material to support rearing habitat, and installing log jams to interact with river flows that can increase bed topography and create eddies. The rehabilitation activities are needed to increase optimal habitat over a wide range of flows for fry and presmolt fish above existing conditions. This

[1] Hocker Flat EA/EIR, the Canyon Creek Suite EA/EIR, Indian Creek EA/EIR, and Lewiston-Dark Gulch EA/EIR.
[2] On the TRRP website, go to http://www.trrp.net/?page_id=409.

site provides a source of alluvial materials necessary for improving aquatic habitat, increasing habitat complexity, and constructing submerged fords to access activity areas on river left.

For the Sheridan Creek rehabilitation site, the primary rehabilitation objective is also to increase habitat diversity, including riparian and aquatic habitat, while also promoting dynamic river processes. The existing riffles and multi-story riparian vegetation provide opportunities to enhance the existing habitat, increase the functional floodplain area, and protect existing high-use spawning riffles above Sheridan Hole. The rehabilitation activities are needed to increase rearing habitat for juvenile fish, reduce the wood storage deficit, and improve continuity between the existing riparian vegetation patches. This site also provides a source of alluvial materials necessary for improving aquatic habitat, increasing habitat complexity, and constructing submerged fords to access activity areas on river left.

1.4 Purpose of This Document

Both NEPA (42 USC 4321 et seq.) and CEQA (PRC, Section 21000 et seq.) require that governmental agencies disclose information about proposed activities that may affect the environment, evaluate the potential environmental impacts of their proposed actions before making formal commitments to implement them, and involve the public in the environmental review process. This site-specific EA/IS for the proposed action at the Deep Gulch and Sheridan Creek sites has been prepared to comply with NEPA and CEQA. This combined NEPA/CEQA document evaluates the environmental impacts of the proposed action, recommends project design features or mitigation measures to minimize impacts, and is designed to facilitate lawful implementation under all applicable laws.

Tiering, which is recognized under both NEPA and CEQA, refers to the practice of covering general matters in broader-scope environmental documents and focusing subsequent documents on the issues germane to the site-specific actions (40 CFR 1508.28). Tiering is appropriate when a sequence of analyses progresses from a broad, conceptual, or planning-level review over a wide area or program to a project-specific and site-specific analysis. Tiering helps the lead agencies focus on issues that are "ripe" for decision, while excluding from consideration issues already decided or not yet ripe (CCR, Title 14, Division 6, Chapter 3, Section 15385). The general analysis in the broader document is incorporated by reference into the subsequent documents, meaning that the information in the broader document does not need to be repeated in subsequent documents.

This site-specific EA/IS for the proposed action at the Deep Gulch and Sheridan Creek sites is tiered to the previous analysis in the *Trinity River Mainstem Fishery Restoration Final EIS/EIR* (FEIS/EIR; USFWS et al. 2000). It also incorporates by reference the analyses in the Master EIR and EA/EIR (Regional Water Board and Reclamation 2009).

The Trinity River FEIS/EIR serves as a NEPA analysis from which site-specific projects may tier. NEPA allows for tiering, as described in Sec. 1508.28 of the Council on Environmental Quality (CEQ) regulations. This section of the CEQ regulations states that tiering "refers to the coverage of general matters in broader environmental impact statements…with subsequent narrower statements or environmental analyses (i.e., regional or basinwide program statements or, ultimately, site-specific

statements), incorporating by reference the general discussions and concentrating solely on the issues specific to the statement subsequently prepared."

In 1994, the USFWS as the NEPA lead agency and Trinity County as the CEQA lead agency began the public process for developing the EIS/EIR for the Trinity River Mainstem Fishery Restoration Program. The FEIS portion of the Trinity River FEIS/EIR (published in October 2000) functions as a project-level NEPA document for policy decisions associated with managing Trinity River flows and as a programmatic NEPA document providing "first-tier" review of other potential actions, including the proposed action. However, because the Trinity County Board of Supervisors—the CEQA lead agency for the Trinity River FEIS/EIR—never certified the EIR portion of the 2000 FEIS/EIR, the EIR portion was not available to tier from for the CEQA portion of this document or for other earlier TRRP CEQA documents. Consequently, four joint EA/EIRs were completed to analyze TRRP channel rehabilitation projects between 2004 and 2008[3]. Based on the similarity of these projects and their environmental impacts and agreement that future TRRP projects would have similar impacts, a separate programmatic document, the Master EIR, was developed. The EA portion of the Master EIR – EA/EIR tiers from the Trinity River Mainstem Fishery Restoration FEIS/EIR (USFWS et al. 2000a). The ROD, dated December 19, 2000, for the FEIS/EIR directed USDI agencies to implement the Flow Evaluation Alternative, which was identified as the Preferred Alternative in the FEIS/EIR.

CEQA allows for preparation of a Master EIR that analyzes a series of related actions that are characterized as one large project or program, such as the channel rehabilitation and sediment management activities proposed by TRRP. A Master EIR evaluates at a programmatic level the direct and indirect environmental impacts, cumulative impacts, growth-inducing impacts, and irreversible significant effects on the environment of subsequent site-specific projects. A Master EIR forms the basis for analyzing the effects of subsequent projects (CEQA Guidelines, Section 15175, et. seq.). The Master EIR meets the elements required for a Program EIR pursuant to CCR, Title 14, Division 6, Chapter 3, Section 15168. Therefore, the Master EIR provides programmatic CEQA level review, from which the Deep Gulch and Sheridan Creek project—a subsequent site-specific project—is tiered.

The Regional Water Board acted as the lead agency for the Master EIR (State Clearinghouse #2008032110) and for the initial study portions of subsequent site-specific EA/ISs. The Master EIR provides a discussion of the existing conditions, environmental impacts, and mitigation measures required to comply with CEQA (California PRC, Section 21000 et seq.). In addition to addressing direct and indirect impacts associated with the proposed project and alternatives, the Master EIR addresses cumulative and growth-inducing impacts that could be associated with activities at the remaining Phase 1 and Phase 2 sites. The Regional Water Board certified the Master EIR on August 25, 2009.

Because the Master EIR provides programmatic level review from which site-specific projects may tier, the analysis of the proposed action required under CEQA is tiered from that document. In addition, the EIS portion of the Trinity River FEIS/EIR functions as a project-level NEPA document for policy decisions associated with managing Trinity River flows and as a programmatic NEPA document providing "first-tier" review of other potential actions, including the proposed action. This EA/IS focuses only on site-specific activities for the proposed action and serves as a joint

[3] Hocker Flat EA/EIR, the Canyon Creek Suite EA/EIR, Indian Creek EA/EIR, and Lewiston-Dark Gulch EA/EIR.

NEPA/CEQA document for project authorization by both federal and California state regulatory agencies.

Under CCR, Title 14, Section 15177, after a Master EIR has been prepared and certified, subsequent projects that the lead agency determines as being within the scope of the Master EIR will be subject to only limited environmental review. Subpart (b)(2)) of this section of the CCR states that the preparation of a new environmental document and new written findings will not be required if, based on a review of the IS prepared for the subsequent project, the lead agency determines, on the basis of written findings, that no additional significant environmental effect will result from the proposal, that no new additional mitigation measures or alternatives are required, and that the project is within the scope of the Master EIR[4]. Whether a subsequent project is within the scope of the Master EIR is a question of fact to be determined by the lead agency based on a review of the IS to determine whether there are additional significant effects or new additional mitigation measures or alternatives required for the subsequent project that are not already discussed in the Master EIR.

This EA/IS for the proposed action provides site-specific details for the environmental impact analyses and has been prepared to comply with NEPA (42 USC, Section 4321 et seq.) and CEQA (California PRC, Section 21000 et seq.). This EA/IS focuses only on site-specific activities for the proposed action and serves as a joint NEPA/CEQA document for project authorization by both federal and California state regulatory agencies. This EA/IS contains a site-specific project description and other information required to apply for enrollment under General Water Quality Certification R1-2015-0028 (or subsequent reissued Certification) for Trinity River channel rehabilitation activities, which the Regional Water Board will consider in making its determination and approval decision.

1.5 Other Regulatory Requirements

In addition to CEQA and NEPA, the proposed rehabilitation activities are subject to a variety of federal, state, and local statutes, regulations, policies, and other authorities, such as the Clean Water Act, Endangered Species Act, California Fish and Game Code, National Historic Preservation Act[5], Wild and Scenic Rivers Act, and BLM's 1993 Redding Resource Management Plan (RMP). The primary responsible and trustee agencies are the U.S. Army Corps of Engineers (USACE), USFWS, National Marine Fisheries Service (NMFS), California Department of Fish and Wildlife (CDFW), the Regional Water Board, and Trinity County. Chapter 3, Regulatory Framework, of the Master EIR includes descriptions of the actions required of these agencies and the applicable environmental statutes and identifies permits required for the TRRP work on the Trinity River.

The BLM's Redding Field Office manages public lands in the Trinity River Basin in accordance with its 1993 RMP and Record of Decision (RMP) (BLM 1993). The RMP discusses the general condition of natural resources in the plan area and prescribes appropriate land use management for lands within the plan jurisdiction, including BLM-managed lands at the Deep Gulch and Sheridan Creek rehabilitation sites. Section 4.2.2 of the Master EIR provides additional information about the

[4] Applicable for Master EIRs certified more than 5 years prior to the filing of a subsequent application.

[5] Section 3.1.1 of the Master EIR provides a comprehensive discussion of Reclamation's approach to compliance with the National Historic Preservation Act; specifically with respect to Section 106 consultation requirements. Appendix D to the Master EIR documents the programmatic agreement between USFWS, Reclamation, BLM, Hoopa Valley Tribe, the California State Historic Preservation Office and the Advisory Council on Historic Preservation.

RMP. As part of the BLM decision-making process, BLM must evaluate the consistency of the proposed action with the RMP, as amended.

1.6 Scoping and Public Involvement

Since the signing of the ROD and efforts to begin its implementation, TRRP and other agencies have held numerous public meetings and open houses to obtain public input and provide the public with information on the overall TRRP rehabilitation activities. As part of ongoing TRRP outreach activities, TRRP staff members have met with local groups (e.g., fishing guides and mining groups) and individual landowners from the Junction City area to obtain stakeholder input and advice and to address general concerns not specific to the Deep Gulch or Sheridan Creek rehabilitation activities. Notice of all public meetings and other pertinent project information are announced in local newspapers and posted on the TRRP's website: http://www.trrp.net/.

Assembly Bill 52 (AB52) was signed by the Governor of California in September 2014. The bill requires that California state lead agencies consult with California Native American tribes traditionally and culturally affiliated with the geographic area of a project when the Tribe requests to be informed of such projects and requests the consultation in order to ensure that impacts to tribal cultural resources are minimized. AB 52 requirements apply to projects with a notice of preparation or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. The consultation requirements of AB 52 did not apply to the preparation and adoption of the 2009 Master EIR prepared for the TRRP.

Under the auspices of Reclamation, the TRRP entered into a Programmatic Agreement (PA) with the California State Historic Preservation Officer to ensure compliance with Section 106 of the National Historic Preservation Act. The PA ensured that tribal cultural resources were addressed in the Master EIR. The mitigation, monitoring, and reporting plan adopted by the Regional Water Board includes measures for the protection of tribal cultural resources, including tribal consultation and coordination; site evaluations; and avoidance, minimization, and other specific mitigation as necessary at the site scale.

Starting in 2014, when the initial planning/design process for the Deep Gulch and Sheridan Creek sites began, TRRP staff met numerous times with individual landowners along Sky Ranch Road as well as with other interested parties (e.g., local fishing guides) to describe the proposed activities, exchange ideas on how to make the project more acceptable to the local community, adjust project boundaries to reduce impacts to landowners and other users, and discuss the advantages and disadvantages of combining the two sites in one environmental review.

At the request of the TRRP, an outside, independent team of scientists and engineers met for a week in July 2015 to conduct a detailed review of the proposed designs for, and recommend improvements to, the Deep Gulch and Sheridan Creek project using a process referred to as value engineering (VE). The VE study, which was completed in December 2015, provided recommendations related to the design and implementation of the proposed action. As a result of the VE study, the TRRP design teams revised the preliminary design reports and developed the proposed action described in Chapter 2 of this EA/IS. The Value Engineering Study report was completed in December 2015 and is available on the TRRP website at http://odp.trrp.net/Data/Documents/Details.aspx?document=2255.

Consistent with Reclamation and BLM's NEPA requirements, the public review of the Draft EA/IS began when the agencies posted the document to their official websites. The official public review period under CEQA began when the document was submitted to the California State Clearinghouse on March 8, 2017. The Draft EA/IS was circulated to local, state, and federal agencies and to interested organizations and individuals, stipulating a 31-day review period ending on April 7, 2017. After several requests to extend the review period, it was extended for a week to April 14, 2017. At the onset of the review period, public notices informing the public of the availability of the Draft EA/IS for review were posted on the TRRP website, at the rehabilitation sites, at the TRRP Weaverville and BLM Redding Field offices, and in the *Trinity Journal* and *Redding Record Searchlight* newspapers; the public notices were also mailed to local landowners and emailed to interest groups. An open house to describe the proposed action and receive public input was held on March 15, 2017, at 6:00 pm at the North Fork Grange Hall on Dutch Creek Road in Junction City, California, and was attended by representatives of agencies and Tribes, as well as local residents and other interested parties.

During the comment period, five individual comment submittals were received by the TRRP covering a wide array of topics, many of which were outside the scope of the EA/IS. Appendix B provides a complete record of these comments and the responses from the lead agencies.

Chapter 2. Description of Alternatives

This chapter describes the proposed action and the no action alternative as well as alternatives that were eliminated from detailed analysis in this EA/IS. The NEPA term "proposed action" is used throughout this document rather than the CEQA term "proposed project"; however, the terms should be considered synonymous.

2.1 Proposed Action

The proposed action consists of a number of rehabilitation activities at the Deep Gulch and Sheridan Creek rehabilitation sites, including reducing the encroachment of riparian vegetation; placement of large wood material; physical alteration of alluvial features (e.g., placement or excavation of alluvial material to construct floodplains and side channels); construction of large wood hydraulic and habitat structures; and removal or replacement of riparian and upland vegetation at strategic locations. These activities are based on those described and analyzed in the Master EIR; refer to Section 2.3.2 of the Master EIR for more information about each of these general activity types.

For the proposed action, specific activities that fall within the broader categories outlined in Table 2-1 of the Master EIR are described below. Activities P and W have the same level of impacts originally analyzed in the Master EIR, but are described separately in this analysis to clarify their intent. This section describes the general types of activities that occur in the TRRP's rehabilitation projects; Section 2.4.2.2 below describes the actual site-specific activities for the proposed action at the Deep Gulch and Sheridan sites.

2.1.1 Activity A (Recontouring and Vegetation Removal)

Under Activity A, the ground surface would be modified to reduce riparian encroachment and minimize the risk of stranding of juvenile salmonids. Vegetation would be cleared at most of the activity areas that would be subject to rehabilitation activities (e.g., constructed floodplains, disposal areas), but would be maintained where possible.

Activity A includes grading to construct or enhance topographic features that could develop into functional riparian habitat; excavation and the placement of fill would be balanced. In addition to the activity areas that would be cleared prior to grading, site-specific removal of trees (e.g., cottonwood, grey pine) may be required to enhance the safety of the work site and to improve local conditions for individual tree growth and wildlife; these trees would be used to construct large wood habitat structures. In these instances, consultation and authorization with BLM would be required before removal of site-specific trees.

Removed vegetation would be used for in-river placement as large wood, chipped/masticated, or spread/buried in revegetation areas to increase nutrients in and the water holding capability of the soils. Activities would be accomplished using a variety of methods, including hand tools and heavy equipment, such as excavators, bulldozers, scrapers, and dump trucks. Only the minimum amount of riparian vegetation that is necessary for project implementation would be removed.

2.1.2 Activities B, C, and D (Construction of Inundated Surfaces)

Activities B, C, and D concern the construction of surfaces that would be inundated. Activities associated with the construction of these surfaces would enhance their connection to the river at various flows. These activities are intended to expand the surface area of the channel that could be inundated by reoccurring flows below the ordinary high water mark. Vegetation would be cleared as necessary, and earth would be excavated to meet design elevations for periodic inundation.

Newly inundated surfaces would provide important rearing and slow-water habitat for juvenile salmonids and other native anadromous fish. They would also provide low points that could enhance sinuosity and thereby provide the habitat variability that was historically present and is required to support rapid growth of native fishes.

These treatment areas would rely on a combination of natural recruitment of native riparian vegetation and riparian planting to enhance the establishment of a diverse assemblage of native vegetation. If initial revegetation establishment is less successful than anticipated, additional efforts would be made by Reclamation consistent with requirements and commitments outlined in the TRRP's 2016 Draft Riparian Mitigation and Monitoring Plan. This plan requires supplemental efforts (e.g., in-planting, weed control, irrigation) as necessary to establish riparian vegetation to meet the standard of no net loss in riparian vegetation from pre-project levels.

2.1.3 Activities E and F (Side Channels)

Under Activities E and F, modifications to create or change side channels would reconnect the Trinity River with its floodplain at targeted flows. Side channels constructed for flows of 300 cubic feet per second (cfs) would provide off-channel, low-velocity habitat for a variety of aquatic organisms, including juvenile salmonids at base flow conditions. Side channels constructed for 1,000 cfs flows would provide habitat for salmonid rearing when water is flowing through the channels. As flows recede during the year, these side channels would drain naturally, reducing the likelihood of stranding aquatic organisms.

Side channels would evolve and revegetate to varying degrees over time. While the duration of side channel flow would depend on their evolution over time and the river's water surface elevation (WSE), riparian and wildlife habitat diversity would increase even when water is not flowing.

Side channels would be constructed to leave earthen berms near the upstream and downstream ends to protect water quality during construction. These berms would be removed at the end of construction if the water in the side channel is of appropriate quality for discharge to the river or the water in the side channel would be left in place for removal by subsequent high flows. Water in side channels may be pumped to uplands or slowly metered into the mainstem river post-construction. These techniques would reduce the amount of turbid water that would ultimately reach the Trinity River during side channel connection.

2.1.4 Activity G (Alcoves)

Under Activity G, alcoves would be excavated to design elevations at the downstream end of side channels or other appropriate locations. They would be continuously inundated (approximately 1-2

feet deep during low flows) and scoured/maintained during high flows to provide year-round juvenile fish habitat.

2.1.5 Activity H (Grade Control Removal)

Under Activity H, grade control structures, including constructed features, would be removed to increase channel complexity via promotion of channel migration, increased sinuosity, reduced fine sediment storage, increased coarse sediment transport, and restoration of bars.

2.1.6 Activity I (Sediment Management, Coarse and Fine)

In addition to site-specific creation and enhancement of alluvial features (bars), sediment management activities would occur at various sites under Activity I. Sediment management activities include augmentation of coarse sediment (e.g., spawning gravel) and removal of fine sediment (0.5–0.8 millimeter size fraction) at key locations. Long-term, large-scale coarse sediment augmentation sites would be established at select locations to encourage channel migration and the development of alternate bars. Augmentation activities also include measures required to provide a long-term supply of coarse sediment and to ensure that the TRRP has the administrative access necessary to implement these activities at specific locations.

Selected vegetation would be removed to facilitate the introduction of the coarse sediment along the channel margin. As appropriate, salvaged large wood would be retained and incorporated into riverine/in-channel activities to provide additional habitat complexity. The use of large wood is a vital component of channel rehabilitation work and includes incorporation of hydraulic structures (wood and/or rock), wood habitat structures, skeletal bars, and boulder habitat placement. Coarse sediment would be introduced via mechanized equipment (e.g., conveyor, mechanical placement below the ordinary high water mark) into the river channel under various high-flow conditions in a manner that facilitates the river's ability to route the coarse sediment downstream during high-flow periods.

2.1.7 Activity J (Placement of Excavated Materials)

Under Activity J, excavated materials would be placed in spoil areas so that there would be no increase in the elevation of the 100-year floodplain to comply with the requirements of Trinity County's Floodplain Ordinance. Appropriate site-specific spoil areas are identified and verified through hydraulic analysis so that they would have no effect on the 100-year flood elevation or only within established ordinance parameters. Spoiled materials would be spread in uniform layers that blend with the natural terrain. Placement of excavated and cleaned coarse sediment or cobbles may alternatively be used to create an infiltration gallery to allow subsurface water flow.

2.1.8 Activity K (Staging/Contractor Use Areas)

Under Activity K, excavated materials would be transported across the staging area to stockpile areas. Water would be applied to the excavated materials for construction purposes, including dust abatement, as directed by the Contracting Officer. The TRRP would use water to control dust generated from project activities that would have the potential to affect sensitive receptors adjacent to the project area. It is anticipated that two water trucks would be on site, a 4,000 gallon "ten wheel"

type truck and an "articulated" truck/trailer with a capacity of approximately 10,000 gallons. These would be used continuously on all access roads to and from Sky Ranch Road as well as haul roads on-site. These trucks would also use water to suppress dust where excavation and spoil activities are occurring. At the mobile gravel processing plant, planned for washing and sorting gravel in the DG U-1 or SC U-6 areas, a self-contained unit with spray bars would wash gravel and decrease dust coming off of the plant. The gravel processing operation also includes a 2-inch water hose to allow manual application of water as needed to control dust.

Activity in these areas would also include maintaining existing water wells and other infrastructure. The staging area may also be used for processing and storage of coarse sediment required for long-term sediment management activities or to obtain and store boulders for use in constructing hydraulic structures and boulder habitat placements.

2.1.9 Activities L and M (Roads, Existing and New)

Activities L and M pertain to existing and new access roads. The location of the activity areas within the project area would require construction of access roads that connect one activity area to others or to an existing public or private road authorized for use for specific project purposes. In some instances, these access roads would remain in use after the completion of the authorized project at the discretion of the land owner or manager. The site-specific design of these roads would consider factors like topography, soils, existing vegetation, and the need for future vehicle access. BMPs would be used to reduce the impacts of road-related sediment on the riparian and aquatic environments.

2.1.10 Activity N (Temporary Channel Crossings)

Temporary crossings under Activity N occur in “X” activity areas on the figures and may include constructed fords, temporary bridges, or other site improvements to facilitate access for construction-related traffic. If required, temporary bridges would be used when crossings are needed outside of the summer (July 15–September 15) in-channel work window.

Fords would be constructed using imported clean gravel and native alluvial materials excavated from the bed and bank of the Trinity River or adjacent sources. Where equipment crossings are needed outside of the summer (July 15–September 15) in-channel work window (e.g., to perform wet season revegetation on the right bank), temporary, permitted conditions would be created to prevent spawning in the crossing until all crossings have been completed. All temporary crossings would be designed and constructed to meet the requirements for heavy equipment such as trucks and excavators. With the exception of rip-rap or other stabilizing materials, material would be primarily extracted from activity areas within identified, permitted sites. The use of fords to cross the river would be minimized, and fords would not be used to transport excavated materials across the channel. All extracted material would be placed on the same side from which it was taken.

Due to requirements to retain passage for fish and boats, at least one-third of a ford crossing would be submerged to a minimum depth of 1 foot under low-flow conditions. The construction of the temporary crossings would likely require some vegetation removal at entrances and exits to the channel. All temporary crossings would be constructed in a manner that does not impede navigability at the specific site.

2.1.11 Activity O (Revegetation)

Impacts to vegetation are anticipated in most activity areas. Under Activity O, revegetation of riparian and upland areas would rely on a combination of planting and natural recruitment of native species consistent with TRRP's 2016 Draft Riparian Mitigation and Monitoring Plan and the needs of BLM and other cooperating, responsible, and trustee agencies. Native willows from the impact areas would be replanted as clumps during construction to speed recovery of vegetation. Replanting of affected native vegetation (e.g., willows and cottonwoods) would be completed after construction in accordance with a site-specific plan. This activity may include watering during the first 3 years post-planting.

In general, the TRRP objective is to ensure that riparian vegetation is minimally affected by TRRP activities and is replaced at a 1:1 ratio (no net loss of riparian area habitat) within the Trinity River corridor. Revegetation would provide aquatic refugia at high flows, improve terrestrial habitat for birds and other wildlife, provide future wood recruitment, and provide future terrestrial nutrient input to the river. Additional planting, seeding, mulching, and irrigation in the upland areas would occur at a 3:1 ratio using native seed and root stock available to Reclamation. Reclamation would also implement measures to control or inhibit the reestablishment of noxious and invasive plant species.

The proposed action also includes the extraction, processing, and use of mineral materials (e.g., gravel, cobble) for on-site activities. Consistent with the Master EIR, the design teams use activity areas to define discrete activities that would be implemented at the rehabilitation sites. The considerations that went into the designs at each site are summarized below, and the descriptions of the activities and activity areas follow the section that discusses design considerations section.

2.1.12 Detailed Master EIR Activities Described to Provide Additional Clarity Beyond That in Table 2-1

Activity P (In-River Installation of LWD [Hydraulic and Habitat Structures], Skeletal Bars, and Boulder Habitat)

Activity P impacts were covered in the Master EIR as part of Activity I (Sediment Management) as well as other activities to facilitate side channel construction and maintenance (e.g., excavation of in-channel and riverine areas—activities E, F, and G). The TRRP would use appropriate materials to cause and enhance geomorphic action that would also be expected to improve aquatic and wildlife habitat. Addition of large rock (>6 inch as in the skeletal bars described in the ROD) or rock/wood structures would remain in place and confine the river, thereby increasing stream power to scour and maintain adult salmonid holding habitat.

As appropriate, salvaged large wood and accompanying slash would be retained and used in riverine/in-channel activities to provide additional hydraulic and habitat complexity. This could include large wood placement as individual pieces, small accumulations, and large habitat structures. The addition of large wood would develop topographical and hydraulic complexity and increase bank length to provide additional rearing habitat over a wide range of flows. Incorporation of woody material would improve anadromous fish spawning and rearing habitat.

Woody material is a natural part of healthy rivers. It provides important habitat for aquatic species by providing cover from high flows and predators. The low velocity areas collect suitable spawning materials, and its organic materials are a food source for aquatic insects. It can help create and maintain beneficial habitat features such as pools, islands, and gravel bars. Activity P may also include the construction of log jams to further engage the flow and act as a catalyst for natural processes of scour and channel migration. Construction of larger habitat structures or log jams may incorporate rock and boulders as ballast to ensure that the structures do not migrate with high flows. Furthermore, log jams may be built with downstream "skeletal bars," thus forming habitat complexes that would grow in depositional areas.

Processed alluvial construction material would be obtained and imported from off-site gravel processing areas, or purchased from local vendors for delivery. Unprocessed material or "pit-run" dirt and gravel from onsite excavation may be used in the construction of features and for habitat enhancement, using methods that would be continuously monitored for compliance with turbidity standards when in or near the river channel.

All large wood installations would be designed so that local velocities would be safe for navigation during relatively low river flows (less than approximately 2,000 cfs). Natural wood material would be placed in a manner to reduce the chances of hazardous contact with swimmers and boaters. Over time, woody material would collect on the structures to create areas of slower flow, which would direct water flow and, consequently, boaters away from the large wood, any hazard of these structures to people.

The proposed action would place wood in alcoves to improve the quality of habitat by providing cover for juvenile fish, enhancing roughness and complexity, and increasing shading. Because of uncertainties about the availability, types, shapes, and sizes of the wood and the planned construction methods, the exact amounts and locations of wood placement are not known at this time. Trees, tree tops, and branches for use in constructing large wood structures would be obtained on-site (see Activity A) and/or opportunistically from other lawful sources (e.g., public or private construction areas where clearing has occurred) and delivered to the project area. The final locations and dimensions of wood and large rock placement would be determined in the field based on direction from Reclamation's field engineer.

Activity W (Wetland Complexes – Rearing Ponds)

Activities identified for Activity W were covered in the Master EIR under Activities A, B, C, or D. Ponds would be created off the mainstem Trinity River via excavation to capture groundwater and/or surface run-off. The water holding capability may be enhanced through the use of Beaver Dam Analog (BDA) features similar to those constructed in 2016 at the Bucktail site. The ponds would provide slow backwater refugia during high flow periods and rearing habitat for juvenile salmonid species. Groundwater infiltration and surface water inflow from side channels would supply the ponds with a cold water environment. The existing tree/shrub canopy would be saved during construction to provide food sources, shade, and protection from predation. The ponds would contain deep pools that have a connection to groundwater to supply needed cold water. Existing vegetative cover and revegetation planting would be incorporated into the ponds for food productivity.

2.1.13 Design Considerations

Early in the planning process, the TRRP identified six sensitive features that are critical with respect to design considerations (e.g., Ice Box Hole, Sheridan Spawning Riffle). Throughout this chapter, these features are referenced with respect to avoiding and/or protecting them to ensure that the overall design objectives are met. These features are illustrated on Figure 2-1.

The design teams worked closely with Reclamation and BLM cultural resources staff to avoid a number of dredge tailing deposits that provide important information on the mining history along the Trinity River. By combining the Deep Gulch and Sheridan Creek sites into one project, there is a reduction in the amount of dredge tailing features that would be impacted. Specifically, activity areas DG U-3 and DG U-4 are not currently planned to receive excavated material.

Initial design of the Deep Gulch rehabilitation site was assigned to the TRRP Federal Design Group, and design of the Sheridan Creek rehabilitation site was assigned to the Yurok Tribe; a design report was prepared for each site by the design teams. Preparation of these reports entailed a review of existing conditions at the site, such as vegetation communities, flow patterns, fluvial geomorphology, soil conditions and characteristics, and other physical characteristics; the reports also included an evaluation of future desired conditions, which considered the success of rehabilitation activities at other sites along the Trinity River and the opportunities available at the two sites. Copies of these design reports are available on the TRRP data portal at http://odp.trrp.net/.

The design teams later worked together to develop final designs for these sites that were responsive to the following physical, biological, and riparian objectives:

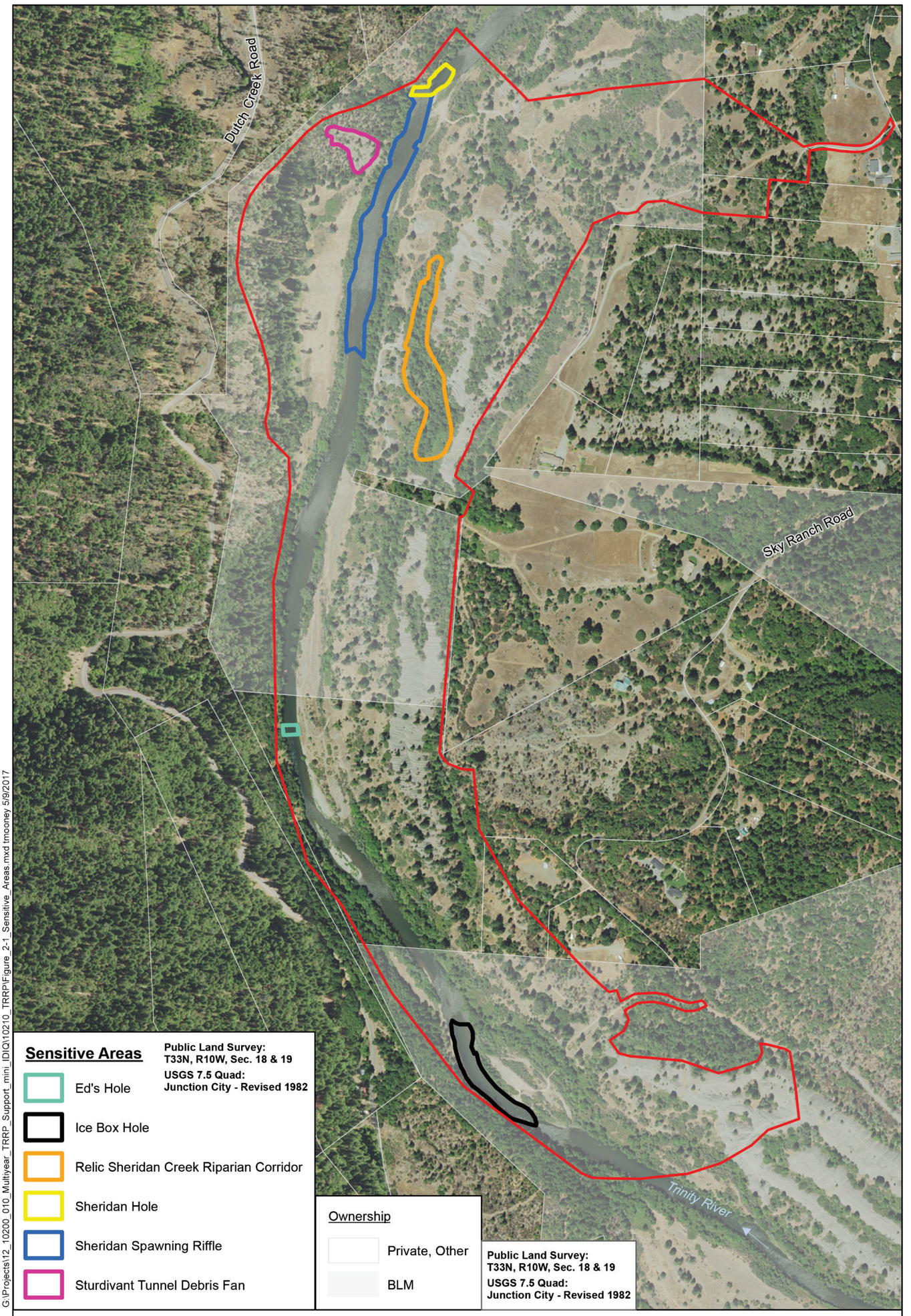
- Physical Objectives
  - Promote dynamic river processes
  - Increase functional floodplain area
  - Reduce wood storage deficit (wood structures and standing inventory)
- Biological Objectives
  - Eliminate the dip in habitat between low flows and 7,150 cfs
  - Double the amount of juvenile fish rearing habitat area–days across the range of critical habitat flows during the January–June time period
  - Encourage stream-type life history characteristics for rearing Chinook juveniles
  - Protect existing high-use spawning riffles above Sheridan Hole
  - Enhance existing amphibian habitat
  - Create perennial or seasonal surface water connection to existing and new off-channel water features

- Riparian Habitat Objectives
  - — Minimize impacts to existing multi-story riparian vegetation and cottonwoods
  - — Increase over existing conditions the riparian vegetation biomass and abundance in the tree, shrub, and herb layer along design features
  - — Increase the number of trees (especially cottonwood) that could supply logs larger than 24 inches diameter at breast height to the river
  - — Increase native species richness/abundance on surfaces that will be open and greater than 7 feet above the lowest groundwater of the year

2.1.14 Rehabilitation Activities

The proposed rehabilitation activities in the project area are described below. Table 2-1 summarizes the proposed activities by activity area, and Figure 2-2 illustrates the locations of each activity area in the project area. Table 2-1 and Figure 2-2 have been revised to reflect adjustments in the size and location of activity areas based on public comments. As the table shows, each activity area has been assigned a unique alphabetic label that corresponds to the type of activity area and the site name.

The activity areas include riverine areas, upland areas, and construction support areas. While these areas are intended to cover the full range of activities, the actual area that would be treated would typically be smaller. Riverine areas are labeled with an R preceding the site number (e.g., R-1, R-2); upland areas are labeled with a U (e.g., U-1, U-2); in-channel work areas are labeled with an IC; construction staging/contractor use areas are labeled with a C; access roads are labeled with an A; wetland/pond areas are labeled with a W; and temporary crossings are labeled with an X. Activities at Deep Gulch are labeled with "DG," and activities at Sheridan Creek are labeled with "SC." These labels are used throughout this document.



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TRINITY RIVER RESTORATION PROGRAM
Deep Gulch and Sheridan Creek Rehabilitation Sites

Figure 2-1
Deep Gulch and Sheridan Creek Sensitive Areas

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Table 2-1. Overview of Activity Areas at Deep Gulch and Sheridan Creek Rehabilitation Sites

Activity Area[a]	Primary Activity	Activity/ Treatment Area[b]	Earthwork (CY)[c]	Fill (CY)[c]
DG IC-1	Main channel	0.48 ac	3,565	–
DG IC-2	Bars and islands in channel *	0.53 ac	–	1,250
DG IC-3	Wood structure *	0.06 ac	200	245
DG IC-4	Wood structure *	0.02 ac	70	85
DG IC-5	Wood structure *	0.14 ac	400	525
DG IC-6	Wood structure *	0.04 ac	165	200
DG IC-7	Wood structure *	0.02 ac	130	160
DG IC-8	Wood structure *	0.03 ac	105	130
DG IC-9	Wood placement	0.08 ac	–	–
DG IC-10	Wood placement	0.13 ac	–	–
DG IC-11	Wood placement	0.07 ac	–	–
SC IC-1	Main channel – realignment	1.56 ac	11,469	1,045
SC IC-2	Bars and islands – gravel bar/alcove *	1.11 ac	734	5,534
SC IC-3	Wood structure *	0.04 ac	424	–
SC IC-4	Bars and islands – transverse riffle *	0.14 ac	–	458
SC IC-5	Main channel – realignment	1.16 ac	5,932	1,185
SC IC-6	Bars and islands – gravel bar/alcove *	0.52 ac	293	2,303
SC IC-7	Wood placement	0.46 ac	–	–
SC IC-8	Wood structure *	0.03 ac	–	–
SC IC-9	Wood structure *	0.05 ac	–	–
SC IC-10	Wood structure – hydraulic structure *	0.03 ac	–	–
	IC Subtotal =	**6.7 ac**	**23,487 CY**	**13,120 CY**
DG R-1	Banks and floodplains – floodplain *	3.99 ac	23,300	–
DG R-1a	Banks and floodplains – floodplain	0.02 ac	–	15
DG R-2	Banks and floodplains – channel *	0.25 ac	700	–
DG R-3	Side channel	0.46 ac	2,390	15
DG R-4	Banks and floodplains – floodplain *	1.67 ac	7,600	–
SC R-1	Banks and floodplains – floodplain construction *	0.39 ac	114	2,206
SC R-2	Banks and floodplains – floodplain construction*	0.09 ac	44	362
SC R-3	Banks and floodplains – floodplain construction	0.16 ac	78	337
SC R-4	Banks and floodplains – floodplain construction	0.24 ac	–	801

Table 2-1. Overview of Activity Areas at Deep Gulch and Sheridan Creek Rehabilitation Sites

Activity Area[a]	Primary Activity	Activity/ Treatment Area[b]	Earthwork (CY)[c]	Fill (CY)[c]
SC R-5	Banks and floodplains – floodplain transition	0.03 ac	22	12
	R Subtotal =	**7.3 ac**	**34,248 CY**	**3,748 CY**
SC W-1	Constructed wetland – ponds and riparian floodplain complex *	0.92 ac	7,128	45
SC W-2	Constructed wetland – ponds and riparian floodplain complex *	1.26 ac	8,953	75
SC W-3	Constructed wetland – ponds and riparian floodplain complex *	1.17 ac	8,717	34
SC W-4	Constructed wetland – enhance existing wetland drainage *	0.08 ac	220	6
SC W-5	Constructed wetland – ponds and riparian floodplain complex *	1.46 ac	11,471	26
	W Subtotal =	**4.89 ac**	**37,489 CY**	**1,186 CY[d]**
DG A-1	Temporary access	0.88 ac	–	–
DG A-2	Temporary access	0.63 ac	–	–
DG A-3	Temporary access	0.16 ac	–	–
DG A-4	Temporary Access	0.23 ac		
DG A-5	Temporary access	0.15 ac	–	–
DG A-7	Temporary access	0.09 ac	–	–
DG A-9	Existing access	0.89 ac	–	–
SC A-1	Temporary access	0.12 ac	–	–
SC A-2	Existing access	0.33 ac	–	–
SC A-3	Existing access	0.29 ac	–	–
SC A-4	Temporary access	0.14 ac	–	–
SC A-5	Temporary access	0.33 ac	–	–
SC A-6	Existing access	0.21 ac	–	–
SC A-7	Existing access	1.06 ac	–	–
SC A-10	Existing access	0.15 ac	–	–
	A Subtotal =	**5.66 ac**	**–**	**–**
DG C-1	Contractor use area, gravel processing (parking area post-construction)	1.65 ac	–	–
DG C-2	Contractor use area	3.49 ac	–	–
DG C-3	Contractor use area	0.62 ac	–	–
DG C-4	Contractor use area	0.40 ac	–	–
DG C-5	Contractor use area	0.36 ac	–	–
DG C-6	Contractor use area	1.14 ac	–	–
SC C-1	Contractor use area	1.07 ac	–	–
SC C-2	Contractor use area	0.38 ac	–	–
SC C-3	Contractor use area	0.23 ac	–	–
SC C-4	Contractor use area	1.18 ac	–	–

Table 2-1. Overview of Activity Areas at Deep Gulch and Sheridan Creek Rehabilitation Sites

Activity Area[a]	Primary Activity	Activity/ Treatment Area[b]	Earthwork (CY)[c]	Fill (CY)[c]
SC C-5	Contractor use area	1.38 ac	–	–
SC C-6	Contractor use area	0.34 ac	–	–
SC C-7	Contractor use area	0.64 ac	–	–
SC C-8	Contractor use area	0.93 ac	–	–
SC C-9	Contractor use area	0.46 ac	–	–
SC C-10	Contractor use area	0.40 ac	–	–
SC C-11	Contractor use area	1.83 ac	–	–
SC C-12	Contractor use area	3.13 ac	–	–
SC C-13	Contractor use area	1.03 ac	–	–
SC C-14	Contractor Use Area	2.56 ac		
	C Subtotal =	**24.271 ac**	**–**	**–**
DG U-1	Upland fill, gravel processing *	2.36 ac	–	26,865
DG U-2	Upland fill *	0.81ac		2,410
DG U-3	Upland fill [e]	0.94 ac	–	–
DG U-4	Upland fill *	1.41 ac	–	–
SC U-1	Upland drainage – rerouting *	0.37 ac	361	10
SC U-2	Upland fill – spoils area *	1.48 ac	–	37,581
SC U-3	Upland fill – spoils area [f] *	0.53 ac	–	–
SC U-4	Gravel processing – tailings *	0.57 ac	20,295	–
SC U-5	Upland fill, gravel processing – spoils area *	3.36 ac	–	14,324
	U Subtotal =	**11.02 ac**	**20,656 CY**	**81,087 CY**
DG X-1	Temporary river crossing	0.10 ac	–	–
DG X-2	Temporary river crossing	0.05 ac	–	–
SC X-1	Temporary river crossing – upstream	0.27 ac	–	450
SC X-2	Temporary river crossing – downstream	0.43 ac	–	–
	X Subtotal =	**0.85 ac**	**–**	**450 CY[g]**

a DG = Deep Gulch; SC = Sheridan Creek; IC = in-channel work area; R = riverine work area; U = upland activity area; C = construction staging/contractor use areas; A = access roads; X = temporary river crossing; W = wetlands.

b Area calculated from geographical information system (GIS) data; ac = acre.

c Provided by TRRP; CY = cubic yard.

d In addition to alluvial materials, approximately 150 logs (35 feet in length) would be used to construct wetland infiltration structures.

e Would only be used in the event SC U-5 is unavailable.

f Would only be used if SC U-2 has inadequate space.

g These crossings would also be used to transport woody materials (logs and/or slash) to activity areas on river left.

* Revegetation after construction

The implementation of the proposed action would require placement of alluvial materials at activity areas throughout the project area. The size of alluvial materials necessary to construct the in-channel, floodplain, and wetland/riparian features varies, depending on the function and location of the activity areas. Table 2-2 describes the size classes of processed alluvial materials called for by the design

teams that would be excavated and processed on lands managed by BLM. At activity areas DG-U-1 and SC U-4), the size and location were revised based on the outcome of cultural resource investigations and subsequent negotiations with BLM to ensure that representative dredge tailings features are retained. Dredge tailings would be used as a source of alluvial material. In addition to processed materials, additional alluvial material would be used as fill without processing (i.e., pit run).

Table 2-2. Material Types

Material	Description	D_{50} (inches)	D_{90} (inches)	D_{Max} (inches)	Percent Fines*
Clean gravel and cobble (CGC)	Gravel and cobble between 0.5 and 6 inches intermediate diameter	2	5	6	0
Modified pit run (MPR)	Excavated material processed to remove excess fines	2-3	5-6	10-12	<20
Cobble and small boulder (CSB)	Cobble and small boulders between 5 and 12 inches intermediate diameter	7-9	10-12	14	0
Sorted Cobble (SC)	Medium cobble between 4 and 8 inches intermediate diameter	5-7	7-8	10	0

*Fines are defined as material less than 0.5 inch in diameter.

Table 2-3 illustrates the volume of alluvial material anticipated to be processed for each site, by size class.

Table 2-3. Processed Material by Size Class

Site	CGC (Cu. Yd.)	MPR (Cu. Yd.)	CSB (Cu. Yd.)	SC (Cu. Yd.)
Deep Gulch	1,000	815	670	15
Sheridan Creek	3,836	4,080	1,747	0
Total	**4,836**	**4,895**	**2,417**	**15**

Note: About 9,600 yards of dredge tailing deposits would be excavated and processed from activity area SC U-4.

The implementation of the proposed action would require a large amount of large wood and slash for proposed activities in a variety of locations. In addition to large wood structures that incorporate the pin logs, root wads, and whole trees proposed at a number of locations (e.g., DG IC-3, SC IC-3), additional wood would be incorporated into a number of activity areas (e.g., IC-6, SC W-1). Slash and/or chips from on-site and off-site sources[1] would be used to increase site productivity, provide effective ground cover on disturbed areas, and function as cover habitat for terrestrial organisms. Table 2-4 illustrates the type and amounts of wood and slash necessary to implement the proposed

[1] All material from off-site sources would be acquired by Reclamation from public lands (as authorized by BLM) and private parcels in Trinity County.

action. The primary on-site sources of wood include upland material placement areas (e.g., SC U-2 and SC U-3) and riverine excavation areas (e.g., DG R-1 and DG-R-4).

Table 2-4. Woody Material Used for Rehabilitation Activities

Site	Whole Trees Harvested – On-Site (#)	Trees/Logs (Structural) (#)	Trees/Logs (Habitat) (#)	Slash (Cu. Yd.)
Deep Gulch	120	120	170	1,300
Sheridan Creek	200	90	110	900
Total	**320**	**210**	**280**	**2,200**

Notes: Whole trees are approximately 75 feet in length. Logs range from 10 feet to 35 feet in length. An additional 150 logs (35 feet in length) acquired from off-site sources would be used in the construction of the wetland complexes (e.g., SC W-1) at the Sheridan Creek site.

Deep Gulch Rehabilitation Activities

At the Deep Gulch rehabilitation site, the design focus would be on modifying the channel of the Trinity River to restore riverine processes and enhancing the floodplain through restoration of native riparian vegetation and excavation of terraces and floodplain surfaces. Critical features considered in the design process include Ice Box Hole and Ed's Hole (see Figure 2-1), historic dredge tailing deposits, public river access, and adjacent residences. Most activities would take place in the upstream (southern) half of the site. In-channel activities would include bank excavation (DG IC-1); creation of a bar (DG IC-2 and IC-3); and installation of woody material, consisting of individual pieces of wood, wood jams (primarily for habitat), and wood structures (primarily for hydraulic function; DG IC-3 through IC-11). Riverine activities would include lowering the floodplain (DG R-1, R-2, and R-4), filling a swale (DG R-1A), and creating a side channel (DG R-3). Additional details on these activities are presented below.

Floodplain Modifications (DG R-1 and R-1A)

The DG R-1 activity area encompasses approximately 3.99 acres on the right bank (east side) of the river at the upstream (southern) end of the rehabilitation site. Existing terrace and floodplain surfaces would be lowered by up to 7 feet to create a lower floodplain composed of two main topographic structures, requiring the excavation of approximately 21,200 cubic yards of material. The larger of the two structures would consist of a surface that slopes downvalley and away from the river toward a swale (DG R-1A) that drains into an alcove at the downstream end of the floodplain. The edge of this surface nearest the river would remain at its existing elevation. Inundation of the floodplain would begin at moderate flows from backwater entering from the alcove outlet at its downstream end. Downstream flow over the floodplain would increase at discharges greater than about 4,500 cfs and would overtop the surface at its upstream end. The upstream end would remain at the existing elevation so that construction of this feature does not alter flow conveyance outside the main channel. The other topographic structure would be a smaller excavation that allows backwater to inundate another portion of the constructed floodplain at moderate flow levels.

The floodplain at the DG R-1 activity area would provide slow water habitat that increases in area with an increase in discharge. The area of inundated habitat would cover nearly the entire floodplain area as discharge approaches bankfull stage. However, limited flow conveyance would ensure that

the area inundates primarily from its downstream end, keeping overbank flow velocities relatively low. Limited overbank conveyance would also ensure that sediment transport capacity in the main channel is maintained. Overtopping of the crest at the upstream end of the floodplain at higher discharges would allow periodic flushing of fines from the floodplain swales and maintain the downstream connectivity. The activity area would eventually provide wood and organic material as well as trophic production to the aquatic ecosystem, as well serving as a high-flow refugia with abundant cover. The habitat value of the floodplain is expected to increase as it becomes vegetated through natural recruitment and planting. Some bank erosion may occur along the floodplain adjacent to the DG IC-1 channel expansion (west side of DG R-1), but other major topographic changes would not be expected.

The DG R-1A activity area is at the downstream end of DG R-1 and encompasses approximately 0.02 acre. Approximately 15 cubic yards of coarse permeable fill would be placed in the swale at this activity area. The bottom of the swale, which is 10 to 15 feet wide, would be filled with 1 to 2 feet of fill to make it even with the ground on either side of the swale over a linear distance of about 15 feet. The purpose of the fill is to limit overbank flow velocities in the swale. Modification of the floodplain at DG R-1 would allow water from the main channel to enter the swale at a lower discharge than occurs under existing conditions. Flow velocities in the swale during moderate floods would therefore be larger than under existing conditions. The fill in the swale would enable surface flow to enter the swale when discharges are between 2,500 and 6,000 cfs, while ensuring that hyporheic flow continues unrestricted

Diagonal Bar Complex Creation (DG IC-1, IC-2, R-2, and IC-3)

The DG IC-1, IC-2, R-2, and IC-3 activity areas are just west of DG R-1 in the upstream (southern) portion of the rehabilitation site. These activity areas encompass approximately 1.32 acres. Both banks would be excavated to increase the bankfull channel width from about 175 feet to about 215 feet. A large constructed bar would be created in the main channel, and a smaller bar and wood structure would be incorporated into the left bank. The excavation of approximately 3,565 cubic yards from the right bank at DG IC-1 would lower the existing floodplain surface to a level about 2 feet below the baseflow water surface, matching the existing bed elevation at its downstream end. The excavation of approximately 700 cubic yards from the left bank at DG R-2 would lower the existing floodplain to a level slightly above the baseflow water surface elevation. A medial bar would be constructed at DG IC-2 by placing approximately 1,250 cubic yards of gravel and cobble fill to form the crest of the diagonal complex. The medial bar would be built so that it would be fully inundated at flows near 2,500 cfs. At DG IC-3, a bar and wood structure, consisting of approximately 245 cubic yards of gravel, cobble, small boulders, and wood, would extend about 40 feet into the channel from the left bank downstream of DG R-2. Approximately 200 cubic yards of material would be excavated at DG IC-3 to create the bar. Together with the bar at DG IC-2, they would create a diagonal structure that extends from upstream right to downstream left and would be cross cut by a pair of channels along the toe of each bank. The hydraulic control that regulates flow into the right channel would be approximately three times wider and about 1 foot deeper than the control regulating flow into the left channel, such that more than 90 percent of the baseflow discharge would be directed to the right of the medial bar.

The diagonal bar complex is intended to greatly increase local hydraulic and habitat diversity over a wide range of flows. At lower flows, the medial bar would emerge, which would double the length of emerged edge habitat in the area. More than 0.15 acre of new eddy habitat would be created. At higher flows, the medial bar would submerge and would provide cover, slower flowing water, and large eddies that span about 0.15 acre. The diagonal bar complex would also create the potential for increased bed scour and pool formation over an area of the bed covering at least 0.15 acre near the downstream end of DG R-1. The habitat value provided by the medial bar would increase as riparian vegetation becomes established on its surface. Topographic and ecological complexity is also expected to increase as high flows reshape the bar, bed, and banks. Modest bank erosion that further widens the channel is likely.

Side Channel Creation (DG R-3 and IC-4)

The DG R-3 and IC-4 activity areas are just downstream (north) of DG R-2 and IC-3 on the left bank of the river. They encompass approximately 0.48 acre.

A baseflow side channel would be created at DG R-3, and a wood structure that extends 15 feet into the main channel immediately downstream of the side channel inlet would be installed at DG IC-4. The inlet to the side channel would be cut through the riparian fringe about 200 feet downstream of the new diagonal bar complex. The final elevation of the inlet would allow surface water flow in the side channel at a rate of about 15 cfs during baseflow periods. In addition, the inlet would be over-excavated during construction and backfilled with longitudinally oriented large wood and rock to allow hyporheic flow into the side channel regardless of whether surface water connectivity is maintained in the future. An estimated 2,410 cubic yards of material would be excavated to create the side channel, and about 15 cubic yards of rock and wood would be placed along the channel. Flow into the side channel would continue through existing low areas and sections of excavated channel into an alcove that grades into the mainstem channel bed near the center of the site. The wood structure adjacent to the side channel at DG IC-4 would contain approximately 85 cubic yards of coarse fill and wood, and approximately 70 cubic yards of material would be excavated to install the wood structure.

The new side channel is intended to provide additional rearing habitat at low and intermediate flows. The wood structure along the side channel is intended to help prevent clogging of the side channel inlet and would provide a small amount of additional cover and slow water habitat. The side channel would provide rearing habitat indefinitely. The inlet design incorporates hyporheic flow to ensure future function even if the inlet aggrades.

Wood Jam Installation (DG IC-5)

The DG IC-5 activity area is on the right bank of the river across from DG R-3 and encompasses approximately 0.14 acre. A wood jam would be installed at this activity area. It would extend about 40 feet into the channel from the right bank and would contain approximately 525 cubic yards of gravel, cobble, small boulders, and wood. An estimated 400 cubic yards of material would be excavated to install the wood jam. The top elevation of the jam would be constructed approximately equal to the water surface elevation at the design discharge of 8,500 cfs. The back of the structure

(the side away from the river) would be anchored with vertical posts[2], which would not be keyed far into the floodplain. This would allow flood flows to potentially scour the floodplain behind the structure, increasing complexity and possibly creating additional aquatic habitat.

The wood jam is intended to increase hydraulic and habitat diversity by causing bed scour at its base, creating an eddy in its lee, and providing direct cover habitat. This feature is located in an area that currently can be described as a planar bed that gradually slopes up toward the next hydraulic control. Zones of scour and deposition associated with the jam would shorten the length of bed lacking local topographic relief. High flows would scour the bed near the leading edge of the jam, and deposition of fine gravel and sand is expected in portions of the eddy zone. The jam is intended to remain in place for 10-20 years.

Floodplain Modifications and Wood Jam Installation (DG R-4, IC-6, IC-7, and IC-8)

The DG R-4, IC-6, IC-7, and IC-8 activity areas are on the right bank of the river near the downstream or northern portion of the rehabilitation site. These activity areas encompass approximately 1.76 acres. At the DG R-4 activity area, the floodplain surface would be lowered, requiring the excavation of approximately 7,600 cubic yards of material. The upstream third of the excavated floodplain would be constructed so that it would inundate at flows as low as 2,000 cfs. A rise in ground elevation by about 2 feet at the downstream end of this low region (i.e., near the center of DG R-4) would keep flow conveyance in the area very small until the higher area in the middle of the activity area is overtopped at flows greater than 2,500 cfs. A wood jam would be installed at DG IC-6 on the existing bank immediately downstream of the intersection between the low floodplain and the main channel. The top elevation of the wood jam would be the same as the existing top of the bank. The wood jam would consist of approximately 200 cubic yards of rock and wood fill, and approximately 165 cubic yards of material would be excavated to install the wood jam.

The downstream two-thirds of the excavated floodplain would slope downstream but away from the river toward a swale that empties into a series of three alcoves, similar to the floodplain modifications at DG R-1. Existing terrace and floodplain surfaces would be lowered to varying degrees. Typical excavation depths would be less than 3 feet, but larger cut depths of up to 6 feet would be required where the alcove at the far downstream end grades into the existing channel bed. Inundation of this downstream section of floodplain would begin at moderate flow by backwater entering the swale from the alcove. The swale extends upstream along the distal edge of the floodplain until it grades into the broad low area in the upstream third of DG R-4. Three sections of existing bank between the alcoves would remain unexcavated, increasing the topographic complexity of the surface. A wood jam would be installed at DG IC-7 on the existing bank at the upstream edge of the middle of the three unexcavated areas. The top elevation of the wood jam would be near the existing top of bank. The wood jam would consist of approximately 160 cubic yards of rock and wood fill, and approximately 130 cubic yards of material would be excavated to install the wood jam. Another wood jam would be installed at DG IC-8 on the existing bank immediately downstream of the alcove. The top elevation of the wood jam would also be similar to the existing top of bank. The wood jam would consist of approximately 130 cubic yards of rock and wood fill, and approximately 105 cubic yards of material would be excavated to install the wood jam.

[2] Anchoring may include the use of pile-driving equipment at one or more activity areas.

The upstream third of the floodplain at DG R-4 would inundate at very low discharge levels, and the lack of downstream gradient would keep flow velocities very low. This floodplain is expected to provide abundant high-quality rearing habitat. The downstream two-thirds of the floodplain at DG R-4 is intended to function similar to the floodplain at DG R-1; more habitat would become available with increasing discharge due to backwatering from downstream. The entire excavated area would be inundated at discharges near 4,500 cfs. The unexcavated portions of bank in this area would create local eddies, promote local scour, and provide riparian cover. All three of the wood jams associated with this floodplain are also intended to promote local scour and hydraulic diversity. Scour at the toe of the wood jam at DG IC-6 is specifically intended to maintain a low gap in any natural levee that might deposit along the floodplain margin so that the floodplain continues to inundate at low discharge levels in the future. The wood jam at DG IC-8 is intended to split the flow draining toward the main channel from the downstream part of the floodplain, potentially causing incision of an additional alcove on the right side of the wood jam. The entire floodplain would eventually provide wood and allochthonous trophic production to the aquatic ecosystem, as well serve as a high-flow refugia with abundant cover. The habitat value of the floodplain would increase as it becomes vegetated through natural recruitment and planting. Some bank erosion may occur adjacent to the main channel, but other major topographic changes are not expected.

Woody Materials Installation (DG IC-9, IC-10, and IC-11)

The DG IC-9 and IC-10 activity areas are along the left and right banks, respectively, near the DG R-3 and DG IC-5 activity areas in the middle portion of the rehabilitation site. The DG IC-11 activity area is on the right bank near the DG R-4 activity area. These activity areas encompass approximately 0.28 acre. Woody debris would be installed in the baseflow channel to provide immediate cover habitat and a substrate for primary and macroinvertebrate production. Approximately 214 cubic yards of slash and 61 large wood pieces would be placed along the river at these activity areas.

Sheridan Creek Rehabilitation Activities

At the Sheridan Creek rehabilitation site, the design focus is on modifying the channel of the Trinity River to restore riverine processes and enhancing the floodplain through creation of multiple wetland/pond complexes. Critical features considered in the design process include Sheridan Hole, Sheridan Spawning Riffle, Relic Sheridan Creek Riparian Corridor, and the Sturdivant Tunnel Debris Fan. In-channel activities would include creation of a meander complex (SC IC-1, IC-2, IC-4, IC-5, and IC-6) and installation of woody material, consisting of wood placement as individual pieces, wood jams (primarily for habitat), or wood structures (primarily for hydraulic function; SC IC-3 and IC-7 through IC-10). Riverine activities would include elevating the floodplain (SC R-1 and R-2) and constricting the floodplain (SC R-3 and R-4). At SC R-5, a notch would be created through the riparian berm to encourage formation of a high-flow scour channel around the log jam at SC IC-10. Wetland activities include creating wetland/pond complexes along both sides of the river and connecting them to the river (SC W-1 through W-5). Additional details of these activities are presented below.

Meander Complex (SC IC-1, IC-2, IC-4, IC-5, IC-6, R-1, and R-2)

The SC IC-1, IC-2, IC-4, IC-5, R-1, and R-2 activity areas are adjacent to one another along the main channel and left bank of the river in the upstream (southern) end of the rehabilitation site. These activity areas encompass a total of approximately 4.97 acres. A meander complex would be constructed at these activity areas that would include two constructed bars and alcoves (SC IC-2 and IC-6), excavated bends with scour pools and side slope transitions (SC IC-1 and IC-5), one constructed riffle (SC IC-4), and two raised floodplains (SC R-1 and R-2). Overall, the meander complex would increase sinuosity and hydraulic complexity in this reach to create a diverse suite of habitats. The meander complex is also intended to increase shear stress along the right edge of SC IC-5 (an old dredger tailings pile) to promote bank erosion and to provide additional sediment for transport and deposition downstream.

The meander complex would encompass about 1,050 feet of the river and would end about 230 feet just upstream of Sheridan riffle, one of the most important and highly used spawning riffles on the mainstem Trinity River. The location and length of the meander complex would be constrained upstream by the valley wall on river left and preservation of the spawning riffle downstream. The separation between the complex and spawning riffle is important in order to minimize changes to the velocity and shear stress fields across the existing spawning riffle where redds are typically located. Overall, the meander complex is expected to be self-maintaining, with minor adjustments to the channel and planform dimensions following high flows.

At the SC IC-2 and IC-6 activity areas, bars and alcoves would be constructed to adjust the river meander. The bars would have variable flow widths ranging from 84 feet at baseflow to a bankfull width of 200 feet. Gravel, cobble, excavated materials, and boulders would be obtained from the U-4 and U-5 activity area and placed in the river to create the bars. An estimated 2,615 cubic yards of clean gravel and cobble would be placed below the 450 cfs water surface elevation at SC IC-2, and approximately 2,619 cubic yards of well-graded excavated materials and 300 cubic yards of cobbles and small boulders would be placed above the 450 cfs water surface elevation. An estimated 542 cubic yards of clean gravel and cobble would be placed below the 450 cfs water surface elevation at SC IC-6, and approximately 1,461 cubic yards of well-graded excavated materials and 300 cubic yards of cobbles and small boulders would be placed above the 450 cfs water surface elevation. The maximum size of added substrate (excluding boulders that vary between 3 and 6 feet in diameter) would be 12 to 14 inches in diameter, consistent with the existing range of substrate size that allows for long-term geomorphic processes. The proposed substrate for the constructed bars is expected to remain semi-stable under the modeled shear stress. In addition, alcoves would be excavated to create shallow/slow water habitat on the backside of the constructed bars. An estimated 734 and 293 cubic yards of material would be excavated from the SC IC-2 and IC-6 activity areas, respectively, and transported to one of the upland activity areas. Once constructed, large wood would be incorporated into the bars, and the surface of these bars would be planted with native vegetation to reduce flow velocity and promote depositional processes.

The SC IC-2 bar is expected to maintain its form as shear stresses across the bar would be low at all flows. Shear stress in the alcove would also be low, and the alcove is expected to fill in over time. Overbank flows across the backside of SC IC-2 may form an incised channel leading into the alcove. These overbank flows would help maintain the alcove. It is unlikely that this incised channel would

be cut off because the shear stress would be low. The substrate of the SC IC-6 bar is sized to withstand the modeled shear stress and allow the bar to persist and redirect mainstem flows towards river right. The bar is expected to deflate somewhat as an armor layer develops. The shear stresses across the top of the SC IC-6 bar should be sufficient to maintain an incised channel and alcove on the backside of the bar.

At the SC IC-1 and IC-5 activity areas, the river banks would be excavated to modify the bend and create scour pools and side slope transitions. An estimated 11,469 cubic yards of material would be excavated from the SC IC-1 activity area, and an estimated 1,045 cubic yards of fill (gravel, cobble, and boulders) would be placed in the activity area. An estimated 5,932 cubic yards of material would be excavated from the SC IC-5 activity area, and an estimated 1,185 cubic yards of fill would be placed in the activity area. The excavated material would be transported to one of the upland activity areas for processing and/or disposal. Boulders[3] would be added to the deeper portions of the activity areas to increase hydraulic complexity. The outer bank of SC IC-5 is expected to erode over time, widening the channel and creating a more gradual transition back to the original downstream channel. The bank erosion process is expected to reach quasi-equilibrium without substantial lateral channel migration (i.e., without corresponding growth of the SC IC-6 bar), although lateral migration is desirable if it occurs.

A riffle would be constructed at the SC IC-4 activity area, which is entirely in the main channel. Approximately 229 cubic yards of clean gravel and cobble and 229 cubic yards of cobbles and small boulders from the U-4 or U-5 activity area would be placed at the SC IC-4 activity area. The substrate size would be slightly larger than the existing bed substrate, but no bigger than 12 to 14 inches in diameter for the gravel and cobble. Boulders would be 3 to 6 feet in diameter. The transverse bar at SC IC-4 would connect the bar at SC IC-2 to the bar at SC IC-6 and would adjust its size and elevation to accommodate the new channel hydraulics.

The floodplain on river left would be raised at activity areas SC R-1 and R-2 to minimize flanking associated with the new meander complex. This would maintain flow conveyance in the mainstem channel and minimize overbank bypass flows. Floodplain modifications would include some excavation of the banks and placement of fill, primarily gravel and cobble. Woody material may also be incorporated opportunistically into these activity areas. At SC R-1, an estimated 114 cubic yards of material would be excavated, and an estimated 2,206 cubic yards of material would be placed in the activity area; the fill material would preferentially come from excavation of native alluvium at the SC W-1 and W-2 activity areas. If the excavated native alluvium is too small, the fill would need to be imported from U-4 or U-5 or from a local commercial source. At SC R-2, an estimated 44 cubic yards of material would be excavated, and an estimated 362 cubic yards of material would be placed in the activity area. Any excess or unusable excavated material would be transported to the SC U-2 or U-3 activity areas.

River Left Wetland Complex (SC W-1, W-2, W-3, U-1, IC-3, R-3, and R-4)

The SC W-1, W-2, W-3, IC-3, R-3, and R-4 activity areas are adjacent to one another on the left bank of the river and extend from the border of SC R-1 and R-2 activity areas about 1,200 feet

[3] The size and number of boulders available from on-site are uncertain. It is expected that some boulder-sized alluvium would be procured from a local commercial source; a commercial pit within several miles of the project area has boulders available.

downstream. These activity areas encompass approximately 3.78 acres. The U-1 activity area consists of an ephemeral stream that conveys seasonal flow onto the existing floodplain on river left, just west of SC W-1. The activity area encompasses approximately 0.37 acre. A wetland/pond complex would be constructed at the SC W-1, W-2, and W-3 activity areas, and the floodplain would be modified at the SC R-3 and R-4 activity areas. The ephemeral stream at the U-1 activity area would be modified to direct flow to the SC W-1 activity area. A large wood jam would be installed at the SC IC-3 activity area, which is between the floodplain modifications proposed at SC R-1 and R-2.

The floodplain and wetland complexes are designed to provide a large area of high-quality rearing habitat across a wide range of flows, as well as off-channel over-summer and over-winter habitat for both fry and presmolt salmonids. Due to the high density of redds in this reach, juvenile fish densities are anticipated to be very high. These complexes would help reduce densities of rearing fish, especially for those migrating into this area. The floodplain and wetland complex is also intended to raise local groundwater levels to promote robust riparian forest growth and enhance riparian and salmonid habitat. In addition, the complex was designed to protect high-quality adult steelhead holding habitat near the SC IC-10 activity area in the downstream portion of the site by keeping overbank velocities low and locating the floodplain outlets of SC W-2 and W-3 upstream of SC IC-10.

Three wetland/pond complexes would be constructed at the SC W-1, W-2, and W-3 activity areas. The ponds would have variable depths: 6 to 8 feet during summer baseflow conditions and as much as 10 to 12 feet when the ponds are inundated during higher flows. Each pond would have side slopes that allow for emergency egress for wildlife. The ponds would be constructed adjacent to existing riparian vegetation to optimize shade and cover, and wood would be placed in the ponds to enhance juvenile rearing habitat. Shade plus groundwater connectivity are expected to maintain water temperatures adequate for fry/juvenile rearing. The small ephemeral channel at the SC U-1 activity area would be redirected to flow into the wetland/pond complex at SC W-1. An existing scrub wetland at SC W-3 would be modified to enhance the functions and values of the wetland/pond complex by conversion of this scrub wetland.

All three wetland ponds would be perennial and would be reliant on a hyporheic connection with the river under base flow conditions (i.e., 450 cfs) based on site-specific groundwater monitoring data collected by members of the design team. The ponds would be graded to collect ephemeral flow emanating from small drainage features along the valley wall. In addition, the SC IC-3 wood jam would be constructed to supply some additional surface and hyporheic water from the mainstem into the SC W-1 pond, while filtering out mainstem sediment. Surface water supplied from the SC IC-3 activity area during base flow conditions is expected to dissipate into the groundwater, elevating the local groundwater table, but would be insufficient to provide a perennial surface water supply to the downstream SC W-2 wetland. If a perennial surface water connection does develop, it would be desirable.

Floodplain swales at the SC W-1, W-2, and W-3 activity areas would provide surface water connections between the wetland ponds and the Trinity River. The swales would be compound features that are 25 feet wide and 1 foot deep, with an inner swale that is 10 feet wide and 2 feet deep. The swales would allow overbank flows to backwater into the wetland ponds when mainstem flows are greater than about 1,200 cfs and would provide fish passage between the wetlands and the river

under those conditions. Surface water flow in the floodplain swales is not expected during low-flow conditions due to the groundwater connection at the wetland complex. Riparian floodplains surrounding the wetland complex are designed to progressively inundate between 2,500 cfs and 4,500 cfs to provide rearing habitat and promote natural riparian vegetation recruitment that increases cover and habitat quality over the long term. Side slope transition areas would transition back to the existing ground surface. The extent of grading necessary to establish the wetland/pond complexes would vary. With the exception of fine sediments that are excavated and stockpiled on site to enhance revegetation efforts on the constructed floodplain, all spoils generated from excavation activities would be transported to the SC U-2 or U-3 activity areas on river left to minimize the number of river crossings. An estimated 25,661 cubic yards of material would be excavated for the wetland/pond complexes, and about 130 cubic yards of specified fill material would be transported across the river from excavations or processing sites in the activity areas on river right for use as backfill at the SC W-1, W-2, and W-3 activity areas.

The SC W-3 wetland and floodplain maintain a minimum buffer distance of 125 feet from the hydraulic mining debris fan on river left at the confluence of Deep Gulch (located immediately upstream of Sheridan Hole). The buffer would prevent the sedimentation of the constructed features from ongoing erosion of the toe of the Sturdivant Tunnel Debris Fan and maintain the existing mainstem outflow connection, preventing outflow and associated sediment from draining into SC W-3. The existing riparian vegetation that separates the mainstem and constructed floodplains would be retained as a buffer between the wetland complex and the existing spawning riffle during high flows. This buffer of riparian vegetation would also act as a sediment filter, promoting sediment deposition on the floodplain where it benefits riparian growth and minimizes deposition in the wetland ponds (extending their life). The SC IC-3 wood jam is also intended to reduce sediment delivery from the mainstem directly into the wetlands. This wood jam would contain various rootwads, logs, whole trees, and slash.

Floodplain constrictions would be established between each wetland complex at the SC R-3 and R-4 activity areas. These constrictions are designed to reduce overbank flow velocities during high-discharge events in excess of 6,000 cfs. The flow paths in and out of the river-left floodplain and wetland complex would work together with the floodplain constrictions to limit overbank flow velocities. The effect would make overbank floodplain flow hydraulically ineffective in order to preserve the existing shear stresses in the mainstem, thereby protecting the existing spawning riffle. Hyporheic connections through SC R-3 and R-4 would be established to increase groundwater exchange between all three wetland ponds. The hyporheic connections would be constructed by over-excavation of a 4-foot-wide trench, placement of cobbles and wood in the bottom to create a porous matrix (i.e., french drain), and backfilling with native material to the design elevations of the surrounding features such that no trench or depression would be visible. An estimated 78 cubic yards of material would be excavated at the SC R-3 activity area, and an estimated 337 and 801 cubic yards of material would be placed at the SC R-3 and R-4 activity areas, respectively. Alluvial materials (e.g., gravel, cobble, boulders) would be excavated and processed from activity areas on river right and transported to river left using the temporary crossings at SC X-1 and X-2.

Riparian planting and natural recruitment would revegetate the floodplains over time to create a robust and diverse riparian forest. Native vegetation from the excavated pond areas (e.g., mugwort) would be salvaged during the initial excavation efforts, and steps would be taken to ensure salvaged

plants are available for incorporation into wetland revegetation efforts after grading is completed. Overbank flows are expected to cause some minor changes in the pond and floodplain configuration post construction. The wetland ponds are anticipated to maintain their general depth and volume for many decades because mainstem sediment supply would be restricted by the SC IC-3 feature and the existing riparian vegetation along the mainstem. Over time, the pond bottoms would accumulate organic matter that could reduce porosity and reduce (but not eliminate) groundwater connectivity. The potential warming effect caused by reduced groundwater connectivity is expected to be offset by development of a riparian forest that provides shade and organic input. Fines would most likely accumulate in the SC IC-3 wood jam, reducing the amount of surface water flowing into SC W-1 over time.

Alternatively, the wood structure at SC IC-3 may degrade over the long term, increasing the amount of overbank flow that may pass into SC W-1. Although improbable, it is conceivable that such overbank flows may convert SC W-1 into a side channel that would also provide a wealth of complex rearing habitat. The SC R-3 floodplain constriction would return potential surface and overbank flows back to the mainstem upstream of the existing spawning riffle to maintain high flow confinement and shear stresses.

Sheridan Creek (SC W-4)

Sheridan Creek and Sheridan Spring are currently disconnected from each other and from the Trinity River as a result of remnant dredger tailings piles. The SC W-4 activity area encompasses approximately 0.1 acre (10 feet wide by 40 feet long) on the east side of the rehabilitation site near Sheridan Spring. At the SC W-4 activity area, a channel would be constructed by excavating approximately 220 cubic yards of material from the adjacent tailings pile to intercept perennial flow from Sheridan Spring and redirect it across an old road surface and through tailings piles to the high-quality, 1,300-foot-long riparian corridor that is associated with a relic reach of Sheridan Creek located between the SC W-4 and W-5 activity areas. Both Sheridan Spring and Sheridan Creek contribute to an elevated groundwater table that supports the riparian corridor. This riparian corridor forms contiguous, gently sloping habitat that connects SC W-4 to W-5 and contains several ephemeral wetlands. It is located between two tailings piles that isolate Sheridan Creek and Sheridan Spring from the mainstem, and a broad terrace near SC W-5 blocks surface water from exiting the riparian corridor. The riparian corridor is shaded with a grassy bottom and maintains moist soil conditions and cooler air temperatures throughout the summer, even in drought years. During wet periods in the winter and spring, water from Sheridan Creek and Sheridan Spring elevate the perched groundwater table, causing the riparian corridor to become ponded for several months at a time. No construction would take place in this riparian corridor to protect the soil profiles, maintain the perched groundwater table, and encourage formation of a perennial surface water connection between Sheridan Spring and the SC W-5 wetland. Over the long term, the constructed channel (SC W-4) is expected to remain very stable because of the perennial source of water emanating from Sheridan Spring.

River Right Wetland Complex (SC W-5)

The SC W-5 activity area is near the northern portion of the rehabilitation site on the right bank of the river. It encompasses approximately 1.46 acres of an elevated floodplain terrace adjacent to high-quality spawning habitat upstream of Sheridan Hole. At this activity area, the floodplain would be

lowered and an off-channel wetland would be constructed. The purpose of the wetland complex is to provide high-flow refugia and intermittent access to the off-channel wetland that supports over-summer and over-winter habitat for juvenile salmonids. An estimated 11,471 cubic yards of material would be excavated from the floodplain to create the wetland. During the initial grading, temporary stockpiling of excavated fines would occur for use in site rehabilitation and revegetation efforts. The excavated material would be transported to the processing/disposal area at the SC U-3 activity area for re-use or disposal.

Fish passage between the mainstem and SC W-5 would be possible when the mainstem flow exceeds approximately 2,500 cfs and the off-channel wetland backwaters. The wetland bottom at SC W-5 would be 8 feet below the mainstem water surface at 450 cfs to facilitate a groundwater connection that maintains a perennial wetland with water temperatures suitable for salmonids. Post construction, new riparian vegetation on the SC W-5 floodplains would provide shade and additional water temperature benefits in the wetland as the vegetation matures. Wood would be added to the floodplain to provide cover.

Excavation of Sheridan Spring at SC W-4 may provide a surface water supply via the relic reach of Sheridan Creek and/or via localized groundwater sources to the wetland at SC W-5. Such additional water supply would be beneficial, but is uncertain. Therefore, the wetland was designed to function without any water supply from Sheridan Spring and would, instead, continue to rely on a hyporheic connection to the mainstem. In the event that flow from Sheridan Spring reaches this wetland, the flow would improve water temperature, increase water supply, and increase the level of ponding and associated riparian and aquatic habitat. Active bars along the right bank of the Trinity River preclude establishment of a perennial connection between SC W-5 and the Trinity River that would be suitable for fish passage under low flows.

*Downstream Wood Jam Complex (SC IC-7, IC-8, IC-9, IC-10, and R-5)**

A wood jam complex would be established along the right bank at the SC IC-7, IC-8, IC-9, and IC-10 activity areas at the downstream end of the rehabilitation site. These activity areas encompass approximately 0.57 acre. The SC IC-7 activity area would provide high-quality rearing habitat, with whole trees anchored into the existing riparian vegetation. The wood jams at SC IC-8 and IC-10 would be on active bars and are intended to increase bar complexity by redirecting water along the backside of the bars to create and maintain scour channels and local deposition, as well as collect and store woody debris being transported during high flow events. Minor excavation along the floodplain at the SC R-5 activity area would initiate formation of a scour channel upslope of SC IC-10 through the existing riparian berm. An estimated 22 cubic yards of material would be excavated from the SC R-5 activity area, which encompasses approximately 0.03 acre. Approximately 12 cubic yards of alluvial material from the project area would be used as backfill along the berm to anchor the wood jam.

Individually, the SC IC-8 and IC-10 wood structures would create local scour and deposition zones on bar surfaces to create bar complexity and a patchier mosaic of riparian vegetation and fish habitat. The wood structures may temporarily collect more wood material from the river during high flows, but would be overtopped too frequently to retain much debris. Local scour and deposition patterns around and downstream of the wood structures would be dynamic over time. The wood structures would not appreciably change the location or the magnitude of shear stress magnitude across the

nearby spawning riffles or Sheridan Hole downstream. The SC IC-8 and IC-10 wood structures would emulate natural wood jams and would slowly degrade over time, as well as occasionally collect additional wood. Riparian vegetation would be used in the design and construction of the wood jams to increase the longevity of the wood structures if the vegetation matures before the structures degrade.

The hillslope on river left adjacent to the SC IC-9 activity area is an active fan associated with eroding debris from the construction and use of the Sturdivant Tunnel upslope (See Figure 2-1). The toe of this depositional feature is subject to periodic erosion, resulting in the release of small fan deposits in the mainstem. The wood feature at SC IC-9 would be designed and built consistent with site conditions at the time of construction within an existing fan deposit to mimic a natural slide deposit that contains both wood and sediment. Boulders would also be added to the river in front of the feature. The wood and boulders would increase mainstem complexity next to and downstream of the structure. This wood feature is not intended to capture additional sediment from the eroding mining debris fan. Over time, the wood feature is expected to degrade, and the wood and rocks would mobilize downstream, mimicking a natural small debris flow.

In addition to the activity areas described above, several beaver dam analog (BDA) features would be constructed in conjunction with the wetland complexes on either side of the river. The specific locations of these features will be identified in conjunction with construction activities based on input from regulatory agencies, TRRP biologists, and design team members. These features would allow an adaptive approach to raising water surface elevations at various flows to backwater areas in the newly constructed wetlands. These BDAs would consist of buried posts (12 inches in diameter) that provide a framework for willow cuttings to be woven between the posts. This would regulate water depth in the wetland upstream. The BDA features would be reviewed the first year following construction to determine the level of adjustment necessary to allow high winter and spring flows to pass without obstruction and the ability to reduce the potential for deposition of fine sediment behind them. An adaptive approach would be necessary to successfully achieve riparian and wetland plant success as well as encourage fine sediment deposition outside the low-flow channel thalweg.

2.1.15 Revegetation Activities

The TRRP's goal for revegetation of the Deep Gulch and Sheridan Creek rehabilitation sites is to promote the establishment and growth of a more diverse assemblage of riparian shrubs and deciduous hardwoods with varying ages so that the size, frequency, and distribution of native vegetation would increase in the future. By meeting this goal, the functions and values of native riparian and upland vegetation are expected to increase over time. In addition, the revegetation plan emphasizes the expansion of large conifers and hardwoods that could be naturally recruited as woody material into the mainstem. The revegetation activities described in this section are based on the TRRP's project experience and subsequent yearly monitoring efforts since the first channel rehabilitation site (Hocker Flat) was constructed in 2006.

Revegetation at both the Deep Gulch and Sheridan rehabilitation sites would include preparing planting areas; planting a mixture of wetland, riparian, and upland plant species; and installing plant protection over woody plants after planting. A number of the plant species used for revegetation at these sites are used for various purposes by members of the Native American community.

Revegetation efforts may also include the use of anadromous salmonid carcasses as a source of supplemental fertilizer in an effort to reintroduce marine nutrients into the riparian ecosystem. The plantings would include plants salvaged from the sites, nursery container stock available from USFS nurseries and or commercial sources[4], live hardwood poles, bareroot trees, and herbaceous plugs. Plant species expected to be incorporated into the revegetation plan for either site include California brome (*Bromus carinatus*), incense cedar (*Calocedrus decurrens*), sedge (*Carex* spp.), wildrye (*Elymus* spp.), rush (*Juncus* spp.), ponderosa pine (*Pinus ponderosa*), cottonwood (*Populus trichocarpa*), oak (*Quercus* spp.), and willow (*Salix* spp.). Mulch and other tree protection and stabilization devices (e.g., stakes, fencing, cages) would be installed after the planting is done. These devices would be removed once the revegetation efforts are deemed successful by the TRRP, typically within a 3-year period after vegetation is established. Revegetation activities may start during the latter part of construction efforts (e.g., planting and watering as appropriate) and would continue primarily in the wet season (October through March) after final grading and site stabilization measures are completed. Planting and seeding efforts may extend into the year following construction, depending on site and weather conditions. Herbaceous bare root material and hardwood poles would be used if planting occurs in or after November.

The TRRP anticipates that most planting areas would not require watering post project. However, given recent drought years, some intermittent watering of revegetated areas during dry conditions may increase plant survival. Source water for any irrigation efforts would be pumped from the Trinity River consistent with existing riparian water rights available from willing landowners or from the river on public lands as authorized by the BLM. If this subsequent irrigation is needed, gasoline pumps and irrigation equipment would be brought into the site; where vehicle access is limited, irrigation equipment would be brought in using authorized watercraft. Equipment would be used to water plants as needed, stored on site for use during dry periods, or brought in as water demands require. Any irrigation measures would be temporary to improve establishment and survival of vegetation. The decision to implement irrigation measures would be based on site-specific monitoring information (e.g., soil moisture, plant stress) concerning planting areas during or subsequent to initial revegetation efforts. Irrigation measures would likely occur during the first 3 years following initial revegetation efforts. Post-project monitoring may indicate the need for additional irrigation and other measures to ensure successful revegetation. These measures may include weeding, in-planting, and replanting as conditions require.

The revegetation plan at the Deep Gulch rehabilitation site includes approximately 6.8 acres within in six elevation zones; 12.4 acres would be seeded and mulched. Planting zones include emergent wetland (0.8 acre), herbaceous toe zone (1.2 acres), willow (0.5 acre), cottonwood (2.75 acres), transition (1.0 acre), and upland (0.5 acre). Each zone would have different combinations of herbaceous, shrub, and tree species. Plantings in wetland and toe zones would be herbaceous and have approximately 3 feet between plant centers, about 5,500 plants per acre. Plantings in willow, cottonwood, and transition zones would be sedges, shrubs, and trees and have approximately 5 to 8 feet between plant centers, with about 872 plants per acre. Plantings in upland zones would be shrubs and trees and have approximately 10 to 12 feet between plant centers with about 326 plants per acre.

Throughout the Sheridan Creek rehabilitation site, trees, shrubs, forbs, and herbs would be planted immediately alongside select constructed features and islands of remnant riparian vegetation.

[4] All plant materials used in revegetation efforts are acquired in a manner to ensure they are pathogen-free.

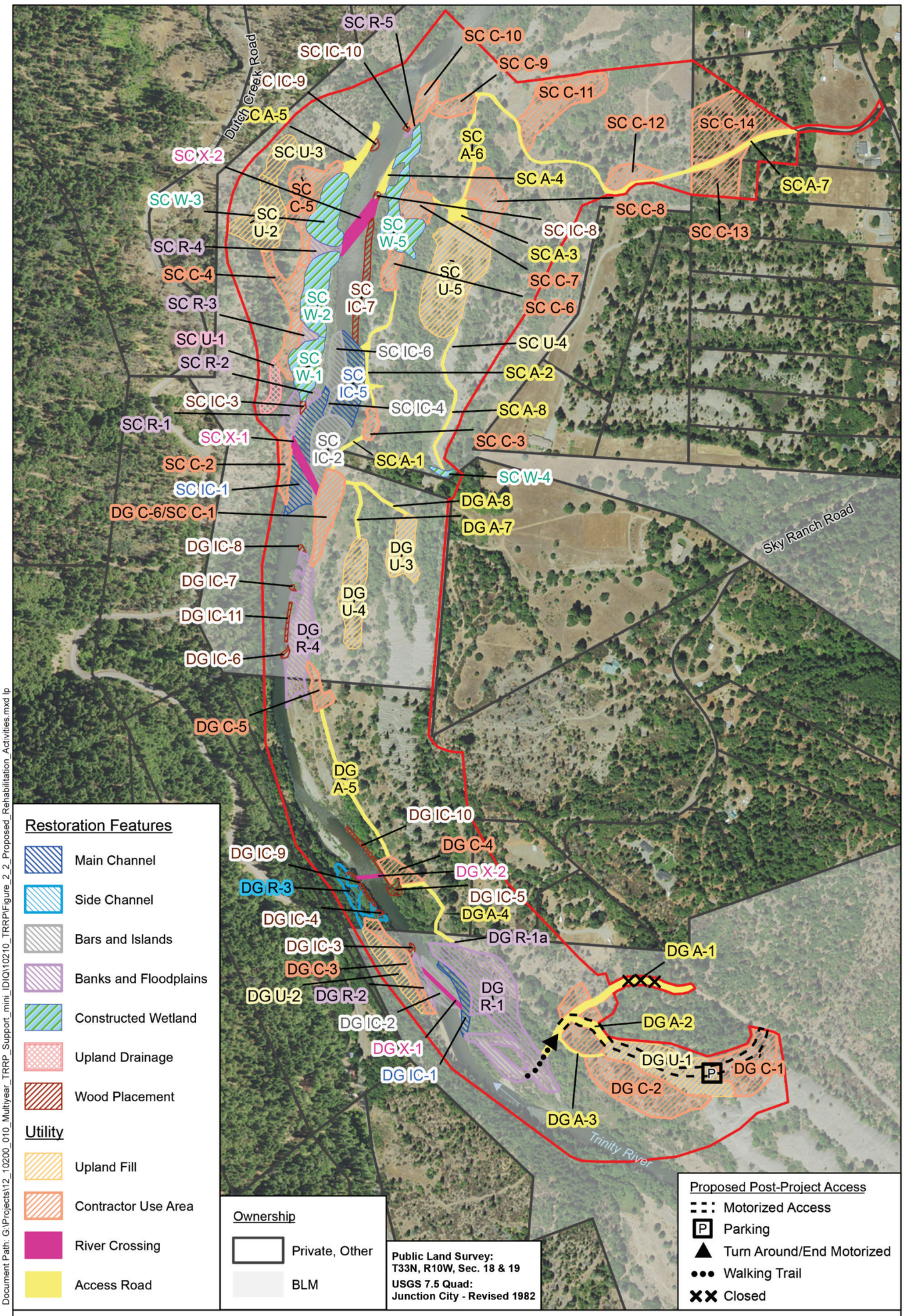
Cottonwoods and tree willows are target woody riparian species because of their ability to meet the riparian goal in the next 30 to 50 years. Revegetating constructed features (e.g., floodplains, side channels) improves the complexity of aquatic habitats in the 300 cfs to 2,000 cfs range; covers areas where non-native, invasive, and less preferable plant species could grow (i.e., sweet-clover, Bermuda grass, Himalayan blackberry, and narrowleaf willow); and speeds the recovery of activity areas. Revegetation was designed to complement the functional values and structural diversity of remnant riparian vegetation after construction by planting tree and shrub species together. To varying degrees, activity areas that are cleared would be revegetated with black cottonwood, shiny willow, and red willow in an arrangement that promotes greater riparian patch interior area and continuity with existing vegetation. Revegetation of the activity areas is expected to increase the riparian corridor width and riparian connectivity throughout the site. Post-project riparian land cover types would cover a greater area and be less linear in shape than the existing narrow and often discontinuous patches of riparian and upland vegetation.

The revegetation plan at the Sheridan Creek rehabilitation site includes approximately 5.75 acres within seven elevation zones and up to 40.3 acres that would be seeded and mulched. Planting zones include deepwater wetland (about 0.16 acre), emergent wetland (about 0.5 acre), herbaceous toe (about 1.0 acre), willow (about 1.1 acres), cottonwood (about 1.5 acres), transition (about, 0.9 acre), and upland (about 0.7 acre). Each zone would have different combinations of herbaceous, shrub, and tree species. Plantings in wetland and toe zones would be herbaceous and have approximately 3 feet between plant centers, with about 5,500 plants per acre. Plantings in willow, cottonwood, and transition zones would be sedges, shrubs, and trees and have approximately 5 to 8 feet between plant centers, with about 872 plants per acre. Plantings in upland zones would be shrubs and trees and have approximately 10 to 12 feet between plant centers, with about 455 plants per acre.

2.1.16 Access and Other Associated Activities

To support the rehabilitation activities, designated contractor use areas were identified by the design team to avoid sensitive resources. These areas would be used for stockpiling materials, staging equipment, contractor parking, and similar activities (these are labeled with “C” in Table 2-1 and Figure 2-2). Similarly, excavated material from each rehabilitation site would be stored in upland spoils areas if it is not re-used on-site (these are labeled with “U” in Table 2-1 and Figure 2-2).

Primary access to the upstream portion of the Deep Gulch rehabilitation site would be from Sky Ranch Road through DG C-1, DG C-2, and U-1 via connections to DG A-1 from DG A-2 and A-3. Generally, these access areas would be 40 feet wide to allow flexibility in the alignment so that off-highway trucks and other heavy equipment can use these activity areas for two-way traffic. Administrative access to this site would be available via an existing road (DG A-1). That portion of DG A-1 from Sky Ranch Road to DG C-2 would primarily be used for administrative access and would not be improved for construction access. Access area DG A-6 identified in the Draft EA/IS has been excluded from the proposed action in response to a comment from an adjacent landowner. Access between activity areas during rehabilitation activities would be via the temporary access routes, which would be decommissioned after both the Deep Gulch and Sheridan Creek sites have been constructed and revegetation efforts have been successfully completed. Access routes DG A-4 and A-5 may be required for a longer period of time to access the lower portion of Deep Gulch and upstream portion of the Sheridan Creek site in the event construction is staged over multiple years.



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TRINITY RIVER RESTORATION PROGRAM
Deep Gulch and Sheridan Creek Rehabilitation Sites

Figure 2-2
Proposed Rehabilitation Activities

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Some degree of decommissioning of these access routes (e.g., DG A-2, A-3, A-5, and A-7) would occur as part of final grading and site stabilization (i.e., narrowing route width); however, some level of access for high-clearance vehicles would be required for up to 5 years following revegetation efforts. Two river crossings (DG X-1 and X-2) would be used to access activity areas on river left. These crossings would be low-water fords and would not require placement of fill prior to use. The temporary crossings would provide access across the river primarily for equipment and worker access. Over the course of several days, these crossings would also be used to convey rehabilitation materials (e.g., logs, slash, cobbles, and gravel) for placement in the left bank activity areas (i.e., DG R-3 and IC-4). In order to avoid transport of spoil material across the river, a small disposal area was incorporated into the design (DG U-2).

After construction of the project has been completed, a portion of the DG C-1 or U-1 activity areas, which are entirely on BLM lands, would be graded to create a small parking area (up to 10 parking spaces) and an interpretive display (e.g., historic mining landscape, TRRP activities) accessible from Sky Ranch Road. Beyond this parking area, a route for high-clearance vehicles would remain after project construction to provide public access through these activity areas to a newly proposed new turn-around area near the end of access route DG A-1 in the vicinity of its intersection with access route DG A-3. Figure 2-2[5] illustrates the location of this proposed turn-around. Vehicular access to the riparian corridor, the adjacent floodplain and Ice Box Hole would be blocked at the turn-around; however, pedestrian/equestrian access to BLM lands on the river, via an existing native-surface route (access route DG A-2)[6], would remain. The existing user-created access route (DG A-1) would be closed to motorized vehicles upon completion of the project, recontoured to match the existing topography, and revegetated.

Access to the Sheridan Creek rehabilitation site from Sky Ranch Road would be via a private native surface road in the northeast corner of the site. Access is initially via Dredger Place (SC A-7); following a split in the road approximately 500 feet west of Sky Ranch Road, access follows the right fork on an unnamed road that crosses onto BLM land. The road then connects with other existing routes that parallel the river upstream to the Deep Gulch project site. Access between activity areas during rehabilitation activities would be via existing unmaintained primitive roads within the project boundary. Access roads SC A-1, A-2, A-3, A-6, and A-10 on river right follow existing roads; these roads would be widened to enable two-way construction traffic. Upon completion of the rehabilitation activities, access roads SC A-2, A-3, and A-6 would be rehabilitated for use as unmaintained, nonmotorized access routes on BLM land. Access road SC A-7, A-4, and A-6 would be rehabilitated consistent with pre-construction conditions. Access road SC A-5 would provide temporary access between river left activity areas and would be decommissioned after work on the river left activity areas is complete. Access to the lower portion of this site would require an agreement between Reclamation and a private landowner.

Two river crossings on BLM lands would be needed to access activity areas along the left bank. The upstream crossing at SC X-1 would require placement of about 450 cubic yards of alluvial material (e.g., gravel, cobble) processed from either a Deep Gulch or Sheridan Creek activity area on river right to create a crossing at a grade that enables high-clearance vehicles and equipment to cross in a manner that would not impede fish passage or boat navigation. Once construction equipment is

[5] Figure 2-2 was revised to illustrate this route.
[6] This change from the Draft EA/IS has been made in response to a public comment.

transported to the river left activity areas, daily trips would transport project staff over the course of several months during low-flow conditions. In the event of a multi-year construction schedule, the SC X-1 crossing may require some degree of reconstruction with heavy equipment (e.g., excavator) to ensure that the width and depth of the crossing is adequate for construction traffic. This crossing would be reshaped after use to facilitate erosion and transport of the fill material to supplement spawning habitat downstream. The downstream crossing at SC X-2 would be located in a shallow area that would not require additional fill material to raise the grade of the crossing.

The use of fords to cross the river would be minimized, and the SC crossings would not be used to transport excavated materials across the channel. A small amount of alluvial material (154 cubic yards) necessary for construction within activity areas SC W-1, W-2, and W-3 would be transported over these crossings during the initial construction of these features. In addition, these crossings would be used to deliver approximately 1,200 logs necessary for construction of the infiltration galleries associated with SC wetland complexes. These crossings would also provide daily access for project staff; fuel and maintenance vehicles would also use these crossings periodically during the construction period.

SC-U-2 is the primary disposal area on river left; SC U-3 is available as necessary to ensure that all spoils are placed in a location above the floodway and reduce the need to remove established upland vegetation (see Figure 2-2). Under the proposed action, it is assumed that both of these sites would be cleared and graded in a manner that would allow full use of these areas for efficient placement of spoils using heavy equipment. Any spoils placed in SC U-3 would be placed upstream of the active erosion zone of the Sturdivant Tunnel Debris Fan (see Figure 2-1). Spoils would be placed in such a manner as to permit passage of surface water drainage from the valley wall.

On both river left and right, suitable nesting habitat for western pond turtles would be constructed on southern aspects in dry areas consistent with BLM's recommendation to use best management practices provided in Oregon Department of Fish and Wildlife *Guidance for Conserving Oregon's Native Turtles* (ODFW 2015). Several of these sites were identified by BLM's biologist, including SC W-1 and SC W-5. TRRP staff, in consultation with BLM, will identify additional sites during the final grading efforts prior to site stabilization and revegetation activities. These nesting benches would be sparsely seeded post construction.

Spoils from river right would be placed at various locations throughout SC U-5 to establish an area amenable for reestablishing upland vegetation. Gravel processing of the tailings excavated from SC U-4 and, to a lesser degree from SC U-5, would occur within the SC U-5 activity area in order to provide the volume of alluvial materials (e.g., sand, cobble, gravel, boulders) necessary for construction and restoration purposes. Also, the large pile of gravel and dirt at the SC C-7 activity area would be re-graded, smoothed out, and covered with fine sediment to make it more suitable for revegetation and associated upland habitat (e.g., western pond turtle nesting habitat).

2.1.17 Construction Methods and Schedule

Earthmoving equipment that may be used to complete the rehabilitation activities includes off-road articulated dump trucks, wheel loaders, tracked excavators, dozers, push-pull scrapers, water tenders, and graders. In addition, equipment capable of driving piles (e.g., large logs) with a hydraulic ram may be used to anchor or stabilize wood structures in various activity areas. For materials that are

hauled from off-site, such as large wood, trucks capable of hauling up to 20 cubic yards at a time would obtain the materials from private forested lands throughout the Trinity River watershed. Large boulders, cobbles, and gravel would primarily be obtained through processing of alluvial material in the project area (see Table 2-2) or would come from a local commercial source. Gravel would be transported from clean stockpiles stored at previous TRRP channel rehabilitation/gravel processing sites. Potential stockpiles include those on private lands at the Lower Junction City and Upper Junction City sites, as well as at other authorized sources on BLM lands. The proposed rehabilitation activities are planned for construction between 2017 and 2019; the availability of funding may accelerate some elements of the project. Some staging of materials, such as trees and gravel, may occur on private land within the project area before construction begins, and on BLM lands after completion of the NEPA process and acquisition of required permits. The flow release schedule established for a particular water year may limit surface disturbance activities below the ordinary high water mark during the late spring through early summer. Processing of alluvial and material and dredger tailings (i.e., DG U-1 and SC-U4/U-5) is expected to take 4 to 6 weeks and could be accomplished at any time of year. Although the majority of in-channel and river left excavation and grading activities would typically occur between July 15 and September 15, excavation may continue later as long as surface water runoff does not increase the mainstem Trinity River turbidity by more than 20 percent. (Trinity River summer turbidity is typically very low at between 0.5 and 5.0 nephelometric turbidity units [NTUs]). Revegetation work (e.g., planting of willow pole cuttings and/or container plants and seeding with native grasses) would generally take place in the wet season (fall/winter) following construction or during the year after construction. If access across the river is needed for revegetation work, equipment would use the crossings only during the in-river work window from July 15 to September 15.

Construction of in-river work at both sites would be a priority, and it would be preferable to also perform the efforts associated with processing alluvial material at both sites to reduce noise and air quality impacts. To increase efficiency and reduce construction-related impacts, processing and stockpiling activities would ideally occur once, rather than several times during the course of the project. To the extent possible, activity area DG U-1 would be the priority area for processing and stockpiling within the project area. After all in-river work (IC areas) is completed, excavation and grading on the right bank would continue through the fall with project construction completed by December. Alternatively, construction would be sequenced as funding and environmental constraints allow, within the guidelines discussed previously this section.

2.1.18 Environmental Commitments

Reclamation, as the implementing agency for the proposed rehabilitation activities, has committed to implementing the mitigation measures identified in the Master EIR to avoid or minimize potential impacts associated with the proposed action (refer to MMRP in Master EIR, Table 2) for descriptions of these measures). These measures have been incorporated as design features as defined under NEPA and are considered environmental commitments included in the proposed action for purposes of the NEPA analysis. They also serve as CEQA mitigation measures that will be implemented in accordance with a project-specific mitigation monitoring and reporting program (MMRP, Appendix B). The environmental commitments are labeled according to their resource topic, as shown in Table 2-5, for easy referencing throughout this document. Also throughout this document, reference to these commitments is cross-referenced with the corresponding mitigation measure from the MMRP.

Table 2-5. Environmental Commitments

Label	Commitment
	Mineral Resources
EC-MR-1	Reclamation will provide notice of the project to landowners in and adjacent to the project area and to individuals with mining claims within the project sites. Notice will be given prior to project implementation and will include a schedule of river access closures. Reclamation will coordinate with private landowners and owners of active mining claims to develop site-specific measures that can be implemented to avoid or lessen project-related impacts to mineral resources associated with the Trinity River and its tributaries.
	Fluvial Geomorphology and Soils
EC-GS-1	Reclamation will implement the following measures during construction activities: ▪ Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation. ▪ All vehicular construction traffic will be confined to the designated activity areas, access routes, and staging areas. ▪ Disturbance will be limited to the minimum necessary to complete all rehabilitation activities. ▪ All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications.
EC-GS-2	Reclamation will prepare a Storm Water Pollution Prevention Plan (SWPPP) to prevent erosion and control sediment into adjacent water bodies. Measures for erosion control will be prioritized based on proximity to the Trinity River. Reclamation will provide the SWPPP for review by associated agencies (e.g., BLM, the Regional Water Board, NMFS, and CDFW) upon request. Reclamation's project manager will ensure the preparation and implementation of an erosion and sediment control plan prior to the start of construction. The following features will be used as a guide to develop this plan: ▪ Restore disturbed areas to pre-construction contours to the fullest extent feasible. ▪ Salvage, store, and use the highest quality soil for revegetation. ▪ Discourage noxious weed competition and control noxious weeds. ▪ Clear or remove roots from steep slopes immediately prior to scheduled construction. ▪ Leave drainage gaps in topsoil and spoil piles to accommodate surface water runoff. ▪ To the fullest extent possible, cease excavation activities during significantly wet or windy weather. ▪ Use bales, wattles, and/or silt fencing as appropriate. ▪ Before seeding disturbed soils, work the topsoil to reduce compaction caused by construction vehicle traffic. ▪ Rip feathered edges (and floodplain surfaces where appropriate) to approximately 18 inches deep. The furrowing of the river's edge will remove plant roots to allow mobilization of the bed, but will also intercept sediment before it reaches the waterway. ▪ Spoil sites will be located such that they do not drain directly into a surface water feature, if possible. If a spoil site will drain into a surface water feature, catch basins will be constructed to intercept sediment before it reaches the feature. Spoil sites will be recontoured and revegetated to reduce the potential for erosion. ▪ Sediment control measures will be in place prior to the onset of the rainy season to ensure that surface water runoff does not occur. Project areas will be monitored and maintained in good working condition until disturbed areas have been seeded and mulched or revegetated in another fashion. If work activities take place during the rainy season, erosion control structures will be in place and operational at the end of each construction day.

Table 2-5. Environmental Commitments

Label	Commitment
	Water Quality
EC-WQ-1	The project will comply with the water quality objective for turbidity levels in the Trinity River, as listed in the most recent version of the Basin Plan for the North Coast Region (current version is dated May 19, 2011) or in the General Permits issued to the TRRP, whichever is more stringent: ▪ Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. The 2015 General Order provides an allowable zone of turbidity dilution within which turbidity levels may be increased to more than 20 percent above naturally occurring background levels. ▪ Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated are defined in the 2015 general discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level. To ensure that turbidity levels do not exceed the thresholds described above during in-river project construction activities, Reclamation will monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. During in-river project construction activities, the Applicant shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities (point of compliance) that could increase turbidity. The Applicant shall monitor for turbidity increases and shall collect field turbidity measurements in accordance with Mitigation Measure 4.5 1a and Mitigation Measure 4.51b in the MMRP. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. If grab sample results at the point of compliance indicate that turbidity levels exceed 20 percent above naturally occurring background or 20 NTUs, whichever is greater, remedial actions will be implemented to reduce and maintain turbidity at or below this threshold level at the point of compliance. Potential remedial actions include halting or slowing construction activities and implementation of additional Best Management Practices (BMPs) until turbidity levels are at or below 20 percent above naturally occurring background or 20 NTUs, whichever is greater. If naturally occurring background levels are greater than 20 NTUs, turbidity levels at the point of compliance shall not exceed 20 percent above the naturally occurring background level. A monitoring report containing all turbidity measurements shall be submitted in a tabular format to the Regional Water Board upon annual project completion. The monitoring report shall be written in a manner that clearly demonstrates compliance with all water quality monitoring requirements.
EC-WQ-2	Fill gravels used on the streambeds, stream banks, and river crossings or alluvial material used for coarse sediment additions will be composed of clean, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand,

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Label	Commitment
	clay, and organic matter and will be free of contaminants such as petroleum products. Clean gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater. Abutment and embankment materials used for bridges will be native alluvium available from the project area.
EC-WQ-3	Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.
EC-WQ-4	To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following design features: ▪ Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed as needed to reduce short-term erosion prior to the start of the rainy season. ▪ Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. ▪ Disconnect and disperse flow paths, including roadside ditches that might otherwise deliver fine sediment to stream channels or other water bodies. ▪ Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs. To reduce the potential for the access routes to continually contribute soil materials to the Trinity River following project construction, thereby increasing turbidity and total suspended solids in the river, these routes will be stabilized or decommissioned upon completion of work in those areas. Decommissioning is defined as removing those elements of a road that reroute hillslope drainage and present slope stability hazards.

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EC-WQ-5	Construction specifications will include the following features to reduce potential impacts associated with accidental spills of pollutants (fuel, oil, grease, etc.) on vegetation and aquatic habitat resources within the project boundary: ▪ Equipment and materials will be stored away from wetland and surface water features. No hazardous materials, including fuels, oils, and solvents, will be stored or transferred within 150 feet of the active Trinity River channel. ▪ Vehicles and equipment used during construction will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Construction equipment that will come in contact with the Trinity River will be inspected daily for leaks prior to entering the flowing channel. External oil, grease, and mud will be removed from equipment using steam cleaning. Untreated wash and rinse water will be adequately treated prior to discharge if that is the desired disposal option. ▪ Areas for fuel storage, refueling, and servicing will be located at least 150 feet from the active river channel or within an adequate secondary fueling containment area. Gasoline engines and pumps operated on the floodplain will be isolated from the ground by an impermeable barrier so that any leaking petroleum products are isolated from the ground. ▪ Spill containment booms will be maintained onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks will maintain a spill containment boom at all times. ▪ The contractor will develop and implement site-specific BMPs, a water pollution control plan, and spill prevention and containment plan in accordance with applicable federal and state requirements. The contractor will be responsible for immediate containment and removal of any toxins released.
	Fishery Resources
EC-FR-1	The proposed construction schedule avoids in-channel work during the period in which it could affect spawning spring- and fall-run Chinook salmon, coho salmon, and steelhead or their embryos once in the gravel. As directed by the 2000 Biological Opinion (National Marine Fisheries Service 2000), Reclamation will ensure that all in-channel construction activities are conducted during late-summer, low-flow conditions (e.g., July 15-September 15). Alluvial material used for coarse sediment additions will be composed of washed, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter; will be free of contaminants, such as petroleum products; and will pass Caltrans cleanliness test #227 with a value of 85 or greater.
EC-FR-2	To avoid or minimize potential injury and mortality of fish during riverine activities (e.g., addition and grading of coarse sediment), equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area. Reclamation will minimize potential injury and mortality of fish during the use of low-flow channel crossings. This will be accomplished by minimizing vehicle traffic and by operating equipment and vehicles slowly and deliberately to alert and scare adult and juvenile salmonids away from the crossing area, or by having a person wade ahead of equipment to scare fish away from the crossing area. To avoid or minimize potential injury and mortality of fish during excavation and placement of fill materials in the active low-flow channel, equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area. Reclamation will ensure that before submerging an excavator bucket or laying gravel below the water surface, the excavator bucket will be operated to "tap" the surface of the water, or a person will wade ahead of fill placement equipment to scare fish away from the work area. To avoid impacts to mobile life stages of salmonids that may be present in the water column, the first layers of clean gravel that are being placed into the wetted channel will be added slowly and deliberately to allow fish to move from the work area.

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	To avoid impacts to juvenile salmonids during high flow gravel injections, gravel will only be injected in select locations where water velocities are too high and juvenile salmonids would not be expected to be holding.
EC-FR-3	Monitoring of the constructed inundation surfaces for salmon fry stranding will be performed by a qualified fishery biologist immediately after recession of flood flow events designated as a 1.5-year or less frequent event (i.e., Q >6,000 cfs) for a period of 3 years following construction. These flows, and associated fry stranding surveys, will typically occur between January and May. If substantial stranding is observed, Reclamation will take appropriate measures to return stranded fishes to river habitats and to subsequently modify the constructed surfaces prior to the next managed flow release to reduce the likelihood of future occurrences of fry stranding.
EC-FR-4	Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net-loss of riparian habitat and jurisdictional wetlands within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD. Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be redelineated 5 years post-project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after project implementation and wetland delineation 5 years after implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian and jurisdictional wetland habitat within rehabilitation site boundaries after 10 years.
EC-FR-5	Low water crossings will only be constructed and used between July 15 and September 15. The number of vehicle and equipment crossings of the Trinity River will be minimized. Reclamation will construct the low-flow channel crossings to allow adequate depths and velocities for adult and juvenile salmonids to pass safely. Flows associated with storm events are not considered critical because the width and hydrologic conditions associated with low-flow channel crossings in the Trinity River are not considered to limit fish passage at elevated flows and would be comparable to hydrologic conditions in local riffle-and-run features. For Trinity River low-flow channel crossings at base flows, velocities will not exceed 2 feet per second to allow for juvenile fish passage and water depths will not be less than 12 inches in two-thirds of the river channel to provide adequate depth for adult salmon and steelhead passage. Reclamation will not impede the physical features or hydraulic process of the Trinity River in a fashion that would be inconsistent with the 2000 Biological Opinion (National Marine Fisheries Service 2000), or result in a temporary impairment to fish passage related to a bridge.
	Vegetation, Wildlife, and Wetlands
EC-VW-1	Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes to ensure that these features avoid and/or minimize to the fullest extent impacts to riparian habitats and jurisdictional waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain marked areas on a regular basis throughout the construction phase.
EC-VW-2	A qualified botanist will conduct a minimum of two pre-construction surveys to determine if special-status plant species occur within the project site. Surveys shall be conducted during the blooming periods of the plants potentially occurring at the site to determine (1) if the species occur and (2)

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Label	Commitment
	the quality, location, and extent of any populations. If a special-status plants species is found within 250 feet of any proposed disturbance, the following measures will be implemented. ▪ Prior to the start of disturbance, exclusionary fencing will be erected around the known occurrences. If necessary, a qualified botanist shall be present to assist with locating these special-status plant populations. The exclusionary fencing will be periodically inspected throughout each period of construction and be repaired as necessary. ▪ If a population cannot be fully avoided, Reclamation will retain a qualified botanist to (1) determine appropriate salvage and relocation measures and (2) implement appropriate measures in coordination with CDFW staff.
EC-VW-3	Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the little willow flycatcher is present. If suitable habitat is present, the following measures will be implemented. ▪ Grading and other construction activities will be scheduled to avoid the nesting season to the extent possible. The nesting season for this species in Trinity County extends from June 1 through July 31. If construction occurs outside of the breeding season, no further mitigation is necessary. If the breeding season cannot be completely avoided, the following measures will be implemented. ▪ A qualified biologist will conduct a minimum of one pre-construction survey for the little willow flycatcher within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey(s) will be used to ensure that no nests of this species within or immediately adjacent to the rehabilitation site will be disturbed during project implementation. To the extent possible given timing for construction and with the contract award, pre-construction surveys will conform to methodologies identified in a Willow Fly Catcher Survey Protocol for California available online at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Birds (Bombay et al., 2003). If an active nest is found, CDFW will be contacted prior to the start of construction to determine the appropriate mitigation measures. ▪ If vegetation is to be removed by the projects and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.
EC-VW-4	If any construction in the Trinity River channel will occur prior to August 1 of any construction season, a pre-construction survey for the foothill yellow-legged frog larvae and/or eggs will be conducted by a qualified biologist. This survey will be conducted within the construction boundary no more than 2 weeks prior to the start of in-stream construction activities. If larvae or eggs are detected, the biologist will relocate them to a suitable location outside of the construction boundary. In the event that a foothill yellow-legged frog is observed within the construction boundary, the contractor will temporarily halt in-stream construction activities until qualified personnel have moved the frog(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.
EC-VW-5	A minimum of one survey for western pond turtle nests will be conducted during the nesting season (generally late June-July) prior to construction. A qualified biologist will be retained by Reclamation to conduct the survey. If a western pond turtle nest is found, the biologist will flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, the nest will be excavated by the biologist and reburied at a suitable location outside of the construction limits. Prior to construction in open water habitat, a qualified biologist will trap and move western pond turtles out of the construction area to nearby suitable habitats.

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	During construction, in the event that a western pond turtle is observed within the construction limits, the contractor will temporarily halt construction activities until qualified personnel have moved the turtle(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.
EC-VW-6	Prior to the start of construction, a qualified biologist will conduct surveys of the rehabilitation sites to determine whether suitable nesting habitat for California yellow warblers, yellow-breasted chats, and Vaux's swifts is present. If suitable habitat is present, the following measures will be implemented. Grading and other construction activities will be scheduled to avoid the nesting season for these species to the extent possible. The nesting season for these species in Trinity County extends from March 15 through July 31. If construction occurs outside the breeding season, no further mitigation is necessary. If construction during the breeding season cannot be completely avoided, the following measures will be implemented. A qualified biologist will conduct a minimum of one preconstruction survey for these species within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The preconstruction surveys will be used to ensure that no nests of these species within or immediately adjacent to the rehabilitation sites will be disturbed during project implementation. If an active nest is found, a qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest. If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting habitat (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.
EC-VW-7	Due to the removal of the bald eagle from the endangered species list and the availability of the National Bald Eagle Management Guidelines provided by the US Fish and Wildlife Service to protect the bald eagle, modified commitments are outlined below. These measures are now stricter than those outlined in the Master EIR and provide additional protections for the bald eagle to abide by directives within the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d): ▪ Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable habitat for Bald Eagle and/or northern goshawks is present. If suitable habitat is present, the following commitment will be implemented. ▪ Construction will be scheduled to avoid the nesting season for bald eagles and northern goshawks to the extent feasible. The nesting season for most raptors in Trinity County extends from February 15 through July 31. Thus, if construction can be scheduled to occur between August 1 and February 14, the nesting season will be avoided and no impacts to nesting bald eagles and/or northern goshawks. If it is not possible to schedule construction during this time, the following measures will be implemented. ▪ Pre-construction surveys for bald eagles and nesting northern goshawks will be conducted by a qualified biologist to ensure that no disturbance will occur during project implementation. These surveys will be conducted no more than 14 days prior to the initiation of construction activities. The biologist will conduct surveys immediately adjacent to the impact areas for bald eagles and northern goshawk nests. If eagles or an active nest are found within 500 feet of the construction areas to be disturbed by these activities, the biologist, in consultation with the CDFW and the National Bald Eagle Management Guidelines, will determine the extent of a construction-free buffer zone to be established. ▪ If vegetation is to be removed as part of the project and all necessary approvals have been obtained, potential nesting habitat (i.e., trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts. Directives under the Bald and Golden Eagle Management Protection Act will be adhered to.

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Label	Commitment
EC-VW-8	Pre-construction surveys for roosting bats and ring-tailed cats will be conducted prior to the start of construction activities. The surveys will be conducted by a qualified biologist. No activities that will result in disturbance to active roosts of special status bats or dens of ring-tailed cats will proceed prior to completion of the surveys. If no active roosts or dens are found, no further action is needed. Because bats are known to abandon young when disturbed, if a maternity roost is located, a qualified bat biologist will determine the extent of a construction-free zone to be implemented around the roost. If a bat maternity roost or hibernaculum is present, or a ring-tailed cat den is present, the following commitment will be implemented. CDFW will also be notified of any active bat nurseries within the disturbance zones. If an active maternity roost or hibernaculum is found, the projects will be redesigned to avoid the loss of the tree or structure occupied by the roost, if feasible. If the projects cannot be redesigned to avoid removal of the structure, demolition of that structure will commence before bat maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). The disturbance-free buffer zones described above will be observed during the bat maternity roost season (March 1–July 31). If a non-breeding bat hibernaculum is found in a tree or structure to be razed, the individuals will be safely evicted under the direction of a qualified bat biologist, by opening the roosting area to allow air to flow through the cavity. Demolition will then follow no sooner than the following day (i.e., there will be no less than one night between initial disturbance for air flow and the demolition). This action will allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during darker hours. Ring-tailed cats are fully protected species under Fish and Game Code Section 4700. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. If an active ring-tailed cat nest is found, the projects will be redesigned to avoid the loss of the tree occupied by the nest if feasible. If the projects cannot be redesigned to avoid removal of the occupied tree, the CDFW will be contacted for their input. If approved by CDFW, demolition of the tree will commence outside of the breeding season (February 1 to August 30). If a non-breeding den is found in a tree scheduled to be removed, prior to disturbance, the CDFW will be notified to review and approve proposed procedures to ensure that no take occurs as a result of the action. Trees with dens that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow ring-tailed cats to escape during the darker hours.
EC-VW-9	In order to avoid and/or minimize the potential introduction and/or spread of noxious weeds, the following measures will be implemented: ▪ When using imported erosion control materials (as opposed to rock and dirt berms), use only certified weed-free materials, mulch, and seed. Preclude the use of rice straw in riparian areas. Limit any import or export of fill to materials to those that are known to be weed free. ▪ Ensure all construction equipment is thoroughly washed prior to entering and leaving the worksite. Equipment will be inspected to ensure that it is free of plant parts as well as soils, mud, or other debris that may carry weed seeds. ▪ Use a mix of native grasses, forbs, and non-persistent non-native species for seeding disturbed areas that are subject to infestation by non-native and invasive plant species. Where appropriate, a heavy application of mulch will be used to discourage introduction of these species. Use of planting plugs of native grass species may also be used to accelerate occupation of disturbed sites and increase the likelihood of reestablishing a self-sustaining population of native plant species.

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	▪ Within the first 3 to 5 years post-project, if it is determined that the project has caused non-native invasive vegetation to out-compete desired planted or native colonizing riparian vegetation, opportunities to control these non-native species will be considered. When implementing weed control techniques, the approach will consider using all available control methods known for a weed species. Within the first 3 to 5 years post-project, if it is determined that on-site revegetation/post-project conditions do not meet landowner requirements, opportunities to revisit the site and remedy the concern will be considered.
EC-VW-10	Reclamation will develop and implement a plan to minimize impacts to freshwater mussels {e.g., western pearlshell mussel) and lamprey ammocetes that occupy habitat within the project area. This plan will include measures to collect, transport and relocate mussel populations to appropriate alluvial habitat within the project area. Relocation of ammocetes would occur using techniques to extract them from substrate habitat and move into the water column; thereby being transported to alluvial habitat downstream.
	Recreation
EC-RE-1	Reclamation will provide precautionary signage to warn recreational users of the potential safety hazards associated with project construction activities. Signs and/or buoys shall be placed within and directly adjacent to the project boundaries along the Trinity River in accordance with the requirements specified in Title 14, Article 6 of the California Code of Regulations. Notification signs shall be posted at public river access areas located within the project area and managed by BLM. Additionally, public notification of proposed project construction activities and associated safety hazards shall be circulated in the local Trinity Journal newspaper prior to the onset of project construction.
EC-RE-2	Reclamation will repair and/or replace any facilities associated with the project that are impacted by project activities. This feature includes installation of interpretive signage consistent with the requirements of the BLM. Preconstruction meetings between Reclamation and landowners/land managers will identify the amount of vegetative screening to be retained at each recreation site within the project area.
	Cultural Resources
EC-CU-1	Prior to initiation of construction or ground-disturbing activities, all construction workers will be alerted to the possibility of discovering cultural resources. This includes prehistoric and/or historic resources. Personnel will be instructed that upon discovery of buried cultural resources, work within 50 feet of the find will be halted and Reclamation's designated archaeologist will be consulted. Once the find has been identified, Reclamation will be responsible for developing a treatment plan for the cultural resource including an assessment of its historic properties and methods for avoiding any adverse effects, pursuant to the PA and in compliance with the NHPA.
EC-CU-2	If human remains are encountered during construction on non-federal lands, work in that area will be halted and the Trinity County Coroner's Office will be immediately contacted. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be notified within 24 hours of determination, as required by PRC, Section 5097. The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within 24 hours. The NAHC will mediate any disputes regarding treatment of remains. If Native American human remains and associated items are discovered on federal lands, they will be treated according to provisions set forth in the Native American Protection and Repatriation Act (25 USC 3001) as well as Reclamation's Directives and Standards LND 02-01. If the find is determined to be a historical resource or a unique archaeological resource, as defined by CEQA, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or other appropriate mitigation will be made available. Work may continue on other parts of the project while mitigation for historical or unique archaeological resources takes place.

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	Air Quality
EC-AQ-1	Reclamation will implement a dust control program to limit fugitive dust and particulate matter emissions. The dust control program will include the following elements as appropriate: ▪ Inactive construction areas will be watered as needed to ensure dust control. ▪ Pursuant to the California Vehicle Code (Section 23114), all trucks hauling soil or other loose material to and from the construction site will be covered or will maintain adequate freeboard to ensure retention of materials within the truck's bed (e.g., ensure 1-2 feet vertical distance between top of load and the trailer). ▪ Excavation activities and other soil-disturbing activities will be conducted in phases to reduce the amount of bare soil exposed at any one time. Mulching with weed-free materials will be used to minimize soil erosion. ▪ Watering (using equipment and/or manually) will be conducted on all stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust. ▪ All paved access roads, parking areas, and staging areas will be swept (with water sweepers), as required by Reclamation. ▪ Paved roads will be swept (with water sweepers) if visible soil material is carried onto adjacent private and public roads, as required by Reclamation. ▪ All ground-disturbing activities with the potential to generate dust will be suspended when winds exceed 20 mph, as directed by the NCUAQMD. Reclamation or its contractor will designate a person to monitor dust control and to order increased watering as necessary to prevent transport of dust offsite. This person will also respond to citizen complaints. Reclamation will comply with NCUAQMD Rule 104 (4.0) Particulate Matter. This compliance could occur by using portable internal combustion engines registered and certified under the state portable equipment regulation (Health & Safety Code 41750 through 41755).
EC-AQ-2	Vegetative piles to be burned will consist only of dried vegetative materials. Burn piles will be no larger than 10 feet in diameter. Field personnel will be on site during all hours of burning, and materials necessary to extinguish fires will be available at all times. In general, all requirements of a NCUAQMD "Non-Standard" burn permit will be met for burning. Burn management planning will include but not be limited to the following: ▪ Ensure that burning occurs only on approved burn days as defined by the NCUAQMD (determined by calling 1-866-BURN-DAY). ▪ Burning will only occur during suitable conditions to ensure control of ignited fires. For instance, water to wet the litter and duff layer and penetrate the mineral soil layer to 1/4 inch or more will be present, wind speeds will be low (<10 mph), and temperature will be low (<80 ºF). ▪ Piles will be covered with a 5-foot x 5-foot sheet of 4-mil polyethylene plastic to promote drying of the slash. At least 3/4 of each pile surface will be covered and the plastic anchored to preserve a dry ignition point. Dry fuel conditions will minimize smoke emissions. ▪ Slash piles will not be constructed on logs, stumps, or talus slopes within 25 feet of wildlife trees with nest structures, in roadways, or in drainage ditches. Piles will not be placed within 10 feet of trees intended to be saved (reserved trees) or within 25 feet of a unit boundary. ▪ Reclamation will notify the public each day that burning is to occur. Signs or personnel will notify residents and traffic on nearby access routes.
EC-AQ-3	Construction activity occurring within 300 feet of elementary schools will be limited to the period when school is not in session. Construction activity occurring within 300 feet of residences will be limited to Monday through Saturday, from the hours of 9 a.m. to 5 p.m. Reclamation will notify

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	residences within 300 feet of the site and project activity and elementary schools will be notified of construction activity located near the school prior to site construction activities.
EC-AQ-4	Reclamation will ensure that a notice is posted at/adjacent to the rehabilitation site, which contains a phone number for the public to contact for concerns related to air quality.
	Noise
EC-NO-1	Construction activities near residential areas will be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No construction activities will be scheduled for Sundays or other hours and days established by the local jurisdiction (i.e., Trinity County). The contractor may submit a request for variances in construction activity hours, as needed.
EC-NO-2	Reclamation will require that all construction equipment be equipped with manufacturer's specified noise muffling devices. Reclamation will require placement of all stationary noise-generating equipment as far away as feasibly possible from sensitive noise receptors or in an orientation minimizing noise impacts (e.g., behind existing barriers, storage piles, unused equipment).
	Public Services
EC-PS-1	Reclamation will require that staging and construction work, including temporary road or bridge closures occurs in a manner that allows for access by emergency service providers. Reclamation will provide 72-hour notice to the local emergency providers and affected users prior to the start of temporary closures.
EC-PS-2	Reclamation will coordinate road closures occurring during the school year (mid-August through mid-June) with the appropriate school districts to avoid disruption of school attendance and student access to bus service.
	Transportation/Traffic Circulation
EC-TC-1	Reclamation will post signs during gravel haul activities notifying travelers of trucks entering the roadway. Reclamation will ensure that gravel trucks maintain a speed limit of 15 mph on residential and private roads and operate only between the hours of 7 a.m. and 7 p.m., Monday through Saturday.
EC-TC-2	Reclamation will maintain access throughout the construction period for all private residences adjacent to the project boundary and access roads adjacent to the Trinity River. During the construction phase of the project, Reclamation will limit the amount of daily construction equipment traffic by staging construction equipment and vehicles within the project boundary throughout the work period. All large equipment "lowbed" movements will be performed as required by CHP/Caltrans, etc., using pilot vehicles in the front and rear. A "scout vehicle" can be sent forward in the narrow areas to avoid/advise oncoming public traffic.
EC-TC-3	Reclamation will perform a pre-construction survey of local federal and state roads to determine the existing roadway conditions of the construction access routes and will consult with the relevant agencies/private parties about road conditions prior to construction activity and post construction activity. An agreement will be entered into prior to construction that will detail the pre-construction conditions and post-construction requirements for potential roadway rehabilitation.
EC-TC-4	Reclamation will prepare and implement a traffic control plan that will include provision and maintenance of temporary access through the construction zone, reduction in speed limits though the construction zone, signage and appropriate traffic control devices, illumination during hours of darkness or limited visibility, use of safety clothing/vests to ensure visibility of construction workers by motorists, and fencing as appropriate to separate bicyclists, pedestrians, and equestrians from construction activities. During the times that truck traffic and movement of equipment may result in a traffic obstacle or safety hazard (as defined in the traffic control plan), construction flagging and/or pilot cars will be used to ensure safe traffic conditions on Sky Ranch Road and other public access routes. Reclamation will obtain encroachment permits from the appropriate entities to work

Table 2-5. Environmental Commitments

Label	Commitment
	within road easements. These permits will require traffic control and signage to meet California standards.

2.1.19 No Action Alternative

The no action alternative represents ongoing activities and operations of the TRRP and other entities involved in restoring the Trinity River with the exception of the proposed action. Under the no action alternative, no rehabilitation activities would be implemented at the Deep Gulch and Sheridan Creek rehabilitation sites. Other activities already being implemented in compliance with the 2000 ROD would continue to be implemented. These include:

- Implementation of the annual flow release schedule based on recommendations of the Trinity Management Council (TMC) to Reclamation; and
- Implementation of annual high flow coarse sediment (gravel) augmentation, at designated long-term sites along the Trinity River mainstem, based on recommendations of the TMC to Reclamation; and
- Implementation of watershed restoration and rehabilitation projects at other locations in the Trinity River Basin, including those funded by the TRRP, members of the TMC, BLM, and the Trinity County Resource Conservation District.

2.2 Alternatives Considered but Eliminated from Further Evaluation

Within the general confines of the defined activity areas and rehabilitation site boundaries, the designers used models to inform themselves about the potential effects that changes in constructed topography (how the features are built – using various grades, side slope angles, and elevation on the ground) might have on how constructed features function under various flow conditions. The designers have been evaluating how these changes in design affect modeled water depths, velocities, and sheer stresses under post-construction conditions and how these results might affect long-term maintenance/evolution of features. Results of modeling were used to select optimal configurations, presented as the proposed action here, for maximum aquatic habitat quality for juvenile salmonids (e.g., depth, velocity, and substrate) and to predict changes to the river and floodplain (e.g., erode, aggrade, or vegetate) under envisioned ROD flow conditions.

While no discrete action alternatives were identified for consideration, the type and scale of activity areas originally considered by the respective design teams included the location of access roads, contractor use areas, and the location and use of processing/disposal areas for a long-term source of coarse sediment. Several access roads initially considered by the design team were eliminated due to resource conflicts (e.g., cultural resources) and concerns raised by landowners. In one case, an access area (DG A-1) was relocated to increase the distance from a private property and include restrictions on maintenance to avoid impacts to cultural resources. The boundaries of activity areas identified for processing and/or disposal of material were adjusted to address resource concerns associated with

wetlands, wildlife habitat, and cultural resources. Specifically, the boundaries of DG U-1 and SC U-2 and U-3 were revised several times prior to final design to address these concerns. In addition to including additional contractor use areas through the design process, several of these areas were revised to ensure adequate space was available to support the adjacent activities.

Initially, the project included a component that would provide processing of alluvial materials to develop a long-term source of coarse sediment available for subsequent TRRP channel rehabilitation and gravel augmentation projects. The temporal scale of this type of activity would have required use of certain activity areas (A, C, and U) for multiple entries. BLM requested that the proposed action exclude consideration of these areas for long-term TRRP activities.

Chapter 3. Affected Environment and Environmental Consequences

3.1 Introduction to the Analysis

This chapter characterizes the affected environment at the Deep Gulch and Sheridan Creek rehabilitation sites and analyzes the potential environmental impacts associated with implementing the proposed action described in Chapter 2. The analysis includes a discussion of the proposed action and the no action alternative. A number of design features have been developed and incorporated into the proposed action to reduce or eliminate adverse effects. Table 2-5 provides a comprehensive list of environmental commitments that have been incorporated into the proposed action to lessen impacts to various resources. This is consistent with guidance issued by the Council on Environmental Quality (CEQ) for Federal agencies for implementing, monitoring, and evaluating environmental commitments identified in EAs completed for compliance with the National Environmental Policy Act (NEPA). Throughout this chapter, these environmental commitments are identified with a unique label (e.g., (EC-CU-1)).

The analysis for each resource area includes discussions of the existing environmental setting, applicable significance criteria, potential environmental impacts, and project design features (e.g., environmental commitments). There is a clear distinction between NEPA and CEQA with respect to mitigation measures. No CEQA mitigation measures were identified for the resource topics addressed in this chapter; the environmental commitments described in Table 2-5 have been incorporated into the proposed action to ensure that there are no significant impacts as defined under CEQA. An alphanumeric coding system that corresponds to the CEQA mitigation measures found in Appendix E of the Master EIR/Programmatic EA is used to identify each mitigation measure that is applicable to the proposed action. Where a NEPA environmental commitment corresponds to a referenced CEQA mitigation measure as described in the mitigation monitoring and reporting program (MMRP) (Appendix E of the Master EIR), it is cross referenced, for example (EC-CU-1 [4.10-2a]).

Several resource topics or issues were considered, but eliminated from further evaluation in this EA/IS due to the resource not being present or the issue not being a concern at the rehabilitation sites. Table 3-1 identifies the resource topics considered in this document as well as those eliminated from further consideration, and Appendix A1 contains an Environmental Screening Checklist based on the Master EIR/Programmatic EA, which was used to screen and identify resource topics and issues to carry forward for further evaluation.

Table 3-1. Summary of Resource Topics Considered or Eliminated from Further Consideration in This EA/IS

Resource Topic	Analyzed in the EA/IS?	Comments
Visual Resources/ Aesthetics	Yes	Temporary and long-term changes to visual resources or aesthetics are addressed. Scenic resources associated with scenic highways are not present. Light and glare were addressed in the Master EIR, and no issues were identified.
Agricultural Resources	No	Agricultural lands and uses are not present.
Air Quality	Yes	Temporary construction-related emissions and dust are addressed. No long-term air quality impacts, including greenhouse gas contributions, are expected.
Cultural Resources	Yes	Impacts on tribal cultural resources, archeological resources, and historic properties/historical resources are addressed. The alluvial nature of the geology within the project area is not conducive to the occurrence of paleontological resources.
Environmental Justice	No	The proposed action would not disproportionately affect low-income or minority populations.
Fishery Resources	Yes	Impacts on aquatic habitat and special-status fish are addressed.
Forestry Resources	Yes	Forestry resources are addressed. This topic is covered in the Vegetation, Wildlife, and Wetlands section.
Geology and Geologic Hazards	No	Unique geological resources are not present. Geologic hazards were addressed in the Master EIR, and no issues were identified.
Geomorphology and Soils	Yes	Soil disturbance, erosion potential, changes to the geomorphology of the river, and disposal of excavated materials are addressed in this section.
Greenhouse Gases	Yes	Greenhouse gas emissions are addressed in the Air Quality section.
Hazardous Materials	No	Hazardous materials were addressed in the Master EIR, and no issues associated with hazardous material sites were identified. Use of hazardous materials during construction activities is addressed in the Soils, Fishery Resources, Wildlife, and Water Quality sections.
Hydrology and Flooding	Yes	Changes to hydrology of the river and floodplain effects are addressed.
Indian Trust Assets	Yes	Impacts on Indian Trust Assets associated with uses of the river and its resources are addressed. This topic is covered in the Cultural Resources section.
Indian Sacred Sites	No	No Indian sacred sites have been identified within or in close proximity to the project area.
Land Use	Yes	Consistency with federal agency resource management plans is addressed. Consistency with Trinity County General Plan is also addressed.
Mineral Resources	Yes	Impacts on recreational mining and from use of mineral resources are addressed. These topics are addressed in the Recreation, Geomorphology, and Soils sections.

Table 3-1. Summary of Resource Topics Considered or Eliminated from Further Consideration in This EA/IS

Resource Topic	Analyzed in the EA/IS?	Comments
Noise	Yes	Increased noise during construction activities is addressed in the Noise section.
Population and Housing	No	No populations or housing would be affected.
Public Health and Safety	No	Hazards to the public were addressed in the Master EIR, and no issues were identified. Indirect public health or safety concerns are addressed in the Air Quality, Noise, Recreation, and Transportation and Traffic sections.
Public Services	No	Public services were addressed in the Master EIR, and no issues associated with the increased demand or disruption of public services were identified. Access-related issues are addressed in the Transportation and Traffic sections.
Recreation	Yes	Potential disruptions to recreational uses are addressed.
Socioeconomics	No	Socioeconomics were addressed in the Master EIR, and no issues were identified.
Transportation and Traffic	Yes	Increased traffic and access-related issues are addressed.
Tribal Cultural Resources	Yes	Tribal cultural resources are addressed in the Cultural Resources section.
Utilities and Energy	No	Utilities and energy were addressed in the Master EIR, and no issues were identified.
Vegetation, Wildlife, and Wetlands	Yes	Vegetation removal, disturbance to wildlife, and modifications of wetlands are addressed.
Water Quality	Yes	Temporary and long-term water quality impacts are addressed.
Wild and Scenic Rivers	Yes	The recreation and aesthetic values of the Trinity River are addressed. This topic is covered in the Recreation and Wild and Scenic Rivers, Water Quality, Fisheries, Visuals Resources/Aesthetics and Recreation sections.

3.2 Land Use

3.2.1 Affected Environment

The project area encompasses federal and private lands. About 140 acres, or 78 percent, of the lands are managed by the BLM. Portions of nine private parcels encompass approximately 40 acres in the central and eastern portions of the project area. Some of the private parcels contain large-lot rural residential uses (residences are outside the project area) and are surrounded by open space on adjacent private properties and BLM-managed lands. The private parcels in the project area are designated by Trinity County as Agriculture with a 10-acre minimum lot size (A10), Open Space (OS), and Specific Unit Development (SUD), and those portions of the parcels in the 100-year floodplain of the Trinity River have an overlay designation of Scenic Conservation. Land uses on private lands are guided by

the Trinity County General Plan and Junction City Community Plan. The BLM-managed land is used primarily for recreational activities associated with the Trinity River, although public access to the river on BLM-managed land is limited to one user developed primitive route (DG A-1) with an undeveloped launch site accessible via four-wheel-drive, high-clearance vehicles. Boats and rafts provide access to BLM lands along both sides of the river through the project area. Historic use of the land included mining, and dredge tailings are present along the river corridor. Two of the main vehicle access routes (DG A-6 and SC A-7) into the project area cross private lands and are not open to the public.

BLM-managed lands are administered in accordance with BLM's 1993 Redding Resource Management Plan (RMP), as amended. This RMP discusses the general condition of natural resources in the plan area and prescribes appropriate land use management for lands within the plan jurisdiction. The federal lands in the project area are allocated as "Other," but this allocation is overlaid with other designations with stringent management standards. The 1993 Redding RMP was amended by the Northwest Forest Plan, which added requirements for compliance with the Aquatic Conservation Strategy and other Standards and Guidelines to protect habitat for the northern spotted owl. As part of this plan, Riparian Reserves were established along rivers and streams to protect aquatic resources. The width of the Riparian Reserves essentially correlates with the floodplain of the Trinity River and includes most of the project area. Also, the Trinity River from Lewiston Dam to Weitchpec is federally designated as a Wild and Scenic River for its recreational values. BLM is the federal river manager from Lewiston Dam to the North Fork Trinity River.

3.2.2 Environmental Consequences

Proposed Action

The proposed rehabilitation activities would not change the uses of the project area or require changes to land use allocations or zoning designations. Temporary disruptions to nearby property owners and recreationists using the river and adjacent areas near the project area could occur during the rehabilitation activities (i.e., 3 to 6 months for construction and up to 5 years with respect to revegetation efforts), but no long-term impacts are anticipated and use of the land within the project area would be the same as under current conditions. Recreation-related impacts are discussed in section 3.3, Recreation, and access-related impacts are discussed in section 3.6, Transportation and Circulation. The restored floodplain and habitats would enhance the area for recreationists and would maintain open space and scenic views near the private residences.

Based on the nature of the rehabilitation activities, the proposed action would be consistent with current uses and zoning of the project area, as defined by the BLM and Trinity County. The BLM's 1993 Redding RMP describes various resource condition objectives applicable to federal lands in the project area, and the rehabilitation activities would help the BLM achieve these objectives for the Trinity River. Additional details on the consistency of the TRRP activities with the Redding RMP are presented in Appendices D (ACS), E (Survey and Manage Species) and F (Wild and Scenic Rivers).

The proposed action was developed be consistent with the BLM RMP and the Trinity County General Plan. Therefore, CEQA-specific impacts considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, land use within the project area is expected to remain similar to existing uses. Therefore, there would be no impacts to land use as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.3 Recreation and Wild and Scenic Rivers

3.3.1 Affected Environment

The project area encompasses both federally and privately owned land. About 140 acres, or 78 percent, of the land in the project area is managed by the BLM. The BLM-managed land is used primarily for recreational activities associated with the Trinity River.

The Trinity River provides year-round recreational opportunities, including boating, kayaking, canoeing, rafting, inner tubing, fishing, swimming, camping, gold panning, wildlife viewing, picnicking, hiking, and sightseeing. Fishing for Chinook salmon, steelhead, and rainbow and brown trout are major recreational activities on the Trinity River throughout the year but are more prevalent between April and December.

BLM issues special recreation permits for about 100 commercial fishing guides along this reach of the river. Canoe, raft, and shuttle service permits are also issued in this area. Visitor use in the project is most likely light, with an occasional bank fisherman, drift boat, raft, or hiker transiting the area.

There are no campgrounds or other formal recreational sites in the project area, and public access to BLM land within the project area is limited due to the pattern of private ownership within and adjacent to the project area. One user created access route is available to the Deep Gulch site using DG A-1. This route provides access to the Trinity River in the vicinity of a sensitive feature locally known as Ice Box Hole (See Figure 2-1) for various recreational opportunities (e.g., angling, gold panning). Public access to the river by drift boat or raft is afforded at Evans Bar (USFS) on the west side of the river 1.5 miles upriver from the project site and at the Sky Ranch river access adjacent to SR 299, about 1.5 miles downriver.

The Trinity River was designated by the Secretary of the Interior as a National Wild and Scenic River (WSR) in 1981 under the 1968 Federal Wild and Scenic Rivers Act (WSRA). In addition to the mainstem Trinity River from the confluence with the Klamath River to 100 yards below Lewiston Dam, three other sections of the river were designated: the North Fork from the Trinity River confluence to the southern boundary of the Trinity Alps Wilderness Area, the South Fork from the Trinity River confluence to the SR 36 bridge crossing, and the New River from the Trinity River confluence to the Trinity Alps Wilderness Area. From 100 yards below Lewiston Dam downstream to Cedar Flat, this section of the mainstem of the Trinity River is classified as a “Recreational” wild and scenic river. In 1998, BLM delineated the wild and scenic river corridor.

The sections of the Trinity River described above were designated as Wild and Scenic to preserve the river’s free-flowing condition, water quality, and the Outstandingly Remarkable Values (ORVs). The ORV that was identified on the date of designation was the anadromous and resident fisheries. Under

an interagency agreement between the National Park Service, the Bureau of Land Management (BLM), and the U.S. Forest Service, the BLM has the responsibility for conducting WSRA Section 7 determinations for the mainstem Trinity River from Lewiston Dam to the confluence with the North Fork Trinity River. Appendix F provides additional information on this topic.

3.3.2 Environmental Consequences

Proposed Action

The proposed action would require construction within the active river channel, the floodplain, and adjacent upland areas, as described in Chapter 2. Construction activities could result in temporary disruptions to public access and recreational activities in the project area and its immediate vicinity. However, river access and recreational opportunities would continue to be available at other locations along the river. Because disruptions to recreational activities in the project area would be temporary, this impact would be less than significant.

Construction and implementation of the proposed action would have a temporary effect on the scenic and recreational components of the Trinity River's Wild and Scenic River values. However, this temporary impact would be less than significant because the rehabilitation activities would ultimately enhance the overall form and function of the Trinity River, thereby enhancing the outstandingly remarkable values for which it was designated a federal Wild and Scenic River.

Flows that typically contribute to good fishing tend to be clear; increases in turbidity may therefore affect the recreational experience of anglers and the aesthetic values held by other recreationists. Increased turbidity and suspended solids levels would adversely affect water quality (refer to discussion in section 4.8, Recreation of the Trinity River Master EIR) and could adversely affect aesthetic resources. Four specific environmental commitments developed to reduce water quality impacts as described in Table 2-5 have been integrated into the proposed action in order to reduce impacts of increased turbidity levels on recreational users. These commitments include EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], and EC-WQ-4 [4.5-1e].

Implementation of the proposed action could increase turbidity and total suspended solids in the Trinity River for some distance downstream during construction activities. The level of the increase would be largely dependent on the flow regime at the time of the project. Water quality objectives for the Trinity River specifically prohibit the discharge of any materials into the river that could cause a nuisance or adversely affect beneficial uses such as recreation. The extent of downstream sedimentation would be a function of the instream flow velocity and particle size. For example, fine-grained sediments like silts and clays could be carried several thousand feet downstream of the project area, while larger-sized sediments like sands and gravels would tend to drop out of the water column within several feet of the construction limit.

Temporary construction activities associated with the proposed action could pose a hazard to recreational users of the river and cause resource damage to recreational lands within the project boundaries. Potential hazards to recreationists include the presence of temporary river crossings, operation of construction equipment and vehicles in and around the rehabilitation sites, changes in the river's subsurface movement as a result of the in-channel addition or removal of gravel, the addition of wood into the channel, and an increased potential for a hazardous materials spill (e.g., diesel and

hydraulic fluid) presented by construction equipment and vehicles operating in and adjacent to the river. Potential hazards to resources on recreational lands within project boundaries include an increased potential for hazardous materials spills and unstable riverbanks and/or uplands resulting from excavation, material addition, road creation, and vegetation removal. During construction activities in the vicinity of DG R-1 and U-1, public access to the Trinity River would be limited. Several public access points to the river for recreationists would be available upstream (e.g., Evans Bar) and downstream (e.g., Junction City) of the project area throughout the construction period.

An environmental commitment listed in Table 2-5 (EC-RE-1 [4.8-1a]) requires Reclamation to prepare and post precautionary signage and public notification warning of in-river construction in order to reduce the hazards to recreational users that would be associated with in-river construction activities. This approach has worked well for previous TRRP projects and has been particularly effective in reducing impacts on in-water recreational activities such as boating and fishing over the past 10 years.

After construction is completed, the activity areas would be evaluated by Reclamation in conjunction with land managers and owners to identify specific prescriptions required to minimize any further potential safety risks to recreational users and to ensure the avoidance of any further project effects to resources occurring on recreational lands within the project boundaries.

With the inclusion of CEQA mitigation measures EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], EC-WQ-4 [4.5-1e] and EC-RE-1 [4.8-1a] described in this section, CEQA impacts considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, recreational resources and uses within the project area are expected to remain similar to existing conditions. Therefore, there would be no impacts to recreational resources or disruption of uses as defined in the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

3.4 Visual Resources/Aesthetics

3.4.1 Affected Environment

The Trinity River is considered an important aesthetic and visual resource for residents of Trinity County and visitors to the area. The river is an integral component of the communities and residential areas throughout the County. Residents and visitors actively use the river for recreation, both on and adjacent to the river. The river also offers a variety of landscapes, many of which are incorporated into the rural residential lifestyle of Trinity County.

This section describes the scenic values and visual resources that are known to occur within the project area and evaluates the effect that the proposed action could have on these values and resources. The BLM is responsible for managing public lands for multiple uses while ensuring that the scenic values and open space character of the public lands are considered before authorizing actions on public lands. The BLM accomplishes these responsibilities through its Visual Resource

Management (VRM) system. The VRM system classifies land based on visual appeal, public concern for scenic quality, and visibility from travel routes or observation points. VRM classes are used to identify the degree of acceptable visual change within a landscape based on the physical and sociological characteristics: Classes I and II are the most valued, Class III represents a moderate value, and Class IV is of least value. The proposed action would affect BLM-administered public lands in the project area with the VRM Class Objective of II (USDI BLM 1993).

BLM Manual 8431, Visual Resource Contrast Rating, provides the following management objectives for this VRM class (BLM 1986):

> *Class II Objective: The objective of this class is to retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must repeat the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.*

As illustrated in Figures 2-1 and 2-2, the project area includes lands on either side of the Trinity River that are isolated from public roadways. Because the project area is isolated and is essentially screened by vegetation and/or topography, key observation points were not developed and described in this discussion.

On river left, Dutch Creek Road parallels the project boundary, but is several hundred feet in elevation above the project boundary. Although there are several turnouts where a motorist may catch a glimpse of the area across the river to the east, the topography screens the project area from these vantage points. Similarly, the residential development on river left and west of Sky Ranch Road has limited views of the project area. While several residences do have views of the river to the west, topography and/or vegetation screen most of the project area from these residences. While the local residents access the project area for various recreational activities, the existing vegetation and dredge tailing deposits screen most users from views of the river except during high-flow events when the floodplain is inundated. From the river itself, the bed and banks can be viewed by boaters and those wading in the river. Due to the nature of the tailing deposits and extensive riparian vegetation, these views are limited other than from directly up or down the river corridor.

Because of the rural nature of the Trinity River corridor, the primary sources of artificial light are from vehicles passing through the area on state, local, and private roads; commercial and residential buildings; and, to a lesser degree, recreational features and facilities. Glare may occur during the daylight hours as the sun is reflected off the river or light-colored alluvium associated with the Trinity River floodplain.

The section of the Trinity River within the project area was designated as Scenic under the federal and state Wild and Scenic Rivers Acts (WSRA; Public Law 90-542 1968). This designation serves to preserve the river's free-flowing condition, water quality (e.g., extremely low turbidity levels under low-flow conditions), and ORVs. The section of the Trinity River subject to the proposed action was found to have ORVs due to its anadromous fishery. Appendix F provides a comprehensive analysis and determination of the proposed action consistent with the requirements of the Section 7 of the WSRA.

3.4.2 Environmental Consequences

Proposed Action

The potential impacts of the proposed action would include changes brought about by the removal of vegetation, construction of inundated surfaces, construction of new access roads, and creation and use of staging and gravel processing areas. These various activities are intended to restore the form and function of an alluvial river, thereby enhancing the overall aesthetic values and visual resources associated with the Trinity River and the surrounding landscape. Although the adverse impacts are expected to be temporary and the long-term outcome should improve the visual diversity of the corridor, the short-term (i.e., 5 years) impacts would persist.

Activities associated with the proposed action are intended to be not only functional (e.g., enhance fisheries and restore river sinuosity), but to complement the aesthetic values and visual resources associated with the rehabilitation sites. Overall, the proposed action incorporates the project area's diversity of landscapes and vegetation types to define the location, character, and magnitude of the rehabilitation activities at the sites. For example, materials excavated from riverine areas would be removed to upland areas or used as a source of coarse sediment to enhance the alluvial function of the river. Material transported to upland activity areas would be placed in a manner that blends the materials into the contours of the topography. Retention of existing topographic features would significantly lessen the degree of visual impact.

The activities described in Chapter 2 provide a framework for reestablishing the physical process necessary to enhance the alluvial attributes of the river channel and floodplain over time, particularly those attributes that are flow dependent. Over time, the proposed action would produce gradual, ever-improving changes in the aesthetic quality of this reach of the Trinity River, while maintaining the character of the surrounding land uses.

Implementation of the proposed action would increase the potential for increases in turbidity levels during and, to a lesser degree, after construction. Flows that typically contribute to good fishing tend to be clear; increases in turbidity may therefore affect the recreational experience of anglers and the aesthetic values held by other recreationists. Increased turbidity and suspended solids levels would adversely affect water quality (refer to discussion in section 4.8, Recreation, of the Trinity River Master EIR) and could adversely affect aesthetic resources. As described in Table 2-5, four specific environmental commitments developed to reduce water quality impacts have been integrated into the proposed action to the reduce impacts of increased turbidity levels that could be visible to recreational users.

Under section 7 of the federal WSRA, direct and adverse effects to the values for which the Trinity River was recognized as a Wild and Scenic River are prohibited. Based on the analysis and determination presented in Appendix F, the proposed action would enhance the fishery ORV as well as maintain the water quality and free-flowing conditions for which the Trinity River was designated. Therefore, the proposed action would be consistent with the provisions of the federal WSRA.

With the inclusion of CEQA mitigation measures EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], EC-WQ-4 [4.5-1e] and EC-RE-1 [4.8-1a] described in this section, the CEQA

impacts considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, there would be no degradation or obstruction of a scenic view as a result of construction because the project would not be implemented nor would there be an effect on the scenic quality of the Wild and Scenic River. The level of artificial light or glare would be similar to the existing condition. Therefore, there would be no impacts to aesthetic resources as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.5 Cultural Resources

Cultural resources is a broad term that includes prehistoric, historic, archeological, and tribal cultural resources. The National Historic Preservation Act (NHPA) of 1966 is the primary federal legislation that outlines the federal government's responsibility related to cultural resources. Title 54 U.S.C § 306108, commonly known as section 106 of the NHPA, requires the federal government to take into consideration the effects of the undertaking on any historic property, i.e., cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP).

The project area's cultural resources identification and significance determinations were performed by Reclamation consistent with the terms and stipulations of a Programmatic Agreement (PA) (USFWS et al. 2000) pursuant to the NHPA's section 106 process and its implementing regulations at 36 CFR Part 800.

Assembly Bill 52 (AB52) was approved by the Governor of California in September of 2014. The bill requires that the California state lead agency consult with California Native American tribes traditionally and culturally affiliated with the geographic area of the project when the Tribe requests to be informed of such projects and requests the consultation in order to ensure that impacts to tribal cultural resources are minimized. AB 52 requirements apply to projects with a notice of preparation or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. Therefore, the requirements of AB 52 did not apply to the preparation and adoption of the 2009 Master EIR prepared for the TRRP. However, the Programmatic Agreement ensures that tribal cultural resources were considered and incorporated into the Master EIR, which is incorporated by reference into this EA/IS. In fact, the MMRP for the Master EIR (Appendix E) adopted by the Regional Water Board includes measures consistent with the protection of tribal cultural resources, including tribal consultation and coordination, site evaluations, and avoidance, minimization and other specific mitigation as necessary at the site-scale.

Background research used to develop this section included a review of the files at the Northeast Center of the California Historical Resources Information System and the files of BLM, Redding Field Office applicable to the area of potential effect (APE) delineated by Reclamation and BLM (see Figure 2-2). Previously produced archaeological and historical literature pertinent to the general location was given special attention. The current list of contacts from the Native American Heritage Commission (NAHC) was consulted and initial contacts were made. Additional local individuals representing tribes collaborated in the investigation. The Trinity County Historical Society was

consulted as well as archaeologists with the Shasta-Trinity National Forest and the BLM, Redding Field Office.

This background research concluded that several previous cultural resources surveys covered portions of the current project environmental study limits (Ritter 1984, 1986, Matzat 1993, AECOM 2013b, Rich et al. 2015). These surveys resulted in the identification of several placer mines whose boundaries coincide with the current project boundary. Additionally, one Native American habitation site was identified during the records search as being within the area of potential effects (APE). The project design, and thus the APE, was amended by adjusting the boundaries of the activity areas to avoid this site; the site is therefore no longer within the project boundaries. However, measures including flagging and fencing will be used to ensure that this site is protected during project implementation.

3.5.1 Affected Environment

Archaeological research indicates people have been living in this general part of Trinity County for at least 7,000 years . The prehistory of the Trinity River area has received considerable study in conjunction with various BLM, Reclamation and U.S. Forest Service projects conducted throughout the watershed, largely as the result of archaeological field work accomplished in preparation for reservoir construction in the low lying river valleys, TRRP restoration projects and on BLM and U. S. Forest Service projects in the upland areas.

The Trinity River watershed was a main source of food for the indigenous peoples. Prior to European entry into Trinity County and the surrounding area, the indigenous people's traditional lifestyle was intimately connected to the dynamics of the river's ecology and the surrounding watersheds. Salmon, which was abundant in the Trinity River, was their main source of meat. Acorns, which were prolific in the surrounding hills, provided their main source of plant food. These primary food sources were supplemented by many other animals and plants that inhabited this region.

While the question of who were the earliest Native Americans to occupy the habitation sites in the general vicinity of the project area may be contested, there is no doubt that Penutian speaking Wintu controlled the area when Major Pierson B. Reading made the first gold discovery in Trinity County at Readings Bar near Douglas City in 1848. By 1849, word of this discovery had spread, resulting in an influx of gold miners from all over the United States, and there were miners working placer claims along the Trinity River between Reading Creek and Canyon Creek. At the confluence of Canyon Creek and the Trinity River, the community of Junction City was established in 1852, about 3 miles downstream from the project boundary.

Early claims were more primitively worked with just pick, shovel, pan, and sluice, and were often mined by just a few men. Later claims involved elaborate hydraulic equipment and were worked by larger companies of men, requiring more space for the tearing down of banks and hillsides. Bucket-line dredging required more acreage and involved even larger groups of claims.

Gold dredging in Trinity County began in the 1890s as an alternative to hydraulic mining because it was viewed at the time as having a lesser impact on the river. It became prominent during the 20th century as an economically viable gold extraction method, with some dredging companies continuing

to work well into the 1960s (Crawford 2011). Gold mining, especially dredging, remained an important part of Trinity County's economic focus, continuing into the late 1960s.

Large bucket-line dredging became the standard dredge method in California in the 1920s. This type of dredging was more efficient and was able to excavate and process large volumes of unsorted alluvial materials common in the floodplain of the Trinity River. The bucket-line dredging at various locations in the Trinity River continued until completion of Trinity Dam and diversion of the river as part of Reclamation's Central Valley Project. As dredge systems evolved over time, the character of the dredge tailing deposits changed, leaving behind a highly modified landscape of large barren tailings piles and associated ponds and pits that are still visible within and adjacent to the project boundary.

The cultural resources investigation identified nine historic mining sites within or adjacent to the project boundary. In addition, two prehistoric cultural resources, one a site and the other an isolated find, were identified in this investigation. The identified site is assumed eligible for listing on the NRHP and may potentially contribute to the eligibility of other nearby sites. In consultation with Reclamation and BLM heritage resource staff, the boundaries of the project were modified to exclude the site from potential project-related impacts. The recorded isolate is by definition not eligible for NRHP inclusion. Although it is within the APE, the isolate will nevertheless be avoided during ground-disturbing activities. At several locations, certain components of dredge tailing sites were avoided in the project design in order to ensure that they could contribute to a larger district of tailings created by the Junction City Dredge Company. Figure 2-1 illustrates sensitive features, including one historical feature that were avoided during the planning process.

3.5.2 Environmental Consequences

Proposed Action

The boundaries of the activity areas within project area were adjusted to avoid sites with known tribal cultural resources and historical resources. Implementation of the proposed action will effectively avoid, minimize, or mitigate impacts to cultural resources, as required by the PA. By incorporating the environmental commitments outlined in Table 2-5 and following the stipulations of the PA prior to implementation, there would be no impacts to known cultural resources, and all actions under CEQA and NHPA will be fulfilled. Reclamation commits to fulfilling the stipulations of the PA prior to implementation of the proposed action. This commitment is shown in Table 2-5 (EC-CU-1 [4.10-2a])

TRRP rehabilitation activities have limited[1] potential to affect unknown cultural resources that may be present within the boundary of the proposed action. In the event that any cultural resources or human remains are encountered during project implementation, all work in the area of the find would halt and Reclamation's Regional Archeologist would be immediately notified. Reclamation would follow the stipulations of the PA and appropriate laws and regulations for compliance with the NHPA and other cultural resources statues. If the discovery is determined to be a historic property that would be adversely affected by the rehabilitation activities, Reclamation would resolve the adverse effect by preparing a Historic Property Treatment Plan in accordance with section III (d) of the PA. If human

[1] Most of the project area is underlain by recent floodplain deposits.

remains are discovered and identified as Native American, they would be treated according to provisions set forth in section IV of the PA as well as the Native American Graves Protection and Repatriation Act (43 CFR 10). This commitment is outlined in Table 2-5 (EC-CU-2 [4.10-2a]).

Under the proposed action, known cultural resources were considered in the design process and avoided. With the inclusion of CEQA mitigation measures EC-CU-1[4.10-2a] and EC-CU-2 [4.10-2a] described in this section, CEQA impacts to undiscovered cultural resources considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, the condition of cultural resources would remain similar to existing conditions. Therefore, there would be no impacts to cultural resources as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.6 Transportation and Circulation

3.6.1 Affected Environment

The transportation network in the vicinity of the project area is typical of a rural environment, with low traffic and little development. State Route (SR) 299 is the main highway in the region and is a designated truck route between the Sacramento Valley and the coastal communities of northern California. The highway goes through Junction City less than a mile north of the project area. Traffic counts along SR 299 between Weaverville, northeast of the project area, and Big Flat Camp, which is about 8 miles west of Junction City, were between 1,600 and 2,650 average annual daily trips in 2014 (Caltrans-http://www.dot.ca.gov/trafficops/census/volumes2014/Route280-405.html).

Sky Ranch Road provides primary access to the project area from SR 299. This road is part of the County road system and is considered a scenic county roadway. Trinity County Department of Transportation records indicate that Sky Ranch Road has evolved over time. Surveys conducted by Trinity County in 2012 and 2013 document that the section of the road in the general vicinity of the project area has a native soil subgrade with a chipseal overlay; the most recent surfacing was done approximately 15 years ago. The survey results provided by the County indicate that the segment of the road between SR 299 and activity area DG A-1 ranged in condition between fair and failing at the time the survey was conducted. Since then, the road surface has become worse, according to local residents.

Based on the number of residences accessed via Sky Ranch Road, it is estimated that traffic counts along this road equal fewer than 200 trips on a daily basis. Primary travelers along local roads near the project area are residents and property owners, with occasional recreationists, agency staff, or other users visiting the area. Private roads off Sky Ranch Road provide access onto private parcels, and, at various locations, BLM parcels are currently accessible to both motorized and non-motorized access into the project area. Public vehicle and pedestrian access to BLM lands along the river is restricted on private lands due to the landlocked nature of BLM parcels within the vicinity of the project area. Other than access from the river, the only access to a BLM parcel within the project area is via activity area DG A-1, a narrow, steep, high-clearance user created route that can be driven to

the upper end of the Deep Gulch site near Ice Box Hole. There is no developed parking along this route.

After construction of the project is completed, a portion of the DG C-1 area (entirely on BLM lands) would be graded to create a small parking lot and associated interpretive display (e.g., historic mining landscape, TRRP activities) adjacent to Sky Ranch Road and visible from that vantage point. In addition, a motorized route would provide access through DG C-1 and U-1 to a new turn-around area near the end of DG A-1. Vehicular access would end at DG R-1 (at approximately the edge of the ordinary high water mark), but non-motorized access via an existing native-surface route (DG A-2) would allow users to reach the river on BLM land. The existing user-created access route (DG A-1) would be closed to motorized vehicles upon completion of the project, recontoured to match the existing topography, and revegetated in a manner that provides BLM with administrative access. Long-term motorized access to the upper portion of the Deep Gulch site would be available through BLM lands. After the project is completed (including revegetation efforts), access to BLM lands within the Sheridan Creek site will be limited to administrative use only.

3.6.2 Environmental Consequences

Proposed Action

Construction equipment and vehicles would temporarily increase traffic on local roads around the project area, primarily Sky Ranch Road, and on major highways, primarily SR 299, that provide access to the area from local communities. Construction equipment (e.g., large trucks, excavators, and backhoes) would be mobilized to the project area prior to rehabilitation activities and would be removed upon completion of these activities to minimize the number of daily trips, in accordance with the environmental commitments outlined in Table 2-5 (i.e., EC-TC-2 [4.16-2a, 4.16-5a]). During the rehabilitation activities, 20 to 30 construction workers and their vehicles would access the project area on a daily basis. SR 299 is a designated truck route that was built to withstand occasional use by heavy equipment and has a moderate volume of existing traffic. The temporary use of SR 299 for access to the project area during rehabilitation activities would not change its existing level of service or average traffic volumes and would not affect roadway conditions. In addition, trucks carrying heavy equipment and materials would operate within the legal weight limits, as determined by the state.

The temporary use of Sky Ranch Road and the primary access routes through DG C-1 and along SC A-7 during rehabilitation activities could delay or restrict recreationist and resident access to the river or private lands, but no road closures would be required. Traffic control measures would be implemented to alert travelers about the rehabilitation activities and minimize conflicts during the activities, in accordance with environmental commitments listed in Table 2-5 (EC-TC-1 and EC-TC-4 [4.16-2a, 4.16-5a]). Access to adjacent private properties would be maintained throughout the construction period, in accordance with environmental commitment EC-TC-2; however, this access would be restricted to project traffic based on individual agreements with land owners and not available to the public during or after project implementation. Passage for emergency vehicles would not be restricted, and the temporary roads (e.g., DG A-6) in the project area would aid in emergency access, if needed, during construction. In addition, several public access points to the river for

recreationists would be available upstream (e.g., Evans Bar) and downstream (e.g., Junction City) of the project area throughout the construction period.

The use of local roads by trucks and heavy equipment could degrade roadway conditions due to increased wear and tear and require road restoration once the rehabilitation activities are complete. In accordance with EC-TC-3 [4.16-4a], Reclamation would survey the road conditions before the rehabilitation activities and assess the degree of post-construction restoration that may be needed. Sky Ranch Road and adjacent private roads may require some degree of grading, resurfacing, or drainage improvements to restore them to pre-disturbance conditions, and Reclamation would coordinate with the County and landowners and easement holders to ensure that the roads are in acceptable condition after the rehabilitation activities.

Post-construction activities (i.e., revegetation, maintenance, and monitoring) would require intermittent access by TRRP staff and consultants for 3 to 5 years and occasional access for construction equipment in the event that implementation of adaptive management measures is required to ensure success of the rehabilitation activities. This traffic would be minimal and would not affect local traffic volumes or roadway conditions.

With the inclusion of CEQA mitigation measures EC-TC-2 [4.16-2a, 4.16-5a] and EC-TC-3 [4.16-4a] described in this section, CEQA impacts on traffic and transportation considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, traffic conditions and traffic circulation would remain similar to existing conditions. Therefore, there would be no impacts to traffic conditions as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.7 Air Quality

3.7.1 Affected Environment

Trinity County has a climate characterized by hot, dry summers and cold, moderately wet winters (USDA 1998). Most precipitation in the county results from major storms originating in the Pacific Ocean; however, short thunderstorms resulting from localized climatic conditions occur in the summer months. The higher mountain ridges receive precipitation as snow and hold most of it until late spring. Precipitation at the lower elevations is predominantly rainfall, with occasional snow in the winter (North Coast Unified Air Quality Management District 1995). Trinity County has an average summer high temperature of 93.9°F and winter low of 27.3°F.

Trinity County's air quality is generally good. The low population density, limited industrial and agricultural operations, and minimal traffic congestion contribute to the good air quality. Ambient air quality data are available from the Weaverville air monitoring station, which is located approximately 6 miles from the project area. Air quality data from this station may not be a precise representation of ambient air quality in the immediate vicinity of the project area but it does provide a good indication of air quality in the general vicinity. Locally, air quality and contributions of greenhouse gas (GHG)

to the atmosphere along the Trinity River corridor is influenced by topographic features, microclimate, and pollutants (i.e., particulate matter 10 (PM 10)) such as road dust and smoke from wildfires in the summer and wood stoves/fireplaces during cold weather.

Sensitive receptors consist of human populations, particularly children, seniors, and individuals with health risks, located where there is a reasonable expectation of human exposure to pollutants. The project area is not located near a school, hospital, senior housing, or other facilities where concentrations of sensitive receptors may be located. There are a number of residential properties within or adjacent to the project area that would be exposed to changes in air quality. Sky Ranch Road is the only paved road used to access these residences. All other roads in the general vicinity of the project area serve as a source of road dust periodically. The majority of these residences use wood as a source of heat as well as burn piles to reduce fuels on private parcels. Some level of commercial truck use (e.g., logging trucks) occurs periodically on unpaved roads that intersect with Sky Ranch Road. During these periods of high truck traffic, road dust has some localized effect on air quality, even with implantation of dust control measures (e.g., road watering). Operation of heavy equipment on private parcels within and adjacent to the project area occurs periodically and is a source of vehicle emissions.

3.7.2 Environmental Consequences

Proposed Action

Rehabilitation activities associated with the proposed action would require excavation, grading, disposal of earthen materials, and the use of vehicles and heavy equipment on unpaved roads and access routes, all of which would generate fugitive dust in the project area. Fugitive dust emissions would also result from activities associated with vegetation removal and gravel injection.

Transportation and construction activity associated with project implementation would generate GHG emissions from diesel- and gasoline-powered vehicles and equipment. An environmental commitment listed in Table 2-5 (EC AQ-1 [4.11-a-1a], [4.11-2a] is incorporated into the proposed action in order to reduce the impacts to air quality and GHGs. Additionally, the following measures would be used to enhance the awareness of global warming in conjunction with the proposed action:

- Provide project contractors with educational material about fuel efficiency and incentives;
- Promote incentives for contractors to initiate ride-sharing programs;
- Promote the use of energy efficient and alternative fuel construction equipment and transportation fleets through contract incentives;
- Require contractors to provide recycling bins for on-site waste materials;
- Provide incentives for contractors to use re-usable water containers rather than plastic bottled water;
- Provide incentives for contractors to hire locally;

- Require re-useable batteries for equipment that can use them.

In order to determine the significance of the impact of the proposed action, a "carbon foot-print" was developed for the proposed action based on the project's potential generation of GHGs (primarily CO_2) from project activities at the Deep Gulch and Sheridan Creek sites. Project activities that would offset potential impacts were weighed into the equation. This analysis indicates that the proposed action would produce approximately 54 pounds of CO_2 per day over the course of a 120-day construction period. Total GHG emissions resulting from the proposed action is estimated to be 525 metric tons of CO_2.

Based on those calculations, the proposed action's GHG emissions associated with the use of heavy equipment would be measurable over the course of the project; however, GHG emissions and any effects on global climate change would not be cumulatively significant considering the amount of GHG emissions generated by the proposed action in the context of current local air quality conditions. As a result, the proposed action represents a much smaller action than that analyzed in the Trinity River Master EIR. Vegetation replanting and natural reseeding within the existing upland and riparian areas would offset the total project GHG emissions by approximately 20 metric tons of CO_2 over a 5-year period. Additionally, project activities are expected to result in opportunities to increase the amount of riparian and upland vegetation, particularly with the rehabilitation and revegetation of dredge tailing deposits[2].

High levels of PM10 in Trinity County generally coincide with regional wildland fire events during the dry summer months and with localized woodstove use and brush burning activities during periods of cool, wet weather. Fugitive dust resulting from project activities would occur during the dry summer and early fall months, when PM10 levels may be elevated by wood stove use, brush burning, or wildland fires. The proposed action would increase the PM10 levels to varying degrees, depending on the type and extent of construction activity. Dust control measures will be used to reduce project-related impacts. Once rehabilitation activities have been completed, project impacts on air quality from fugitive dust would cease.

Diesel- and gasoline-powered equipment and vehicles used in project construction could also contribute to air pollution. Diesel particulate is an identified Hazardous Air Pollutant and Toxic Air Contaminant.

The proposed action would include vegetation removal. All of the vegetative material would be chipped and left on the floodplain or placed in upland areas to enhance growing conditions. All areas not subject to inundation would be revegetated with native riparian and upland plant and tree species. In some locations, non-native grass may be planted as a short-term erosion control measure.

With the inclusion of CEQA mitigation measure EC AQ-1 [4.11-a-1a], [4.11-2a] described in this section, CEQA impacts on air quality would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

[2] The Road Construction Emissions Model Version 8.1.0 was used to calculate GHG emissions for combustible fuel (Sacramento Metropolitan Air Quality Management District 2016) and the Construction Carbon Calculator was used to calculate GHG emissions for vegetation loss (Build Carbon Neutral 2007). The calculation is based on 120 days of construction per site and includes diesel fuel combustion and loss of vegetation.

No Action Alternative

Under the no action alternative, air quality conditions would remain similar to existing conditions. Therefore, there would be no impacts to air quality as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.8 Noise

3.8.1 Affected Environment

Sensitive receptors are specific geographic points, such as residences or parks, where people could be exposed to unacceptable levels of noise. Noise-sensitive land uses that have been identified in the project area include private residences and recreation use of the river corridor. Noise levels in the project vicinity are governed primarily by road noise along Sky Ranch Road from local residential traffic, occasional commercial traffic (e.g., logging trucks) and miscellaneous sources (i.e., chain saws, lawn mowers, overhead aircraft, barking dogs, children at play). There are about 20 private parcels that are adjacent to, or in close proximity (0.5 mile) to, the project area; each of these parcels has one or more structures that may be occupied and susceptible to project-related noise. In addition, recreational use of the river corridor by residents and their guests as well as boaters (anglers and rafters) occurs throughout the year. These recreational user groups may be closer to one or more activity areas, during the construction period, but the duration of their exposure to construction noise would depend on the type of recreational activity. A hiker walking a trail within the project area may take several hours to walk from one point to another, while a bank angler may spend time at one location within the project area for several hours. A boater may stop to fish at one of the locations shown on Figure 2-1 for a short period of time, but typically less than an hour at each stop.

In 2002, a community noise survey was conducted for Trinity County (Brown-Buntin 2002) as part of the update for the County General Plan – Noise Element. The nearest survey points to the project area were two sites about 3 miles away in Junction City: Junction City School and Winton Pass Road (Lot 25). The community noise survey results indicate that noise levels at these two noise-sensitive areas range from 52 to 60 dB Ldn[3] at those locations. These are low noise levels, which is typical of small communities and rural areas. Maximum noise levels observed during the noise survey were generally caused by local automobile traffic and heavy trucks (Brown-Buntin 2002). Occasional aircraft overflights and construction activities were other sources of maximum noise levels. Background noise levels in the absence of these maximum-noise generating events are largely attributable to distant traffic, wind, birds, and insects.

3.8.2 Environmental Consequences

Proposed Action

During the construction phase of the proposed action, noise from construction activities would temporarily dominate the noise environment in and adjacent to activity areas for varying periods of time throughout the project area. Construction activities would generate maximum noise levels

[3] dB Ldn = The average equivalent sound level during a 24-hour day, obtained after addition of 10 A weighted decibels to sound levels in the night after 10:00 p.m. and before 7:00 a.m.

ranging from 65 to 84 dB Ldn at a distance of 50 feet, although intervening terrain and vegetation could reduce these noise levels. Construction noise would be temporary and is expected to occur primarily between the months of July and December. The environmental commitments outlined in Table 2-5 (EC-NO-1 [4.14-1a] and 2 [4.14-1b]) would ensure that temporary noise impacts would be minimized (by noise muffling devices), so sensitive receptors would not be negatively affected for extended periods of time. Construction activities will be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday; construction activities will be prohibited on Sundays unless a variance is granted by Trinity County. As a result of ongoing communication and coordination with local stakeholders to address concerns related to project-related noise, including several comments provided during the public review process, the TRRP has reduced the size of five activity areas and adjusted the location of two of these areas. These changes to the proposed action are intended to further reduce potential noise-related impacts to sensitive receptors (e.g., adjacent residences) by increasing the distance between activity areas and sensitive receptors. Other elements of the proposed action have also been adjusted. Specifically, large-size material (e.g., cobbles 6 to 14 inches diameter) from SC-U4 will be relocated for gravel processing in the SC U-5 area, where processing may be conducted in a depression to reduce noise to nearby residences. This will increase the distance between gravel processing and the nearest residence, reducing noise levels. Further, it will reduce the type of material processed at this location and focus on the larger cobble-sized material that is found at those locations in disproportionate quantities. Processing of smaller material will primarily occur in DG U-1 in an existing topographic depression to provide a physical barrier between gravel processing and nearby residences. The noise associated with processing alluvial material is expected to occur periodically during construction activities.

Residences located near the site would be subjected to varying degrees of construction noise, primarily associated with construction traffic entering and exiting the project area during the authorized work periods. It is not anticipated that ground vibration created by project activities would be detectable at any sensitive receptor location nor would the activities result in any structural damage. Recreational users in the general vicinity of the site could encounter increased ambient noise levels during construction activities. While such an increase in noise would be significant, its impact would be temporary and localized.

In the event that migratory birds are using habitat in the project area for nesting and rearing purposes, pre-construction surveys will be performed to identify specific activity areas where noise-related impacts will be deferred until after the nesting season is complete.

With the inclusion of CEQA mitigation measure EC-NO-1 [4.14-1a] and EC NO-2 [4.14-1b] described in this section, CEQA impacts related to noise considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, noise impacts to sensitive receptors would remain similar to existing conditions. Therefore, there would be no noise-related impacts as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.9 Geomorphology and Soils

3.9.1 Affected Environment

The mainstem Trinity River generally flows north through the project area. Major influences on the river channel are flow regulation from Lewiston Dam, about 13 miles upstream of the project area, and a wide array of historical large-scale mining sites.

The 1.3-mile-long reach of the river in the project area is characterized by a relatively wide alluvial valley bottom, relatively low water surface slopes, low sinuosity, and simple channel geometry (TRRP Federal Design Group 2016, Yurok Tribe 2016). The channel is almost exclusively single-thread, with some evidence of riffles, bars, or similar topographic elements. Sinuosity is low, with channel curvature being almost entirely driven by valley confinement. The surface grain size distributions on bars and riffles throughout the project area are fairly consistent, with median particle sizes in the range of 40 to 80 millimeters (mm). Surface grain sizes in the pools and runs are more variable, with the median grain sizes ranging from sand to 150 mm or more. Sections of channel not influenced by valley walls are almost perfectly straight.

The relatively low slope and simple channel geometry that dominate the area are clearly linked to historical mining activities. Just downstream of these sites, Oregon Gulch discharged millions of cubic yards of mining debris from hydraulic mining at the LaGrange Mine on Oregon Mountain over a 60-year period ending in the 1930s. Massive aggradation during the period dominated by hydraulic mining was followed by large-scale dredge mining of the alluvial valley floor that continued into the 1950s. The channel and associated alluvial features of the Trinity River were dredged extensively, and the dredge tailing deposits are evident on the right side of the river throughout the project area.

Flows in the Trinity River downstream from Trinity and Lewiston dams have been regulated since Trinity Dam was closed in 1960. Diversion of up to 90 percent of the Trinity River to the Sacramento River basin in the 1960s and 1970s led to substantial geomorphic change in many locations along the Trinity River, with the predominant responses being channel narrowing and vegetative encroachment along the channel margins (USFWS and HVT 1999). Although flow regulation has certainly influenced current conditions, larger scale historical mining impacts are also important drivers of recent geomorphic evolution in the Junction City area. Figure 2-1 illustrates several sensitive geomorphic features that influence the form and function of the river within the project area. On river right, the relic riparian corridor of Sheridan Creek is bounded on either side by large dredge tailing deposits that essentially cut off Sheridan Creek from the Trinity River. On river left, a large debris fan associated with construction and use of the Sturdivant Tunnel continues to periodically release sediment to the river just upstream of Sheridan Hole.

Currently, the average channel and valley widths through the project area are 123 feet (channel) and 770 feet (valley) at the Deep Gulch site and 133 feet (channel) and 1,225 feet (valley) at the Sheridan Creek site (TRRP Federal Design Group 2016, Yurok Tribe 2016).

Mineral resources in the project area consist primarily of gravel and cobble, which are considered suitable for use in river rehabilitation activities. Placer mining of alluvial gravel for gold using a variety of techniques over time has left tailing deposits of different types that are apparent throughout the project area; these deposits continue to influence the form and function of the Trinity River.

Recreational mining (i.e., gold panning) may take place along the river corridor, but public access is limited to a small section of the river near Ice Box Hole (see Figure 2-1) or by boat.

Other than mining activities authorized under the Surface Mining and Reclamation Act (SMARA), information on private mining activities in Trinity County is limited. According to BLM and Trinity County records, there are currently no approved mining activities operating under the provisions of the 1872 mining law or a county SMARA permit within or in close proximity to the project area. There is one active sand and gravel mine, the Eagle Rock Mine, operating under a county SMARA permit several miles from the project area. This mine is currently operating at the site of the historic La Grange Hydraulic Gold Mine upstream of Junction City.

Soil types in the project area are primarily gravelly loams and clay loams with varying levels of runoff and erosion hazards. An overview of each soil type is presented below.

- **Atter-Dumps, Dredge Tailings-Xerofluvents Complex, 2 to 9 percent slopes (map unit 102):** The map unit is on alluvial fans, stream terraces, and floodplains that have been altered by dredging operations and is found in the eastern portion of the project area. The soil formed in alluvium derived from mixed rock sources. It is very deep and is somewhat excessively to well-drained. Runoff is slow to medium, and the hazard of water erosion is slight.

- **Pardaloe-Goulding complex, 50 to 75 percent slopes (map unit 186):** The map unit is 45 percent Pardaloe very gravelly loam and 30 percent Goulding very gravelly loam. It is found in slivers along the western border of the project area. The Pardaloe soil is deep or very deep and is well drained, and the Goulding soil is shallow and somewhat excessively drained. The soils formed in colluvium, residuum, and material weathered from metavolcanic rocks. Runoff is very rapid, and the hazard of water erosion is severe.

- **Weaverville loam, 30 to 50 percent slopes (map unit 209):** The map unit is a very deep, well-drained soil located on hills and is found in the southwest portion of the project area. The soil formed in residuum and colluvium derived from weakly consolidated, moderately fine grained sediments. Runoff is rapid, and the hazard of water erosion is severe.

- **Xeralfs-Xerorthents complex, 5 to 50 percent slopes (map unit 213):** The map unit is about 40 percent Xeralfs and 40 percent Xerorthents. It is located on hills and terraces and is found on both sides of the river in upland areas in the project area. The soils formed in alluvium from mixed rock sources and material weathered from weakly consolidated nonmarine sediments or schist. Much of the soil material has been removed by hydraulic mining. The soils are well drained with variable depths. Runoff is rapid to very rapid, and the hazard of water erosion is moderate or severe.

- **Xerofluvents-Riverwash Complex, 0 to 5 percent slopes (map unit 217):** The map unit is about 45 percent Xerofluvents and 35 percent Riverwash. It is located on floodplains and stream terraces and is found on both sides of the river in the project area. Xerofluvents consist of well-drained soils that formed in alluvium from mixed rock sources. Runoff is slow or medium, and the hazard of water erosion is slight or moderate. The soils are subject to flooding during prolonged, high-intensity storms.

- **Xerorthents-Rock Outcrop Complex, 2 to 15 percent slopes (map unit 218):** The map unit is similar to the Xeralfs-Xerorthents complex, except with a rock outcrop component. It is found in the northwestern and southern portions of the project area. The soil is well drained with rapid runoff and a moderate erosion hazard.

3.9.2 Environmental Consequences

Proposed Action

Most of the rehabilitation activities would take place along the floodplain and would involve activities in the active river channel and adjacent areas. Approximately 113,800 yards of material would be excavated, and about 77,805 yards of fill would be placed at various activity areas throughout the project area. The excavation and fill of alluvial materials from alluvial and upland areas would expose these disturbed areas to erosion from wind and water, to varying degrees modifying the form and function of these disturbed landscapes.

General ground disturbance from equipment access and use, vegetation removal, stockpiling of materials, and other related activities would also disturb soils on approximately 59 acres of the project area and increase the potential for erosion due to decreased soil cohesion and armoring, as well as increases in soil compaction in some activity areas. Sediment exposed to flowing water has an increased potential to mobilize and be transported downstream, resulting in other impacts such as short-term increases in surficial and channel erosional processes; increases in turbidity levels downstream (varying distances); and changes to the type, volume, and character of deposition downstream. Increased wind and water erosion and subsequent downstream sediment transport in the Trinity River would occur if soils are exposed during the wet season (typically November through May) or during infrequent precipitation events (summer thunderstorms). Soil compaction from heavy equipment can also increase runoff and subsequently increase the potential for erosion in disturbed areas. Disturbance areas would be minimized through the establishment of activity areas and clear markers (e.g., fencing, flagging) to designate the work limits, in accordance with environmental commitment EC-GS-1[4.3-2a] (see Table 2-5). Erosion control measures would be implemented during the rehabilitation activities to protect exposed soils and minimize erosion, in accordance with EC-GS-2 [4.3-2b]. Indirect effects on water quality of the Trinity River are discussed in section 3.11, Water Quality.

Newly created side channels and wetland complexes would enhance the floodplain through removal of excess dredge tailings and soils that have accumulated over the years. Some fill would be placed along the floodplain to create bars and islands, realign the main channel, and constrict the floodplain.

Soil conditions in the activity areas were evaluated as part of the design process, and the types of soil material (e.g., cobble, gravel, fines) available for the rehabilitation activities were evaluated to determine how much material could be re-used on-site. The filled areas would be initially exposed to water erosion from the river, particularly during high flow and flood events, but the newly created features are expected to stabilize after grading efforts are completed, initial erosional events occur, and vegetation is re-established in disturbed areas. Sediment would be transported downstream to be deposited on downstream alluvial features as part of the natural riverine process. The overall effects on river geomorphology would benefit aquatic resources and result in more natural alluvial processes

that would result in an increase in the size, amount and complexity of alluvial features that support diverse aquatic habitat, as discussed further in section 3.12, Fishery Resources.

Cobble, gravel, and other mineral materials associated with alluvial and dredge tailings deposits in the project area would be used on-site to enhance the floodplain as part of the rehabilitation activities. During the design process, the boundaries of upland activity areas were revised to avoid affecting adjacent tailing deposits. The processing and reuse of alluvial material excavated from in-channel, riverine, and wetland activity areas would minimize the need to obtain these materials from adjacent tailings deposits (e.g., Chapman Ranch rehabilitation site) and other off-site sources. Some alluvial material may be imported from other rehabilitation sites available to the TRRP or from local commercial sources, depending on the quality and quantity required. The mineral materials used for the rehabilitation activities would be incorporated into the riverine and riparian environment.

Although a large amount of soil would be disturbed through excavation and general construction activities, the implementation of environmental commitments specific to erosion would minimize the potential for soil erosion and adverse effects on the river and its floodplain during the rehabilitation activities. Also, the rehabilitation activities are intended to modify the geomorphology of the river in the project area in order to benefit aquatic resources and fluvial processes.

With the inclusion of CEQA mitigation measures EC-GS-1[4.3-2a] and EC-GS-2 [4.3-2b] described in this section, CEQA impacts related to geomorphology and soils considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, impacts to geomorphic processes and soils resources would remain similar to existing conditions. Therefore, there would be no impacts on these processes or resources as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.10 Hydrology and Flooding

3.10.1 Affected Environment

The project area encompasses approximately 1.3 river miles of the Trinity River about 29 river miles downstream of Lewiston Dam. The Trinity River Division of the Central Valley Project (TRD) regulates flow in the 40-mile reach of the river in accordance with the 2000 ROD for the Trinity River Mainstem Fishery Restoration EIS. Since 2005, the flow schedule has been adjusted annually based on water year type and ranges from 369,000 acre-feet (af) in critically dry years to 815,000 af in extremely wet years. Peak flow, as measured at the Dutch Creek Bridge about 2 miles downstream of the project area, ranged from a low of about 2,600 cfs in 2001 to a high of about 30,000 cfs in 1997, and the median flow over a 21-year period (1995 to 2015) was 8,540 cfs (TRRP Federal Design Group 2016). Higher peak flows, up to about 70,000 cfs, have likely occurred during other periods, but were not recorded.

Streamflow in the project area exhibits seasonal patterns that reflect a combination of flow releases from Lewiston Dam and natural tributary accretion (TRRP Federal Design Group 2016, Yurok Tribe

2016). During the late summer and fall, Lewiston Dam releases to the Trinity River range from 300 cfs to 450 cfs; contributions from tributaries upstream of the project area are minor. Reclamation has periodically increased releases during the late summer–early fall period for short periods of time to respond to water quality concerns downstream in the Klamath River. Between November and May, flow releases from Lewiston Dam are augmented by increased tributary flow. The tributaries can also cause large floods during intense winter storms, leading to high peak flows in the project area. Between May and July, TRRP flow releases ranging from about 4,500 and 11,000 cfs are augmented by moderate tributary flows. Flow typically recedes in the summer. At about 1,500 cfs, low floodplain areas in the project area become inundated, and, at about 2,500 cfs, in-channel bars and additional floodplain areas become inundated. Most of the floodplain and in-channel bars are inundated at 4,500 cfs.

The Trinity River Flood Insurance Study (FIS) was updated for Trinity County beginning in 2014 using a hydraulic analysis conducted by the California Department of Water Resources (DWR) Northern Region Office. This analysis consisted of creating and calibrating the Trinity River FIS hydraulic model, performing the floodway analysis, and mapping the 100- and 500-year floodplains. This FIS modeled the reach of the Trinity River from just downstream of the North Fork Trinity River to Trinity Dam Boulevard (RM 72.43 to 110.96). It also included development of approximate hydraulic models for seven tributaries to the Trinity River to aid in improving flood zone A mapping (California Department of Water Resources 2016). This analysis used the best available topographic and flow data, provided in part by the TRRP.

A floodplain encroachment analysis was performed by the DWR for the TRRP using the methods consistent with the Federal Emergency Management Agency (FEMA) requirements. From this encroachment analysis, the floodway of the Trinity River was determined. The floodway is defined as the channel of a river or watercourse and the adjacent lands that must be reserved in order to discharge the base flood without cumulatively increasing the water-surface elevation more than 1 foot.

Most of the project area is within the 100-year floodplain, as defined in the 2014 FIS, and is subject to section 29.4 of Trinity County's zoning ordinance (Flood Hazard Zoning District or Flood Hazard Overly Zone). This section of the County's ordinance requires a floodplain development permit; provisions of this section require that "encroachments shall not result in any increase in [the base] flood elevation during the occurrence of the base flood discharge."

3.10.2 Environmental Consequences

Proposed Action

The elevation and extent of the floodplain of the Trinity River would be modified through the activities associated with the proposed action, as described in Chapter 2. The proposed action was designed to ensure that none of the activities within the limits of the 100-year floodplain would be in conflict with the provisions of section 29.4 of Trinity County's zoning ordinance.

Through the design and review process, a number of activity areas (e.g., SC U-2) were relocated to areas upslope of the 100-year floodplain. A key element in the selection of activity areas and subsequent engineering designs for activities in these areas was to ensure that encroachments into the

floodway would not result in any increase in the base flood elevation (BFE) during the occurrence of the base flood discharge within the project area. The hydraulic analysis conducted by DWR used the FEMA-approved model developed for the 2014 FIS. This analysis indicates that removing all the excavated material from the riverine rehabilitation areas and placing it as coarse sediment within the channel or above the BFE in upland activity areas would not result in an increase in the FEMA BFE (California Department of Water Resources 2016). A small structure (a box over a water well) downstream of DG R-1 is currently within the 100-year floodplain. At this location, the proposed action would actually decrease the water surface elevation by about 0.1 foot.

The displacement of channel and floodplain materials would have only a minimal potential to change the groundwater hydraulics in the project area. Groundwater table elevations and water volumes in nearby off-channel wetlands would not be negatively affected because groundwater elevations in these areas are associated with river stage. The construction of the wetland complexes (e.g., SC W-1, SC W-5) is intended to raise local groundwater levels to promote a robust mixed-cottonwood riparian forest and better use the water supply from the valley walls for the benefit of riparian and salmonid habitat. The tendency of the surface water–groundwater system to move to equilibrium conditions and the overall absence of impacts to the regional driving mechanisms of groundwater recharge (seasonal precipitation and Trinity River flow regimes) indicate that no long-term impacts on water table elevations would occur.

The proposed action would not result in activities intended to increase the BFE within the project area. Activities intended to modify the bed and banks of the Trinity River could have ancillary impacts to the bed and banks downstream.

While the fundamental objective of the activities associated with the proposed action is to reestablish the alluvial features of the river, isolated instances of bank erosion could result in the loss of river bank, sedimentation, deposition of sediment on alluvial features, and loss of riparian vegetation. The physical, biological, and riparian habitat objectives described in section 2.1.13 of this EA/IS provided the basis for the development and refinement of the proposed action. The environmental commitments described in Table 2-5 are an integral component of the proposed action. As a whole, the proposed action was formulated to ensure that no people or structures would be exposed to a risk of injury, death, or loss involving flooding and/or erosional processes.

The overall design of the proposed action was developed to ensure that the hydrologic function and potential for flooding meet the project objectives. No mitigation was required. CEQA impacts related to hydrology and flooding considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, impacts to hydrology and flooding would remain similar to existing conditions. Therefore, there would be no impacts on hydrology or flood occurrence as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.11 Water Quality

3.11.1 Affected Environment

The release of water from Lewiston Dam influences water quality in the Trinity River, primarily in the 40-mile reach downstream of the dam. These influences are particularly important with respect to temperature, turbidity, and suspended sediments.

The proposed action is subject to compliance with the Water Quality Control Plan for the North Coast Region (Basin Plan; Regional Water Board 2011). The beneficial uses for the Trinity River defined in the Basin Plan are listed in Table 4.5-1 of the Master EIR. In addition to municipal and domestic water supply, the beneficial uses affected by the water quality of the Trinity River are primarily those associated with supporting high-quality habitat for fish. Recreation (contact and non-contact) is another important beneficial use potentially affected by various water quality parameters (e.g., sediment and temperature).

The Basin Plan identifies both numeric and narrative water quality objectives for the Trinity River. Table 4.5-2 in the Master EIR summarizes the water quality objectives for each of the categories that have been established by the Regional Water Board to protect designated beneficial uses. Section 4.5-1 of the Master EIR also provides a comprehensive discussion of water quality parameters that influence water quality in the 40-mile reach of the Trinity River below Lewiston Dam.

In 1992, the Environmental Protection Agency (EPA) added the Trinity River to its list of impaired rivers under the provisions of section 303(d) of the Clean Water Act (CWA) in response to a determination by the State of California that the water quality standards for the river were not being met due to excessive sediment. In 2001, the EPA established a Total Maximum Daily Load (TMDL) for sediment in the river. The Regional Water Board has continued to identify the Trinity River as impaired in subsequent listing cycles. The primary adverse impacts associated with excessive sediment in the Trinity River pertain to degradation of habitat for anadromous salmonids. The restriction of streamflows downstream of the TRD has greatly contributed to the impairment of the Trinity River below Lewiston Dam (EPA 2001).

Due to the location of the Deep Gulch and Sheridan Creek channel rehabilitation sites (RM 81.05 to 83.03), the effects of the TRD are less than those documented in TRRP monitoring efforts upstream of Douglas City at about RM 92.6. Data from on-going sediment transport monitoring suggests that below Douglas City, additional streamflow and sediment contributions (from Indian, Weaver, and Reading Creeks) significantly reduce the coarse sediment and streamflow deficits. Below Douglas City, dam releases and natural runoff events are generally capable of transporting sediment influxes (TRFE 1999; GMA 2007; GMA 2015). Local fishermen (e.g., the Trinity River Guides Association) have recently expressed concern that TRRP gravel augmentation efforts have resulted in the filling, or partial filling, of fishing holes (adult holding habitat) with gravel. According to comments provided to the TRRP on this topic, the fishing holes referred to are all upstream of Douglas City. There is no evidence that the fishing holes shown on Figure 2-1 have been affected by TRRP coarse sediment augmentation activities that have been ongoing since about 2006.

Water temperature is one of the most important variables affecting salmonids and other aquatic organisms (Carter, 2005). It influences feeding rates and growth, metabolism, development, timing of

migration, spawning and rearing, and the availability of food. Since the construction of the TRD, discharge from Lewiston Dam has played an important role in regulating water temperatures in the Trinity River downstream. Depending on the type of water year and time of year, this effect diminishes to varying degrees with distance from Lewiston Dam.

A key objective of the TRRP's flow management is to improve the thermal regimes for all anadromous salmonid life stages that use the Trinity River. The TRRP has been using flow management practices to meet specific temperature management targets, and temperature monitoring data have been collected as part of the Adaptive Environmental Assessment and Management (AEAM) process since 2002. The project area is located between two water temperature monitoring sites, Douglas City and the Trinity River above Canyon Creek.

In the river reach in the project area, water temperatures are primarily influenced by flows, topography, and aspect. Flows in this reach typically exceed the temperature targets for short periods of time in the fall (Magneson and Chamberlain 2015). This reach is oriented in a north-south direction with very little shade provided by topography or riparian vegetation. The extensive mining activities and infertility of dredge tailing deposits on the right side of the river limit the establishment of riparian forests. On the left bank of the river, mature upland forest occurs in isolated stands downslope from steep bedrock slopes.

The TMDL for sediment was established in 2001 by the EPA in accordance with section 303(d) of the CWA. The primary adverse impacts associated with excessive sediment in the Trinity River pertain to anadromous salmonid fish habitat, which the TRRP was formed to correct. Section 4.5.1 of the Master EIR provides a comprehensive discussion of this topic beginning on page 4.5-5.

On May 20, 2015, the Regional Water Board issued a General Water Quality Certification (Order R1-2015-0028) to the TRRP under the auspices of Reclamation. This order implements portions of the Trinity TMDL and provides an allowable zone of turbidity dilution (protective of sensitive aquatic life), within which turbidity levels shall not exceed 20 nephelometric turbidity units (NTUs) or 20 percent above naturally occurring background levels, whichever is greater. During in-river project construction activities, the TRRP shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities (point of compliance) that could increase turbidity. If naturally occurring background levels are greater than 20 NTUs, turbidity levels at the point of compliance shall not exceed 20 percent above the naturally occurring background level.

The Trinity River is typically very clear with natural background turbidity levels in the range of 0 to 1 NTU during low flow conditions (300 to 450 cfs). Due to the very low background concentrations during the summer, turbidity levels immediately downstream of the most carefully planned and implemented in-channel restoration activities will likely be increased by more than 20 percent above background levels, and plumes extending downstream of restoration activities may be visible. Due to the extremely low background turbidity levels during low-flow conditions, reduction of these turbidity levels to within 20 percent above background is generally not feasible, even with the environmental commitments outlined in Table 2-5. However, short-term increases in turbidity levels that occur during permitted restoration activities are generally not considered to be biologically detrimental to aquatic organisms because they are short in duration and fish are able to move away from the activity area. Monitoring turbidity increases during implementation of previous TRRP

projects has shown that periods of increased turbidity are brief (generally less than 24 hours) at monitoring points located 500 feet downstream and that beneficial uses continued to be protected. In addition, the quantity of fine sediment introduced to the river during activities at low flows is typically small and is restricted with respect to timing and location; furthermore, not all activity areas are experiencing disturbance at the same time.

Post-construction monitoring data collected for the TRRP's Wheel Gulch project in 2012 documented the effectiveness of various turbidity control measures that are commonly used in the construction of TRRP channel rehabilitation projects (Reclamation 2012). These measures include:

- Structural containment – Use structures such as earth barriers, K-rail containment dams, bladder dams and silt curtains to isolate turbid water from the active channel. These structures typically remain in place until the riverine features are fully excavated and graded.

- Processing – Gravel and cobbles excavated from alluvial deposits (e.g., floodplain, dredge tailings) are processed and in some cases washed to help maintain low turbidity levels associated with placement of gravel and cobbles in or adjacent to the channel.

- Pace of construction – Controlling the pace of in-channel excavation and placement of alluvial material ensures that sediment input into the water column is consistent with permit requirements. This method requires direct field observations and real-time turbidity data obtained by on-site construction monitoring personnel.

- Flushing – Within structurally contained areas, turbid water is flushed by allowing flow into the work area and regulating the outflow as a function of measured turbidity levels. Small weirs are used to adjust inflow and outflow rates to ensure permit requirement are met.

- Channel bottom cleaning – This method entails removal of silt- and clay-sized sediment from the channel bottom, typically by pumping or hand excavation. This method requires effluent to be pumped to containment ponds in upland areas and subsequently incorporated into site rehabilitation efforts.

Monitoring of the Wheel Gulch project documented the success of these types of measures in controlling turbidity during construction and site rehabilitation activities. TRRP monitoring data also indicates that turbidity levels downstream of the rehabilitation sites may be increased by overland flow during the initial high-flow events that occur following completion of construction activities. During high-flow spring time releases from Lewiston Dam (e.g., clear water released from the dam during ROD flows), turbidity levels may be increased by more than 20 percent at monitoring locations 500 feet or more downstream of recently completed channel rehabilitation sites. However, when the high flows are caused by natural stormwater runoff in the Trinity River Basin and the river is already carrying a substantial sediment load (e.g., turbidity greater than 40 NTUs), background levels are generally not increased by more than 20 percent at monitoring locations downstream of recently completed rehabilitation activities. Furthermore, during natural high-flow events, the relative addition of fine sediment from recently completed channel rehabilitation projects is minimal compared to the sediment load already being transported by the river. In these high-flow events, monitoring data to date indicates that the contribution of fine sediment associated with TRRP projects is minimal because the materials that increase turbidity levels are maintained in suspension and

transported downstream and eventually deposited on existing alluvial features in the same manner as fine sediment from other sources.

3.11.2 Environmental Consequences

Proposed Action

The activities incorporated into the proposed action have been developed to meet the physical, biological, and riparian objectives described in section 2.1.1 of this EA/IS and are intended to reestablish functional fluvial and alluvial processes within and to some extent downstream of the project area. In the following discussion, the environmental consequences of the proposed action on water quality and the associated beneficial uses of the Trinity River focus on three water quality parameters: sediment, temperature, and turbidity.

The consequences of the proposed action on water quality associated with the construction of in-channel alluvial bars and floodplains that would support spawning and rearing of anadromous salmonids would change the location and nature of sediment in and adjacent to the low-flow channel. The placement of spawning-sized gravel at three of the four crossings necessary to access the activity areas on river left would add approximately 450 cubic yards of material to the river; the gravel used for these crossings would be sized to ensure that it would mobilize during high flows within the first year following construction and provide some augmentation of spawning habitat downstream.

The activities incorporated into the proposed action are intended to reestablish a functional channel and associated riparian vegetation in a manner that would provide an increase in available habitat for anadromous salmonids and other aquatic organisms. Due to the location and aspect of the river within the project area, water temperature is heavily influenced by flow releases from Lewiston Dam as well as input from tributaries downstream. The north-south orientation of this reach also influences the degree that afternoon shading affects water temperature.

The proposed action would result in clearing and grading a number of activity areas, some of which have some amount of riparian vegetation. Functionally, the existing riparian vegetation has little influence on water temperature through this reach. While there would be some localized effect on water temperature as a result of clearing and grading activities, the construction of wetland complexes on either side of the river is expected to benefit aquatic biota by providing off-channel thermal refugia in the deeper reaches of these new ponds via a direct hyporheic connection to the river. Extensive revegetation efforts associated with these wetlands and associated floodplain planting would increase functional riparian vegetation that would in turn increase shade along the margins of these features under a wide range of flow conditions, including those that may occur during late-summer releases when air temperatures are high.

The activities described in Chapter 2 for the proposed action would temporarily increase turbidity and total suspended solids in the Trinity River. The incorporation of environmental commitments listed in Table 2-5 (EC WQ-1 [4.5-1a, b], EC WQ-2 [4.5-1c], EC WQ-3 [4.5-1d], EC WQ-4 [4.5-1e, 4.5-2a-2c] and EC WQ-5 [4.5-3a-3c]) in conjunction with the design elements and construction criteria described in Appendix C (e.g., in-river construction, water pollution prevention, and construction schedules) are intended to limit turbidity and suspended sediments in the Trinity River. Additionally, river's edge and in-channel construction activities would be staged to minimize potential turbidity

effects. During in-channel construction activities, increases in turbidity levels could occur because of the excavation of alluvial material. Connection of isolated and newly constructed side channels (e.g., during the first flush of flowing water) would result in short-term increases in turbidity levels as this material is removed from and/or redistributed downstream. Fine sediments may be suspended in the river for several hours following construction activities.

The extent of downstream sedimentation would be a function of the size and mobility of the substrate. For example, fine-grained sediments such as silts and clays can be carried several thousand feet downstream of construction zones, while larger-sized sediments such as coarse sands and gravels tend to drop out of the water column within several feet of the construction zone. Collectively, the activities included in the proposed action could result in short-term increases in turbidity and suspended solids concentrations in the water column that could potentially violate the Basin Plan objectives for turbidity in the Trinity River.

The temporary crossings at the site would provide access for in-channel and riverine work areas. The low-flow channel crossings would be constructed of appropriately sized alluvial materials. Placement of alluvial fill materials could temporarily increase turbidity and suspended materials during and immediately following crossing construction. Removal and distribution of alluvial materials upon deconstruction of the low-flow channel crossing could also increase turbidity and suspended materials during and immediately following excavation.

With the inclusion of CEQA mitigation measures EC WQ-1 [4.5-1a, b], EC WQ-2 [4.5-1c], EC WQ-3 [4.5-1d], EC WQ-4 [4.5-1e, 4.5-2a-2c] and EC WQ-5 [4.5-3a-3c] described in this section, CEQA impacts related to water quality considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, impacts to water quality and associated beneficial uses would remain similar to existing conditions. Therefore, there would be no impacts on water quality as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.12 Fishery Resources

This section describes the fishery resources and aquatic habitats that are known to occur within the project area and evaluates the impacts of the proposed action and the no action alternatives on these resources. The discussion of fisheries resources is based on detailed design reports prepared for the Deep Gulch site by the Federal Design Team and the Sheridan Creek site by the Yurok Tribe. A focused literature review, informal consultation with resource agencies, and observations made during site visits also were incorporated into this section. Additional information on fishery resources are discussed in the Master EIR (section 4.6 and Appendix G). The Magnuson-Stevens Fishery Conservation and Management Act and Essential Fish Habitat are also described in the Master EIR (section 4.6).

3.12.1 Affected Environment

The native anadromous species of interest in the mainstem Trinity River and its tributaries are Chinook salmon (*Oncorhynchus tshawytscha*), coho salmon (*Oncorhynchus kisutch*), steelhead (*Oncorhynchus mykiss irideus*) and Pacific lamprey (*Entosphenus tridentatus*). There are two spawning races of Chinook salmon (spring- and fall-run) and two spawning races of steelhead (winter- and summer-run). The life histories and fresh water habitat requirements of these and other species and their distinct spawning populations are described in Appendix G of the 2009 Master EIR.

Resident native fish species found in the Trinity River Basin include game fish such as rainbow trout (*Oncorhynchus mykiss*) and non-game fish such as speckled dace (*Rhinichthys osculus*), Klamath smallscale sucker (*Catostomus rimiculus*), Pacific lamprey, Klamath River lamprey (*Lampetra similis*), three-spined stickleback (*Gasterosteus aculeatus*), coast range sculpin (*Cottus aleuticus*), and marbled sculpin (*Cottus klamathensis*). The abundance of resident native species and the factors affecting their abundance within the basin are not well understood; however, all these species evolved and existed in the Trinity River prior to the TRD and are presumably adapted to those conditions.

Non-native fish species found in the Trinity River include American shad (*Alosa sapidissima*), brown bullhead (*Ameiurus nebulosus*), green sunfish (*Lepomis cyanellus*), brown trout (*Salmo trutta*), and brook trout (*Salvelinus fontinalis*) (USFWS, unpublished data). American shad occur in the lowermost portions of the Trinity River below Burnt Ranch Falls. Currently, brown trout are largely limited to the upper portions of the river below Lewiston Dam, although some brown trout exhibit anadromous characteristics.

Special-status fish species with the potential to occur in the project area include:

- Southern Oregon/Northern California Coasts (SONCC) Evolutionarily Significant Unit (ESU) of coho salmon;
- Klamath Mountain Province steelhead ESU;
- Upper Klamath-Trinity Rivers ESU Chinook salmon; and
- Pacific lamprey,

The aquatic environment in the Deep Gulch segment of the project reach is characterized by a sequence of aquatic mesohabitat types. Each of these habitat types consists of distinctive combinations of depth, water velocity, water temperature, cover, substrate composition (bedrock, cobble, gravel, sand, silt, etc.), and adjacent riparian vegetation. The Deep Gulch segment contains three distinct pool-riffle units (TRRP Federal Design Group 2016). The first unit is in the general vicinity of activity area DG R-1 and consists of a pool known as Ice Box Hole (see Figure 2-1), with riffles on either side. The second pool-riffle unit is in the general vicinity of activity DG IC-5, and the third unit includes the pool known as Ed's Hole downstream of activity area DG R-4. Salmonid spawning and rearing habitat and ammocoete (juvenile lamprey) rearing habitat are present throughout this segment. The highest spawning densities of chinook occur in the riffle downstream of Ice Box Hole and along the margins of the riffles.

The aquatic environment within the Sheridan Creek segment of the project reach contains three important and unique aquatic mesohabitat features that support anadromous salmonids and other aquatic organisms (Yurok Tribe 2016). At the upper end of this segment, a feature known as Upper Sheridan Bar is a riffle that provides high-quality spawning habitat just downstream of Ed's Hole. Sheridan Bar is a riffle complex that is also referred to as the Sheridan Spawning Riffle (see Figure 2-1). Long-term TRRP monitoring data indicate that this riffle complex has the highest density of salmonid spawning in the lower 40 miles of the Trinity River other than the short segment immediately downstream of the Lewiston Hatchery. At the downstream end of this riffle complex, Sheridan Hole is associated with a large bedrock outcrop on the left bank that forces an abrupt change in flow direction creating strong turbulence and scour. While this feature was heavily affected by historic mining debris and periodic flood flows (e.g., in 1997), it currently provides holding habitat for adult salmonids. The size of this pool changes periodically as high flows scour sediments and moderate flows result in some development of a gravel wedge from upstream sources.

In 2014, freshwater mussels were identified at a number of locations in the low-flow channel within the project area, primarily associated with vegetated banks. In 2015, a number of ammocoete rearing areas were identified throughout the project reach. Generally, these rearing areas were associated with eddy habitat that had abundant levels of detritus.

The aquatic values and resources that persist in the project reach were recognized early in the planning and design process and specific project objectives were developed by the TRRP design teams to ensure that key aquatic habitats are protected and/or enhanced as the proposed action is identified. Figure 2-1 illustrates the location of these sensitive areas. The activity areas presented on Figure 2-2 were modified as necessary to ensure that these sensitive areas were addressed by the design teams.

In support of the TRRP, Reclamation developed a hydraulic model that has been used by the design teams to characterize existing and potential habitat within the project area for anadromous salmonid fry and presmolt life stages. Weighted useable area (WUA) is the metric used to characterize habitat under the existing conditions based on three attributes: depth, velocity, and cover. Table 3-2 provides WUA values for flows ranging between 350 cfs and 9,000 cfs modeled for the Trinity River under the existing condition; WUA values are expressed in acres of habitat for both fry and presmolt life stages that would be available under these flows.

Table 3-2. Existing Condition WUA for Fry and Presmolt Habitat – Deep Gulch and Sheridan Creek Sites

	Flow (CFS)									
	350	450	600	800	1,200	1,800	2,500	4,800	7,150	9,000
	WUA (Acres)									
Fry	4.18	3.94	3.63	3.29	2.78	2.31	2.16	2.34	3.16	10.75
Presmolt	4.63	4.48	4.27	4.03	3.59	3.06	2.73	3.29	7.27	11.03

3.12.2 Environmental Consequences

Proposed Action

A primary objective of the proposed action is to increase spawning and rearing habitat for anadromous salmonids in a manner that benefits coho salmon and other special-status fish species.

Activities related to implementation of the proposed action include the following environmental commitments to reduce impacts to fishery resources: EC FR-1 [4.6-1a, 1b], EC FR-2 [4.6-4a-4e], EC FR-3 [4.6-4f], EC FR-4 [4.6-5b], and EC FR-5 [4.6a-6d]. The proposed action would result in the localized loss of vegetation and general disturbance to the bed and banks of the Trinity River. Removal of vegetation and soil could accelerate erosion processes within the project area and increase the potential for sediment delivery to the Trinity River. As discussed in Section 3.11 (Water Quality), the proposed action would result in some project-related effects on erosional process and changes in the sediment regime within and to a limited extent downstream. The excavation and placement of alluvial materials within the channel and associated floodplain of the Trinity River would result in changes to the amount and character of sediment that may be mobilized post-construction.

In certain activity areas, processed alluvium (gravel and cobble) would be placed within and adjacent to the low-flow channel in a manner intended to increase spawning and rearing habitat for coho salmon and other salmonids. However, the environmental commitments in the above paragraph have been incorporated into the proposed action to minimize the release of fine sediment to the water column during or following construction and to reduce the impacts to existing spawning and rearing habitat for short periods of time, primarily in conjunction with elevated turbidity levels. The placement and use of four low-water fords would require increasing the amount of coarse sediment at several shallow riffles during in-river construction windows, possibly for several months. The presence and use of these fords would occur at locations occasionally used by salmonids as spawning and rearing habitat. Proportionally, these fords would occupy a small percentage of the available habitat within the project reach.

Exposed soils in the upland and staging areas are susceptible to mobilization from rainfall during early season runoff events. In-river excavation is planned as part of the proposed action; therefore, it is expected that excavation and operation of heavy equipment would re-suspend silt and sand, resulting in localized and temporary increases of suspended sediment and turbidity. Operation of heavy equipment in the active channel during these activities would likely re-suspend streambed sediments. Any juvenile salmonid salmon rearing in the area during in-channel construction could be temporarily displaced or their social behavior could be temporarily disrupted by turbidity created during this activity.

Erosion and deposition of fine sediments associated with implementation of the proposed action are expected to be localized and temporary. Some fine-textured sediment may settle near or on spawning habitat located downstream of riverine activity areas, but this sediment is not expected to impair redd excavation or spawning activities. Excavation, grading, and coarse sediment addition within the channel would occur only during low-flow conditions between July 15 and September 15, minimizing the potential for adverse effects on holding habitat. Construction activities are proposed during the spawning period, and in-river construction, including construction of temporary crossings, may

temporarily displace holding adult salmonids. Adult salmonids using holding habitat during the summer months may be displaced to other holding habitat either upstream or downstream of the project reach by transient turbidity and sediment plumes created by construction activity. Juvenile salmonids using this reach during this timeframe could be temporarily displaced or their social behavior could be temporarily disrupted by an increase in turbidity. Behavioral disruption, even temporarily, could result in some increased vulnerability to competitive interactions or predation for salmonids. These temporary impacts were anticipated and addressed in the 2000 Biological Opinion (BO) and associated incidental take statement for the ROD as well as the amended BO for in-river work.

Adult Pacific lampreys migrate upstream from spring through early summer and again in the fall to spawn. Larval lampreys inhabit the river year-round. Siltation of nests that may be built in suitable habitats (i.e., low-slope riffles) could occur. Filter feeding by larval lampreys could be disrupted by an increase in suspended sediments caused by construction-related erosion, although this impact would be very localized and temporary. In addition to ammocetes occupying alluvial substrate, freshwater mussel populations occur at locations through the project area. The TRRP is now in the process of developing a plan to avoid or minimize impacts to these species during construction. Areas inhabited by these creatures within the construction limits will be flagged for avoidance. If construction will change presently occupied habitats, resident mussels and lamprey will be relocated to nearby appropriate habitat that would not be disturbed (see EC-VW-10).

The environmental commitments incorporated into the proposed action would be implemented in conjunction with the construction activities described in Chapter 2. In addition to the typical practice of refueling construction equipment at upland activity areas (e.g., DG U-1), the proposed action also includes activities that would result in mechanized equipment (e.g., trucks, excavators) crossing and/or operating within the active channel for short periods. As a result, minor fuel and oil spills could occur and there would be a risk of larger releases. Without rapid containment and clean up, these materials could be toxic, depending on the location of the spill in proximity to water bodies within the project area. Oils, fuels, and other contaminants could have short-term effects on the various life stages of salmonids and other anadromous fish that are using habitat within close proximity to construction activities.

Coho salmon and other special-status aquatic species occur throughout the Trinity River, and suitable salmonid rearing habitat is used within the project area year-round. Adult coho and other salmonids migrate through the site and use suitable spawning habitat throughout the 40-mile reach of the Trinity River below Lewiston Dam. Direct injury to, or mortality of, coho salmon and other salmonids could occur during in-river construction and construction of the low-flow channel crossings planned under the proposed action. These activities would be conducted only during late-summer low-flow conditions (e.g., July 15 to September 15), thus minimizing the potential for direct mortality to rearing coho and other salmonids because this period corresponds to a time of the year when the fewest number of juvenile salmonids are known to occur in the project reach.

The National Marine Fisheries Service (NMFS) expects that all displaced juvenile fish, including coho salmon, would find suitable habitat within river reaches upstream or downstream of the project reach, because juvenile rearing habitat within the mainstem Trinity River is likely under-saturated during summer and fall months (NMFS 2006). The construction period identified above would

completely avoid the spawning period for coho salmon; therefore, direct impacts to adult coho salmon or their eggs/alevins (yolk-sac fry) would not occur.

A small, temporary, but uncertain level of stranding of coho salmon fry could occur on the newly constructed inundation surfaces, wetland complexes, and side channels during rapidly receding flood-flow periods in the winter and early spring when fry are emerging. Additionally, construction of side channel features could result in stranding conditions as flows recede, particularly if the exits of these features become plugged with fine sediments, potentially stranding coho salmon fry. Although stranding of fry under such receding flood conditions occurs naturally (Sommer et al. 2001), the constructed features could increase the potential for stranding. As fluvial channel migration occurs through these surfaces, the potential for fry stranding is expected to equilibrate to that of a natural stranding risk.

Table 3-3 illustrates the amount of WUA fry and presmolt salmonid habitat that would be provided with implementation of the proposed action as flows increase through the project reach.

Table 3-3. Proposed Action WUA for Fry and Presmolt Habitat – Deep Gulch and Sheridan Creek Sites

	Flow (CFS)									
	350	450	600	800	1,200	1,800	2,500	4,800	7,150	9,000
	WUA (Acres)									
Fry	5.59	5.40	5.20	5.07	5.26	5.97	6.80	8.01	9.40	12.41
Presmolt	6.02	5.92	5.82	5.77	5.99	6.60	7.31	8.48	9.81	12.93

As indicated in Table 3-4, the proposed action would result in an increase in rearing habitat within the project reach over a range of flows. The proposed action also includes design elements to protect adult spawning and holding habitat, particularly at the sensitive features shown on Figure 2-1. These beneficial effects will also apply to varying degrees to other aquatic organisms that use habitat within this reach.

Table 3-4. Increase in WUA Habitat Under the Proposed Action– Deep Gulch and Sheridan Creek Sites

	Flow (CFS)									
	350	450	600	800	1,200	1,800	2,500	4,800	7,150	9,000
	WUA (Acres)									
Fry	1.40	1.46	1.57	1.78	2.48	3.66	4.64	5.67	6.24	5.24
Presmolt	1.39	1.44	1.55	1.75	2.41	3.54	4.58	5.79	6.51	5.66

With the inclusion of CEQA mitigation measures EC FR-1 [4.6-1a, 1b], EC FR-2 [4.6-4a-4e], EC FR-3 [4.6-4f], EC FR-4 [4.6-5b], and EC FR-5 [4.6a-6d] described in this section, CEQA impacts

related to fisheries considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, there would be no effects on spawning and rearing habitat other than those associated with current ongoing actions because the project would not be constructed. As described in Chapter 1, the TRRP and other entities have been implementing channel rehabilitation projects since about 2005. These projects continue to affect the Trinity River with regards to flows, sediments, channel morphology, and riparian vegetation. These effects would continue to influence the spawning and rearing habitat for anadromous fishes, irrespective of the no action alternative.

Under the no action alternative, there would be no increase in erosion or sedimentation levels that could adversely affect fish species because the project would not be constructed. Similar to previous discussions, this alternative acknowledges that a number of restoration activities that are intended to restore the fishery resources and functional values offered by the mainstem Trinity River have been implemented or are ongoing. While some of these activities may result in changes to erosional processes and sedimentation levels, these changes are taken into account in the evaluation of the no action alternative.

Under the no action alternative, there would be no risk of accidental spills of hazardous material because the project would not be constructed.

Under the no action alternative, construction-related mortality to rearing salmonids would not occur because the project would not be constructed.

Under the no action alternative, loss of spawning, rearing and holding habitat would not occur because the project would not be constructed.

Under the no action alternative, temporary impairment of fish passage would not occur because the project would not be constructed.

Under the no action alternative, impacts to fishery resources would remain similar to existing conditions. Therefore, there would be no impacts on fishery resources as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.13 Vegetation, Wildlife, and Wetlands

3.13.1 Affected Environment

The project area supports a diversity of plant communities and wildlife habitats typical of the Trinity River corridor. Wildlife habitats described in this section are based on the California Wildlife Habitat Relationships (CWHR) system. These wildlife habitats are summarized in Table 3-5.

The dominant habitat type is montane riparian, with Douglas-fir, blue oak–foothill pine, and mixed chaparral habitats scattered throughout the project area. Ponderosa pine and montane hardwood are found in upland areas outside the riparian corridor. Dominant plants in these communities include

white alder (*Alnus rhombifolia*), Oregon ash (*Fraxinus latifolia*), and various willows (*Salix* spp.) in the riparian habitats; whiteleaf manzanita (*Arctostaphylos viscida*), foothill pine (*Pinus sabiniana*), Douglas-fir (*Pseudotsuga menziesii*), and various oaks (*Quercus* spp.) in the chaparral and woodland habitats; and yellow star-thistle (*Centaurea solstitialis*), an invasive plant, and various grasses in the annual grasslands. In addition to yellow star-thistle, other invasive plants found in the project area include tree of heaven (*Ailanthus altissima*), Himalayan blackberry (*Rubus armeniacus*), dalmatian toadflax (*Linaria genistifolia* ssp. *dalmatica*), Klamath weed (*Hypericum perforatum*), bull thistle (*Cirsium vulgare*), and Scotch broom (*Cytisus scoparius*). The Trinity River provides riverine habitat, which is described in more detail in Section 3.12.2, Fishery Resources. Descriptions of the plant communities and habitat types can be found in Section 4.7.1 of the Master EIR.

Table 3-5. Wildlife Habitats in the Project Area

Wildlife Habitat Type	Estimated Amount in Project Area
Annual Grassland	30.5 acres
Barren	20.2 acres
Blue Oak-Foothill Pine	7.3 acres
Douglas-fir	4.5 acres
Mixed Chaparral	0.7 acre
Montane Hardwood	6.2 acres
Montane Hardwood-Conifer	5.0 acres
Montane Riparian	61.1 acres
Ponderosa Pine	25.7 acres
Riverine	15.4 acres
Valley Foothill Riparian	0.01 acres
Total	177.0 acres

The Trinity River is a water of the United States and is considered a navigable water that is subject to the jurisdiction of the Army Corps of Engineers (Corps). It is also considered a Riparian Reserve on public lands subject to BLM's RMP. The main channel in the project area ranges from about 59 to 188 feet wide at the ordinary high water mark, and several side channels with widths between 2 and 72 feet and lengths between 87 and 218 feet collect and convey flow into the main channel. Several intermittent streams on river left convey seasonal flow from upland areas near the outer limits of the project area into wetlands, other streams, or the main channel. The streams are narrow and have widths between 2.5 and 5 feet. Riparian wetlands occur along the main and side channels and in pockets between dredge tailings and other lowland areas (e.g., Relic Sheridan Creek Riparian Corridor). The riparian wetlands are dominated by woody riparian and open-to-dense emergent herbaceous species, such as white alder, willows, narrow-leaved cattail, common spikerush, and tall fescue. Table 3-6 provides a summary of the wetlands and other waters of the United States that occur within the project boundary.

Table 3-6. Summary of Waters of the U.S. Within the Project Area

Waters of the United States	Total Acreage	Total Linear Feet	Cowardin Type[1]
Wetlands			
Riparian wetland	41.44	N/A	PSS/PFO
Seasonal wet meadow	0.07	N/A	PEM
Other Waters			
Intermittent stream	0.067	831	R4SB
Riverine	20.46	8,148	R3UB
Total Waters of the United States	**62.03**	**8,979**	

1 Classification of Wetlands and Deep Water Habitat of the United States (Cowardin et al. 1979).

A total of 41 riparian wetlands, encompassing approximately 41.4 acres, were delineated in the project area. A sliver of a seasonal wet meadow (0.07 acre) is located adjacent to activity area SC W-4 in the eastern portion of the project area. Dominant plants in this wet meadow are tall fescue and sedges. In addition, there are 20.5 acres of other waters (13 riverine and intermittent stream features) within the project boundary; the Trinity River represents the dominant riverine feature.

Plant communities along the 40-mile reach of the Trinity River downstream of Lewiston Dam may support several special-status plant species, including species listed under the federal and state Endangered Species Acts (ESAs); BLM Sensitive Species; and species considered rare, threatened, or endangered in California based on the Rare Plant Rank (see Table 4.7-1 in Master EIR for complete list of species and their status). Botanical surveys were conducted at the Deep Gulch and Sheridan Creek sites during May and July 2015, and no special-status plants were identified by Trinity County Resource Conservation District botanists. In May and July 2016, the boundary of project area was revised and additional botanical surveys were conducted at the new locations by North State Resources (NSR) biologists.

Based on a site-specific assessment by a BLM biologist in 2015 in conjunction with additional site reviews performed by NSR's certified wildlife biologist in 2016, it was determined that no wildlife species listed under ESA or CESA as threatened or endangered or candidates for listing as threatened or endangered are present within the project area nor is there critical habitat for any listed wildlife species within the project area.

The Trinity River corridor provides habitat and travel corridors for various wildlife species, such as Pacific fisher (*Pekania pennanti*), American marten, black-tailed deer, river otter, beaver, cliff swallow (*Hirundo pyrrhonota*), bank swallow, and raccoon. The riparian vegetation along the Trinity River, in association with adjacent and nearby chaparral and woodland habitats, provides connected habitat within an area that has been fragmented by rural residential development and road building. Special-status wildlife species that may use habitats in the project area include Pacific fisher, a BLM Sensitive species and California species of special concern; ring-tailed cat (*Bassariscus astutus*), a California fully protected species; little willow flycatcher (*Empidonax traillii brewsteri*), an endangered species under the California ESA; bald eagle (*Haliaeetus leucocephalus*), an endangered species under the California ESA, a BLM Sensitive species, and a California fully protected species; several birds and bats that are BLM Sensitive species or California species of special concern; foothill

yellow-legged frog (*Rana boylii*), a BLM Sensitive species and California species of special concern; and western pond turtle (*Actinemys marmorata*), a California species of special concern. Most of these species are riparian species and may be found using trees in the montane and valley foothill riparian habitats or using wetlands in the project area. Additional details on these special-status species can be found in section 4.7 and Table 4.7-1 and Appendix C of the Master EIR.

There are several activity areas on river left (e.g., SC U-2, C-4) where mature montane hardwood–conifer occurs on lands managed by BLM. The BLM has reviewed these areas and documented that because these sites are the focus of a riparian and stream improvement project where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions, the proposed action (including vegetation removal) would meet the criteria under Exemption C of the Pechman Exemptions (October 11, 2006 Order) (see Appendix E of this EA/IS).

3.13.2 Environmental Consequences

Proposed Action

The proposed rehabilitation activities would modify the riparian and upland habitats in the project area and enhance the wetland, riverine, and upland (i.e., dredge tailings) habitats. Temporary disturbance in these habitats during project implementation would result from removal of understory vegetation, including invasive plants, to provide access and establish stockpile and staging areas in the activity areas and ground disturbance from equipment access and use. Throughout the project area, activity areas were refined to avoid wooded areas. However, several activity areas (e.g., SC U-2) require the use of upland areas to address FEMA floodway requirements, including the removal of conifers. Tree removal outside these activity areas would be limited and subject to site-specific review and authorization by the BLM prior to removal in order to enhance habitat complexity, provide safe working conditions, and facilitate access. During the rehabilitation activities, invasive plant control measures, including using weed-free erosion control materials and washing equipment, would be implemented in accordance with environmental commitment EC-VW-9 [4.3-2b] (see Table 2-5) to prevent the spread of noxious weeds in the project area. Some trees and downed logs would be reused on site to establish the wood jams and structures along the river. Riparian and wetland habitats would be protected outside the activity areas and would be clearly marked for avoidance in accordance with EC-VW-1[4.7-1a]. No special-status plants would be affected during rehabilitation activities because none have been observed in the project area based on previously conducted botanical surveys.

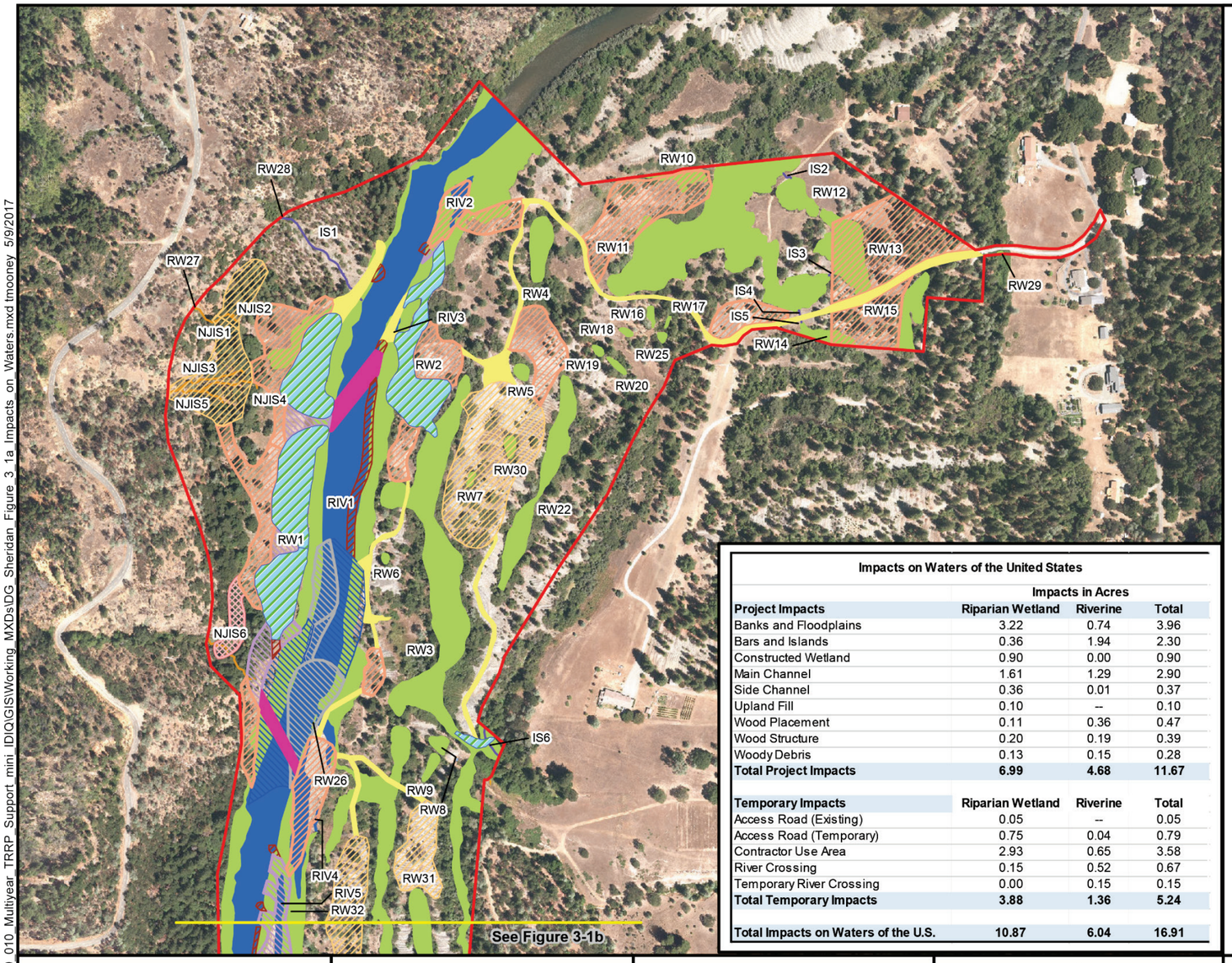
Construction activities associated with the proposed action would result in temporary impacts to waters under the jurisdiction of the Corps (jurisdictional waters), including wetland features in the project area. Figures 3.1a and 3.1b illustrate the size and location of jurisdictional waters that would be affected by the proposed action as revised to reduce potential impacts to adjacent residences. Construction of the proposed action would result in a direct temporary impact to a total of 10.87 acres of riparian wetlands and 6.03 acres of riverine habitat. Included in these totals are impacts associated with temporary access and use of activity areas (e.g., roads, staging). A total of 3.88 acres of riparian wetlands and 1.36 acres of riverine habitat would also be temporarily affected. Due to the nature of

the project, the impacts to jurisdictional waters are expected to be temporary, and it is anticipated that there will be a net increase in jurisdictional waters within 5 to 10 years after completion of the proposed action.

Construction activities associated with the proposed action would result in temporary impacts to riparian habitat. There are three distinct CWHR habitat types that occur within the project area: montane riparian, riverine and valley foothill riparian. Valley foothill riparian habitat would not be affected by the proposed action. A description of these habitat types is provided in Section 4.7.1 of the Master EIR beginning on page 4.7-2. Figures 3.2a and 3.2b illustrate the size and location of riparian habitat that would be affected by the proposed action. Construction of the proposed action would result in direct impacts to 9.34 acres of montane habitat and 3.46 acres of riverine habitat, totaling 12.80 acres. The construction and use of temporary access and use of activity areas (e.g., roads, staging) would also result in temporary impacts to 6.43 acres of montane riparian habitat and 0.62 acres of riverine habitat. Of these acres, about 5.25 acres would be revegetated with riparian species. Due to the nature of the project, the impacts to riparian habitat from construction of associated with access and staging areas would be temporary, and the riparian habitat is expected to recover over time.

As shown on Table 2-1, 25 of the activity areas included in the proposed action will be revegetated with native riparian species. Revegetation would occur at three types of activity areas: in-channel (IC), riverine (R), and wetland (W). Revegetation efforts will result in reestablishment of 2.76 acres of riparian habitat at IC activity areas; 6.41 acres of riparian habitat at R activity areas; and 4.91 acres of riparian habitat at W activity areas, equaling a total of 14.08 acres of functional riparian habitat within these three activity areas. In addition, riparian revegetation of access and staging areas would add 6.63 acres of functional riparian habitat. A total of 20.71 acres of riparian habitat would therefore be functional within 5 to 10 years after completion of the project. Based on the impact tables presented on Figures 3-2a and b, the proposed action would meet the TRRP's objective of no net loss of riparian habitat in the long term.

Temporary disturbance associated with the rehabilitation activities could discourage wildlife use of the habitats in and near the project area. Most wildlife species, such as Pacific fisher, deer, beaver, and most birds, would be able to use nearby habitats to avoid the disturbance and return once the rehabilitation activities are complete. Because the rehabilitation activities cannot avoid the nesting bird season and they would take place in riparian habitat that is likely to support nesting and breeding activities for various wildlife species, pre-construction surveys would be conducted to identify active nests, bat roosts, and ring-tailed cat dens. If the schedule allows, trees that need to be removed would be removed outside the nesting season for birds and the breeding season for ring-tailed cat and before bats establish maternity colonies (i.e., in early February). If this is not practicable and active bird nest sites, bat roost sites, or ring-tailed cat dens are found in trees or other vegetation in or near the project area during pre-construction surveys, no-disturbance buffers would be established around the nest or roost site or den until the nest is no longer active or the bats and cats can safely escape on their own before disturbance takes place near the site or den or the tree(s) are removed, in accordance with environmental commitments EC-VW-6 [4.7-7 a-d], EC-VW-7 [4.7-8a-d], and EC-VW-8 [4.7-9a-c] (see Table 2-5). With these environmental commitments, no take of little willow flycatcher or ring-tailed cat would occur, and impacts on other special-status birds and bats would be minimized or completely avoided.



Impacts on Waters of the United States

	Impacts in Acres		
Project Impacts	**Riparian Wetland**	**Riverine**	**Total**
Banks and Floodplains	3.22	0.74	3.96
Bars and Islands	0.36	1.94	2.30
Constructed Wetland	0.90	0.00	0.90
Main Channel	1.61	1.29	2.90
Side Channel	0.36	0.01	0.37
Upland Fill	0.10	--	0.10
Wood Placement	0.11	0.36	0.47
Wood Structure	0.20	0.19	0.39
Woody Debris	0.13	0.15	0.28
Total Project Impacts	**6.99**	**4.68**	**11.67**
Temporary Impacts	**Riparian Wetland**	**Riverine**	**Total**
Access Road (Existing)	0.05	--	0.05
Access Road (Temporary)	0.75	0.04	0.79
Contractor Use Area	2.93	0.65	3.58
River Crossing	0.15	0.52	0.67
Temporary River Crossing	0.00	0.15	0.15
Total Temporary Impacts	**3.88**	**1.36**	**5.24**
Total Impacts on Waters of the U.S.	**10.87**	**6.04**	**16.91**

Project Impacts
- Main Channel
- Side Channel
- Bars and Islands
- Banks and Floodplains
- Constructed Wetland
- Upland Drainage
- Wood Placement
- Upland Fill

Temporary Impacts
- Contractor Use Area
- River Crossing
- Access Road

Waters of the United States

Wetlands
- Riparian Wetland (41.441 acres)
- Riverine (20.461 acres)
- Seasonal Wet Meadow (0.001 acre)

Other Waters
- Intermittent Stream (0.067 acre)
- Non-Jurisdictional Intermittent Stream (0.057 acre)

Public Land Survey:
T33N, R10W, Sec. 18 & 19

USGS 7.5 Quad:
Junction City - Revised 1982

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Delineator: North Wind Resource Consulting, North State Resources, Inc.
Delineation Date: May-July 2015; April-June 2016
Aerial Photography Source: TRRP 2015

This delineation of waters of the United States is subject to verification by the U.S. Army Corps of Engineers (Corps). NSR advises all parties that the delineation is preliminary until the Corps provides a written verification.

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Feet
1 inch = 400 feet

TRINITY RIVER RESTORATION PROGRAM
Deep Gulch and Sheridan Creek Rehabilitation Sites

Figure 3-1a
Impacts on Waters of the United States

May 2017

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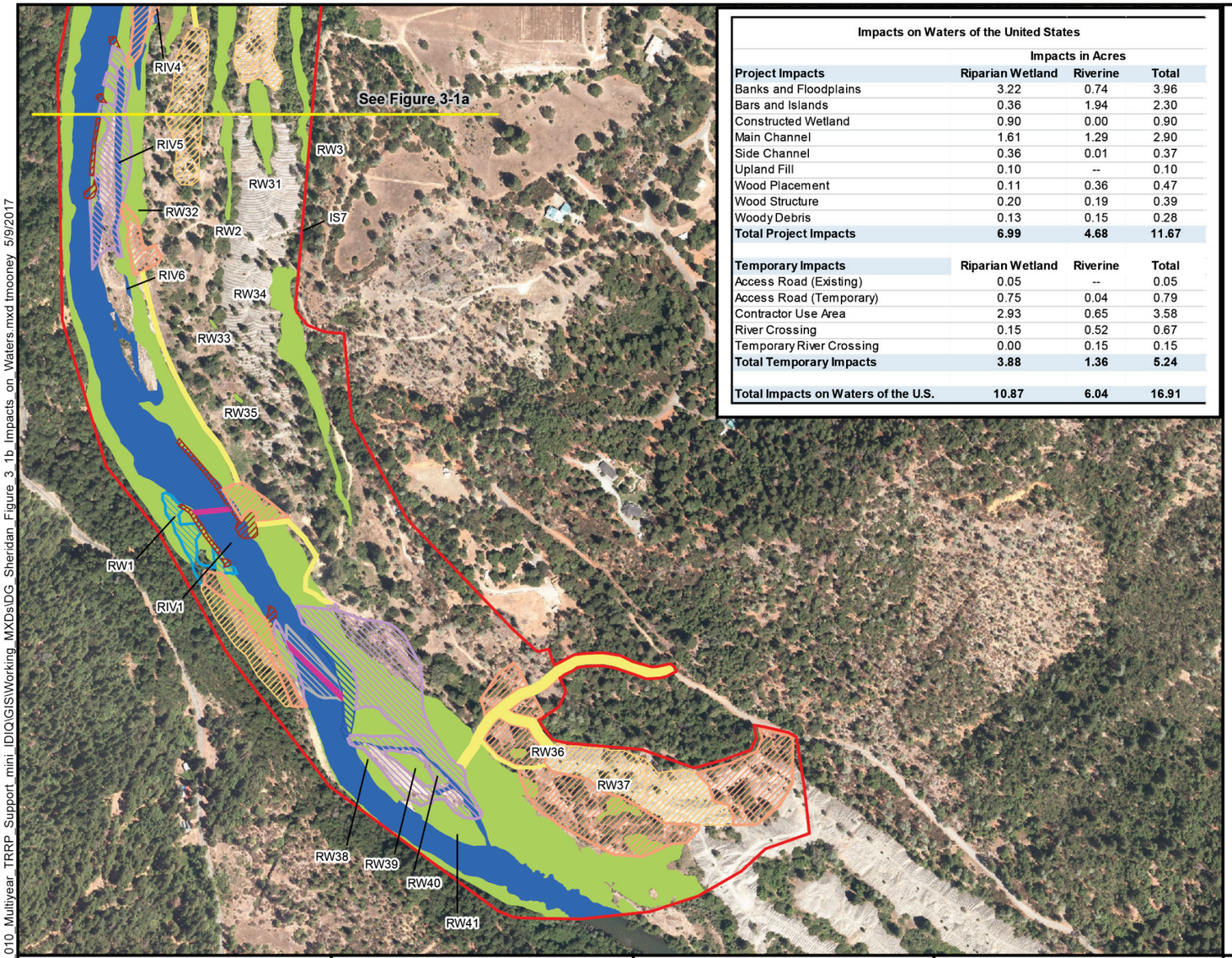

Impacts on Waters of the United States

	Impacts in Acres		
Project Impacts	**Riparian Wetland**	**Riverine**	**Total**
Banks and Floodplains	3.22	0.74	3.96
Bars and Islands	0.36	1.94	2.30
Constructed Wetland	0.90	0.00	0.90
Main Channel	1.61	1.29	2.90
Side Channel	0.36	0.01	0.37
Upland Fill	0.10	--	0.10
Wood Placement	0.11	0.36	0.47
Wood Structure	0.20	0.19	0.39
Woody Debris	0.13	0.15	0.28
Total Project Impacts	**6.99**	**4.68**	**11.67**
Temporary Impacts	**Riparian Wetland**	**Riverine**	**Total**
Access Road (Existing)	0.05	--	0.05
Access Road (Temporary)	0.75	0.04	0.79
Contractor Use Area	2.93	0.65	3.58
River Crossing	0.15	0.52	0.67
Temporary River Crossing	0.00	0.15	0.15
Total Temporary Impacts	**3.88**	**1.36**	**5.24**
Total Impacts on Waters of the U.S.	**10.87**	**6.04**	**16.91**

Project Impacts
- Main Channel
- Side Channel
- Bars and Islands
- Banks and Floodplains
- Constructed Wetland
- Upland Drainage
- Wood Placement
- Upland Fill

Temporary Impacts
- Contractor Use Area
- River Crossing
- Access Road

Waters of the United States

Wetlands
- Riparian Wetland (41.441 acres)
- Riverine (20.461 acres)
- Seasonal Wet Meadow (0.001 acre)

Other Waters
- Intermittent Stream (0.067 acre)
- Non-Jurisdictional Intermittent Stream (0.057 acre)

Public Land Survey:
T33N, R10W, Sec. 18 & 19
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0 200 400 800
Feet
1 inch = 400 feet

TRINITY RIVER RESTORATION PROGRAM
Deep Gulch and Sheridan Creek Rehabilitation Sites

Figure 3-1b
Impacts on Waters of the United States

May 2017

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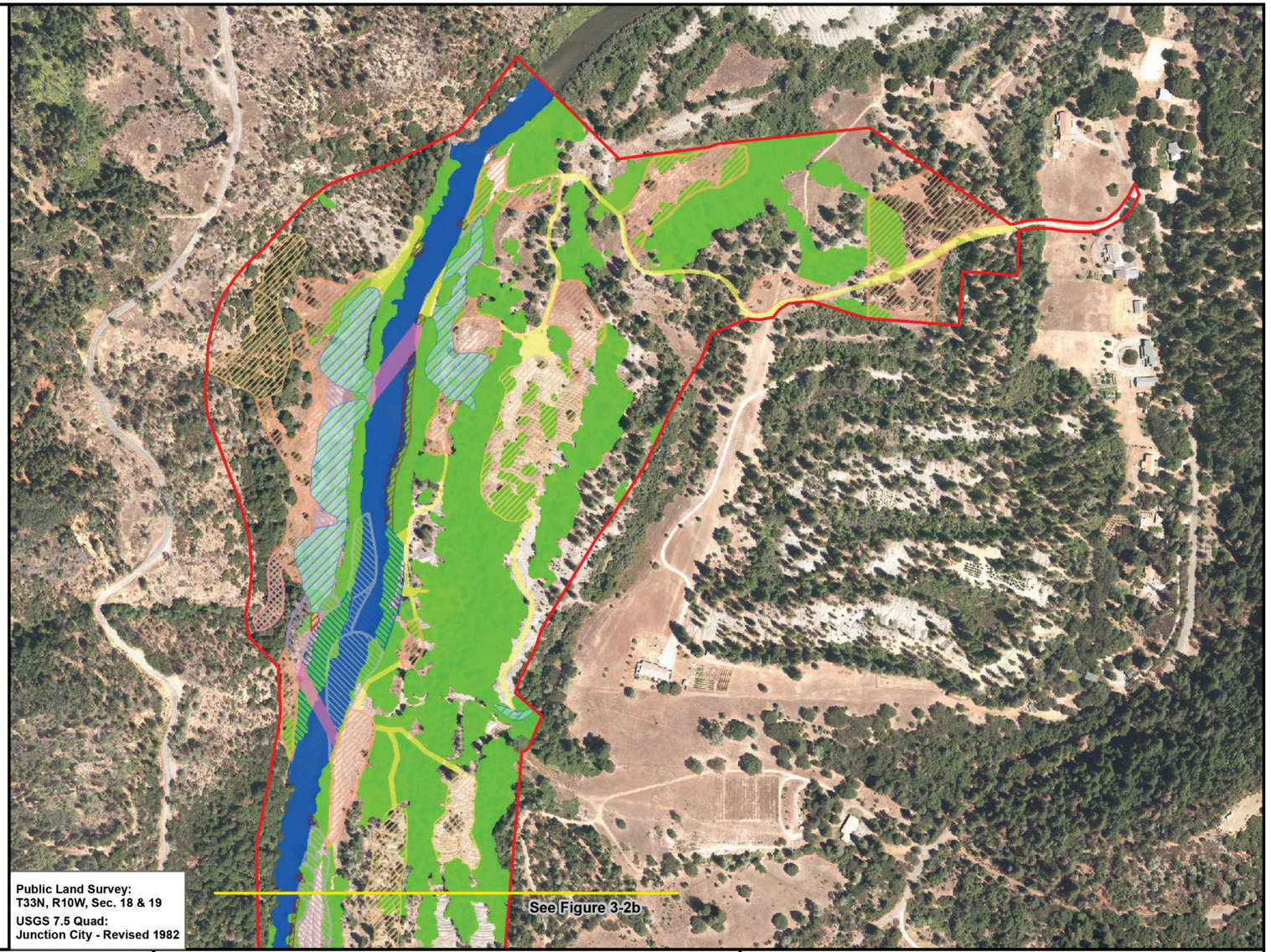
Project Impacts
- Main Channel
- Side Channel
- Bars and Islands
- Banks and Floodplains
- Constructed Wetland
- Upland Drainage
- Wood Placement
- Upland Fill

Temporary Impacts
- Contractor Use Area
- River Crossing
- Access Road

Riparian Habitat
- Montane Riparian
- Riverine
- Valley Foothill Riparian

Impacts on Riparian Habitat

	Impacts in Acres		
Project Impacts	**Montain Riparian**	**Riverine**	**Total**
Banks and Floodplains	3.60	0.05	3.65
Bars and Islands	0.44	1.84	2.28
Constructed Wetland	1.14	--	1.14
Main Channel	1.77	1.16	2.93
Side Channel	0.26	< 0.01	0.26
Upland Fill	1.44	--	1.44
Wood Placement	0.24	0.22	0.46
Wood Structure	0.25	0.12	0.37
Woody Debris	0.20	0.07	0.27
Total Project Impacts	**9.34**	**3.46**	**12.80**
Temporary Impacts	**Montain Riparian**	**Riverine**	**Total**
Access Road (Existing)	0.25	--	0.25
Access Road (Temporary)	1.12	0.01	1.13
Contractor Use Area	4.88	< 0.01	4.88
River Crossing	0.17	0.47	0.64
Temporary River Crossing	0.01	0.14	0.15
Total Temporary Impacts	**6.43**	**0.62**	**7.05**
Total Impacts on Riparian Habitat	**15.77**	**4.08**	**19.85**



Public Land Survey:
T33N, R10W, Sec. 18 & 19

USGS 7.5 Quad:
Junction City - Revised 1982

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N

0 200 400 800

Feet

1 inch = 400 feet

TRINITY RIVER RESTORATION PROGRAM
Deep Gulch and Sheridan Creek Rehabilitation Sites

Figure 3-2a
Impacts on Riparian Habitat

May 2017

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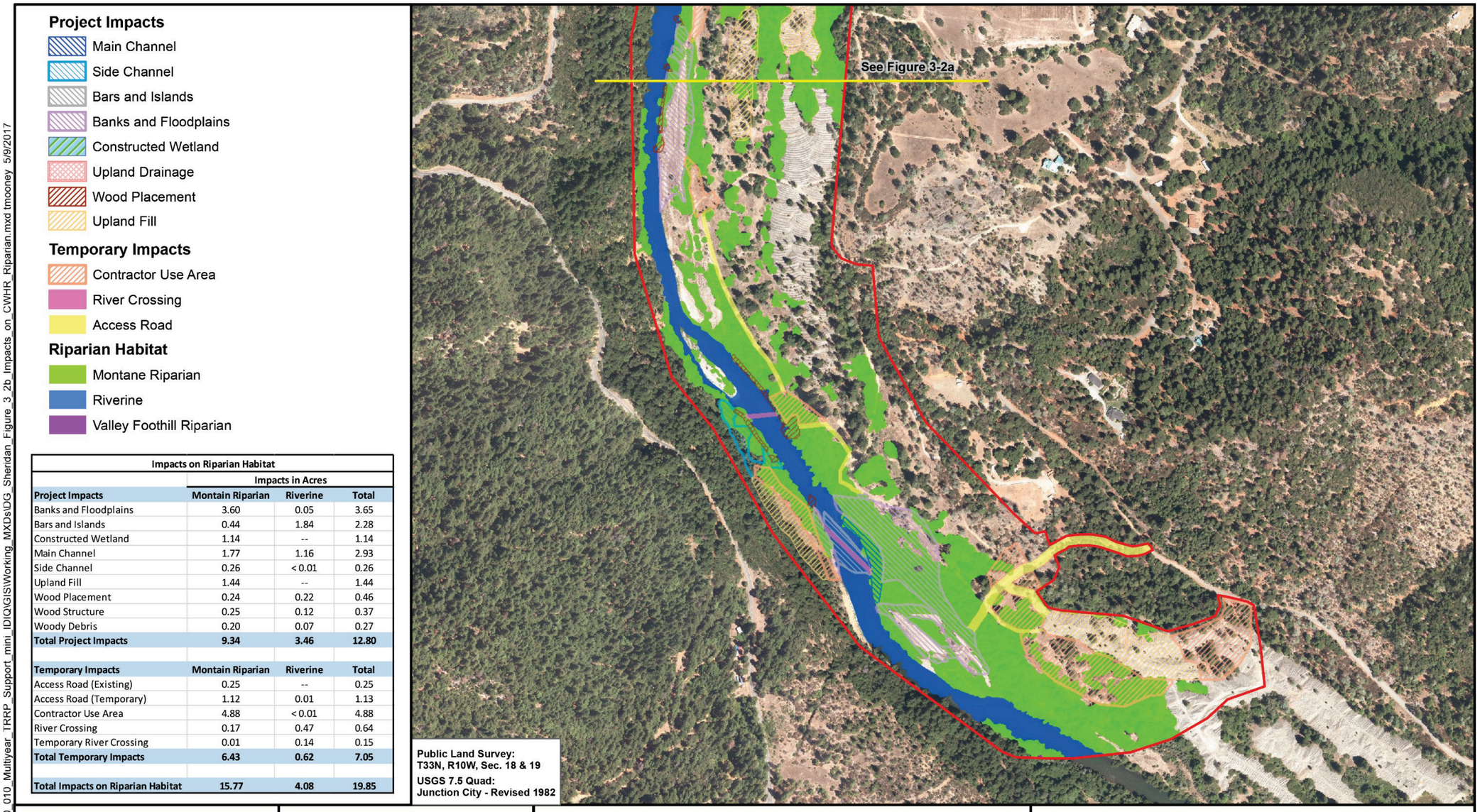

Project Impacts
- Main Channel
- Side Channel
- Bars and Islands
- Banks and Floodplains
- Constructed Wetland
- Upland Drainage
- Wood Placement
- Upland Fill

Temporary Impacts
- Contractor Use Area
- River Crossing
- Access Road

Riparian Habitat
- Montane Riparian
- Riverine
- Valley Foothill Riparian

Impacts on Riparian Habitat			
	Impacts in Acres		
Project Impacts	**Montain Riparian**	**Riverine**	**Total**
Banks and Floodplains	3.60	0.05	3.65
Bars and Islands	0.44	1.84	2.28
Constructed Wetland	1.14	--	1.14
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Total Impacts on Riparian Habitat	**15.77**	**4.08**	**19.85**

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TRINITY RIVER RESTORATION PROGRAM
Deep Gulch and Sheridan Creek Rehabilitation Sites

Figure 3-2b
Impacts on Riparian Habitat

May 2017

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The foothill yellow-legged frog and western pond turtle are known to use the Trinity River and adjacent habitats. The frog may use pools and slow-moving areas of the river with adequate substrate for egg laying, and disturbance to these areas during in-water activities could dislodge egg masses or injure frogs. Turtles may nest in upland areas adjacent to the river or be found in the water, and disturbance in these areas could damage nests or injure turtles. Pre-construction surveys for breeding and nesting activity of these species would be conducted in accordance with EC-VW-4 [4.7-5a-d] and EC-VW-5 [4.7-6a-e], and foothill yellow-legged frog egg masses or western pond turtle nests that could be disturbed by the rehabilitation activities would be relocated to nearby suitable habitat outside the activity areas. Precautionary measures would also be taken during the rehabilitation activities in the event a frog or turtle is encountered in an activity area, and the individual(s) would be relocated outside the activity areas in accordance with EC-VW-4 and EC-VW-5. With these environmental commitments, impacts on foothill yellow-legged frog and western pond turtle would be minimized or completely avoided.

Once the rehabilitation activities are complete, the habitats in the project area would shift to include more riparian and wetland habitat with side channels off the mainstem Trinity River providing additional riverine habitat. Revegetation of disturbed areas would return the activity areas to their current or better conditions and would ensure reestablishment of native plants while reducing the extent of non-native and invasive plants. If invasive plants recolonize the restored areas, Reclamation would implement targeted control methods to remove the plants and reestablish native plants in accordance with EC-VW-9 [4.7-13a-g]. Long-term monitoring of the rehabilitation sites and adaptive measures to further enhance or create additional riparian or wetland habitat in accordance with EC-FR-4 [4.7-1b] would ensure no net loss of riparian or wetland habitat occurs, consistent with TRRP's Riparian Revegetation and Monitoring Plan (TRRP Federal Design Group 2016). The rehabilitation activities would benefit wildlife, particularly wetland and riparian species, by enhancing the Trinity River corridor for nesting, breeding, roosting, foraging, and other activities. The corridor would continue to function as a movement corridor for many wildlife species, and the enhanced floodplain and riparian conditions could attract more wildlife to the project area.

With the inclusion of CEQA mitigation measures EC-VW-9 [4.3-2b], EC-VW-1[4.7-1a], EC-VW-6 [4.7-7 a-d], EC-VW-7 [4.7-8a-d], EC-VW-8 [4.7-9a-c], EC-VW-4 [4.7-5a-d], EC-VW-5 [4.7-6a-e], EC-VW-9 [4.7-13a-g], and EC-FR-4 [4.7-1b] described in this section, CEQA impacts related to fisheries considered under this resource topic would be less than significant (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

No Action Alternative

Under the no action alternative, no temporary or permanent disturbance to the habitats, plants, wildlife, or wetlands (and other waters) would occur within the project area. Habitat conditions in the project area would be the same as current conditions, and the riparian corridor would be subjected to current Trinity River influences without the enhancements to the riparian and wetland habitats. The invasive yellow star thistle and other invasive plants would continue to dominate annual grasslands in the project area. Special-status wildlife species would continue to use habitats in the project area that are suitable for them.

Under the no action alternative, impacts to vegetation, wildlife and wetlands would remain similar to existing conditions. Therefore, there would be no impacts on these resources as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382.

3.14 CEQA Significance

As described in section 3.1, this document is an integrated NEPA/CEQA document. Table 3-7 provides a summary of the CEQA mitigation developed for each resource topic discussed in this chapter (see Appendix A2 for details). It also identifies the level of significance as defined in California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15382).

Table 3-7. Summary of Resource Topics Considered in This EA/IS

Resource Topic	CEQA Mitigation	CEQA Significance
Aesthetics	EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], EC-WQ-4 [4.5-1e], and EC-RE-1 [34.8-1a].	Less than Significant
Air Quality	EC AQ-1 [4.11-a-1a], [4.11-2a]	Less than Significant
Cultural Resources	EC-CU-1 [4.10-2a] and EC-CU-2 [4.10-2a]	Less than Significant
Fishery Resources	EC FR-1 [4.6-1a, 1b], EC FR-2 [4.6-4a-4e], EC FR-3 [4.6-4f], EC FR-4 [4.6-5b], and EC FR-5 [4.6a-6d]	Less than Significant
Geomorphology and Soils	EC-GS-1[4.3-2a] and EC-GS-2 [4.3-2b]	Less than Significant
Hydrology and Flooding	Not Applicable	Less than Significant
Land Use	Not Applicable	Less than Significant
Noise	EC-NO-1 [4.14-1a] and EC NO-2 [4.14-1b]	Less than Significant
Recreation and Wild and Scenic Rivers	EC-WQ-1 [4.5-1a-1e], EC-WQ-2 [4.5-2a – 2c], EC-WQ-3 [4.5-3a-3c], EC-WQ-4 [4.5-1e] and EC-RE-1 [4.8-1a]	Less than Significant
Transportation and Traffic	EC-TC-2 [4.16-2a, 4.16-5a] and EC-TC-3 [4.16-4a]	Less than Significant
Vegetation, Wildlife, and Wetlands	EC-VW-9 [4.3-2b], EC-VW-1[4.7-1a], EC-VW-6 [4.7-7 a-d], EC-VW-7 [4.7-8a-d], EC-VW-8 [4.7-9a-c], EC-VW-4 [4.7-5a-d], EC-VW-5 [4.7-6a-e], EC-VW-9 [4.7-13a-g], and EC-FR-4 [4.7-1b]	Less than Significant
Water Quality	EC WQ-1 [4.5-1a, b], EC WQ-2 [4.5-1c], EC WQ-3 [4.5-1d], EC WQ-4 [4.5-1e, 4.5-2a-2c] and EC WQ-5 [4.5-3a-3c]	Less than Significant

Chapter 4. Cumulative Impacts and Other CEQA and NEPA Considerations

The analysis in this chapter tiers from the "statutory considerations" discussion in Chapter 5 of the Master EIR; the EA incorporates that discussion by reference. That discussion addressed certain topics required under CEQA, such as cumulative impacts, the significant environmental effects of the proposed action, the significant effects that cannot be avoided if the proposed action is implemented, and the growth-inducing effects of the proposed action. Under NEPA, additional discussions are also required, such as the significant irreversible and irretrievable commitments of resources and the relationship between local short-term uses of the environment and the maintenance of long-term productivity. These discussions are incorporated by reference from the Master EIR and are summarized below; see the Master EIR for complete discussions of these topics. This section also provides updated information on cumulative impacts for additional projects that were not identified in the Master EIR.

4.1 Cumulative Impacts

The regulatory framework for the assessment of cumulative impacts under CEQA is discussed in Chapter 5, section 5.2.1, of the Master EIR, and the regulatory framework for NEPA is discussed in Chapter 8, Section 8.2.1 of the Master EIR. Under the CEQA Guidelines (Section 15355), the term "cumulative impacts" refers to two or more individual impacts that, when considered together, are considerable or that otherwise compound or increase other environmental effects. Cumulative environmental impacts arise from the incremental impacts of the proposed action when added to other closely related past, present, and reasonably foreseeable future projects.

The CEQ's implementing regulations for NEPA (40 CFR 1508.7) state that cumulative impacts result from the incremental impact of a proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) undertakes the other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

4.1.1 Methodology and Analysis

The methodology for the cumulative impact analysis is described in section 5.2.2 of the Master EIR. As discussed in that section, the methodology involved the assessment of the potential cumulative effects of the proposed action when considered in combination with a list of related projects within a defined geographical area. This assessment of cumulative impacts is considered in the same cumulative context; however, the list of related projects and programs considered in this analysis has been updated to include those closely related past, present, and reasonably foreseeable future projects listed below.

The cumulative impacts section provided in Chapter 5 of the Master EIR identified related projects through the list approach, based on input from the lead and cooperating agencies. The geographic

scope of the area examined in that assessment for cumulative effects was the Trinity River corridor between Lewiston Dam and the confluence of the North Fork Trinity River at Helena, California. The following projects were considered in that section and are still considered timely and relevant:

- Fish Habitat Management
- Trinity River Mainstem Fishery Restoration Project
- California Coastal Salmonid Restoration Program/Five-Counties Salmonid Conservation Program
- Clean Water Act Section 303(d) Total Maximum Daily Load Requirements Program

Since 2009, the TRRP has implemented projects at all of the Phase 1 Channel Rehabilitation Sites and implemented projects at seven of the Phase 2 sites; the Bucktail site completed in 2016 was expanded in 2016 to include additional area coincident to the portion of the site completed in 2010 as part of the Lewiston-Dark Gulch complex. Concurrently, the TRRP has continued to implement coarse-sediment (gravel) augmentation at a number of locations downstream of Lewiston Dam, and fine sediment has been removed from both the Hamilton Ponds and Grass Valley Creek Reservoir. In addition, the TRRP-managed flows have been implemented yearly since the Master EIR was certified in 2009. Ongoing monitoring efforts by the TRRP and its partners continue to document improvements in habitat use and restoration of alluvial processes and riparian vegetation.

Since 2009, there have been a number of watershed restoration and road sediment reduction projects implemented by various agencies and organizations throughout the Trinity River basin. While some of these were listed and considered in the Master EIR, the Forest Service and the Trinity County Resource Conservation District have completed a wide array of additional projects intended to improve watershed conditions, restore aquatic habitat, improve aquatic connectivity, and reduce road-related sediment delivery to streams and rivers.

The TRRP has identified the need to develop a long-term source of coarse sediment (i.e., spawning gravel) for use in the lower reaches of the Trinity River (downstream of Douglas City). This need could result in harvesting and processing of dredge tailing deposits at various TRRP sites identified in the Master EIR. A project of this kind would have potential impacts on various resource topics, but it is speculative at this point in the planning cycle to be specific with respect to the location and/or type of impacts that may occur.

The issue-specific analysis of cumulative impacts in Chapter 5 of the Master EIR identifies the potential cumulative impacts related to the Remaining Phase 1 and Phase 2 sites for a variety of resource areas. Table 4-1 provides an update to the summary prepared for the Master EIR.

In 2016, the TRRP completed the expanded Bucktail channel rehabilitation project downstream of Lewiston, California. This site is about 23 miles upstream of the project area. While there is the potential for cumulative impacts as a result of sediment delivery and transport from previous TRRP river rehabilitation and sediment management projects, this is actually a beneficial process that contributes to the TRRP's overall objective of a functional alluvial river. The closest TRRP project that has been constructed since the Master EIR was completed is Lorenz Gulch (constructed in 2013) about 7 miles upstream. It is assumed, however, that the impacts from those earlier projects have been mitigated, and the amount of time that has elapsed since they were completed has further dissipated the effects downstream. The previous issue-specific analysis in Chapter 5 of the Master

EIR sufficiently addresses the cumulative impacts of the proposed action, and no substantial differences arise in consideration of the proposed action separately.

Table 4-1. Summary of Cumulative Impacts Considering Past, Present and Reasonably Foreseeable Actions in the Trinity River Basin

Land Use	Implementation of the proposed action, in combination with other related projects, would not have a cumulative impact in terms of planning policies, nor would river rehabilitation activities result in cumulative effects in terms of local or federal land use planning policies.
Geomorphology and Soils	No significant cumulative impacts associated with geologic hazards, geomorphic processes, or erosional processes are anticipated to occur as a result of implementation of the proposed action in combination with other related projects. While previous TRRP projects (e.g., Lorenz Gulch) and periodic increases in flow regimes continued to increase channel complexity throughout the 40-mile reach, large fires throughout the Trinity River basin continue to influence flow and sediment regimes within the watershed. Appropriate implementation of environmental commitments, project design features, and CEQA-specific mitigation measures would reduce potential impacts to a less than significant level.
Hydrology and Flooding	Implementation of the proposed action in combination with other river rehabilitation activities would not have cumulatively considerable impacts on beneficial uses of the river or result in changes in the quantities of water available for any of those uses or that would cause flooding.
Water Quality	No significant cumulative impacts to water quality are anticipated to occur as a result of implementation of the proposed action in combination with other related projects. The TRRP implementation schedule acknowledges the need to stagger implementation of channel rehabilitation projects along the 40-mile reach of the river to ensure that project sites have the opportunity to stabilize and revegetate. Individually, these activities would result in short-term, temporary effects on water quality. Appropriate implementation of environmental commitments, project design features, and CEQA-specific mitigation measures would reduce potential impacts to a less than significant level.
Fishery Resources	No significant, adverse cumulative impacts to fisheries resources are anticipated to occur as a result of implementation of the proposed action. The effect of the proposed action, in conjunction with other projects and programs such as the Five Counties Salmonid Restoration effort, is expected to be beneficial in terms of the rehabilitation of habitat and fisheries resources. Implementation of the proposed action as designed, in conjunction with CEQA-specific mitigation measures, would benefit, rather than adversely affect, the fishery resources of the Trinity River in the long term.
Vegetation, Wildlife, and Wetlands	No significant cumulative impacts to vegetation, wildlife, and wetlands are anticipated to occur as a result of implementation of the proposed action in combination with other related projects. The proposed action as designed, in conjunction with CEQA-specific mitigation, would benefit rather than adversely affect vegetation, wildlife, and wetlands in the long term, as would most of the other related projects and programs (e.g., Five Counties Salmonid Restoration). Implementation of the proposed action would contribute to long-term ecological benefits in terms of vegetation, wildlife, and wetlands.
Recreation	No significant cumulative impacts to recreational resources are anticipated to occur as a result of implementation of the proposed action in combination with other related projects. Benefits to recreational values may be achieved through implementation of the TRRP over time.
Cultural Resources	No significant cumulative impacts to cultural resources are anticipated to occur as a result of implementation of the proposed action. The environmental commitments, project design features, and implementation of prescribed CEQA-specific mitigation measures (e.g., surveys of potential impact areas by a professional archaeologist prior to construction, protection of potentially significant cultural sites, and coordination with local tribes) consistent with the Programmatic Agreement between the Bureau of Reclamation and the California State Historic Preservation Officer would adequately address potential impacts, including cumulative impacts.

Table 4-1. Summary of Cumulative Impacts Considering Past, Present and Reasonably Foreseeable Actions in the Trinity River Basin

Air Quality	No significant cumulative impacts to air quality are anticipated to occur as a result of implementation of the proposed action. The North Coast Unified Air Quality Management District requirements would be addressed by implementation of environmental commitments, project design features, and prescribed CEQA-specific mitigation measures. The proposed action, in conjunction with the other projects and programs occurring within the Trinity River Basin, would contribute cumulatively to global climate change. Thus, the proposed action would contribute to an adverse cumulative contribution to global climate change. Implementation of the proposed action in conjunction with mitigation measures would reduce the cumulative contribution to global climate change to a less than significant level.
Aesthetics	No significant cumulative impacts to visual resources are anticipated to occur as a result of implementation of the proposed action. Implementation of the proposed action would benefit, rather than adversely affect, visual resources in the long term, as would most of the other related projects described in the cumulative effects analysis in the Master EIR.
Noise	No significant cumulative impacts related to noise are anticipated through implementation of the proposed action in combination with other projects. Reclamation would coordinate the implementation of other restoration projects to ensure that construction noise is minimized through project scheduling.
Transportation/ Traffic Circulation	No significant cumulative impacts related to transportation/traffic circulation are anticipated through the implementation of the proposed action in combination with other related projects. Traffic increases would be localized and temporary.

4.2 Irreversible and Irretrievable Commitments of Resources

NEPA (Section 102) and the CEQ's implementing regulations for NEPA (40 CFR 1502.16) require a discussion of "any irreversible and irretrievable commitments of resources which would be involved in a proposed action should it be implemented."

Section 15126.2(c) of the CEQA Guidelines also requires a discussion of the significant irreversible environmental changes that would result from a Proposed Project should it be implemented. This section of the CEQA Guidelines states:

> *Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvements which provide access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.*

The No Action alternative would not directly involve the use of resources or cause significant irreversible environmental effects other than those previously described in the Trinity River FEIS/EIR (USFWS et al. 2000a) and incorporated by reference in other sections of this document.

Implementation of the proposed action would not involve the substantial use of nonrenewable resources in such a way that would result in conditions that would be irreversible through removal or

nonuse thereafter. Future generations would not be committed to irreversible consequences or uses; the effect on future generations would be beneficial as a result of the enhanced and maintained river system and related fishery resources. No irreversible damage from environmental accidents would be foreseeable in association with the proposed action.

Implementation of the proposed action would result in the use of fossil fuels, a nonrenewable form of energy. A relatively minor amount of nonrenewable resources would be used in the mechanical rehabilitation of the river channel, transport of gravel and other materials, and related construction and management activities in the project area. The material requirements for the proposed action would be relatively minor compared to the overall demand for such materials, and the use of these materials would not have a significant adverse effect on their continued availability.

4.3 Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

Section 102 of the CEQ NEPA Implementing Regulations and 40 CFR 1501.16 require that an environmental document include a discussion of "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity." This discussion was included in Section 8.4 of the Master EIR and is incorporated by reference.

The proposed action does not involve a trade-off between a "local short-term use" of the environment and the maintenance and enhancement of the environment in the sense contemplated by NEPA. Implementation of the proposed action is intentionally aimed at maintaining and enhancing the long-term biological and environmental productivity of the river system consistent with BLM's Resource Management Plan and Trinity County's General Plan. Implementation of the proposed action would not sacrifice the long-term productivity of the project area for short-term uses during construction.

The short-term impacts on the environment associated with implementation of the proposed action are considered minimal compared to the long-term benefits and productivity that would result from the proposed action in conjunction with other objectives of the TRRP. Construction-related impacts and land use conflicts would be short-term, occurring only during the construction phase of the proposed action. The proposed action, including the environmental commitments and project design features, would ensure that the maintenance and enhancement of the fisheries resources offset the short-term impacts.

4.4 Growth-Inducing Impacts

Section 5.3 of the Master EIR evaluated the potential for growth that could be induced by implementation of the proposed action and assessed the level of significance of any expected growth inducement. Under CEQA, growth itself is not assumed to be particularly beneficial, detrimental, or insignificant to the environment. If a project is determined to be growth inducing, an evaluation is made to determine whether significant impacts on the physical environment would result from that growth.

Implementation of channel rehabilitation activities in the project area would not remove any constraints to development, create new or improved infrastructure, or otherwise create conditions that would induce growth. The proposed action would improve habitat for anadromous fish and, thus, improve conditions for fishing and recreation; however, the improved fishery resources resulting from implementation of the proposed action are not likely to directly or indirectly result in substantial development or population growth. Therefore, implementation of the proposed action would not result in a significant growth-inducing impact.

4.5 Environmental Commitments and CEQA Mitigation Measures

Reclamation's NEPA implementation guidance recommends that a list of environmental commitments for the preferred alternative be included in an EA. Chapter 2 of this EA/IS includes a list of environmental commitments and project design features that are part of the proposed action. Where these are cited in the document, they are also cross referenced with the relevant mitigation measure described in the mitigation, monitoring, and reporting plan (MMRP) presented in Appendix D. Because this document is a joint NEPA/CEQA document, mitigation measures have been identified for potentially significant CEQA impacts in compliance with CEQA requirements. Under CEQA, lead agencies are required to adopt a program for monitoring or reporting on the revisions that they required be made part of the project and other measures required to mitigate or avoid significant environmental effects. The MMRP provides the comprehensive list of CEQA mitigation measures and identifies requirements for timing, responsible parties, and compliance verification.

4.6 Significant Impacts under CEQA

CEQA establishes a duty for public agencies to avoid or minimize environmental damage where feasible (CEQA Guidelines Section 15021), and determinations of significance play a critical role in the CEQA process (CEQA Guidelines 15064). Section 5.4 of the Master EIR addresses several types of potentially significant effects.

Potentially significant effects have been identified in the areas of geology, geomorphology, soils, and minerals; water quality; fishery resources; vegetation, wildlife, and wetlands; recreation; cultural resources; air quality; visual resources; noise; public services and utilities; and traffic and transportation. These potential effects are discussed in each resource section in Chapter 3, and Appendix A1 (Environmental Checklist) provides specific CEQA documentation. As part of the environmental impact assessment for each resource area, mitigation measures/design features have been identified that reduce these impacts to less-than-significant levels. The environmental analysis conducted for the proposed action did not identify any effects that, after implementation of the mitigation/design features, remained significant and therefore unavoidable; no significant irreversible effects were identified associated with the proposed action.

4.7 Connected Actions

The CEQ regulations for implementing NEPA (40 CFR 1508.25) state that some actions (other than unconnected single actions) may be interdependent parts of a larger action and depend on the larger action for their justification. These connected actions are closely related and should be addressed when discussing the larger action.

Connected actions that would occur related to implementation of the proposed action include activities that are required for construction of the proposed action, such as TRRP realty actions, transportation of logs, salvaged large woody debris, boulders, and alluvial materials from locations outside the project boundary, and the related vehicle trips, increases in traffic circulation, and wear and tear on local roadways. These activities were analyzed in the Master EIR, and supplemental analysis of these actions is provided in Chapter 3 of this EA/IS. The environmental analysis did not identify any effects that, after incorporation of environmental commitments, project design features, and CEQA mitigation measures, remained significant.

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Chapter 6. References

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Appendix A1

Deep Gulch and Sheridan Creek Rehabilitation Project
Environmental Screening Checklist

This Environmental Screening Checklist was prepared to satisfy in part the requirements of California Environmental Quality Act (CEQA) Guidelines using the format provided in Appendix G of the guidelines and includes the following 16 environmental topics:

- Aesthetics
- Agriculture and Forest Resources
- Air Quality/Greenhouse Gas
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

The checklist was used to identify issues that should be carried forward for further evaluation in the environmental assessment/initial study (EA/IS) and to eliminate topics or resources for which no impacts are anticipated. For each checklist question, the proposed rehabilitation activities were assessed to determine if impacts are anticipated or if the project would clearly not result in any impacts. Previous analyses in the *Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report* (Trinity River EIS/EIR, U.S. Fish and Wildlife Service et al. 2000) and *Channel Rehabilitation and Sediment Management Activities for Remaining Phase 1 and Phase 2 Sites, Part 1: Final Master Environmental Impact Report and Part 2: Environmental Assessment/Final Environmental Impact Report* (Master EIR and EA/EIR, Regional Water Board and Reclamation 2009) were considered in this assessment. If new information available since the previous analyses reveals the potential for an impact that was not previously evaluated or was dismissed, that issue will be carried forward in the EA/IS. For each checklist question, one of the following determinations was made:

- **Further Evaluation Needed:** The proposed rehabilitation activities could result in an impact on the environmental topic or create an issue associated with the topic, and the topic will be further evaluated in the EA/IS. The topic may also require further evaluation due to new information becoming available since the previous analyses. Mitigation measures from the Master EIR (Appendix B) will be considered in the analysis to mitigate impacts, and if necessary additional mitigation measures would be proposed to reduce the significance of the impact under CEQA.

- **No Further Evaluation Needed:** The proposed rehabilitation activities would not result in an impact on the resource topic, or the issue is not a concern at the rehabilitation site or for the rehabilitation activities. Further evaluation of the environmental topic or issue is not necessary. The rationale behind this conclusion is that either the environmental topic is not present in or near the rehabilitation site or the nature of the project would clearly not result in an impact. Also, if

the previous analyses thoroughly evaluated the issue and dismissed it, no further evaluation is needed.

I.	**AESTHETICS** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Have a substantial adverse effect on a scenic vista?	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☒
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒

a) The Trinity River, as it flows through the Deep Gulch and Sheridan Creek Rehabilitation Sites, is a wild and scenic river. Further evaluation is needed to assess impacts on the wild and scenic river corridor and visual changes associated with the rehabilitation activities, particularly for recreationists using the river corridor.

b) The rehabilitation sites are not near a state scenic highway. The rehabilitation activities would not affect scenic resources along a scenic highway.

c) The rehabilitation activities would take place along a wild and scenic river corridor; therefore, further evaluation is necessary to assess impacts on the visual character of the rehabilitation sites.

d) The rehabilitation activities would not involve new sources of light or glare. They would be restricted to daylight hours, and no construction lighting would be required.

II.	**AGRICULTURE AND FOREST RESOURCES** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined by Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production as defined by Government Code Section 51104(g))?	☐	☒
d)	Result in loss of forest land or conversion of forest land to non-forest use?	☐	☒
e)	Involve other changes in the existing environment, which, due to their location or nature, could result in conversion?	☐	☒

a, b) The rehabilitation sites are along the Trinity River and are not used for agricultural purposes. The rehabilitation activities would not convert farmland or conflict with agricultural zoning.

c) The rehabilitation sites are not zoned for timber production.

d) Upland areas on the left side of the Sheridan Creek site contain mixed conifer forests on land managed by the Bureau of Land Management. Mature conifers and hardwoods would be removed at two upland activity areas to provide a stable location for disposal of excavated material. All wood removed from these areas would be used on-site for channel rehabilitation improvements. No forest resources would be sold or removed from the site.

e) The rehabilitation activities would occur on upland, floodplain and riverine features in a manner that would enhance the diversity and complexity of vegetation.

	III. AIR QUALITY/GREENHOUSE GAS — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	***Further Evaluation Needed***	***No Further Evaluation Needed***
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒
b)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☒	☐
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☒	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☒
f)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒
g)	Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒

a, g) The rehabilitation activities would result in temporary construction emissions and fugitive dust and would not conflict with or obstruct implementation of California's air quality or greenhouse gas plans or policies.

b) Impacts associated with temporary construction emissions and fugitive dust will be further evaluated.

c) The proposed rehabilitation activities in combination with other rehabilitation activities or projects in the vicinity of the rehabilitation sites could result in cumulative air quality impacts,

depending on their implementation schedules. Cumulative impacts on air quality will be further evaluated.

d) Recreationists and other sensitive receptors could be affected by temporary air quality impacts, such as from diesel emissions and exhaust, and these impacts will be further evaluated.

e) The use of construction equipment would generate odors from exhaust fumes during rehabilitation activities, but the odors would dissipate quickly and would not have the potential to affect a substantial number of people.

f) The rehabilitation activities would result in temporary emissions that would not contribute to regional greenhouse gas emissions or global climate change, as discussed in the Master EIR.

IV.	**BIOLOGICAL RESOURCES** — Would the project:	***Further Evaluation Needed***	***No Further Evaluation Needed***
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☒	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☒	☐
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☒	☐
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☒	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒

a) The rehabilitation activities could affect federally and state-listed species, other special-status plants or wildlife, or their habitat. A detailed evaluation of impacts is needed.

b) The rehabilitation activities would involve activities in riparian habitat, including the removal of riparian habitat along the Trinity River and modifications to the floodplain. A detailed evaluation of impacts is needed.

c) The rehabilitation activities would involve activities in wetlands and the Trinity River, a water of the United States. A detailed evaluation of impacts is needed.

d) In-channel rehabilitation activities could impede movement of fish and other aquatic organisms through the rehabilitation sites. A detailed evaluation of impacts is needed. No wildlife corridors or nursery sites are present; these topics are not further evaluated.

e) The rehabilitation activities would not conflict with Trinity County policies for protecting biological resources.

f) No habitat conservation plans or other similar types of plans apply to the rehabilitation activities or sites.

V.	**CULTURAL RESOURCES** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?	☒	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☒	☐
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☒	☐
e)	Cause a substantial adverse change in the significance of a Tribal Cultural Resource as defined in Public Resources Code Section 21074?	☒	☐

a, b) The rehabilitation activities could affect cultural resources associated with historic mining activities or other prior uses of the rehabilitation sites. A detailed evaluation of impacts is needed.

c) The rehabilitation sites are not known to support unique paleontological or geologic resources.

d) Although not expected, human remains may be encountered during rehabilitation activities. Further evaluation of this impact is necessary.

e) Previous uses of the rehabilitation sites may have included tribal uses, and further evaluation of impacts on Tribal Cultural Resources is needed.

VI.	**GEOLOGY AND SOILS** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:		
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	☐	☒
	ii) Strong seismic ground shaking?	☐	☒
	iii) Seismic-related ground failure, including liquefaction?	☐	☒
	iv) Landslides?	☐	☒

VI.	**GEOLOGY AND SOILS** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
b)	Result in substantial soil erosion or the loss of topsoil?	☒	☐
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☒	☐
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?	☐	☒
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☒

a) The rehabilitation activities would not cause or contribute to seismic-related hazards or landslides.

b) The rehabilitation activities would require soil excavation along the floodplain and could increase erosion. A detailed evaluation of impacts is needed.

c) Activities along the floodplain could influence geomorphic changes along the river, affecting soil conditions. Further evaluation of soil impacts is needed.

d) The rehabilitation activities would not create risks to life or property due to expansive soils.

e) The rehabilitation activities do not include the use of septic tanks or wastewater systems.

VII.	**HAZARDS AND HAZARDOUS MATERIALS** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☒
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☒

VII.	**HAZARDS AND HAZARDOUS MATERIALS** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☒
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒

a, b) Some hazardous materials would be transported to the rehabilitation sites and used during construction. Further evaluation of impacts associated with these activities is necessary.

c–f) The rehabilitation sites are not near schools, known hazardous sites, or airports. A private airstrip is located on an adjacent private property and is occasionally used, but use of the airstrip would not pose a hazard to activities in the project area.

g) The rehabilitation activities would not require lane or road closures or other activities that could interfere with emergency responses or evacuations in the area.

h) The rehabilitation activities would not increase the potential for wildland fires or create a risk to people or properties from wildfires based on their location along the Trinity River.

VIII.	**HYDROLOGY AND WATER QUALITY** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Violate any water quality standards or waste discharge requirements?	☒	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☒	☐
e)	Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☒
f)	Otherwise substantially degrade water quality?	☒	☐

VIII. HYDROLOGY AND WATER QUALITY — Would the project:		*Further Evaluation Needed*	*No Further Evaluation Needed*
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☒
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☒	☐
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☒
j)	Inundation of seiche, tsunami, or mudflow?	☐	☒

a) The rehabilitation activities would take place along and in the Trinity River and could affect water quality. A detailed evaluation of impacts is needed.

b) The rehabilitation activities could affect the groundwater table. A detailed evaluation of impacts is needed.

c, d, h) The rehabilitation activities would involve changes to the Trinity River that could result in increased erosion downstream or modified drainage patterns along the floodplain. A detailed evaluation of impacts is needed.

e) The rehabilitation activities would not affect stormwater runoff in a manner that would exceed storm drainage facilities.

f) The rehabilitation activities would involve grading that could increase erosion and potential discharge of storm water runoff. A detailed evaluation of impacts is needed.

g, i, j) The rehabilitation activities do not include housing and would not increase the risk of flooding. The rehabilitation sites are not prone to seiche, tsunami, or mudflow.

IX. LAND USE AND PLANNING – Would the project:		*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Physically divide an established community?	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☒	☐
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☒

a) The rehabilitation sites are not in an established community. They are in the planning boundary of the 1987 Junction City Community Plan, and private parcels in and adjacent to the project area are subject to this plan.

b) Some of the rehabilitation activities would take place on lands managed by the Bureau of Land Management and would need to comply with the Redding Resource Management Plan, as amended. Further evaluation of the consistency of the activities with the plan is needed.

c) No habitat conservation plans or other similar types of plans apply to the rehabilitation activities or sites.

X.	**MINERAL RESOURCES** — Would the project:	***Further Evaluation Needed***	***No Further Evaluation Needed***
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☒	☐
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☒	☐

a, b) The southern portion of the Deep Gulch Rehabilitation Site overlaps with an active mining claim on land managed by the Bureau of Land Management. Further evaluation of impacts on the claim is needed.

XI.	**NOISE** — Would the project result in:	***Further Evaluation Needed***	***No Further Evaluation Needed***
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☒

a, b, d) The rehabilitation activities would result in temporary noise that could affect nearby recreationists or other sensitive receptors. A detailed evaluation of this impact is needed.

c) The rehabilitation activities would not result in a permanent increase in noise levels.

e, f) The rehabilitation sites are not near an airport, and use of the nearby private airstrip would not expose people to excessive noise levels based on its infrequent use.

XII. POPULATION AND HOUSING — Would the project:		*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☒
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☒
c)	Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☒

a-c) The rehabilitation activities would not affect population or housing in Trinity County.

XIII. PUBLIC SERVICES — Would the project:		*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:		
	Fire protection?	☐	☒
	Police protection?	☐	☒
	Schools?	☐	☒
	Parks?	☐	☒
	Other public facilities?	☐	☒

a) The rehabilitation activities would not affect public services in Trinity County.

XIV. RECREATION — Would the project:		*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☒
b)	Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☒
c)	Degrade the quality of recreation activities or impede the use of recreation areas?	☒	☐

a, b) The rehabilitation sites do not contain recreation facilities, and the rehabilitation activities would not affect recreation facilities or parks in the county.

c) The Trinity River is used for various recreational purposes, and the rehabilitation activities could affect recreational access or use of the river. A detailed evaluation of this impact is needed.

XV.	**TRANSPORTATION/TRAFFIC** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☒	☐
b)	Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☒
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☒
d)	Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒
e)	Result in inadequate emergency access?	☐	☒
f)	Result in inadequate parking capacity?	☐	☒
g)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☒

a) Increased truck and equipment traffic for the rehabilitation activities could affect nearby roads and highways. A detailed evaluation of this impact is necessary.

b) Traffic associated with the rehabilitation activities would be temporary and periodic during the work day and would not change the level of service of nearby roads or highways.

c) The rehabilitation activities would not affect air traffic.

d) The rehabilitation activities would not create traffic hazards.

e) The rehabilitation activities would include temporary access roads that would improve emergency access to the river while not affecting emergency access outside the rehabilitation sites.

f) All parking associated with the rehabilitation activities would be on-site and would not affect parking on federal or private lands.

g) The rehabilitation activities would not affect alternative forms of transportation.

XVI.	**UTILITIES AND SERVICE SYSTEMS** — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☒
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☒

	XVI. UTILITIES AND SERVICE SYSTEMS — Would the project:	*Further Evaluation Needed*	*No Further Evaluation Needed*
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☒
e)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☒	☐
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☒

a–e) The rehabilitation activities would not affect utilities or service systems in Trinity County.

f) All excavated material and waste disposal associated with the rehabilitation activities would be on-site in designated spoils areas or at an approved landfill. The disposal of materials off-site will be further evaluated to ensure the disposal site can receive the material.

g) All disposal of solid waste would comply with applicable statutes and regulations.

Appendix A2

Deep Gulch and Sheridan Creek Rehabilitation Project
Environmental Checklist Form

1. Project Title: Trinity River Channel Rehabilitation Sites: Deep Gulch and Sheridan Creek (River Mile 81.6-82.9)

2. Lead Agency Name and Address: North Coast Regional Water Quality Control Board
550 Skylane Blvd., Suite A, Santa Rosa, CA 95403

3. Contact Person and Phone Number: Gil Falcone, (707) 576-2830

4. Project Location: Junction City, Trinity County, California

5. Project Sponsor's Names: Bureau of Reclamation
Trinity River Restoration Program

6. General Plan Designation:

- Trinity County General Plan – Open Space, Specific Unit Development, Scenic Conservation
- BLM 1993 Redding Resource Management Plan — Other (Matrix)

7. Zoning: Open Space

8. Description of Project:

- See Chapter 2 of the Environmental Assessment/Initial Study for the Trinity River Channel Rehabilitation Sites: Deep Gulch and Sheridan Creek (River Mile 81.6-82.9) Project (EA/IS)

9. Surrounding Land Uses and Setting: See Section 3.2.1 of the EA/IS

10. Other Public Agencies Whose Approval May Be Required (e.g., permits, financing approval, or participation agreement.)

- Bureau of Land Management, Redding Field Office (special use permit)
- Trinity County Department of Transportation (Floodplain development permit, FEMA compliance)
- U.S. Army Corp of Engineers (Clean Water Act, Section 404 compliance)

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Service Systems	☐ Mandatory Findings of Significance

DETERMINATION: (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☒ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Under California Code of Regulations, title 14, section 15177, after a Master EIR[1] has been prepared and certified, subsequent projects which the lead agency determines as being within the scope of the Master EIR will be subject to only limited environmental review. Mitigation measures from the Master EIR will be implemented.

Signature	**Date**
Printed Name	**For the Lead Agency**

[1] North Coast Regional Water Quality Control Board and U.S. Bureau of Reclamation. 2009. Channel rehabilitation and sediment management for remaining Phase 1 and Phase 2 sites. Master environmental impact report, environmental assessment/ environmental impact report. Trinity River Restoration Program. August 2009. SCH#2008032110

EVALUATION OF ENVIRONMENTAL IMPACTS

Each of these environmental factors listed above was fully evaluated and one of the following four determinations was made:

- **No Impact:** No impact to the environment would occur as a result of implementing the proposed project.
- **Less than Significant Impact:** Implementation of the proposed project would not result in a substantial and adverse change to the environment and no mitigation is required.
- **Potentially Significant Impact:** Implementation of the proposed project could result in an impact that has a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project" (CEQA Guidelines Section 15382).
- **Less than Significant Impact With Mitigation Incorporated:** A "potentially significant impact", as described above, that can be reduced to a less-than-significant level with the incorporation of project-specific mitigation measures.

ENVIRONMENTAL IMPACT CHECKLIST

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
I.	**AESTHETICS — Would the project:**				
a)	Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☒	☐	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to section 3.4.2 of the EA/IS

(b) Refer to section 3.4.2 of the EA/IS

(c) Refer to section 3.4.2 of the EA/IS

(d) Not Applicable

Mitigation Measures

See CEQA mitigation measures described in Appendix B of the EA/IS: [4.5-1a-1e], [4.5-2a – 2c], [4.5-3a-3c], 4.5-1e] and [4.8-1a]

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
II.	**AGRICULTURAL AND FOREST RESOURCES** — In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. **Would the project:**				
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))?	☐	☐	☐	☒
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e)	Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion of Impacts

(a) Not applicable

(b) Not applicable

(c) Not applicable

(d) Not Applicable

(e) Not Applicable

Mitigation Measures

Not Applicable

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
III.	**AIR QUALITY** — Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a)	Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☐	☒	☐
c)	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d)	Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to Section 3.7.2 of EA/IS

(b) Refer to Section 3.7.2 of EA/IS

(c) Refer to Section 3.7.2 of EA/IS

(d) Refer to Section 3.7.2 of EA/IS

(e) Not applicable

Mitigation Measures

See CEQA mitigation measures described in Appendix B of the EA/IS: [4.11-a-1a], [4.11-2a]

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
IV.	**BIOLOGICAL RESOURCES — Would the project:**				
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to sections 3.12.2 and 3.13.2 of the EA/IS

(b) Refer to sections 3.12.2 and 3.13.2 of the EA/IS

(c) Refer to sections 3.12.2 and 3.13.2 of the EA/IS

(d Refer to sections 3.12.2 and 3.13.2 of the EA/IS

(e) Not applicable

(f) Not applicable

Mitigation Measures

See CEQA mitigation measures for fisheries described in Appendix B of the EA/IS: [4.6-1a, 1b], [4.6-4a-4e], [4.6-4f], [4.6-5b], and EC FR-5 [4.6a-6d].

See CEQA mitigation measures for vegetation, wildlife and wetlands described in Appendix B of the EA/IS: [4.3-2b], [4.7-1a], [4.7-7 a-d], [4.7-8a-d], [4.7-9a-c], [4.7-5a-d], [4.7-6a-e], [4.7-13a-g], and [4.7-1b].

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
V.	**CULTURAL RESOURCES — Would the project:**				
a)	Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?	☐	☐	☐	☒
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☐	☐	☒
c)	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒
d)	Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Discussion of Impacts

(a) Not applicable

(b) Not applicable

(c) Not applicable

(d) Refer to Section 3.5.2 of the EA/IS

Mitigation Measures

See CEQA mitigation measures for cultural resources in Appendix B of the EA/IS: [4.10-2a] and [4.10-2a].

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
VI.	GEOLOGY AND SOILS -- Would the project:				
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
	ii) Strong seismic ground shaking?	☐	☐	☐	☒
	iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
	iv) Landslides?	☐	☐	☐	☒
b)	Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c)	Be located on strata or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Discussion of Impacts

(ai) Not applicable

(aii) Not applicable

(aiii) Not applicable

(aiv) Not applicable

(b) Refer to Section 3.9.2 of the EA/IS

(c) Not applicable

(d) Not applicable

(e) Not applicable

Mitigation Measures

See CEQA mitigation measures for geomorphology and soil resources in Appendix B of the EA/IS: [4.3-2a] and [4.3-2b].

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
VII.	**GREENHOUSE GAS EMISSIONS — Would the project:**				
a)	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☒	☐	☐
b)	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion of Impacts

(a) Refer to Section 3.7.2 of the EA/IS

(b) Refer to Section 3.7.2 of the EA/IS

Mitigation Measures

See CEQA mitigation measures for air quality in Appendix B of the EA/IS: [4.11-a-1a] and [4.11-2a].

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
VIII.	**HAZARDS AND HAZARDOUS MATERIALS — Would the project:**				
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b)	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d)	Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Discussion of Impacts

(a-h) Hazards to the public were addressed in the 2009 Master EIR, and no issues were identified. Indirect public health or safety concerns are addressed under air quality, noise, recreation, and transportation and traffic.

Mitigation Measures

Not applicable

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
IX.	**HYDROLOGY AND WATER QUALITY — Would the project:**				
a)	Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☒
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion of siltation on- or off-site?	☐	☐	☒	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
f)	Otherwise substantially degrade water quality?	☐	☒	☐	☐
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☒	☐
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☒	☐
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☒	☐
j)	Inundation of seiche, tsunami, or mudflow?	☐	☐	☐	☒-

Discussion of Impacts

(a) Refer to Section 3.11.2 of EA/IS

(b) Not Applicable

(c) Refer to Section 3.11.2 of EA/IS

(d) Refer to Section 3.11.2 of EA/IS

(e) Refer to Section 3.11.2 of EA/IS

(f) Refer to Section 3.11.2 of EA/IS

(g) Refer to Section 3.10.2 of EA/IS

(h) Refer to Section 3.10.2 of EA/IS

(i) Refer to Section 3.10.2 of EA/IS

(j) Not applicable

Mitigation Measures

See CEQA mitigation measures for water quality in Appendix B of the EA/IS: [4.5-1a, b], [4.5-1c], [4.5-1d], [4.5-1e, 4.5-2a-2c], [4.5-3a-3c] [4.11-a-1a] and [4.11-2a].

No mitigation required for Hydrology and Flooding.

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
X.	**LAND USE AND PLANNING — Would the project:**				
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c)	Conflict with any applicable habitat conservation plan or natural communities conservation plan?	☐	☐	☐	☒

Discussion of Impacts

(a-c) Refer to Section 3.2.2 of the EA/IS

Mitigation Measures

Not applicable

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XI.	**MINERAL RESOURCES — Would the project:**				
a)	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☒

Discussion of Impacts

(a, b) Refer to Section 3.9 of the EA/IS

Mitigation Measures

Not Applicable

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XII.	**NOISE -- Would the project result in:**				
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b)	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
e)	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport of public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion of Impacts

(a) Refer to Section 3.8.2 of the EA/IS

(b) Refer to Section 3.8.2 of the EA/IS

(c) Not applicable

(d) Refer to Section 3.8.2 of the EA/IS

(e) Not applicable

(f) Not applicable

Mitigation Measures

See CEQA mitigation measures for noise in Appendix B of the EA/IS: [4.14-1a] and [4.14-1b].

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XIII.	**POPULATION AND HOUSING — Would the project:**				
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c)	Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion of Impacts

(a-c) No populations would be affected, nor would replacement housing be required.

Mitigation Measures

Not applicable

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XIV.	**PUBLIC SERVICES — Would the project:**				
a)	Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
	Fire protection?	☐	☐	☐	☒
	Police protection?	☐	☐	☐	☒
	Schools?	☐	☐	☐	☒
	Parks?	☐	☐	☐	☒
	Other public facilities?	☐	☐	☐	☒

Discussion of Impact

(a) Public services were addressed in the Master EIR, and no issues associated with the increased demand or disruption of public services was identified. Access-related issues are addressed under transportation and traffic.

Mitigation Measures

Not applicable

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XV.	**RECREATION —**				
a)	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion of Impacts

(a, b) Refer to Section 3.3.2 of the EA/IS

Mitigation Measures

Not applicable to listed impacts, however the EA/IS does include CEQA mitigation measures to address water quality related to recreational use of the Wild and Scenic River: [4.5-1a-1e], [4.5-2a – 2c], [4.5-3a-3c], and [4.5-1e].

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XV.	**TRANSPORTATION / TRAFFIC — Would the project:**				
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b)	Conflict with an applicable congestion management program, including, but not limited to level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☐	☒
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☒	☐	☐
d)	Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e)	Result in inadequate emergency access?	☐	☒	☐	☐
f)	Conflict with adopted polices, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☐	☒

Discussion of Impacts

(a) Not applicable

(b) Not applicable

(c) Refer to Section 3.6.2 of the EA/IS

(d) Not applicable

(e) Refer to Section 3.6.2 of the EA/IS

(f) Not applicable

Mitigation Measures

See CEQA mitigation measures for traffic and transportation in Appendix B of the EA/IS: [4.16-2a] and [4.16-5a].

		Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XVII.	**UTILITIES AND SERVICE SYSTEMS — Would the project:**				
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☒
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Discussion of Impacts

(a) Not applicable

(b) Not applicable

(c) Not applicable

(d) Refer to Section 2.1.15 and Appendix B (Project Design Elements) of the EA/IS

(e) Not applicable

(f) Not Applicable

(g) Refer to Appendix B (Project Design Elements) of the EA/IS

Mitigation Measures

Not applicable

	Potentially Significant Impact	*Less than Significant With Mitigation Incorporated*	*Less than Significant Impact*	*No Impact*
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
(To be filled out by Lead Agency if required)				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

(a) Refer to Sections 3.12.2, 3.13.2 and 3.5.2 of the EA/IS

(b) Refer to Chapter 4 of the EA/IS

(c) Refer to Chapters 3 and 4 of the EA/IS

Appendix B

Deep Gulch and Sheridan Creek Rehabilitation Project Comments and Responses to Comments on the Draft EA/IS

INTRODUCTION

This appendix contains comments received by the Trinity River Restoration Program (TRRP) on the Draft Environmental Assessment/Initial Study (EA/IS) for the Trinity River Rehabilitation Site: Deep Gulch (River Mile 82.4–82.9) and Sheridan Creek (River Mile 81.6–82.4) and the TRRP's responses to those comments.

LIST OF COMMENTERS

Table B-1 identifies local property owners and representatives of agencies and organizations who submitted comments on the Draft EA/IS:

Table B-1. Commenters on Draft EA/IS

Commenter	Individual or Signatory	Agency/Affiliation	Date Prepared	Date Received
1	Deanna Payne	Local Resident	March 15, 2107	March 15, 2017
2	James Martin	Local Resident	March 15, 2017	March 15, 2017
3	Steve Townzen	Local Resident	March 19, 2017	March 19, 2017
4	John Nordlund	Local Resident	April 14, 2017	April 14, 2017
5	Jerry Payne	Local Resident	April 14, 2017	April 14, 2017

Comments and Responses to Comments

The five submittals commenting on the Draft EA/IS are reproduced on the following pages. Immediately following each of the submittals are the responses to each submittal.

To assist in referencing comments and responses, each commenter has been assigned a number and each specific comment a letter of the alphabet. Responses are coded to correspond to the codes used in the margin of the comment submittal. Comments that present opinions about the project or that raise issues not directly related to the substance of the Draft EA/IS are noted; in some cases, a detailed response is provided. Proposed changes to text in the Draft EA/IS are shown using italics within each response.

EAIS — Submittal1 **1**

Trinity River Restoration Program
Deep Gulch and Sheridan Creek:
Trinity River Mile 81.6 to 82.9

Public Meeting
North Fork Grange Hall – March 15, 2017

Comment Card

To be added or corrected on our mailing list, please provide us with the following information:

Name: Deanna Payne Title: _____
Organization: Retired resident of Sky Ranch Rd.
Address: 1708 Sky Ranch Rd.
Junction City CA 96048
Phone: (530) 623-2837 Email: dzpayne@att.net

Please provide us with your ideas or questions you have on this project. Comments may also be faxed to Brandt Gutermuth at (530) 623-5944 or e-mailed to bgutermuth@usbr.gov

My concern is the increased traffic on Sky Ranch Rd. Mainly the large equipment. There are a couple of areas on the road that are narrow & are not necessarily safe for even two cars to pass. If a large piece of equipment is traveling on the road & meets a vehicle coming the other direction there could be negative consequences (i.e. Accident). / Will there be traffic control during the times the large pieces of equipment are traveling on Sky Ranch Rd? a b

Thank you for your participation

Page 1 of 1

Response to Comment Submittal 1 — Deanna Payne

Comment Submittal 1 contains two distinct comments provided to the TRRP at the March 15, 2017 scoping meeting in Junction City, California. The following is a response to this submittal:

Comment 1a. Increased Construction Traffic

Section 2.1.16 of the Draft EA/IS provides a comprehensive description of access and potential construction traffic within and to the proposed project sites. Table 2-5 identifies four discrete environmental commitments that are intended to address construction related traffic on Sky Ranch Road as well as other access routes necessary for project implementation.

Environmental commitment EC-TC-2 (Traffic Control) has been revised to include the following language: *All large equipment "Lowbed" movements will be performed as required by CHP / Caltrans, etc. using pilot vehicles front/rear. A "Scout Vehicle" may be sent forward in the narrow areas to avoid/advise oncoming public traffic.*

As described in EC-TC-4, the Bureau of Reclamation (Reclamation) would require preparation and implementation of a traffic control plan. EC-TC-4 has been revised to include the following language: *During the times that truck traffic and movement of equipment may result in traffic obstacles or a safety hazard (as defined in the traffic control plan), construction flagging and/or pilot cars will be used to ensure safe traffic conditions on Sky Ranch Road and other public access routes.*

Comment 1b. Traffic Plan

Please see the response to Comment 1a. It is anticipated that development of a detailed traffic management and control plan will be coordinated with Trinity County and the local stakeholder to minimize potential impacts to land owners and others that use Sky Ranch Road and other access routes described in the Final EA/IS.

EAIS — Submittal 2

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Trinity River Restoration Program
Deep Gulch and Sheridan Creek:
Trinity River Mile 81.6 to 82.9

Public Meeting
North Fork Grange Hall – March 15, 2017

Comment Card

To be added or corrected on our mailing list, please provide us with the following information:

Name: James Martin Title: Home Owner

Organization: —

Address: P. O Box 203

1170 Sky Ranch Rd Junction City Ca 96048

Phone: 623-5813 Email: JbMARTIN@EXEDE.NET

Please provide us with your ideas or questions you have on this project. Comments may also be faxed to Brandt Gutermuth at (530) 623-5944 or e-mailed to bgutermuth@usbr.gov

OUR CONCERN IS DUST. if You could Keep IT DOWN- we would APPRECIATE IT

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3-16-17

Thank you for your participation

Response to Comment Submittal 2 — James Martin

This comment submittal contains one comment provided to the TRRP at the March 15, 2017 scoping meeting in Junction City, California. The following is a response to this submittal:

Comment 2a. Dust Generation and Control

Section 2.1.8 of the Final EA/IS has been revised to expand the discussion of dust abatement measures in response to this comment. The following text has been incorporated into this section: *Under Activity K, excavated materials would be transported across the staging area to stockpile areas. Water would be applied to the excavated materials for construction purposes, including dust abatement, as directed by the Contracting Officer. The TRRP would use water to control dust generated from project activities that would have the potential to affect sensitive receptors adjacent to the project area. It is anticipated that two water trucks would be on site, a 4,000 gallon "ten wheel" type truck and an "articulated" truck/trailer with a capacity of approximately 10,000 gallons. These would be used continuously on all access roads to and from Sky Ranch Road as well as haul roads on-site. These trucks would also use water to suppress dust where excavation and spoil activities are occurring. At the mobile gravel processing plant, planned for washing and sorting gravel in the DG U-1 or SC U-6 areas, a self-contained unit with spray bars would wash gravel and decrease dust coming off of the plant. The gravel processing operation also includes a 2-inch water hose to allow manual application of water as needed to control dust.*

In addition Table 2-5 includes an air quality environmental commitment (EC-AQ-1) that requires measures that would be implemented to further reduce dust and other potential impacts to air quality. Environmental commitment EC-AQ-4 requires that a notification be posted at the rehabilitation site which contains contact information for the public to relay their concerns related to air quality.

Section 3.7.2 of the Final EA/IS also provides a discussion of potential air quality impacts associated with the proposed project and describes how the environmental commitments outlined in Table 2-5 ensure that impacts under the California Environmental Quality Act (CEQA) would be less than significant.

EAIS — Submittal 3 **3**

Gutermuth, F. <bgutermuth@usbr.gov>

deep gulch sheridan project

steve@trinityfishing.com <steve@trinityfishing.com> Sun, Mar 19, 2017 at 7:54 PM
To: bgutermuth@usbr.gov

Hey Brandt

Good meeting the other night.
I have a couple concerns about our public access, to the ice box hole. We like it the way it is, its not easy to get to so not many folks use it like the residents of sky ranch rd do. Lets try to leave it as is when your done please. a
Also our family uses the old road system along the river near sheridan riffle as access to other parts of the blm land and river. When you are done it would be good if we still have walking / horseback access to these areas. If you would like to talk more on this just give me a call. b
Thanks
Steve Townzen
524-1136

Response to Comment Submittal 3 — Steve Townzen

This comment submittal contains two distinct comments provided to the TRRP via e-mail on March 19, 2017. The following is a response to this submittal:

Comment 3a. Public Access to Ice Box Hole

Section 2.1.16 of the EA/IS has been revised to address this comment: *After construction of the project has been completed, a portion of the DG C-1 or U-1 activity areas, which are entirely on BLM lands, would be graded to create a small parking area (up to 10 parking spaces) and an interpretive display (e.g., historic mining landscape, TRRP activities) accessible from Sky Ranch Road. Beyond this parking area, a route for high-clearance vehicles would remain after project construction to provide public access through these activity areas to a newly proposed new turn-around area near the end of access route DG A-1 in the vicinity of its intersection with access route DG A-3. Figure 2-2 illustrates the location of this proposed turn-around. Vehicular access to the riparian corridor, the adjacent floodplain and Ice Box Hole would be blocked at the turn-around; however, pedestrian/equestrian access to BLM lands on the river, via an existing native-surface route (access route DG A-2) would remain. The existing user-created access route (DG A-1) would be closed to motorized vehicles upon completion of the project, recontoured to match the existing topography, and revegetated.*

Comment 3b. Public Access to Sheridan Riffle

With regards to access to BLM lands within the Sheridan Creek site, Section 2.1.16 of the Final EA/IS states: *Upon completion of the rehabilitation activities, access roads SC A-2, A-3, and A-6 would be rehabilitated for use as unmaintained, non-motorized access routes on BLM land. Access road SC A-7, A-4, and A-6 would be rehabilitated consistent with pre-construction conditions.*

EAIS — Submittal 4 **4**

HAND DELIVERED and
Via email bgutermuth@usbr.gov

F. Brandt Gutermuth
Environmental Scientist
Trinity River Restoration Program
Bureau of Reclamation
U.S. Department of the Interior
1313 South Main Street
Weaverville, CA 96093

April 14, 2017

Re: Comments on the Deep Gulch and Sheridan Creek Rehabilitation Project and Other Related Issues

Dear Mr. Gutermuth,

Please accept this letter as my comments on the Trinity River Restoration Program's (hereafter "TRRP") Deep Gulch and Sheridan Creek Channel Rehabilitation Project (hereafter "DG/SC Project" or the "Project") and other related issues. I have written these comments in good faith and with the hope these comments will have a positive effect on the DG/SC Project, as well as other projects the TRRP may undertake in the future. I have attempted to avoid casting blame over past miscommunications, misunderstandings and general unpleasantness.

PART I: INTRODUCTION

A. A New Morning?

I am able to take this approach because of recent changes that have occurred in TRRP personnel and a marked difference in how TRRP is now communicating with private landowners in the DG/SC Project vicinity. For example, after explaining to TRRP's new Executive Director, Ms. DeCarlo, that many local landowners; 1. May not have attended TRRP's recent public Junction City meeting; 2. May not have been aware that subsequently at the Trinity Management Council (hereafter TMC) meeting, March 27-28, that the publicly stated, and restated, one year construction schedule (July 15-Septemeber 15, 2017) was now possibly a 2, or perhaps even a 3-year construction period. See DG/SC Project's Environmental Assessment / Initial Study (hereafter "EAIS"), pp. 2-28, 2-33; see also Director's Report, dated March 27, 2017; and FY 17 and FY 18 TRRP Budget, dated March 27 and 28, 2017 TMC Meeting; and 3. May not have even been aware that the period to comment on the DC/SC Project closed on Friday, April 7. In order to permit greater public participation and input, the Executive Director graciously extended the DG/SC comment period one week to Friday, April 14/The Executive Director has also verbally informed the undersigned that the DG/SC Project construction schedule

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b has been reviewed and that all construction on the Sheridan Creek portion of the Project would be completed by September 15, 2017).

Other examples of TRRP listening and making adjustments to its DG/SC Project plans in response to landowner input involved Mike Dixon, TRRP's Assistant Executive Director, who is a relatively recent addition, but who arrived a few months prior to the new Executive Director. At the TRRP Junction City public meeting, the maps displayed confirmed that the rock sorting/quarry operation had been removed from my property line (basically it was at my backdoor). Mr. Dixon also affirmed a verbal agreement concerning my "driveway" (Dredger Place) as it c crosses over the wetlands. (See EAIS, figure 3-1a Impacts on Waters of the United States). In addition, last week the Executive Director said that the TRRP will provide me with a binding written agreement, setting forth the terms of the verbal agreement regarding Dredger Place. This week, I received a telephone call from TRRP, scheduling a meeting with the Assistant Director on April 21, regarding the written agreement concerning Dredger Place.

The examples described above, at least in my opinion, are an extremely positive change in approach by TRRP in its communication with vicinity landowners. This new approach, again in my opinion, is more thoughtful, prompt and respectful of the landowners. As such, my comments will be markedly different and more positive than if the above TRRP changes had not occurred.

B. The Undersigned Supports the Project

Before setting forth specific comments, it is important that TRRP understand the general perspective of the commenter. As landowners that live along the Trinity d River, my wife Judy, my adult daughter Jenny, and I would very much like to see the Trinity River become productive once again. This outcome would be good for all landowners and residents, fishing guides who make their living from the river, recreational fishermen, the entire local economy, and most importantly, the Native Americans whose way of life has virtually been destroyed. It is difficult to comprehend how anyone could oppose such laudatory objectives.

C. Our Real Property

1. A description of our real estate parcels and home near the DG/SC Project

Before setting forth specific comments, it is important that the reader understand the nature of our real estate holdings and their relationship to the e DG/SC Project. Our real property is divided into three parcels.

Parcel 17, 521 Dredger Place, is 5.07 acres in size and consists of our home, a large fenced garden / small vineyard, a small winery, 2 well pump houses and several tool/equipment sheds. Parcel 17 is generally level and open and, I believe, is zoned by the County as Rural Residential.

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Parcel 18, 341 Dredger Place, is to the north of Parcel 17, and it is 7.82 acres in size. The parcel is generally open and level and, the County, I believe, has zoned it Agricultural. Currently, the parcel has no buildings or utilities such as power.

Parcel 16, 481 Dredger Place, is east of Parcels 17 and 18. It is 9.16 acres and approximately one-half of the parcel (this is a best guess estimate) consists of large piles of rock tailings from the La Grange Mine's hydraulic operations (Trinity County Records and Book 36 of Deeds, pp. 187,189). The remainder of the parcel is level and generally open, and it has electricity and a pump house. I believe the County has zoned Parcel 16 as Open Space.

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Parcel 17's and 16's southern boundaries are bordered by BLM land; Parcel 17's and 18's western boundaries are bordered by BLM land; and Parcel 18's and 16's northern boundaries are bordered by BLM land. To the east, a small portion of Parcel 18, where Dredger Place enters our property, borders a privately owned parcel (APN 024-690-7) and the remainder of the parcel is bordered to the east by Parcel 16. Parcel 16's eastern border boundary is bordered by six privately owned parcels (APN 024-690-8,9,10,11,12,13). All of these parcels have residences with Sky Ranch Road addresses and are accessed via Sky Ranch Road and not Dredger Place.

2. Subdivision of the Land in the Vicinity of the Current DG/SC Project in the late 1980's and the Creation of Obligations regarding the Maintenance of Dredger Place

In the late 1980's, the land near the current DG/SC Project was subdivided into approximately 19 parcels (See Trinity County Assessor's Book Twenty-Four, p. 69). Interestingly, when the property was subdivided, the owner, Al Mills, was required to deed the 16.3 most western acres to the BLM (id). The 16.3 acres deeded to BLM are designated as APN 024-690-15 (id) and it is the western boundary of our Parcels 17and 18.

Additionally, when Mills subdivided the unit, he was required, as a condition precedent to selling the parcels, that the purchasers of the parcels and their successors in ownership, be members of the Sky Ranch Homeowners Association and fund the maintenance of Dredger Place. The Sky Ranch Homeowners Association founding document provides, in part:

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> "WHEREAS, all of the above-described property requires well maintained roads for its beneficial use and enjoyment; AND, whereas, the care and upkeep of the roadway on the above-described parcels necessarily affects the value and the enjoyment of each of the other above-described parcels…"

The founding document also provides that all parcel owners, and their successors, be required to pay an equal sum each year, not withstanding the size of the parcel

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and irrespective of whether the parcel abutted Dredger Place. If the set amount was insufficient to maintain the road for that year, ALL parcel owners would be required to contribute equal amounts to fund the shortfall. The document also made provision for elections, voting, meetings and other subjects related to governance.

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3. Current Responsibility for the Maintenance of Dredger Place

As is obvious from all official maps of the area of the proposed DG/SC Project, the only landowner who needs Dredger Place to access his property and home is the undersigned. When I bought the three Dredger Place parcels in May, 2012, I was informed by the seller, Bob Estes, that the Sky Ranch Road Maintenance Committee had never met and the parcel owners had never contributed funds for the maintenance of the road. Mr. Estes was the original purchaser of the three Dredger Place parcels, 16, 17, and 18, and he built the residence and garden/vineyard/winery on Parcel 17.

When I inquired about the Homeowners Association and Maintenance Committee, Mr. Estes informed me that he had been "the maintenance committee" since he purchased the parcels in that he assumed the responsibility of the entire road's (the driveway's) maintenance up to Sky Ranch Road. Since Mr. Estes was the only person who used Dredger Place to access his property, this permitted him to maintain the road to the standards that he wanted without interference from the other parcel owners. Because the other parcel owners did not use Dredger Place for access to their properties or their residences, they did not want to participate or contribute to its maintenance. Apparently, this was a satisfactory arrangement, even though it was not reduced to writing.

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When I bought the Dredger Place parcels from Estes in 2012, I assumed the responsibility to maintain Dredger Place road up to Sky Ranch Road, as Estes had.

PART 11: SPECIFIC COMMENTS

A. The EAIS

1. The EAIS Contemplation of Multiple Construction Years

To my knowledge, the TRRP had always stated that the construction schedule for Sheridan Creek would be for one year, July 15 – September 15. Initially, Sheridan Creek was a stand-alone project. The TRRP apparently combined the Sheridan Creek and Deep Gulch projects in the summer of August, 2016. When I learned of the combination in the fall of 2016, I was concerned that the Chapman Ranch Project had also been added in. When I raised this concern, I was assured that Chapman Ranch would remain as a stand-alone project and it would be constructed in 2018. I was also told, on numerous occasions, that Deep Gulch and Sheridan Creek were combined for efficiency reasons and primarily for the purpose of mitigating negative

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impacts on landowners. I was told repeatedly that the construction for the combined DG/SC project would be completed in the fall of 2017 "before the rains came". This one-year construction schedule was reaffirmed by various TRRP personnel at the March public Junction City meeting regarding the DG/SC Project. In addition, the handout provided at the meeting stated re-vegetation would commence after the rains begin "in the fall of 2017", after the construction was completed.

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At the March 27 and 28, 2017 TMC meeting, various documents were distributed that showed that TRRP was contemplating a multi-year construction period that was inconsistent with TRRP's prior assurances to the public. For example, the FY 17 and FY 18 TRRP Budget that was distributed stated:

> "The project would be constructed in one construction period (one equipment mobilization) over two fiscal years and would be estimated to be completed in Spring, 2018".

The EAIS itself states "the proposed reclamation activities are planned for construction between 2017 and 2019…" (p. 2-33). In other portions of the EAIS, it makes clear that TRRP is contemplating a multiple-year construction schedule for the project. See id at 22-28.

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I contacted the TRRP when I learned that the one-year construction period for the DG/SC project that had been communicated to the public for its buy-in was not accurate. In fact, the TRRP had been contemplating a multi-year construction schedule with in-river and left-side river construction scheduled for 2017 and beyond, and right-side river construction scheduled for 2018 and beyond. See EAIS. See also FY 17 and FY 18 TRRP Budget and Director's Report March 27, 2017. I contacted the TRRP and the multi-year construction schedule was confirmed. I was told that the rationale for the multi-year construction schedule was that the budget to complete the DG/SC construction in 2017 was inadequate. I spoke with Executive Director, Ms. DeCarlo, and said that it appeared as though the public had been misled and I told her this was precisely the problem that some of the landowners were having with TRRP for years. In other words, TRRP would tell us their plans, TRRP would subsequently change the plans and not communicate the changes to the public. When the public heard of the changes on its own (rather than being told by TRRP), the public questioned TRRP's motives, intentions and credibility. Ms. DeCarlo asked if another public meeting should be held. I answered in the affirmative. In subsequent conversations with Ms. DeCarlo, she has told me that the TRRP has reviewed the construction schedule and will hold a public meeting for Junction City landowners. She also stated that the Sheridan Creek portion of the construction will be completed in 2017, prior to the rainy season.

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I have confidence in Ms. DeCarlo. I believe that Ms. DeCarlo will follow through on what she has told me. However, since the EAIS, as it is currently written, is in direct

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o conflict with what the TRRP has told local landowners to obtain their acquiescence for the project, I felt it necessary to set forth this comment in writing.[1]

2. The EAIS Description of Dredger Place is Plain Wrong

The EAIS states:

> "Access to the Sheridan Creek Rehabilitation site would be via Sky Ranch Road using an existing native surface access road, SC A-7, which crosses private property before terminating on BLM land near the river".

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Id at p. 2-31. The EAIS also mis-describes Dredger Place in the first section. It states:

> "Access to the site is via a dirt road, referred to as Dredger Lane off the west side of Sky Ranch road at the northeast corner of the site. The road continues into the Deep Gulch site to the south."

Id at p.1-3.

It is incomprehensible how an agency or organization of the United States government, planning and implementing a major multi-million dollar rehabilitation project, at the location of the finest salmon spawning area, the Sheridan riffles, could get the description of the major access road so wrong. The TRRP has had professional surveyors, scientists, construction managers visit the project location on numerous occasions. The TRRP has access to official maps of the area prepared by various agencies of Trinity County.

First, the correct name of the road (my driveway) is not Dredger Lane. The correct name is Dredger Place. Also, it is not "referred" to as …., rather its official name is "DREDGER PLACE". There is a county road sign, which clearly states the name of the road is "Dredger Place".

Perhaps, more important than the correct name, is the mis-description of the path of the road. Dredger Place does NOT terminate on "BLM land near the river" as described in the EAIS; nor does the road continue to the Deep Gulch site. Id p.1-3. Rather, Dredger Place only crosses private land, it does not enter BLM land anywhere. Dredger Place, after it crosses the wetlands (See Figure 3-1a RW 29)[2] turns left (to the south) and crosses private parcels under a canopy of trees and

[1] There has been a lot of turn-over of TRRP personnel, including Executive Directors.

q [2] In response to my verbal inquiry, TRRP representatives said that it had not conducted any environmental impact study about the negative effects of heavy construction equipment crossing the wetlands on my driveway. These ponds are identified in the EAIS as RW 29, Riparian Wetland that is impacted by the project. I have personally seen Great Herons, hawks, Ring-tailed cats, frogs, turtles and various species of fox in the ponds.

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enters onto my Parcel 18. In contrast, the un-named BLM road begins on two private parcels (APN- 024-690-19 and 20) and travels in a westerly direction through the private parcel owners' cattle gate and a sliver of another parcel owner's property, onto BLM land where it continues in a westerly direction to near the river where it turns south.

I am familiar with unofficial maps, which expressly state that they may be inaccurate, that makes the same mistake as TRRP has in locating Dredger Place. For example, Google Maps has misidentified Dredger Place where it turns south, after passage over the riparian wetlands, and proceeds under a canopy of trees, not visible from the sky. Thus, any map made of the local roads made by satellite or airplane, would reasonably make this error. As noted above, these are unofficial maps and carry disclaimers regarding their accuracy. q

With all of the resources that TRRP has at its disposal and the fact that it has access to and has been present on Dredger Place on countless occasions, how is it possible that TRRP has this mistake on all of its maps of the project?[3] With all of this funding, is TRRP just relying on Google Maps, rather than doing the work itself?

Imagine the negative impacts on my driveway if the description, name, location and path of Dredger Place is not corrected. Excavators, bull-dozers, trucks, rocks and logs will end up at my house by the garage. Please correct your maps. r

If such a basic, fundamental error is made on all of your maps of the DG/SC Project, how can any of the information in the EAIS be relied upon as being accurate? I am not a scientist; I am not a technical person and I have never worked for any government agency. I do not understand much of the EAIS because I am not familiar with governmental, scientific or technical terminology. However, on the one aspect of the EAIS of which I have personal knowledge, it is wrong. I rely on others with the expertize to review and comment upon scientific and technical aspects. Notwithstanding this, I have a very low confidence level in the accuracy of the EAIS. s

3. Science, Poor Results, Standstill

It is my understanding that the science related to the rehabilitation of the Trinity River is unsettled and, in many respects, in dispute. For example, it was conceded by TRRP officials, at the April 11, 2017 public meeting regarding river flows, that perhaps too much gravel had been released in the past and this had a detrimental effect on TRRP's goals. Also, the models used by TRRP have not produced the desired effects. Some experts believe that the gravel released has in fact had a negative effect, in that it has settled in great part in the deep pools, which are necessary for the salmon to successfully swim up-river to spawn. Other experts t

[3] Didn't TRRP consult official county maps such as eg. Trinity County Emergency Response Road Name Map Book or the Trinity County Assessors Office maps of the area?

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assert that the high level spring flows disrupt the spring salmon spawn. At this point, TRRP has over a decade of experience in its rehabilitation activities. Rather than the science becoming more clear and a strong consensus settled upon, there appear to be more questions.

t As noted above, I am not a scientist nor a technical person and I have no ability to comment authoritatively on the science of river reclamation and rehabilitation. However, I can read and the literature, at least that I have seen, states that the salmon population is diminishing during this period of so-called river rehabilitation. This past Wednesday, on the front page of the Trinity Journal, there was an article entitled "Fall Run King Salmon Looks Bleak". The article states that the in-river allowable catch for the combined Klamath and Trinity Rivers is "129 fish"; pathetic.

The TRRP has offered numerous explanations for the dramatic decline in the salmon population during the period of its Trinity River reclamation activities; the drought, ocean fishing, global warming etc. We have heard them all. Quoting the SNL comedic character, Rosanna Danna, "If it's not something, it is something else", but it is never that the TRRP's methods are ineffective and counter-productive.

u The original sin, or if you prefer, crime, was committed in the mid-twentieth century when the dams were planned and constructed. This was a time before the passage of the Environmental Protection Act and the Civil Rights Act of 1964. Again, I am not a scientist, but I believe it fair to reason that the environmental impact on the salmon population and Native Americans who lived along the river and relied upon the fish for sustenance and a livelihood, were secondary. In my view, "playing around in the river" as TRRP has done for many years now, may never have the desired result demanded by the amount of effort and funds expended.

v The Sheridan Creek riffles are one of the finest, if not the finest, salmon spawning area in the entire river. If I were the TRRP, I would be approaching this project with a great deal of trepidation. The TRRP asserts that the DG/SC Project will improve the salmon spawning in this area. However, given TRRP's record to date, is it not more probable that the Sheridan riffle will become less productive? Why is the TRRP attempting to improve the area that is most productive for salmon spawning? Why is the TRRP not focusing its resources and effort on the areas that are not producing fish?

w For the above reasons, perhaps a standstill for the DG/SC Project, and other planned construction projects is warranted. The TRRP could put the funds available for construction activities into an escrow fund until such time as a thorough review of TRRP's methods, procedures and policies is conducted and determined to be sound. However, while construction activities should be ordered to stand still, intensive research regarding the science related to rehabilitation should proceed at an even more rapid pace.

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B. Agreement Regarding Dredger Place Where it Crosses the Riparian Wetlands

On or about December 2, 2016, my wife Judy, another landowner and I met with representatives from TRRP and the contractor for the DG/SC Project, the Yurok Tribe. Present for the Yurok Tribe were David "DJ" Bandrowski and Rocco Fiorina (sp?), a consulting engineer for the Yurok Tribe. Present for TRRP were Mike Dixon, Dan Nordstrom and Brandt Gutermuth. A verbal agreement was made outlining the steps TRRP would take to ensure the safety of the driveway over the wetlands: 1. Put down road base over the driveway where the road was damaged; 2. Prepare a written engineering report, stating whether the road over the ponds is safe and can handle heavy equipment and trucks so TRRP can have access to the Sheridan Creek part of the Project and whether the use of the driveway over the wetlands during the winter rainy season (October, November 2016) had damaged the foundation / integrity of the driveway; 3. If I questioned the validity of the engineering report, I would be given time to engage an engineer of my own choosing, but at my own cost; 4. Dredger Place would not be used for access by heavy trucks and equipment until the engineering report was completed; 5. TRRP would assume responsibility for any injuries, deaths or damage to property caused by their use of the driveway as an access road to the Project; 6. At the end of the construction project, in the fall of 2017, another engineering report would be issued affirming that the driveway over the wetlands had not been damaged or compromised as a result of TRRP's use to access the Project; and 7. The heavy equipment and trucks, that were being housed on a Sky Ranch Road landowner's property (near the logs and concrete barriers being stored behind the cattle gate) would be relocated to another location until construction activity commenced in the summer of 2017. x

As of the date of this letter, TRRP has undertaken only item 1, i.e. placing road base from the entry onto Dredger Place from Sky Ranch Road, over the wetlands and approximately 25 yards after the left turn of Dredger Place (to the south). Since it was raining the day the road base was put down, the Yurok consulting engineer told me that he could not access the wetlands to determine if there was a culvert, pipe or other device under the driveway to allow for the proper and safe passage of water from south to north. He also stated that he had started taking out the vegetation and he confirmed that I had been correct, in my concern about the integrity of the foundation of the driveway as it passes over the wetlands. He also said that, when he was pulling the vegetation off the northern slope of the driveway, water leached through at a greater pace. He said that he was concerned that his activity of clearing the vegetation might actually contribute to greater damage to the integrity of the driveway since the ground was so wet. He also said not to worry. This was only phase one and the engineering report would be prepared when the ground dried out. y

The Executive Director, Ms. DeCarlo, has responded to my concern that the agreement regarding the driveway was verbal and she assured me on at least two occasions, that TRRP would reduce the terms of the verbal agreement into a binding written agreement. Since the Assistant Director, Mike Dixon, was involved in the z

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meeting, which resulted in the verbal agreement, Ms. DeCarlo inquired as to whether I would be willing to wait for Mr. Dixon to return from his military commitment. I responded in the affirmative. A meeting has been scheduled for Friday, April 21st for Mike Dixon and me to meet for this purpose.

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I am hopeful that this will resolve the matter and I only submit comment on this issue because of the unlikely possibility that the issue may not get resolved.

C. Retaliation by TRRP Against Vicinity Landowners

As stated on numerous occasions above, TRRP has recently changed its communications and interactions to be more thoughtful, responsive and respectful of the concerns raised by landowners. However, in the past, the communication and interaction was less than responsive and actually retaliatory in nature. The following examples are raised, not to point fingers and cast blame, or resurrect unpleasantness from the past, but rather to make current TRRP leaders aware of what has transpired, so they can insure that it will not reoccur in the future.

The following are a few examples of blatant retaliation. In one instance, a landowner was excluded from a rafting trip to show the proposed Deep Gulch and Sheridan Creek Projects (the projects were separate at the time), because he had raised issues that former TRRP leadership disagreed with (the landowner was also falsely publicly accused of assault; TRRP filed no criminal charges). Another example of

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retaliation is where another landowner had a tentative agreement with TRRP under which the landowner would be paid for the use of his driveway as an emergency access route. He publically advocated against certain aspects of the DG/SC Project, and he subsequently learned, from reviewing revised project maps, that the emergency road would no longer pass through his property, but would now pass through the property of another landowner.

I, personally, was subjected to retaliation by TRRP. Early in the process, when TRRP was having the Sheridan Creek area surveyed, I observed a number of men trespassing on my property. I do not recall the date, but it may have been as early as the spring of 2015. I asked them what they were doing and they said they were working for the government on a government project and they were conducting a land survey and they had the right to be on my property. I disagreed and ordered them to leave. The men asserted their right to trespass and I increased the level of my disagreement. One of the men suggested that they call the sheriff's office. I responded that if they intended to remain on my property, I thought that this was a good idea. However, if they left and wished to return, all they needed to do was to let me know in advance and I would permit them on my property to do their survey work. They elected to leave. Immediately after they left, I called TRRP and reported the trespass.[4]

[4] Several months later, they returned and they asked if it was OK if they finished the survey. I told them it would be fine.

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The next interaction I had regarding TRRP was the next year. I was driving up my driveway and a very large excavator, that appeared to have just been off-loaded from a low-bed, was about to cross the wetlands on my driveway, Dredger Place. I spoke with the operator and asked him what was going on. He said TRRP had an access agreement with the landowner to access the TRRP's Sheridan Creek Project. TRRP had a contract with the landowner for access across Dredger Place to the un-named BLM road and was leasing some land to store logs, concrete barriers and equipment to be used on the Sheridan Creek Project such as excavators, trucks, bull-dozers etc.

I went to the TRRP office and met with several TRRP employees. I explained to them that Dredger Place was basically my driveway; I had an easement over the private parcels and, it was improper for TRRP to enter into an access agreement without first speaking with me. I stressed that I was the only landowner with a Dredger Place address; no other landowner used Dredger Place for access to their residence. The TRRP employees appeared not to understand what I was telling them. One of the TRRP employees asked if they could schedule a visit to my home so they could better see what I was attempting to communicate to them. I agreed. Subsequently, two or three TRRP employees visited me at my home. I again explained my concerns about access over Dredger Place (my driveway), especially over the wetlands. I again told them it was a driveway and not built to carry heavy construction equipment. The conversation was, again, frustrating and unproductive. Out of the blue, one of the TRRP employees asked me if I had run off a TRRP surveyor. I affirmed that I had asked their surveyor to leave. Then he showed me a site map and pointed to where TRRP planned to locate its rock sorting / quarry operation. The site map showed that the operation was to be located on my western boundary and as close to my house as possible without it being a trespass. He then said that this rock sorting / quarry operation would be so loud that I, and my family, should go on vacation while it was in operation. I asked when it would be in operation. He responded that he did not know and it was possible that the rock sorter / quarry could be used for other future projects after Sheridan Creek was completed.

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TRRP never informed me or discussed with me access on Dredger Place, until I learned of it as described above. TRRP knew from maps that we lived on Dredger Place; TRRP also knew because I had complained to TRRP about the surveyor trespass.

I later learned that one of my neighbors had told TRRP that he would not agree to any access agreement unless the TRRP spoke with me. This landowner asked the TRRP on at least three occasions whether the TRRP had spoken with me and on each occasion, TRRP stated they had not. The above speaks for itself.[5]

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[5] It should be noted, for the record, that the new TRRP leadership agreed to place the rock sorter / quarry operation away from my property line and house further to

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D. Favoritism

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I have not been able to read the landowner agreements that TRRP has entered into with DG/SC Project vicinity landowners because they are not publicly disclosed. I have recently been told by the new Executive Director, that I can obtain copies of redacted agreements by submitting a Freedom of Information Act request (hereafter "FOIA"). I intend to do this. However, since the comment period ends tomorrow, the following examples of favoritism are in the nature of hearsay. I will supplement this comment later with direct evidence, when I receive copies of the landowner agreements.

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The following are several examples of TRRP favoritism: 1. Moving the emergency access road from one landowner's parcel to another's, who happened to be a former Assistant Director of TRRP. TRRP has also agreed to expend funds constructing protections for his wells and a promise to repair his wells if TRRP damages them during construction. This promise to protect and repair this landowner's wells was made at the same time it was rejecting requests by Douglas City citizens to repair their wells, caused by TRRP activities in that location. In addition, this landowner was unable to rent his house before leaving for his six-month trip to Alaska. It is my understanding that the Yurok Tribe has rented the house for the summer of 2017 at an above-market price; 2. TRRP agreed to lease 4 acres of a landowner's parcel for the purpose of storing logs, concrete barriers and housing trucks and construction equipment. This landowner is being paid approximately $8200 a year for the 4 acres, even though only two of the acres are usable for TRRP's purposes; and 3. TRRP agreed to lease, from another landowner, approximately 1 acre for the purpose of storing logs and a very small sliver of the landowner's parcel for access to the un-named BLM road. Apparently, the TRRP did not negotiate this agreement directly with the landowner, but with the landowner mentioned in #2. When the actual parcel owner saw the damage caused by the placement of the logs, he objected and TRRP removed the logs. This landowner was to receive approximately $2100 a year for the 1-acre log storage and access over the parcel sliver. This landowner is still being paid approximately $2100 for access over a very small sliver of land to the BLM road.

E. Inadequate Oversight of TRRP

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The TRRP has virtually no oversight or supervision. The lack of oversight is probably a contributing factor of the problems discussed above and perhaps why TRRP does not follow established law or its own policies and procedures. The TMC is supposed to function as a "Board of Directors" for the TRRP. See: Implementation Plan for the Preferred Alternative of the TREIS/R, p.20. The TMC membership includes designees from various federal agencies, state and local agencies and the

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the northwest, to a more appropriate place behind tailings that would mitigate the noise not only on us, but other landowners in the vicinity.

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Hoopa Valley Tribe and the Yurok Tribe. The designees are supposed to allocate approximately 10% of their working time for TMC activities. A chairperson and a vice-chair are supposed to be selected from the federal agencies. The TRRP Executive Director participates in the TMC in order to implement TMC's policy decisions. While the TMC's by-laws contemplate the TMC creating committees to strengthen its oversight responsibilities, the undersigned is not aware of the existence of any such committees. The TMC by-laws set forth provisions for voting, scheduling meetings, cancelling meetings, etc. TMC is supposed to follow Robert's Rules of Order with respect to the conduct of its meetings. See By-laws. It appears to the undersigned, that the members of the TMC are not familiar with their by-laws or their responsibilities. TMC does not follow its rules with respect to cancelling meetings and rescheduling cancelled meetings, (see for example, the January 24, 2017 meeting that was cancelled and not rescheduled), taking secret ballot votes regarding TMC policy decisions, maintaining accurate minutes of their meetings or conducting oversight of TRRP's activities.

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It is commonly understood that Boards of Directors are not supposed to get involved with day-to-day operations or the daily implementation of policy decisions. However, effective Boards of Directors are responsible for oversight and placing controls on corporate employees. Most corporations create committees and board members are assigned to committees based on their knowledge and expertise. Common types of board of director's committees are benefits, compensation, compliance, contracting, etc. I am not aware of TMC creating such Board committees so it can properly perform its oversight functions.

I have been told, and believe, that the TMC does not review TRRP's contracting practices e.g. including whether TRRP is complying with applicable law regarding competitive bidding, certified payrolls and whether contractors are paying prevailing wages. The TMC does not oversee TRRP's contracts with landowners, including whether the contracts are reasonable, conform to legal requirements and whether landowners' contracts are given out by TRRP in a manner to reward their friends and withhold them to punish landowners who advocate positions in opposition to the TRRP.

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I was told by a TRRP employee, that TRRP, at some time in the past, publicly advertised contracts. Bidding was conducted on a competitive basis and contractors were required to pay prevailing wages. In the next breath, the TRRP employee said they had stopped because "this caused problems". Of course, following applicable competitive bidding, maintaining certified payrolls and paying prevailing wages is expensive and difficult. It is supposed to be. I have never heard of any situation involving federal funds, where government contractors could get away without following the law.

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It is anticipated that the TMC or TRRP will assert that the projects are funded by money paid by Central Valley power generators; however, I am confident that TRRP's activities are funded by federal taxpayer money as well as California

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ah taxpayer money. A review of the generic "Temporary Access Agreement and Restoration Activities Permit", which was given to a local landowner for the DG/SC Project, specifically states that it is the "United States" that compensates the landowners under terms of the agreement, p.2.

ai As best as I recall, construction contracts that are awarded and that are funded, in whole or in part, by the federal government, must be awarded and overseen consistent with the requirements of the Davis Bacon Act. Since these construction

aj contracts are funded in whole or in part by California taxpayer funds, the State's little Davis Bacon statute would apply if the federal one does not. It is my understanding that the DG/SC construction projects have been given to a construction company that is owned by a Yurok tribal member. I do not know the name of the construction company, nor has anyone from TRRP told me the name of the construction company. Is the construction company a not-for-profit corporation

ak that exists for the benefit of the entire Yurok Tribe? Or, is it a for-profit corporation that is owned by an individual Yurok tribal member or a group of Yurok tribal members for their benefit only? Up to very recently, I generally accepted the TRRP's terminology when referring to the contractor as being "the Yuroks". However, on reflection, there must be a legal entity and name on the contract. If it is a legitimate construction company, it should be registered with the State of California.

al Let's take it one step further. There is a designee of both the Hoopa Valley Tribe and the Yurok Tribe on the Management Council. Is it possible that the designee of the Yurok Tribe, for example, is the owner of the construction company that was given the construction contract for the DG/SC Project?

I intend to submit a FOIA request, under separate cover, regarding the contracts given by TRRP to the so-called Yurok "construction company".[6] As noted earlier, the TMC does not oversee the TRRP's contracting activity, whether it be construction contracts or landowners' contracts.

It is important that this be investigated and the results of the investigation made public. If the Hoopa and Yurok tribe members are sharing the benefits of these construction contracts on an equal basis, it is one thing. However, if the contracts are being given to for-profit construction companies, that happen to be owned by an individual or a group of tribal members, it is another. This is especially so if the employees who work for the construction company are not being paid in accordance with prevailing wage requirements.[7]

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[6] Under separate cover, I will also make a FOIA request for all TRRP contracts awarded over the last 10 years.

[7] With all the equipment that was being run up and down our driveway, none had any identifiable company name, nor did they supply me with any business card. Every TRRP person I have spoken with has given me a card. Interesting.

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Above, the undersigned suggested that construction activity should stand still until there is a better consensus regarding the science. Given the extent and nature of the questions raised regarding oversight is another compelling reason to halt construction until a thorough investigation is completed. am

PART III: CONCLUSION

I trust you will find the comments contained in this letter regarding the DG/SC Project, as well as broader questions regarding the TRRP's policies and practices, to be helpful. I am distributing this comment letter to a wide-range of people, who may be interested in the facts and questions raised herein. If you have any questions, please feel free to call me. I will be submitting FOIA requests as indicated herein, under separate cover.

Very Truly Yours,

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Thomas Tidwell, Chief, USDA Forest Service

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John Laird, Secretary, California Natural Resources Agency
Director, NOAA National Marine Fishery Service
Ryan Zinke, Secretary, US Department of the Interior
Deep Gulch / Sheridan Creek vicinity landowners

Response to Comment Submittal 4 — John V. Nordlund

Comment 4a. Project Schedule

The co-lead agencies for the project were optimistic early in fiscal year (FY) 2017 that funding would be available for construction of the Deep Gulch and Sheridan Creek project during one field season, and, as you note, have generally communicated this goal when describing the project to the public. The EA/IS, however, is more balanced in its approach, describing the schedule in general terms.

In section 2.1.17, Construction Methods and Schedule, a general sequence is described, with in-channel work typically occurring between July 15 and September 15. The EA/IS states that "Under ideal circumstances with respect to timing and cost, the proposed action at both sites would be constructed in one season and revegetation would be completed within the following 2 years. In-river work at both sites would be a priority, and it would be preferable to also perform the efforts associated with processing alluvial material at both sites to reduce noise and air quality impacts. To increase efficiency and reduce construction-related impacts, processing and stockpiling activities would ideally occur once, rather than several times during the course of the project." The EA/IS also states that "The proposed rehabilitation activities are planned for construction between 2017 and 2019; the availability of funding may accelerate some elements of the project."

Although the co-lead agencies had hoped it would be possible to accelerate project construction, we now know that funding will need to come from two fiscal year budgets—FY17 and FY18—and have developed plans intended to minimize impacts on local residents and the environment while remaining cost effective by revising the proposed construction schedule and adjusting the size and/or location of five activity areas to increase the distance from adjacent private parcels. The changes to these activity areas are reflected in Table 2-1 of the EA/IS; however, the exact timing of implementation is being finalized. The final project schedule will depend on landowner agreements, funding, and environmental limitations.

Many factors that cannot be controlled affect planned construction schedules. TRRP is committed to updating landowners with the latest information as it becomes available.

Comment 4b. In-channel Construction Schedule

The Executive Director of the TRRP regrets any miscommunication on this topic in her conversations with the commenter; she intended to convey that only in-channel construction would be completed by September 15 each year as required by Endangered Species Act restrictions.

The proposed schedule still being finalized is for all in-river and left bank construction to take place by September 15, 2017. River-right construction and final site preparation at the Sheridan Creek site is proposed to occur through December 2017. River-right construction, and potentially in-river left bank work (if not completed in 2017), at the Deep Gulch site would occur in summer/fall 2018. Revegetation, which would be performed with small equipment such as a mini-excavator and gas pumps for irrigation, would continue as needed through 2021.

See also the response to comment 4a.

Comment 4c. Gravel Processing and Landowner Agreements

In response to the commenter's concerns, TRRP has revised the location of activity areas to shift gravel processing areas farther away from the commenter's residence than was shown in the Draft EA/IS. Instead of locating the gravel processing at the SC U-4 activity area, this activity has been excluded from the SC U-4 activity area and would occur at the SC U-5 activity area or other locations further from the commenter's residence, thereby reducing the noise that the commenter would hear at his residence. The TRRP is also reviewing options for processing gravel only at the DG U-1 activity area or importing alluvial material from other TRRP sites or commercial sources.

Environmental Commitment EC-TC-3 in Table 2-5 of the EA/IS describes the requirement for TRRP and its implementation team to address the use and maintenance of Sky Ranch Road and other access routes. Section 3.6.2 of the EA/IS notes that wear and tear would occur on access roads and that project impacts would be repaired at the end of the project. Section 3.6.2 includes the following text:

*"*The use of local roads by trucks and heavy equipment could degrade roadway conditions due to increased wear and tear and require road restoration once the rehabilitation activities are complete. In accordance with EC-TC-3 [4.16-4a], Reclamation would survey the road conditions before the rehabilitation activities and assess the degree of post-construction restoration that may be needed. Sky Ranch Road and adjacent private roads may require some degree of grading and/or resurfacing to restore them to pre-disturbance conditions, and Reclamation would coordinate with the County and landowners to ensure that the roads are in acceptable condition after the rehabilitation activities."

The co-lead agencies note that phased project implementation would likely require road repairs to be completed several times. The TRRP would endeavor to complete annual road repairs prior to the onset of winter so that safe travel would be maintained during wet conditions and additional road impacts from weathering would be reduced.

Finally, an agreement regarding Dredger Place (SC A-7), a private road that is used to access the commenter's property, is currently in place with the owner of the road. Post-construction repairs to this road are included as an environmental commitment in the EA/IS, consistent with the verbal agreement TRRP's Executive Director made with the commenter, and would also be included as a specification in the construction documents.

Comment 4d. Support for TRRP Objectives

Thank you for your support.

Comment 4e. Property Description

Thank you for the clarification regarding your property and other local ownership. We understand that access using the SC-A-7 road is shared near its intersection with Sky Ranch Road and that after the turn-off to the commenter's property, SC A-7 continues toward the river, where it also provides access to SC C-13 and SC C-14 as well as to BLM-managed lands.

Comment 4f. Land Subdivision and Dredger Place Maintenance

Comment noted

Comment 4g. Road Access Agreement

Comment noted.

Comment 4h. In-River Construction

Originally, TRRP staff optimistically stated that the in-river activity areas for both the Deep Gulch and Sheridan Creek sites would be completed by September 15, 2017. This was most desirable but not possible due to multi-year funding, landowner, and environmental considerations. The TRRP proposes to phase the construction portion of the project across two fiscal years[1] and would communicate updated schedules with the landowners as soon as they are available. Please refer to the response to comment 4b for additional details.

Comment 4i. Combining Deep Gulch and Sheridan Creek Sites

The 2000 Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Report prepared by the U.S. Fish Wildlife Service and signed by the Secretary of Interior with concurrence from the Hoopa Valley Tribe identified 44 potential channel rehabilitation sites for consideration by the TRRP. Subsequently, under the auspices of the Bureau of Reclamation, a systematic and detailed evaluation of the Trinity River identified 104 specific sites that offered rehabilitation opportunities. The Deep Gulch site was originally labeled as site 31 (Lower Chapman Ranch) but was renamed in the subsequent list of sites. The Sheridan Creek site was labeled as site 32; this site name has not changed. Table 1-3 of the 2009 Master EIR (*Channel Rehabilitation and Sediment Management Activities for Remaining Phase 1 and Phase 2 Sites, Part 1: Final Master Environmental Impact Report and Part 2: Environmental Assessment/Final Environmental Impact Report*[2]) provides additional information on TRRP Phase 2 sites and naming variations. Figure 1-2 of the Master EIR illustrates the locations of the Phase 2 sites listed in Table 1-3 of the Master EIR. The general locations of the sites illustrated on this figure were used to develop and further refine the project areas used for design and environmental review. In many cases, the project areas have been substantially adjusted to address environmental and socio-economic issues.

As shown in Table 1-2 and on Figure 1- 3 of the Master EIR, the Upper Chapman Ranch (Site 30) was subsequently renamed Chapman Ranch. Currently, this site is undergoing design review.

While the ROD and later the Master EIR set the stage for project locations and initial project boundaries, the boundaries designated for design and subsequent environmental review do not dictate the construction schedule or imply that a project would be constructed in one season since project sites vary greatly in size and complexity. Initially, two design teams were working on the Deep Gulch and Sheridan Creek sites with some degree of coordination. As the design process progressed, the TRRP and members of the Trinity Management Council (TMC) realized that consolidating these two design efforts under one environmental review process would make the process more cost-effective and potentially allow for more efficient and flexible construction opportunities. The environmental setting, land management (Bureau of Land Management [BLM]), and ownership pattern at these sites is similar, and limited access to both sites was considered when the two sites were consolidated under one environmental review process. As described in section 2.1.13 of the EA/IS, there are also

[1] Site cleanup and revegetation efforts would continue for several years after all construction activities are completed.
[2] Available at http://odp.trrp.net/Data/Documents/Details.aspx?document=476

environmental benefits and opportunities to reduce environmental impacts: "By combining the Deep Gulch and Sheridan Creek sites into one project, there is a reduction in the amount of dredge tailing features that would be impacted. Specifically, activity areas DG U-3 and DG U-4 are not currently planned to receive excavated material."

In the past, the TRRP has conducted environmental reviews that consolidated multiple sites (EIR/EA for Four Bridges, Canyon Creek Suite EIR/EA); constructed projects at multiple sites in one year (e.g., Lowden Ranch, Reading Creek, and Trinity House Gulch were constructed in 2010); split individual projects into multiple years (Douglas City was constructed in 2013 and 2015); and revisited sites to complete habitat and functional refinements (parts of the 2008 Lewiston-Dark Gulch EIR/EA project area were revisited during the 2016 Bucktail project).

Comment 4j. Project Schedule

Please refer to the responses to comments 4b and 4h.

Comment 4k. Project Schedule

The commenter is correct that during budget discussions at the March 2017 meeting of the TMC, it was stated that the TRRP hoped to complete construction at the Deep Gulch and Sheridan Creek sites in two years. However, the statement in the distributed TRRP Budget document that construction at both sites would be completed in spring 2018 was incorrect because of a conflict between the availability of FY18 funds and bird nesting periods [construction that would have an adverse impact on migratory birds is avoided during nesting periods]. Because of this conflict, the TRRP will defer work between December 2017 and July 2018 consistent with the environmental commitments in Table 2-5 of the EA/IS.

The TRRP works diligently to provide the best information in a timely manner to landowners and other interested parties. We acknowledge that it can be frustrating when circumstances arise that modify our plans. We will continue to endeavor to improve our communication with landowners and other interested parties and provide them with updates on the proposed project and schedules, including any required modifications.

Please also refer to the responses to comments 4b and 4h.

Comment 4l. Project Schedule and Funding

Following an Independent Government Cost Estimate completed in early 2017, it became clear that the cost of implementing the full Deep Gulch/Sheridan Creek project exceeds TRRP's FY17 construction budget. Multi-year funding for a project is not uncommon. The TRRP representatives have endeavored to work closely with landowners and other interested parties throughout the design and environmental review processes to ensure that the project would reduce impacts on local residents and the environment while remaining cost effective. As the commenter acknowledges, the EA/IS analyzed the possibility of a multi-year project because the document was intended to analyze the broadest reasonable range of implementation approaches.

Comment 4m. Public Has Been Misled

The Executive Director does not believe she stated that it appeared staff had "misled" the public; rather, she acknowledged that several changes had occurred in the project and not all had been communicated or communicated in a timely manner with the public.

TRRP restoration planning and implementation requires staff to simultaneously conduct an environmental review, obtain necessary permits, determine construction techniques and sequencing, refine construction cost estimates, conduct public involvement activities, adjust and respond to federal budgeting uncertainties and continual changes, and prepare construction documents to implement projects, while ensuring other program elements (e.g., monitoring) are performed concurrently. The TRRP works diligently throughout the planning process to listen to affected parties and provide the best information in a timely manner to landowners and other interested parties. We acknowledge that it can be frustrating when circumstances arise that require reallocation of TRRP resources and modification of its priorities. We will continue to endeavor to improve our communication with landowners and other interested parties and provide them with updates on the proposed project and schedules, including any required modifications.

Comment 4n. Informational and Schedule Update Meetings

We intend to hold an informational meeting for local landowners and other interested parties before the start of construction (anticipated in June or July 2017), preferably at the project site. Such meetings for our past projects have provided valuable opportunities to update the public with schedule refinements and to answer new questions.

Please also refer to the responses to comments 4b and 4h.

Comment 4o. Misleading Statements

Comment noted. Please also see the responses to comment 4b, 4h, and 4m.

Comment 4p. Access Route Description

The referenced text in section 2.1.16 of the EA/IS has been revised to remove ambiguity about how the access route is described. The revised text is: *Access to the Sheridan Creek rehabilitation site from Sky Ranch Road would use a private native surface road in the northeast corner of the site. Access is initially via Dredger Place (SC A-7); following a split in the road approximately 500 feet west of Sky Ranch Road, access follows the right fork on an unnamed road that crosses onto BLM land. The road then connects with other existing routes that parallel the river upstream to the Deep Gulch project site.*

The referenced text in section 2.2.16 of the EA/IS has been revised to read: *Access to the site is via Dredger Place, a private, unpaved lane that provides access from Sky Ranch Road through private land to the BLM parcel at the northeast corner of the site. The road continues into the Deep Gulch site to the south.*

Comment 4q. Access Road Name

The commenter is correct about the error concerning the road's name in section 1.1 of the document. Per the Trinity County Planning Department, the private lane (classified as such by the county Fire

Safe Ordinance 8.30.050.R because it provides vehicular access to more than one parcel, as opposed to a driveway) is Dredger Place. The error on page 1-3 of the Draft EA/IS has been corrected.

Please also refer to the response to comment 4p.

Comment 4r. Access Road Name

The road name "Dredger Place" has been corrected in the final EA/IS. Please refer to the response for comment 4p. The subsequent construction maps will be correct to ensure that project users of this access route are not misdirected to the commenter's private driveway. None of the maps in the EA/IS use the label Dredger Place; instead, they label the access route below the split as SC-A7 (Sheridan Creek Access Road 7).

Please also refer to the responses to comments 4p and 4q.

Comment 4s. Error in Naming

Comment noted. The co-lead agencies welcome and appreciate reviews of our documents and work to incorporate and address all pertinent and appropriate comments.

Comment 4t. TRRP Science

Comment noted. This topic is outside of the scope of the project being analyzed in the EA/IS but is pertinent to the TRRP's activities.

TRRP science staff know that incorporation of science and "lessons learned" is key to success. For instance, gravel augmentation locations, quantities, and techniques have changed with time. TRRP's geomorphologist reviews TRRP's ongoing monitoring data for gravel augmentation annually and makes recommendations for future additions. The designers of the proposed project designed the project with the intention of maintaining Sheridan Hole.

TRRP science staff do not believe spring flows negatively affect spring chinook spawning as stated by the commenter. In fact, the flow release schedules are designed to emulate a natural snowmelt recession hydrograph which spring chinook evolved with to co-exist. The spring flow releases helps ensure cooler temperatures and better conditions for upriver migration.

Comment 4u. Declining Salmon Numbers

This topic is outside of the scope of the project being analyzed in the EA/IS but is pertinent to the TRRP's activities.

Staff at the TRRP note that the Trinity River Flow Evaluation Final Report, upon which the Trinity ROD was based, indicated that the bottleneck for production of Trinity River salmon and steelhead is the lack of juvenile habitat available for pre-smolt and young-of-the-year fish prior to their outmigration to the ocean. Current screw trap catches of out-migrating Trinity River steelhead and salmon are generally trending upward (see Figure 1 below) and the percentage of naturally produced fish (vs. hatchery produced) is increasing.

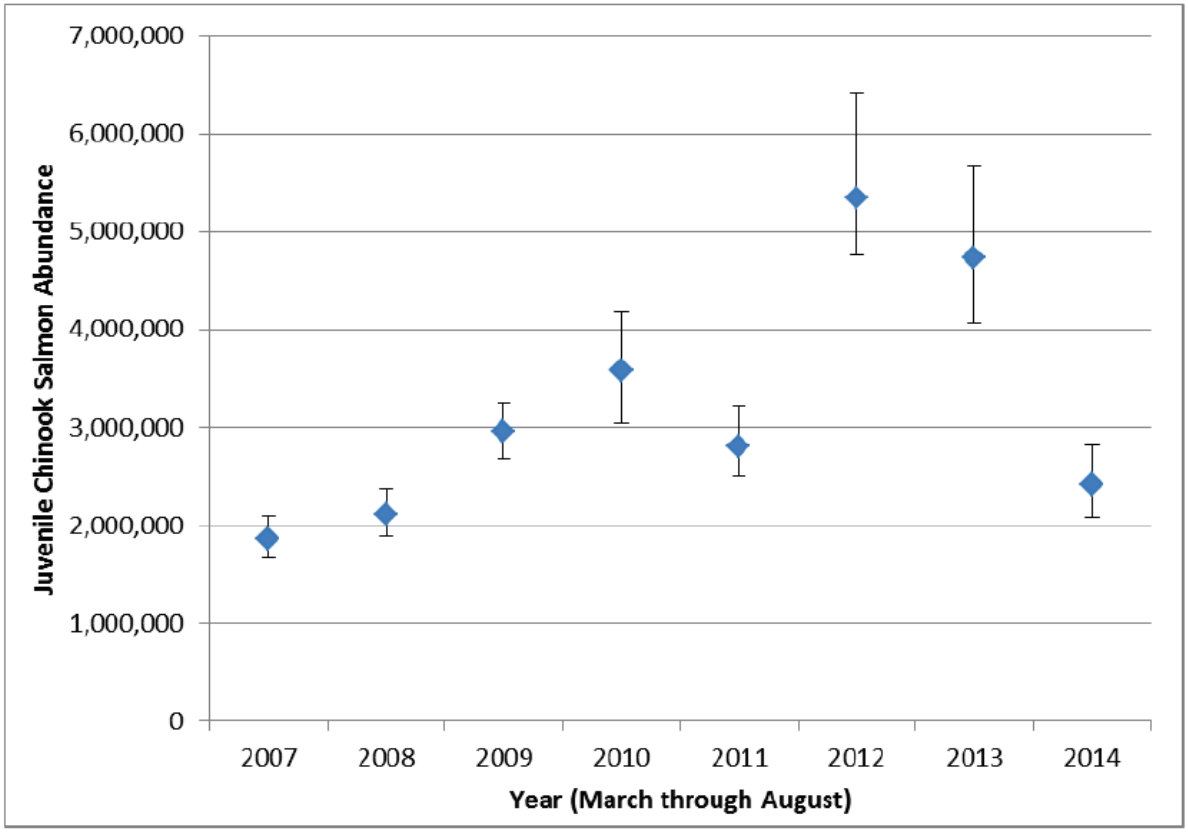

Figure 1. Abundance of naturally produced juvenile chinook salmon at the Willow Creek screw trap site from March through August 2007 – 2014. Error bars represent 95% credible limits for the annual estimates.

Source: http://odp.trrp.net/Data/Documents/Details.aspx?document=2286

The TRRP is charged with implementing the ROD to restore functioning river conditions and recover native salmon and steelhead populations while Reclamation maintains power production and water delivery to the Central Valley. Other factors beyond TRRP's control (e.g., ocean conditions, harvest, hatchery interactions, impacts of multiple years of drought, high incidence of disease in juvenile fish) affect the return of adult salmon and steelhead to the Trinity River.

The commenter refers to the decline of the salmon runs in the last few years, especially with the low projected run size for 2017; we also experienced extremely low fall Chinook salmon abundance in 2016. Both of these low returns can primarily be attributed to two factors: (1) poor in-river conditions during the spring of 2014 and 2015, which resulted in the low age-3 cohort that returned in 2016, as well as the extremely low age-3 and age-4 projected returns for 2017, and (2) extreme drought conditions during 2014 and 2015. In these years, juvenile Chinook salmon experienced extremely high disease infection rates from the parasite *Ceratanova shasta* (*C. shasta*). Of the fish sampled in the Klamath River above the Trinity confluence, 81 percent and 91 percent of the juvenile Chinook of the hundreds that were sampled were infected with *C. shasta* in 2014 and 2015, respectively. While not all infected fish necessarily died, these high infection rates indicate that a large portion of the fish likely perished from the disease.

Finally, when the remaining salmon entered the ocean in 2014 and 2015, they found warm, relatively unproductive El Nino conditions.

A combination of these factors has likely resulted in the low salmon escapement in West Coast rivers during these last few years. TRRP management actions (variable flows, reduced fine sediment, and increasing habitat [including gravel augmentation]) are benefitting fish populations, but fish populations continue to be severely impacted by these factors.

Comment 4v. Protection of Sheridan Riffle

The Sheridan Riffle is a very productive spawning area in this portion of the Trinity River. Acknowledging this, we state in 2.1.13, Design Considerations, that one of our biological objectives is to "[p]rotect existing high-use spawning riffles above Sheridan Hole." The intent of our design features is not to improve spawning; rather, per the descriptions of activities in sections 2.1.2 through 2.1.4, the intent is to expand the areas of juvenile salmon-rearing habitat.

Sheridan Riffle already provides ample spawning habitat for anadromous salmonids. However, due to the simplified channel geometry that has resulted from mining and regulated flow releases to the river (see discussion in sections 3.9 and 3.12 of EA/IS), there is very little of the slow, shallower habitat with access to cover that is required to allow the juveniles to thrive in the river prior to leaving for the ocean.

Comment 4w. Project Delay

As noted in other responses, one of the pillars of the TRRP is adaptive management, which is mandated in the ROD. We have learned a great deal from our earlier Phase 1 projects and continue to learn from our more recent Phase 2 projects, which is why we have added more complex approaches to channel rehabilitation than were used early in the program. The incorporation of science and "lessons learned" have led to the channel rehabilitation projects being more time- and funding-intensive than envisioned at the inception of the TRRP in 2000. While there has been some slippage of the timeline for implementation of the proposed project, we believe that neither additional research nor is a delay in implementation is required.

The intent of the ROD is to implement management actions quickly and to learn by monitoring so that future management will be informed by past activities and later projects can be designed to most efficiently produce conditions that benefit river function and fish production. To use the force of the river to create and maintain diverse habitat conditions for fish and wildlife, the TRRP is endeavoring to complete projects in a timely fashion.

By implementing channel rehabilitation in a timely fashion, constructed project sites will be able to interact with the highest flows[3] (which bring about the greatest geomorphic change), will start to revegetate, and will provide benefit to short-lived salmon species most quickly so that recovery of populations continues.

Like all federal entities, TRRP must plan program and project budgeting as well as it can given the constraints of annual fiscal year budgeting cycles and the unknown timing and amount of funding it

[3] Extremely wet years occur approximately 12 percent of the time and wet years approximately 28 percent of the time.

will receive each year. TRRP endeavors to manage its budgets in this fluid situation in the best way possible; however, it often has to adjust to internal and external influences, which causes changes to planned project implementation.

Comment 4x. Safe Equipment Access

TRRP representatives met with the commenter and discussed his concerns regarding the private lane that crosses over the swale between mine tailings. Except for the last two points (6 and 7) regarding this issue, his comments are accurate. We did agree that, in accordance with our agreement with the landowner of the property, we would assess the road at the conclusion of construction to ensure that it had been repaired to at least the condition it was in before construction; we did not, however, explicitly state that the assessment would be in the form of an engineering report (although that is one mechanism for such an assessment). Regarding point 7, while we did remove the heavy equipment from the site, it was because the owner of the construction equipment required that the equipment be stored elsewhere, not specifically because of an agreement with the commenter.

Comment 4y. Dredger Place Conditions

Based on concerns expressed by the commenter in autumn 2016, the TRRP contracted with an Engineering Geologist (PG #8066) to examine the existing condition of the private lane crossing and to prepare a geotechnical report regarding its safety for use as an access route. The geologist examined the crossing on April 14, 2017. Following the review, TRRP's road construction contractor placed gravel on the private lane from the intersection with Sky Ranch Road to the gated access to SC-A7 as it proceeds west after it splits from Dredger Place to ensure that it would be serviceable prior to authorization of the proposed project. An additional site visit by the geologist occurred on May 9, 2017, to reassess the condition of the crossing now that the rainy season has ended or nearly ended. Additional recommendations made by the geologist for pre-construction, construction, and post-construction guidelines will be incorporated to ensure the safety of the crossing. All relevant environmental commitments incorporated into the proposed project, including the obligation to repair the all roads and access routes to pre-construction condition, will be incorporated into the Performance Work Statement as part of the construction documents.

Comment 4z. Dredger Place Agreement

Reclamation has signed an agreement with the property owner that includes, among many other items, its commitment to ensure that the private lane, including the crossing in question, will be rehabilitated to at least pre-construction conditions.

The agreement for written terms that TRRP's Executive Director discussed with the commenter was intended to be a written specification in the Performance Work Statement that details the requirement to ensure that after construction, the road will be returned to at least its pre-construction condition.

Comment 4aa. TRRP Communication and Interaction with Landowners

Comment noted. Please refer to the response to comment 4m. The co-lead agencies acknowledge the opinions stated in this comment, while also believing it is important to state that we do not agree with the commenter's statement that the TRRP has been retaliatory or intentionally misleading. TRRP staff do, however, apologize for any difficulties that our past communications and/or activities have

caused your family and neighbors. We are committed to continuing and improving our communications and interactions with landowners throughout this project.

As noted in the response to comment 4z, the TRRP has signed an agreement with the property owner whose land is crossed by Dredger Place that includes authorization for storage of construction materials that would be used by the TRRP if the proposed project is authorized. As described in the responses to comments 4 x, 4y and 4z, the TRRP is currently working with both the landowner and the commenter to ensure the commenter's safety and access would be maintained if the proposed project is authorized.

Current TRRP policy, in line with state law, is that reasonable attempts will always be made to notify landowners with property boundaries to be surveyed prior to the professional land surveyor arriving on-site.

Comment 4ab. Landowner Agreements

Please refer to the response to comment 4ad concerning conditions under which the TRRP will enter into access agreements with landowners.

Comment 4ac. Privacy of Landowner Agreements

Agreements between private landowners and the TRRP are not publically disclosed, though, as noted, the commenter was advised that he can submit a request for the agreements under the Freedom of Information Act. The agreements may have redacted information, as determined by a Reclamation solicitor.

Comment 4ad. Details of Landowner Agreements

The details of individual landowner agreements are outside of the scope of the EA/IS, but an explanation is provided in response to this comment. The TRRP enters into agreements with willing landowners when necessary for rental of temporary access or storage areas or to conduct various authorized TRRP activities. (e.g., channel rehabilitation work). The value of the agreement is based on a standardized federal appraisal process that considers the appraised value of the land, the duration of the rental, and the intensity/risk of the proposed activity to the property (e.g., excavation vs. less invasive storage of materials), as well as other administratively determined factors associated with the proposed project defined in the agreement.

Landowner agreements are negotiated with landowners based on strategic geographic locations for project design to facilitate implementation of restoration projects. TRRP negotiates agreements with willing landowners only. If landowners expresses a lack of willingness or interest in having TRRP use their property for any reason, negotiations for any potential agreement are discontinued. TRRP respects landowners who communicate a lack of willingness related to use of their property and will work to identify other ways to allow implementation of the restoration project that do not include using the property of unwilling landowners.

Comment 4ae. Role of Trinity Management Council

The comment is noted; however, the role of the TMC and its bylaws are outside the scope of the EA/IS. The TMC does provide the budget approvals for implementation of rehabilitation projects

such as the Deep Gulch-Sheridan Creek project. The TMC is updated at its quarterly meetings on rehabilitation and other projects by the Executive Director of the TRRP.

Comment 4af. Federal Contracting

The TRRP, like all federal entities, is subject to federal statutes, regulations and policies. The Federal Acquisition Regulations provide the basic framework for service and construction contracts advertised and awarded by the Reclamation. Although other federal agencies that are members of the TMC are subject to these federal regulations and policies, contracting actions through Reclamation are outside the responsibilities of the TMC.

See also the response to comment 4ad.

Comment 4ag. TRRP Funding Agreements

Since the inception of the TRRP, Reclamation has contracted for and completed research, monitoring, rehabilitation projects, and other work under various different federal acquisition options, including competitive bids for construction by civil contractors, sole sourcing under an 8-A small business construction contract, and various grants and agreements with entities such as other federal, state and government agencies, academic institutions, and tribal governments. These agreements are made pursuant to many authorities, including the Tribal Self-Governance Act (Title IV of P.L. 93-638, as amended by Title II of P.L. 103-413); the Fish and Wildlife Coordination Act of 1934 (16 U.S.C. § 661 et seq.); the Trinity River Division, Central Valley Project Act (P.L. 84-386); the Central Valley Project Improvement Act (CVPIA) (P.L. 102-575); the Trinity River Basin Fish and Wildlife Management Act (P.L. 98-541), as amended; and the Reclamation Act of 1902 (32 Stat. 388), as amended.

For the last few years, some channel rehabilitation and sediment management projects have been funded through grant awards via Annual Funding Agreements to the governments of the Yurok Tribe and the Hoopa Valley Tribe. Funding the tribes for this work meets federal objectives to build tribal capacity and is particularly important because recovery of Trinity River anadromous fish populations has special geographic and cultural significance for their people.

Comment 4ah. TRRP Project Funding

The proportion of TRRP projects funded with congressional appropriations versus non-appropriated funds varies each year. For the 2016 Bucktail channel rehabilitation project, approximately 55 percent of the funds were from Reclamation appropriations and 45 percent were from the Central Valley Project Improvement Act – Central Valley Project Restoration Fund with revenues generated by water and power customers. Funding from the CVPIA for the TRRP has averaged $1.5 million each year.

Irrespective of the funding mechanism, the TRRP is acting as the agent of the federal government (the "United States" as noted by the commenter) with respect to compensation related to Temporary Access Agreements and Restoration Activities Permits.

Comments 4ai, 4aj. TRRP Construction

In 2016, the Bucktail project was constructed by the Hoopa and Yurok Tribes in compliance with federal and state regulations and laws, including Davis-Bacon wage requirements and State of California prevailing wage determinations by the Director of Industrial Relations pursuant to California Labor Code part 7, chapter 1, article 2, sections 1770, 1773, and 1773.1. The project was funded by Reclamation, as part of its Annual Funding Agreements with the tribes, under multiple authorities, including the Tribal Self-Governance Act (Title IV). The primary purpose of the Tribal Self-Governance Act (Title IV) is to promote tribal self-governance. Davis-Bacon Act wage rates apply to laborers and operators employed by the contractors and subcontractors (excluding Indian Tribes, inter-Tribal consortia, and Tribal organizations) retained by Self-Governance Tribes to perform construction. The Davis-Bacon Act and wage rates do not apply when Self-Governance Tribes perform work with their own employees.

A tribal Annual Funding Agreement is a grant-based agreement that allows for unexpended funds to be re-allocated for similar additional restoration services. This is different from a "contract" by a profit-based organization that would essentially keep unexpended construction funds as profit. The grant agreement method likely provides for more restoration work to be accomplished with the funding while also building and supporting tribal capacity.

Comments 4ak, 4al. Deep Gulch-Sheridan Creek Project Construction

The TRRP has not awarded a contract or grant agreement for implementation of the Deep Gulch-Sheridan Creek Project.

See also the response to comment 4ag.

EAIS — Submittal 5 **5**

April 14, 2017

F. Brandt Gutermuth
Environmental Scientist
Trinity River Restoration Program
PO Box 1300
1313 S. Main St
Weaverville, Ca 96093

Re: Public Comment for EA/IS due by April 7, 2017

These comments are provided in protest to the incorrect Public Comment Period established by TRRP in direct violation of the TRRP Implementation Plan Rules. a

I request a minimum of 90 days to review the EIR of 2009 that was provided to me on April 5, 2009 at 4:30 pm. The comment period should be until July 5, 2009 at 4:30pm. b

I reserve the right to add additional comments after 30 days from the date all Sky Ranch Residents receive the EA/IS and the EIR of 2009 for the combined projects known as Deep Gulch/Sheridan Creek Projects. c

TRRP has failed to address all my questions from the Trinity Management Council (TMC) meeting held March 27-28, 2017, concerning the conflicts of interest, were TMC does not follow the rules of their own bylaws and Implementation Plan. TMC votes on projects that promote their self interest without public discloser and keeping records of their actions to spend $15,000,000 per year of taxpayer dollars. This is illegal and must be corrected by the Department of Interior before any TRRP activities proceed. d

1) The project is too intrusive to the Sky Ranch Road residents. e

2) The Sky Ranch area has many different types of wildlife that will be adversely impacted by the Deep Gulch/Sheridan Creek project. The animals will have no safe place to go and live their lives. f

ALSO, there are many endangered species in the Sky Ranch area that will be adversely effected and possibly become extinct from TRRP activities. A complaint to all the proper Societies will be able to address some of these issues, that you are attempting to destroy. g

3) We have an Owl House on our property that was used to house the Spotted Owls. The owl house was damaged and the Spotted Owls now live in the Sky Ranch Projects area and will be disturbed by TRRP activities. These Owls are a protected species and must not be disturbed. h

4) Also many nesting birds of all types live and breed in the Sky Ranch Project area and will be adversely affected by TRRP activities. i

pg 1

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j **5)** The Deep Gulch/Sheridan Creek project will destroy many wetland areas that will never be wetlands again. You cannot recreate what took hundreds of years to create naturally. I will be contacting the Environmental Societies to seek help in protecting the environment.

k **6)** The funding to complete the project has not been secured for 2017. The 2018 budget, and 2018 monies are to be used for re-vegetation and the completion of the right side of the river. There is no guarantee that the funding will be available to complete the project after TRRP starts the project in 2017. This is irresponsible planning by TRRP.

l The power user are negotiating to buy power from other sources than from TPUD and hydro power sources and will not have the funds to support TRRP any longer.

m TRRP should only start projects that can be totally completed with the current years already funded monies.

n **7)** Too much private and public land will be destroyed to accomplish the project.

o **8)** The combination of the Deep Gulch and Sheridan Creek projects into one large project is irresponsible at best and deceptive to the public and should not proceed.

p **9)** The EA/IS states that the EIR of 2009 states that all Restoration Projects are similar in nature and a complete EIR will not be necessary for each project. I believe the Deep Gulch/ Sheridan Creek project is much different than any other project that TRRP has attempted, due to the fact there are many more residents affected by this project compared to past projects and a complete separate EIR should be done for the Sky Ranch Area.

q This is the first "combined project" and is so different it requires its own EIR before construction or permitting processes start.

r **10) The survey done for this project is incorrect** and must be done by a out of area surveyor to guarantee that there is no conflict with surveyors that have had much revenue from TRRP in the past and now have a conflict of interest with the landowners. A truly independent survey is the only way to proceed. (They dumped the logs on the wrong property and the surveyor surveyed the wrong side of the river as Mike Dixon stated to me last summer.)

s **11)** The boundaries' of the project are in dispute and until BLM establishes where their original corners are located and their boundaries are exposed or BLM installs new BLM corners this project should not move forward in any respect. BLM must go back to the first original survey and move forward from there with the newest survey near the river. I have researched and the TRRP surveyor has placed corners in the wrong place and I want them removed by TRRP with me present. The original Sheridan Brothers patent maps are more correct than any others.

t **12)** The so called emergency road through my neighbors property goes though my southern property as well and there will be NO Trespassing of any kind.

u **13)** There is a historic Chinese Company mine with original tailings and a cave of several hundred feet that will be disturbed by TRRP activities and it needs to be indentified and protected before TRRP proceeds in destroying it. pg. 2

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14) The EA/IS maps are too confusing to understand for a property owner, many of the statements in this document are not detailed with proper identification markings that are understandable to the public. v

15) The reference to the EIR of 2009 in the EA/IS do not make sense without providing the complete EIR of 2009 along with the complete EA/IS to all residents effected by the Deep Gulch/Sheridan Creek project. And a new complete EIR should be completed before destroying the lives and peace and quiet of the Sky Ranch area. w

16) The noise of the construction and rock separating quarry activates will be too loud for the residents. x

17) Sky Ranch Road was a dirt road that has been chip sealed by Trinity County and has been declared by the County as a failing/failed road that needs to be rebuilt. TRRP activities will destroy the road and make it very dangerous for the public. y

18) Sheridan Creek runs through an old small culvert under Sky Ranch Road and cannot handle heavy loads as the hundreds of heavy loads will collapse the roadway and trap the residents in. z
In the event of an emergency as in ambulances or fire trucks the residents could lose their lives and/or their homes because of road failures caused by TRRP construction activities. TRRP must have an **independent engineering report not conducted by the Tribes engineers** but a truly independent engineer that is selected from the competitive process. aa

19) Trinity County's road report concerning Sky Ranch as a failing/failed road should be used to start the process of repairing/rebuilding the road before TRRP activities begin. ab

20) Sky Ranch Road is too narrow in many places for large trucks to pass each other in opposite directions. Even a semi-truck coming from one direction and a resident driving in the opposite direction causes a very dangerous situation where TRRP personnel or contractors and/or a private resident or public member could be injured or killed. ac

21) TRRP does not have a traffic safety plan in place to protect the public from accidents occurring. All of TRRPs employees and contractors should have a California traffic safety certificate prior to TRRP beginning any construction activities. In 2016 I personally came very close to colliding with a TRRP contracted semi truck traveling on Sky Ranch Rd and reported that to Mike Dixon of TRRP. When the Dredger Place Rd was being worked on in March 2017 there was no signage and/or flagger of any kind and I almost collided with a excavator that was on Sky Ranch Road illegally. All this is against the California Traffic Codes rules and are not being implemented on TRRPs projects. When/if someone dies from your negligence TRRP will be held accountable. ad ae

22) TRRP's EA/IS plan calls for heavy machinery to cross Sheridan Creek at the river and will destroy the ability of the water to reach the river and the small fish to enter Sheridan Creek which is in direct conflict with TRRPs established goals of saving the fisheries. af

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ag **23)** The issue of TRRP's refinements process should be complete before TRRP attempts to construct another one of their failed projects. TRRP proposed to TMC on March 28, 2017 that they be allowed to revisit all of the 32 projects of the 45 identified to RE-DO these sites because they are all failures' and need to be re-designed and re-constructed in a different manner. With this acknowledgment TRRP should stop working on the river until refinements are 100% complete.

ah **24)** The study being conducted at this time concerning the water releases killing the salmon runs and destroying the salmons spawning cycles should be 100% complete before TRRP attempts any future projects to assure that the few remaining fish survive and are not made

ai EXTINCT by TRRP's behavior/ You must quit KILLING the fish with your assumptions that you are doing the right things just to keep TRRP employees and associates working.

aj **25)** With all the possible illegal activities within TRRP and its contractors not following the Laws that govern the environment and construction labor laws TRRP should cease from doing any business until the investigations are all 100% complete.

ak **26)** The Fraud, Waste and Abuse complaint filed with the Department of Interior dated April 14, 2017 should be completely investigated and resolved prior to any commencement of work on any TRRP Project.

al **27)** The conflict of interest issues are too great to be ignored. How does the TMC members vote on projects that directly benefit themselves and their own companies and friends and associates. They never recuse themselves in direct violations of the ethics laws of the US Department of Interior.

am **28)** All TRRP projects need to be vetted properly to assure the public's monies are being used according to the laws of the United States. Until these investigations are 100% complete TRRP should limit its work to the watersheds, but not in or near the river.

Jerry Payne
1780 Sky Ranch Road
Junction City, California 96048

Cc: Clearinghouse to distribute to all agencies receiving the EA/IS for permitting
US Department of Interior Fraud Waste and Abuse Hotline
California State Attorney General
All Trinity Management Council Members,- All TAMWAG Members
All Trinity County Board of Supervisors
Trinity County District Attorney,- Trinity County Sherriff
Bureau of Reclamation Director,- California Department of Fish and Wildlife Director
US Fish and Wildlife Director, NOAA Director,- US Forest Service Director
All Elected State and Federal representatives in this district

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Response to Comment Submittal 5 — Jerry Payne

Comment 5a. Comment Period

The co-lead agencies for the project are unclear about what the commenter refers to as the TRRP implementation plan rules. The co-lead agencies have endeavored to maximize public involvement in reviewing the project proposal since public input is one of the fundamental objectives of both CEQA and the National Environmental Policy Act (NEPA). For an EIR, CEQA requires that public notice be published in a newspaper of general circulation, posted on and off the project site, or directly mailed to owners and occupants of contiguous properties. These requirements were met, as described in Section 1.6, Scoping and Public Involvement, of the Draft EA/IS.

Public notices were published in the *Trinity Journal* and posted off-site at the Junction City Post Office and store. A public meeting, which the commenter attended, was held on March 15, 2017, at the North Fork Grange Hall on Dutch Creek Road in Junction City. These notifications met CEQA and NEPA requirements. In addition, the co-lead agencies extended the comment period for the Draft EA/IS at the request of two local landowners; the extension was for one week through April 14, 2017.

Comment 5b. Comment Period for Master EIR

It is unclear if the commenter is referring in this comment to the 2009 Master EIR or the 2016 Draft EA/IS. The 45-day review period for the Draft Master EIR was initiated on March 27, 2008, and ended on May 12, 2008. The Master EIR was certified by the North Coast Regional Water Quality Board (Regional Water Board) in June 2009. For reference, a copy of the 2009 Master EIR is available on the TRRP website at: http://odp.trrp.net/Data/Documents/Details.aspx?document=476.

With a 30-day circulation of the Draft EA/IS, both the NEPA co-lead agencies (BLM and Reclamation) and the Regional Water Board met or exceeded regulations, policies, and guidelines for public review. CEQA provides for extending the review period by up to 15 days if approved by the lead agency; for the Draft EA/IS, the comment period was extended by 7 days in response to a request from local landowners.

Comment 5c. Comment Period Extension Request

Section 1.4 of the EA/IS discloses that the document was developed using "tiering" and "incorporation by reference," both of which are accepted practices under both NEPA and CEQA: "This site-specific EA/IS for the proposed action at the Deep Gulch and Sheridan Creek sites is tiered to the previous analysis in the Trinity River Mainstem Fishery Restoration Final EIS/EIR (FEIS/EIR; USFWS et al. 2000). It also incorporates by reference the analyses in the Master EIR and EA/EIR (Regional Water Board and Reclamation 2009)."

The final paragraph in section 1.4 of the EA/Is summarizes how this EA/IS complies with NEPA and CEQA with respect to tiering and incorporation by reference: "This EA/IS for the proposed action provides site-specific details for the environmental impact analyses and has been prepared to comply with NEPA (42 USC, Section 4321 et seq.) and CEQA (California PRC, Section 21000 et seq.). This EA/IS focuses only on site-specific activities for the proposed action and serves as a joint NEPA/CEQA document for project authorization by both federal and California state regulatory agencies. This EA/IS contains a site-specific project description and other information required to apply for enrollment under General Water Quality Certification R1-2015-0028 (or subsequent

reissued Certification) for Trinity River channel rehabilitation activities, which the Regional Water Board will consider in making its determination and approval decision."

This response acknowledges the commenter's statement that he has the opportunity to submit additional comments to the lead agencies after the comment period has closed, but the agencies are under no obligation to delay the preparation of the EA/IS and defer decision-making in anticipation of future comments.

Comment 5d. Trinity Management Council (TMC) Concerns

These topics are outside the scope of the project analyzed in the EA/IS.

The commenter's statements regarding TMC conflicts of interest and need for correction of these is an opinion. The TMC and its members are authorized under the Department of the Interior, as outlined in the ROD.

Comment 5e. Intrusive Nature of the Project

The TRRP is mandated to implement the actions directed in the ROD in a timely fashion in order to restore form and function to the Trinity River and fish populations. The TRRP acknowledges that short-term impacts will occur in the construction of our projects, but Reclamation, as noted in section 2.1.18 of the EA/IS, "has committed to implementing the mitigation measures identified in the Master EIR to avoid or minimize potential impacts associated with the proposed action." These measures have been incorporated as design features into the project description and are enumerated in Table 2-5 of the EA/IS. Specific resource topics that would affect landowners are addressed in chapter 3. Through incorporation of the design features noted in the environmental impacts analyses in Chapter 3, impacts on local landowners will be minimized as much as possible.

Comment 5f. Wildlife Impacts

Section 3.12 (Fishery Resources) and section 3.13 (Vegetation, Wildlife and Wetlands) of the EA/IS provide detailed discussions of these resources and the potential effects of the proposed action on these resources. While the commenter is correct that the project area and the surrounding Sky Ranch Road community have a variety of wildlife species that occupy habitat on both BLM and private lands, the commenter offers no evidence that is contrary to the environmental consequences of the proposed action described in these sections of the EA/IS.

Comment 5g. Endangered Species Impacts

Both Reclamation and BLM work closely with the U.S. Fish and Wildlife Service and National Marine Fisheries Service to ensure that all TRRP activities are fully compliant with the federal Endangered Species Act. The Regional Water Board, in conjunction with the TRRP, works closely with the California Department of Fish and Wildlife to ensure that all TRRP activities are fully compliant with the California Endangered Species Act.

The commenter is correct that several special-status species occur in the general vicinity of the Sky Ranch area, including anadromous salmonids and northern spotted owls. As stated in section 1.3 of the EA/IS, the TRRP is charged with increasing habitat for all life stages of naturally produced anadromous fish native to the Trinity River. Section 3.12.2 of the EA/IS provides a discussion of the

potential impacts and benefits to fishery resources. On page 3-38 of the Draft EA/IS, the document states: "Based on a site-specific assessment by a BLM biologist in conjunction with additional site reviews performed by NSR's certified wildlife biologist, it was determined that no wildlife species listed under the ESAs as threatened or endangered or candidates for listing as threatened or endangered are present within the project area nor is there critical habitat for any listed species within the project area."

Comment 5h. Northern Spotted Owl

Site assessments were performed by BLM wildlife biologists to determine if any of the conifer stands were occupied by northern spotted owls, or if there was suitable habitat for this species within the project area. While there is suitable habitat on BLM land in the general vicinity of Sky Ranch Road, there are no owls or suitable habitat within, or in close proximity to, the project area.

Comment 5i. Nesting Birds

Section 3.13.1 of the EA/IS acknowledges that suitable habitat exists for a variety of special-status birds, including migratory birds protected under the Migratory Bird Treaty Act. Table 2-5 describes a number of environmental commitments that would be incorporated into the proposed action to reduce or avoid impacts to these species; these include EC-VW-3 (little willow flycatcher), EC-VW-6 (California yellow warbler, yellow-breasted chat, and Vaux's swift), and EC-VW-7 (bald eagle).

Comment 5j. Wetlands

A comprehensive wetland delineation was performed prior to preparation of the EA/IS to identify waters of the United States that would be subject to jurisdiction by the U.S. Army Corps of Engineers (Corps). Table 3-6 in the EA/IS shows the types and acreages of jurisdictional waters. Figures 3-1a and b illustrate the locations of waters of the United States and summarizes the potential impacts that would occur under the proposed action.

Construction of the proposed action would result in a temporary direct impact to a total of 10.87 acres of riparian wetlands (out of 41.47 acres of riparian wetlands) and 6.04 acres of riverine habitat (out of 20.46 acres of riparian habitat). Included in these totals are impacts associated with temporary access to, and use of, activity areas (e.g., roads, staging). Because the nature of the project, the impacts to jurisdictional waters are expected to be temporary, and it is anticipated that there will be a net increase in jurisdictional waters within 5 to 10 years after completion of the proposed action. The TRRP is committed to conducting a post-project wetland delineation 5 years after project completion to ensure that requirements of Nationwide Permit 27 (Section 404 of Clean Water Act) from the Corps are met.

Comment 5k. Funding Uncertainties

Since the ROD was signed in 2000, the Department of the Interior and the TRRP have been mandated to implement the elements of the ROD: variable annual flows, fine and coarse sediment management, watershed restoration, infrastructure improvement to allow peak flow, adaptive environmental assessment and management, and channel rehabilitation. To the extent that funds are allocated to the program annually, the TRRP will support ROD implementation until riverine processes have been restored and the fishery recovered.

Total funding to the program that is available for construction varies annually based on a variety of factors, including both congressional appropriations and funding provided from the Central Valley Improvement Act (CVPIA). CVPIA funds from power and water users fees equate to about 10 percent of the total TRRP budget on an annual basis; planned TRRP funding for fiscal year (FY) 2018 are projected by Reclamation to be approximately the same as FY17 funding.

Following an Independent Government Cost Estimate completed in early 2017, it became clear that the cost of implementing all elements of the proposed action would exceed TRRP's FY17 construction budget; multi-year funding for a project is not uncommon for federal projects, and TRRP has worked with landowners and other interested parties to refine an implementation schedule that minimizes effects on both the human and natural environment while remaining cost effective. The EA/IS does disclose the possibility of a multi-year project, as the document is intended to analyze the broadest reasonable range of implementation approaches.

Of the total funding provided to the TRRP, the TMC decides the amount to be spent on each line item in the TRRP budget. Due to the nature of the work, rehabilitation project activities (planning, design, environmental compliance, public notification, permitting, construction, revegetation, and monitoring) are typically planned and managed with consideration of seasonal limitations on projects as well as Reclamation's multi-year budget planning process. It is the TMC's decision whether to use funding across fiscal years for any given project authorized by the TRRP. Because of the Department of Interior's legal obligation to implement the ROD, there is anticipation that TRRP funding will continue until the ROD has been fully implemented.

Comment 5l. Reduced CVPIA Funding

The commenter suggests that CVPIA funds from power and water user fees are discretionary and subject to changes in the energy market. Reclamation's contracts with water users form the basis for the fees collected under CVPIA. The possibility of future reductions (or increases) in funding from CVPIA to TRRP always exist. For FY18, the projected CVPIA funds, $1,500,000 are the same as for FY17.

The commenter suggests that CVPIA funds from power and water user fees are discretionary and subject to changes in the energy market and could impact ability to complete the project. Reclamation's contracts with water users form the basis for the fees collected under CVPIA. Approximately only 10 percent of the total annual TRRP budget is from CVPIA. The possibility of future reductions (or increases) in funding from CVPIA to TRRP always exist. For FY18, the projected CVPIA fund amount that was provided to TRRP, $1,500,000, is the same as for FY17.

Please also see the response to comment 5k.

Comment 5m. Funded Project

Please see the response to comment 5k.

Comment 5n. Land Destruction

All elements of the proposed action that would occur on lands managed by the BLM require authorization by the BLM. Prior to this authorization, and through the NEPA process, BLM

considers the scope of the proposed action, including impacts to resources on BLM-managed public lands, and ensures the proposed activities are consistent with the goals and objectives of the 1993 Redding Resource Management Plan and Record of Decision. By definition, actions on BLM lands would occur only if BLM makes a decision that the proposed action would benefit the lands and resources it manages.

Since 2001, the TRRP has been working with Trinity County and private landowners to ensure that TRRP activities on private lands are consistent with Trinity County's General Plan and agreeable to landowners.

The TRRP acknowledges the commenter's opinion that project activities would destroy private and public land, but respectfully disagrees.

Comment 5o. Completion and Phasing of Project

Please see the response to comment 4i.

Comment 5p. EIR for Project

The description of the purpose of a Master EIR is found in section 1.4 of the EA/IS and is as follows:

*"*CEQA allows for preparation of a Master EIR that analyzes a series of related actions that are characterized as one large project or program, such as the channel rehabilitation and sediment management activities proposed by TRRP. A Master EIR evaluates at a programmatic level the direct and indirect environmental impacts, cumulative impacts, growth-inducing impacts, and irreversible significant effects on the environment of subsequent site-specific projects. A Master EIR forms the basis for analyzing the effects of subsequent projects (California Public Resources Code, Section 15175, et. seq.). The Master EIR meets the elements required for a Program EIR pursuant to California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15168. Therefore, the Master EIR provides programmatic CEQA level review, from which the Deep Gulch and Sheridan Creek project—a subsequent site-specific project—is tiered.

The Regional Water Board acted as the lead agency for the Master EIR (State Clearinghouse #2008032110) and for the subsequent site-specific initial studies prepared for TRRP projects. The Master EIR provides a discussion of the existing conditions, environmental impacts, and mitigation measures required to comply with CEQA (California Public Resources Code, Section 21000 et seq.). In addition to addressing direct and indirect impacts associated with the proposed project and alternatives, the Master EIR addresses cumulative and growth-inducing impacts that could be associated with activities at the remaining Phase 1 and Phase 2 sites. The Regional Water Board certified the Master EIR on August 25, 2009.

Because the Master EIR provides programmatic level review from which site-specific projects may tier, the analysis of the proposed action required under CEQA is tiered from that document. In addition, the EIS portion of the Trinity River FEIS/EIR functions as a project-level NEPA document for policy decisions associated with managing Trinity River flows and as a programmatic NEPA document providing "first-tier" review of other potential actions, including the proposed action. The EA/IS for the Deep Gulch–Sheridan Creek project focuses only on site-specific activities for the

proposed action and serves as a joint NEPA/CEQA document for project authorization by both federal and California state regulatory agencies.

The California Public Resources Code, Title 14, Section 15177 state that after a Master EIR has been prepared and certified, subsequent projects that the lead agency determines as being within the scope of the Master EIR will be subject to only limited environmental review. Further on, the California Public Resources Code, Title 14, Division 6, Chapter 3, Section 15177, subd. (b)(2)) states that the preparation of a new environmental document and new written findings will not be required if, based on a review of the IS prepared for the subsequent project, the lead agency determines, on the basis of written findings, that no additional significant environmental effect will result from the proposal, that no new additional mitigation measures or alternatives are required, and that the project is within the scope of the Master EIR. Whether a subsequent project is within the scope of the Master EIR is a question of fact to be determined by the lead agency based on a review of the IS to determine whether there are additional significant effects or new additional mitigation measures or alternatives required for the subsequent project that are not already discussed in the Master EIR.

This EA/IS for the proposed action provides site-specific details for the environmental impact analyses and has been prepared to comply with NEPA (42 USC, Section 4321 et seq.) and CEQA (California Public Resources Code, Section 21000 et seq.). This EA/IS focuses only on site-specific activities for the proposed action and serves as a joint NEPA/CEQA document for project authorization by both federal and California state regulatory agencies. This EA/IS contains a site-specific project description and other information required to apply for enrollment under General Water Quality Certification R1-2015-0028 (or subsequent reissued Certification) for Trinity River channel rehabilitation activities, which the Regional Water Board will consider in making its determination and approval decision."

Consistent with the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15177, subd. (b)(2)), the Regional Water Board has prepared this IS for the Deep Gulch and Sheridan Creek Project that evaluates the potential site-specific impacts of project implementation. . At this point, it appears that the Master EIR analyses remain appropriate for the Proposed Project. The Regional Water Board will consider all the information within the EA/IS when they make their final determination on whether or not to permit the project under the current General Water Quality Certification R1-2015-0028.

Please also see the response to comment 5c.

Comment 5q. Combined Sites

Please see the responses to comments 5p and 4i.

Comment 5r. Cadastral Survey

All TRRP funded lot-line (cadastral) surveys are contracted with and performed by professional land surveyors licensed by the California Board for Professional Engineers, Land Surveyors and Geologists according to BLM and State of California standards. The surveys were conducted in conformance with the Professional Land Surveyors' Act of California's Business and Professions

Code (§§ 8700-8805) and provide official boundary lines for the proposed Deep Gulch–Sheridan Creek Project. These surveys are appropriate for adjusting or updating lot boundary lines, setting monuments and property corners, and filing and recording maps with BLM or the Trinity County Assessor's Office.

For the areas of concern identified by the commenter, two surveys for the proposed Deep Gulch–Sheridan Creek project were completed. The initial survey began in late 2014 and was contracted to perform a Record of Survey for the proposed TRRP "Lower Valley" channel rehabilitation sites in (From Evans Bar downstream through the Sheridan Creek site). This survey spanned miles of boundary on both sides of the river; the intent was to clarify the lines between public and private ownership. This Record of Survey was examined by the Trinity County Surveyor and filed with the County Clerk on February 22, 2016, in Book 23 Maps and Surveys, Pages 141–143.

The second survey for the proposed Deep Gulch–Sheridan Creek project was contracted in late 2016 to help define the side lot lines between three parcels, two of which are within the project limits. This survey involved retracement of property corners that were not recovered in the previous survey. The Record of Survey for this contract was examined by the Trinity County Surveyor and filed with the County Clerk on January 17, 2017, in Book 23 Maps and Surveys, Page 164.

The TRRP acknowledges the commenter's opinion regarding local surveyors and perceived conflict of interest, but respectfully disagrees that it is necessary to obtain the services of Professional Land Surveyors with no prior experience working in Trinity County under the auspices of the TRRP.

The error in log placement noted by the commenter was due to our wood procurement contractor beginning to stage materials on a private parcel prior to the flagging of the log storage area by field staff. It was not due to a surveying error.

Comment 5s. BLM Parcel Boundaries

The boundary lines of the proposed Deep Gulch–Sheridan Creek project are clearly defined on the ground and have been surveyed accurately. These surveys were conducted in conformance with the Professional Land Surveyors' Act of California's Business and Professions Code (§§ 8700-8805) and were consistent with BLM's 2009 Manual of Surveying Instructions; the surveys established the official boundary lines for the proposed Deep Gulch–Sheridan Creek project. BLM approved a Dependent Resurvey and Subdivision of Sections of Township 33 North, Range 10 West, Mount Diablo Meridian on December 16, 1975. This resurvey, which began in 1962 and ended in 1973, shows the boundaries of many land parcels for the proposed TRRP project sites in the "Lower Valley" area. This resurvey included the Sheridan Placer Mine, shown since as early as 1873 as government Lot 41. The original Township Plat shown for this area was approved on June 6, 1882. From the survey information on Sheet 1 of the 1975 Dependent Resurvey, the survey was, in part, "designed to restore the corners in their true original locations according to the best available evidence." During this survey, BLM established its original corner locations and set iron pipes with brass caps stamped with location information and dates. This 1975 resurvey was used and cited in the Parcel Map for Rune & Marja Svensson, filed in Book 10 of Maps & Surveys, Page 37 at the Trinity County Recorder's Office. This parcel map shows, among other divisions, government Lot 41 (Sheridan Placer Mine) as being divided into Parcel 1 and Parcel 2. Parcel 1 of this map subsequently became the commenter's parcel.

BLM commenced another Dependent Resurvey of the township in 1977, with the resultant plat being approved on February 8, 1989. This resurvey and the field notes show many of the corners from the 1975 survey as being found and accepted. Corners recovered in the TRRP contracted Record of Survey (Book 23 Maps and Surveys, Pages 141-143), particularly in the Sheridan Placer Mine (government Lot 41) area, are BLM brass caps stamped 1969, and this plat uses the 1975 and 1989 dependent resurveys as references.

Property corners that were set during TRRP's contracted survey are not a part of the commenter's parcel. Corners recovered in the commenter's area are BLM brass caps; federal law (108 Stat. 1796, 2146; 18 U.S. C. 1858) cited on page 9 of the 2009 BLM Manual of Surveying Instructions states: "The law provides a penalty for the unauthorized alteration or removal of any Government survey monument . . . ." TRRP staff are using these survey markers to ensure that work does not occur on the commenter's property.

Comment 5t. Legal Access

We acknowledge that proposed access road DG A-6 as illustrated on Figure 2-2 in the Draft EA/IS would cross a short portion of the commenter's property. The road was proposed for use only in the event of an emergency during construction, such as a life threatening medical emergency. Based on the commenter's statement that there will be no trespassing and access is not allowed on his portion, the road has been removed as an access route from the proposed project and excluded from text and figures in the EA/IS.

Comment 5u. Cultural Resource Protection

Reclamation's survey of the project's Area of Potential Effect indicated that the proposed action would have no adverse effect on properties eligible for listing on the National Register of Historic Places (NRHP). Figure 2-1 in the EA/IS illustrates several features that were considered in the design and subsequent environmental review process. One of these is a historic feature labeled as the Sturdivant Tunnel Debris Fan. While this feature is within the boundary of the project area illustrated on Figure 2-1, this feature was excluded during the design phase from the activity areas for the project and an additional buffer was added during the environmental review to ensure that this debris fan will not be affected by project activities.

The Sturdivant Tunnel is a historic feature constructed as part of the Sturdivant Mine west of the project area in the general vicinity of Dutch Creek Road. The TRRP has conducted comprehensive surveys for cultural resources throughout the project area, Reclamation's Principal Investigator, who managed these surveys, is unaware of any features similar to those described by the commenter within the boundary of the project area.

Section 3.5 of the EA/IS addresses cultural resource protection as follows: "Cultural resources is a broad term that includes prehistoric, historic, archeological, and tribal cultural resources. The National Historic Preservation Act (NHPA) of 1966 is the primary federal legislation that outlines the federal government's responsibility related to cultural resources. Title 54 U.S.C. § 306108, commonly known as section 106 of the NHPA, requires the federal government to take into consideration the effects of the undertaking on any historic property, i.e., cultural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP)."

The project area's cultural resources identification and significance determinations were performed by Reclamation in consultation with BLM, consistent with the terms and stipulations of a Programmatic Agreement (PA) (USFWS et al. 2000) pursuant to the NHPA's section 106 process and its implementing regulations at 36 CFR Part 800. Based on the information presented in the EA/IS, supported by confidential comprehensive cultural resource reports, the proposed action would not be expected to have significant impacts on cultural resources that are known to exist within the project area. There are two environmental commitments incorporated into the proposed action to address undiscovered historic or prehistoric resources (EC-CU-1) and the encounter of human remains (EC-CU-2).

Comment 5v. Map Clarity

The maps and figures in the EA/IS are similar with respect to content, level of detail, and scale to NEPA/CEQA documents prepared by the TRRP since the Hocker Flat project was authorized in 2004. The maps have been prepared to assist the reader in understanding the size, context, and spatial orientation of the proposed action with respect to various land uses and resources. They are intended to be used in conjunction with the text in the EA/IS sections. The figures in Chapter 2 are most enlightening when read closely alongside the descriptions of the proposed action.

The TRRP has an open door policy, and staff members are available to answer questions or explain maps, as needed. The commenter is welcome to meet with TRRP staff to get clarifications on maps. Project designers were available at the March 15, 2017, public meeting to answer detailed project questions from those in attendance. TRRP will also hold a pre-construction meeting with local landowners to any answer additional questions.

Comment 5w. EIR Requested

Please refer to the responses to comments 5b and 5p.

Comment 5x. Construction Noise

Please refer to the responses to comments 4a and 4c.

Comment 5y. County Road Damage

Please refer to the response to comment 4c.

Comment 5z. Sky Ranch Road–Sheridan Creek Crossing

The TRRP thanks the commenter for bringing the Sky Ranch Road crossing of Sheridan Creek to our attention. This location is not within the boundary of the project area, and while we have coordinated with representatives of Trinity County's Department of Transportation on this project, potential for road failure at this crossing has not been identified by County staff prior to this comment.

While this location is not within the boundary of the project area, Section 3.6 of the EA /IS provides a description of the existing transportation network and acknowledges the environmental commitments incorporated into the proposed action to minimize traffic related impacts. Environmental commitment EC-T-3 requires coordination with Trinity County to evaluate the condition of Sky Ranch Road prior to project implementation, address potential impacts to Sky Ranch Road, and identify and implement measures necessary to ensure impacts to this road would be addressed both

during and after project implementation. Environmental commitment EC-T-4 requires preparation and implementation of a traffic control plan that will address public safety and emergency access issues.

Please also refer to the response to comment 4c.

Comment 5aa. Public Safety and Emergency Access

Please see the response to comment 5z.

Comment 5ab. Repair County Road Pre-construction

Consistent with the requirements of Trinity County's Department of Transportation for using Sky Ranch Road to implement the proposed action, the TRRP would require that construction documents include provisions to ensure a safe and stable running surface prior to use by construction equipment. These provisions would apply only to those segments of Sky Ranch Road that would be affected as a result of traffic associated with the proposed action per TRRP's agreement with Trinity County.

Comments 5ac, 5ad. Traffic Safety

Please see the response to comment 5z. Please also see the responses to comments 1a and 1b.

Comment 5ae. Traffic

Consistent with environmental commitment EC-TC-4, any traffic associated with TRRP's proposed action, including the transport of legal non-highway vehicles, will be in accordance with state law. Traffic by highway-legal trucks too wide to allow a passenger vehicle to pass will be consistent with the proposed Traffic Management Plan.

Comment 5af. Sheridan Creek Confluence

The commenter suggests that the proposed action would have an adverse effect on the hydrology and aquatic connectivity of Sheridan Creek at its confluence with the Trinity River. The proposed action describes activities at two activity areas associated with Sheridan Creek within the boundary of the project area: SC-W-4 (Sheridan Creek) and SC W-5 (River Right Wetland Complex). These two areas are illustrated on Figure 2-2. In addition, Figure 2-1 illustrates what the TRRP refers to as the Relic Sheridan Creek Riparian Corridor, an environmentally sensitive area that was avoided in the design process.

Historic dredging operations throughout the project area dramatically changed the topographic features and altered the hydrology of both the Trinity River and Sheridan Creek. The corridor illustrated on Figure 2-1 reflects a riparian area that was essentially isolated from the floodplain of the Trinity River by large tailings pile deposits, as well as the formation of an alluvial deposit along the river. The construction at SC W-5 is intended to reestablish a functional riverine/wetland complex in the general vicinity of the pre-mining era Sheridan Creek confluence. This is fully described in Section 2.1.14 of the EA/IS. The construction of SC W-4 is intended to enhance the flow from a feature identified as Sheridan Spring and redirect it into the existing riparian corridor to enhance the riparian functions and values of the larger area.

Comment 5ag. TRRP Refinements Review

This topic is outside the scope of the project analyzed in the EA/IS but is pertinent to the TRRP's activities.

During the March 28, 2017, TMC meeting, the TRRP Implementation Branch Chief provided an overview of future channel rehabilitation work, including a brief discussion of the potential to conduct high-value (environmentally beneficial), low-cost site revisits at key locations based on science and observations since the sites were constructed (for example, refining the inundation elevation of floodplains or adding beaver dam analogs), in keeping with the TRRP's adherence to the principle of adaptive management.

The refinements process referred to by the commenter is a programmatic review requested by the Hoopa Valley Tribe and Yurok Tribe and approved by the Regional Directors for Reclamation and U.S. Fish and Wildlife Service. An adaptive management consulting service hired by Reclamation will review the goals and mandates of the Trinity River Flow Evaluation and the ROD, identify refinements to TRRP management and functions that will better serve those goals and mandates, and assist the Department of Interior in implementing refinements. There is no expectation on the part of the TMC or Department of Interior agencies that design, environmental review/permitting, and project implementation or other authorized TRRP activities, such as flow management and monitoring, will be deferred during the 2-year refinement contract review period.

Comment 5ah. Flow Releases

This topic is outside the scope of the project analyzed in the EA/IS but is pertinent to the TRRP's activities.

Many studies and monitoring efforts are ongoing as part of the TRRP's overall program of work. The restoration activities identified in the ROD, including the water releases referenced by the commenter, culminated nearly 20 years of detailed, scientific efforts; the ROD documents the actions determined to be necessary and appropriate to restore and maintain anadromous fishery resources of the Trinity River. The TRRP's adaptive management program involves continual monitoring, assessment, and adjustment of implementation activities. The result of adaptive management is a refinement of the restoration activities, within allowable authorizations, that the Department of Interior agencies are directed to implement.

Comment 5ai. TRRP Assumptions

This topic is outside the scope of the project analyzed in the EA/IS but is pertinent to the TRRP's activities.

The Department of Interior agencies, including the TRRP and its agency partners in the TMC, are directed to implement the Preferred Alternative described in the ROD. This alternative includes variable annual instream flows, physical channel rehabilitation, sediment management, and watershed restoration efforts, as well as completed infrastructure improvements/modifications to structures affected by peak instream flows.

Please also see the response to comment 5e.

Comment 5aj. TRRP Contracting

This topic is outside the scope of the project analyzed in the EA/IS but is pertinent to the TRRP's activities.

Please see the responses to comments 4af, 4ag, 4ai, and 4aj.

Comment 5ak. Complaint

This topic is outside the scope of the project analyzed in the EA/IS but is pertinent to the TRRP's activities.

Neither TMC nor TRRP have received any correspondence or direction from the Department of Interior regarding a complaint of fraud, waste, and abuse or any authorized actions or direction to cease actions.

Comment 5al. Conflict of Interest

This topic is outside the scope of the project analyzed in the EA/IS but is pertinent to the TRRP's activities.

The statement that the TMC members never recuse themselves from votes is inaccurate. TMC members have recused themselves from votes as shown in records of motions in the TMC meeting notes.

Comment 5am. TRRP Oversight

The TRRP is mandated to implement the ROD. TRRP projects are vetted through the established technical Work Groups (Watershed, Fish, Flow, Physical/Gravel, and Wildlife and Riparian) and Interdisciplinary Team processes, the TMC and Trinity River Adaptive Management Working Group, NEPA/CEQA processes where appropriate, public involvement and notifications, scientific report reviews, and peer reviews of scientific publications in journals.

Please also refer to the response to comment 5ag.

Appendix C

Deep Gulch and Sheridan Creek Rehabilitation Project Aquatic Conservation Strategy Consistency Evaluation

INTRODUCTION

The Bureau of Reclamation (Reclamation), under the auspices of the Trinity River Restoration Program (TRRP), is the proponent for implementing a series of channel rehabilitation and sediment management activities throughout the 40-mile reach of the Trinity River below Lewiston Dam. This evaluation is for the Deep Gulch and Sheridan Creek sites, as described in Chapter 2 of this EA/IS at (River Mile 81.6–82.9).

This document evaluates and determines the consistency of the TRRP activities with the Aquatic Conservation Strategy (ACS) in the Record of Decision (ROD) for the Final Supplemental Environmental Impact Statement on Management of Habitat for Late-Successional and Old-Growth Related Species within the Range of the Northern Spotted Owl. The ACS was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained within them on public lands. The ROD amended the Redding Resource Management Plan (RRMP) prepared by the Bureau of Land Management (BLM) in 1994.

The intent of this evaluation is to ensure that decision makers have the information necessary to determine whether the proposed TRRP activities at the Deep Gulch and Sheridan Creek sites are consistent with the ACS objectives. This evaluation incorporates information provided in the Mainstem Trinity River Watershed Analysis (U.S. Bureau of Land Management 1993), incorporates by reference the 2009 Master Environmental Impact Report prepared by Reclamation in cooperation with BLM, and other information in the administrative record to assist the decision maker. In order to make the finding that a project or management activity "meets" or "does not prevent attainment" of the ACS objectives, the decision maker must ensure that management actions that do not maintain the existing condition or lead to improved conditions in the long term would not be implemented.

The ACS states that species-specific strategies aimed at defining explicit standards for habitat elements would be insufficient for protecting even the targeted species. The intent of the ACS is to maintain and restore ecosystem health at watershed and landscape scales to protect habitat for fish and other riparian-dependent species and resources and to restore currently degraded habitats. This approach seeks to prevent further habitat degradation and restore habitat over broad landscapes as opposed to implementing individual projects or focusing on small watersheds. Because the ACS is based on natural disturbance processes, the ROD recognized that it is a long-term strategy that may take decades, and possibly more than a century, to accomplish all of its objectives.

The ACS contains four components: riparian reserves, key watersheds, watershed analysis, and watershed restoration. Each component is integral to improving the health of the aquatic ecosystems encompassed by the ROD. A detailed discussion of these components is provided in the ROD.

Since the BLM's RRMP predated the ROD, it was subsequently amended to include Attachment A of the ROD.

Attachment A of the ROD includes Standards and Guidelines (S&Gs) that were incorporated as management direction into the BLM RRMP to ensure compliance with the ROD. This hierarchy of land allocations is described below.

1. Congressional Reserved Areas – Includes wilderness, federal wild and scenic Rivers, national monuments, and other federal lands not administered by the Forest Service or Bureau of Land Management.

2. Late Successional Reserves – Lands identified with an objective of protecting and enhancing conditions for late-successional and old-growth forest ecosystems.

3. Adaptive Management Areas – Areas with objectives of developing and testing new management approaches to integrate ecological and economic health and other social objectives.

4. Managed Late-Successional Areas – Specific late-successional areas in the drier provinces where regular and frequent fire is a natural part of the ecosystem.

5. Administratively Withdrawn Areas – Areas identified in current Forest and District Plans or draft plan preferred alternatives. These areas include recreation and visual areas, backcountry areas, and other areas where management emphasis precludes scheduled timber harvest.

6. Riparian Reserves – As a key component of the ACS, riparian reserves provide an area along all streams, wetlands, ponds, lakes, and unstable/potentially unstable areas where riparian-dependent resources receive primary emphasis. These reserves are important to the terrestrial ecosystem as well, providing connectivity corridors and dispersal habitat for certain terrestrial species.

7. Matrix – The matrix consists of those federal lands outside the six previous allocations.

The activities proposed by Reclamation under the auspices of the TRRP are confined to a narrow corridor that parallels the Trinity River from Lewiston Dam downstream to Helena, California. This section of the Trinity River is both federally and state designated as a wild and scenic river; it therefore meets the definition of a Congressionally reserved area. Riparian reserve and matrix designations are also used to classify lands within this corridor. This evaluation focuses on riparian reserves as defined in the RRMP.

The following sections of this evaluation address the consistency of the TRRP's proposed action at the Deep Gulch and Sheridan Creek l sites as a single project with the four components of the ACS and the nine ACS objectives described in Attachment B to the ROD.

COMPONENTS OF THE AQUATIC CONSERVATION STRATEGY

Riparian Reserves

The project area contains riparian reserves, as defined in the BLM's RRMP. Watershed analyses have been completed by BLM for federal lands within the Trinity River corridor; these analyses did not modify the designated widths of the riparian reserves established by the S&Gs described in the BLM's RRMP as amended by the ROD. The width of the riparian reserves essentially correlates with the floodplain of the Trinity River, as well as a buffer around riparian features identified during the wetland delineation process within the project area defined for the Deep Gulch and Sheridan Creek sites. Table A-1 at the end of this document shows the S&Gs that were integrated into the project.

Key Watersheds

There are no key watersheds within or downstream of the 40-mile reach of the Trinity River downstream of Lewiston Dam, although the Forest Service does manage key watersheds in the upper Trinity River watershed, primarily associated with the Salmon-Trinity Alps Wilderness Area. This component of the ACS is therefore not applicable to the activities proposed by the TRRP in the Deep Gulch/Sheridan Creek EA/IS.

Watershed Analysis

The BLM conducted watershed analyses for the lands within the Trinity River corridor. These analyses did not identify specific recommendations regarding the riparian reserve widths; therefore, the S&Gs established under the ACS are applicable to this project. Any activities proposed within these riparian reserves will conform to the site-specific conditions established in the S&Gs to ensure consistency with the ACS.

Watershed Restoration

By its nature, the project is a comprehensive ecosystem restoration project intended to restore the physical processes and biological resources of the mainstem Trinity River. While some short-term impacts may occur to riparian-dependent species, the scale of the activities proposed by the TRRP, including this project, ensures that restoration of ecological processes and functions will be consistent with the ACS.

Aquatic Conservation Strategy Objectives

The following section evaluates the consistency of the proposed action with the nine ACS objectives listed in Attachment B of the ROD.

The lands managed by the STNF and BLM within the range of the northern spotted owl will be managed to:

1. *Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.*

The project by its nature is intended to restore the landscape processes, specifically the alluvial and riparian functions, that have been impaired by construction of the Trinity River Division of the

Central Valley Project. The activities that are proposed on federal lands subject to the ACS are an integral part of the larger project and are intended to assist BLM in attaining this ACS objective.

2. *Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.*

The project area defined in Figure 2-2 of the EA/IS for the Deep Gulch and Sheridan Creek sites ensure that project activities are implemented in a manner that complements the functional values offered by the Trinity River between the Lewiston and Helena. The TRRP, in cooperation with BLM, has been involved in the identification and prioritization of channel rehabilitation sites for a number of years. This project has been designed to acknowledge the inter-relationship between aquatic and riparian habitats that occur throughout this reach. Specifically, this project includes a number of activities to enhance the connectivity of aquatic and riparian habitat in the general vicinity of the project area consistent with the overall objectives of the TRRP for the 40-mile reach of the Trinity River downstream of Lewiston Dam. Modifications of floodplains, removal of grade control structures, construction of functional side-channel and off-channel habitat, and augmentation of spawning gravel are examples of restoring connectivity for a variety of aquatic and riparian-dependent species. The intent of this project is to assist the BLM in attaining this ACS objective.

3. *Maintain and restore the physical integrity of the aquatic system, including shorelines, banks and bottom configurations.*

A fundamental component of the project are the activities intended to restore the bed, banks, and floodplain of the Trinity River. The modification of grade control, expansion of functional floodplain habitat, construction of off-channel wetland complexes, efforts to enhance the coarse sediment supply, and placement of large wood and boulders that provide refugia habitat are examples of the activities intended to restore the physical integrity of the aquatic system. Collectively, these efforts are designed to restore the alluvial habitat and associated riparian character of the Trinity River, which was impaired by reductions in flow and sediment upstream. The intent of this project is to assist the BLM in attaining this ACS objective.

4. *Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.*

By its nature, the project will require removal of vegetation and extensive grading activities, including construction within the active channel of the Trinity River. In 2015, the North Coast Regional Water Quality Control Board (Regional Water Board) reissued three General Permits to the TRRP that provide authorization for channel rehabilitation, fine sediment management, and coarse sediment management activities under Section 401 of the Clean Water Act (CWA). As a cooperating agency, BLM has also worked closely with the TRRP to ensure that Best Management Practices are incorporated into the project description as environmental commitments to minimize effects on water quality. Compliance with conditions established by the USACE consistent with the requirements of Nationwide Permit 27 will ensure compliance with Section 404 of the CWA. As proposed, this

project would be consistent with the requirements of the Regional Water Board and the BLM's RRMP; it would therefore not prevent attainment of this ACS objective.

5. *Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.*

A fundamental element of the TRRP is restoration of the sediment regime in a manner that enhances the alluvial character of the 40-mile reach of the Trinity River downstream of Lewiston Dam. The Deep Gulch/Sheridan Creek project would ensure that the coarse sediment fraction of the sediment regime will be replenished on an ongoing basis, consistent with the timing, volume, and rates appropriate for the scaled-down channel. The inclusion of large wood and boulder clusters also increases the functional benefits of gravel augmentation. While there may be a change in the timing or volume of sediment input, overall the project is intended to assist BLM in attainment of this ACS objective.

6. *Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.*

The preferred alternative will not influence any in-stream flows. No modifications to the flow regime of the Trinity River or its tributaries are proposed; therefore, this ACS objective would be met.

7. *Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.*

The activities to modify the bed, banks, and floodplains of the Trinity River within the project boundary are designed to maintain and/or restore the hydrologic connection between the river and adjacent wetland/riparian habitat. By reducing the floodplain elevations, the current flow regime could provide additional opportunities to establish functional, connected wetland habitat adjacent to the Trinity River. The creation of off-channel wetland complexes that are hydrologically connected to the Trinity River will dramatically increase the wetland and riparian habitat within this 1.3-mile long segment. This project would be consistent with this ACS objective.

8. *Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.*

A fundamental objective of the TRRP is to restore the species composition and structural diversity of native plant communities that occur along the mainstem Trinity River. The modifications proposed to the active channel, floodplain, and upland activity areas within the boundaries of the Deep Gulch and Sheridan Creek sites will provide conditions that are receptive to the reintroduction of a diverse assemblage of native riparian vegetation and reduce the potential for non-native, invasive, and noxious plant species. Woody material of various size classes removed as part of the rehabilitation activities will be incorporated into the project as appropriate. Placement of large wood within and/or adjacent to constructed alluvial features will enhance channel complexity and edge habitat. On-site

mulching of vegetative debris will provide effective ground cover and increase successful revegetation efforts. Overall, this natural recruitment of riparian communities, supplemented by riparian planting efforts, will ensure that this project meets this ACS objective.

9. *Maintain and restore habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species.*

A fundamental objective of the TRRP is to restore the aquatic, riparian, and upland habitat along the 40-mile reach of the mainstem Trinity River. The project activities emphasize creation and/or rehabilitation of aquatic and riparian habitat within the boundaries of the Deep Gulch and Sheridan Creek sites. Collectively, these activities are intended to generate geomorphic responses downstream that will further the overall habitat enhancement objectives by reestablishing the alluvial processes that were impaired by the construction and operation of the Trinity River Division. The activities that are proposed on federal lands subject to the ACS are an integral part of the overall objective of the TRRP and are intended to assist BLM in attaining this ACS objective.

Conclusion

Based on this evaluation, BLM finds that the project described in the NEPA decision document has been designed and would be constructed in a manner that does not prevent future attainment of the ACS objectives. The management actions incorporated into the preferred alternative will maintain the existing condition or lead to improved conditions in the long term, consistent with the intent of the ACS.

Table C-1. ACS Applicable Standards and Guidelines

All Land Allocations		
Survey and Manage	2	Survey prior to ground disturbing activities.
Riparian Reserves		
Timber Management	TM 1-c	Apply silvicultural practices for Riparian Reserves to control stocking, reestablish and manage stands, and acquired desired vegetation characteristics needed to attain ACS objectives.
Roads Management	RF-1	Federal, state, and county agencies should cooperate to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives.
	RF-2	For each existing or planned road, meet Aquatic Conservation Strategy objectives by:
	RF-2a	Minimizing road and landing locations in Riparian Reserves.
	RF-2b	Completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
	RF-2c	Preparing road design criteria, elements, and standards that govern construction and reconstruction.

Table C-1. ACS Applicable Standards and Guidelines

	RF-2d	Preparing operation and maintenance criteria that govern road operation, maintenance, and management.
	RF-2e	Minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.
	RF-2f	Restricting sidecasting as necessary to prevent the introduction of sediment to streams.
	RF-3	Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by:
	RF-3a	Reconstructing roads and associated drainage features that pose a substantial risk.
	RF-3b	Prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.
	RF-3c	Closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs.
	RF-4	New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.
	RF-5	Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.
	RF-7	Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. As a minimum, this plan shall include provisions for the following activities:
	RF-7a	Inspections and maintenance during storm events.
	RF-7b	Inspections and maintenance after storm events.
	RF-7c	Road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.
	RF-7d	Traffic regulation during wet periods to prevent damage to riparian resources.
	RF-7e	Establish the purpose of each road by developing the Road Management Objective.

Table C-1. ACS Applicable Standards and Guidelines

Recreation Management	RM-1	New recreational facilities within Riparian Reserves, including trails and dispersed sites, should be designed to not prevent meeting Aquatic Conservation Strategy objectives. Construction of these facilities should not prevent future attainment of these objectives. For existing recreation facilities within Riparian Reserves, evaluate and mitigate impact to ensure that these do not prevent, and to the extent practicable contribute to, attainment of Aquatic Conservation Strategy objectives.
	LH-3	Locate new support facilities outside Riparian Reserves. For existing support facilities inside Riparian Reserves that are essential to proper management, provide recommendations to FERC that ensure Aquatic Conservation Strategy objectives are met. Where these objectives cannot be met, provide recommendations to FERC that such support facilities should be relocated. Existing support facilities that must be located in the Riparian Reserves will be located, operated, and maintained with an emphasis to eliminate adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives.
	LH-4	For activities other than surface water developments, issue leases, permits, rights-of-way, and easements to avoid adverse effects that retard or prevent attainment of Aquatic Conservation Strategy objectives. Adjust existing leases, permits, rights-of-way, and easements to eliminate adverse effects that retard or prevent the attainment of Aquatic Conservation Strategy objectives. If adjustments are not effective, eliminate the activity. Priority for modifying existing leases, permits, rights-of-way and easements will be based on the actual or potential impact and the ecological value of the riparian resources affected.
General Riparian Area Management	RA-2	Fell trees in Riparian Reserves when they pose a safety risk. Keep felled trees on-site when needed to meet coarse woody debris objectives.
	RA-3	Herbicides, insecticides, and other toxicants, and other chemicals shall be applied only in a manner that avoids impacts that retard or prevent attainment of Aquatic Conservation Strategy objectives.

REFERENCES

Shasta-Trinity National Forest. 2005. Upper Trinity River watershed analysis. USDA Forest Service, Shasta-Trinity National Forest.

U.S. Bureau of Land Management. 1995. Mainstem Trinity River Watershed Analysis.

U.S. Bureau of Land Management. 1993. Redding Resource Management Plan and Record of Decision.

APPENDIX D

Deep Gulch and Sheridan Creek Rehabilitation Project Mitigation Monitoring and Reporting Program and Project Design Features

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APPENDIX D

Deep Gulch and Sheridan Creek Rehabilitation Project Mitigation Monitoring and Reporting Program and Project Design Features

INTRODUCTION

The first part of this document comprises the MMRP for the Trinity River Channel Rehabilitation Site: Deep Gulch and Sheridan Creek (RM 81.6-82.9) Project (the Proposed Project). The purpose of providing the MMRP as an appendix is to facilitate its use as a stand-alone document, which clearly expresses to the reader the mitigation responsibilities of the Bureau of Reclamation (Reclamation), and Regional Water Quality Control Board – North Coast Region (Regional Water Board) in implementing the project. The mitigation measures listed herein, which are an updated version of those included within the Master EIR/Programmatic EA (North Coast Regional Water Board and Reclamation 2009), are required by law or regulation and will be adopted by the Regional Water Board when it issues it Notice of Applicability for the project. The second part of this document is comprised of project design elements that shall be implemented as part of the Proposed Project. In general, Chapter 3 mitigation measures identified in the EA/IS correspond to Chapter 4 mitigation measures in the Master EIR. The Appendix B mitigation measures in this EA/IS are meant to mitigate the same impacts as those identified in the Master EIR. Consequently, these mitigation measures are only different to the extent necessary to tailor the mitigation measures to the site specific conditions.

Mitigation is defined by the CEQA – Section 15370 as a measure which:

- Avoids the impact altogether by not taking a certain action or parts of an action;
- Minimizes impacts by limiting the degree or magnitude of the action and its implementation;
- Rectifies the impact by repairing, rehabilitating, or restoring the impacted environment;
- Reduces or eliminates the impact over time by preservation and maintenance operations during the life of the project; and
- Compensates for the impacts by replacing or providing substitute resources or environments.

The mitigation program identified in the MMRP to reduce potential project impacts consists of mitigation measures, project design elements, and construction criteria and methods. Mitigation measures provided in this MMRP have been identified in Chapter 3, Affected Environment and Environmental Consequences of the Proposed Project EA/IS, as feasible and effective in mitigating project-related environmental impacts. This MMRP includes discussion of the following: legal requirements, intent of the MMRP, development and approval process for the MMRP, the authorities and responsibilities associated with the implementation of the MMRP, a description of the mitigation summary table, project design elements, construction criteria and methods, and resolution of noncompliance complaints.

LEGAL REQUIREMENTS

The legal basis for the development and implementation of the MMRP lies within CEQA (including the California PRC). Sections 21002 and 21002.1 of the California PRC state:

- Public agencies are not to approve projects as proposed if there are feasible alternatives or feasible mitigation measures available that would substantially lessen the significant environmental effects of such projects.

- Each public agency shall mitigate or avoid the significant effects on the environment of projects that it carries out or approves whenever it is feasible to do so.

- Section 21081.6 of the California PRC further requires that: the public agency shall adopt a reporting or monitoring program for the changes made to the project or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment. The reporting or monitoring program shall be designed to ensure compliance during project implementation.

- The monitoring program must be adopted when a public agency makes its findings under CEQA so that the program can be made a condition of project approval in order to mitigate significant effects on the environment. The program must be designed to ensure compliance with mitigation measures during project implementation to mitigate or avoid significant environmental effects.

INTENT OF THE MITIGATION MONITORING AND REPORTING PROGRAM

The MMRP is intended to satisfy the requirements of CEQA as they relate to the project. It is anticipated to be used by Reclamation and Regional Water Board staff, participating agencies, project contractors, and mitigation monitoring personnel during implementation of the project.

The primary objective of the MMRP is to ensure the effective implementation and enforcement of adopted mitigation measures and permit conditions. The MMRP will provide for monitoring of construction activities as needed, on-site identification and resolution of environmental problems, and proper reporting to lead agency staff.

DEVELOPMENT AND APPROVAL PROCESS

The timing elements for implementing mitigation measures and the definition of the approval process have been provided in detail through this MMRP to assist staff from Reclamation and the Regional Water Board by providing the most usable monitoring document possible.

AUTHORITIES AND RESPONSIBILITIES

As the Project proponent, Reclamation, functioning as the TRRP, will have the primary responsibility for the execution and proper implementation of the MRRP. The Regional Water Board may provide Reclamation with guidance, as warranted. Reclamation will be responsible for the following activities:

- Coordination of monitoring activities,
- Management of the preparation and filing of monitoring compliance reports, and

- Maintenance of records concerning the status of all approved mitigation measures.

SUMMARY OF MONITORING REQUIREMENTS

Table D-1, which follows, summarizes the mitigation measures and associated monitoring requirements for the Proposed Project. The mitigation measures are organized by environmental issue area (i.e., Soils, Water Quality, etc.). Table D-1 is composed of the following four columns:

- **Mitigation Measure:** Lists the mitigation measures identified for each significant impact discussed in the Draft EA/IS for the project. The mitigation numbering system used in the Draft MEIR/Draft EIR is carried forward in this MMRP.

- **Timing/Implementation:** Indicates at what point in time or project phase the mitigation measure will need to be implemented.

- **Responsible Parties (tasks):** Documents which agency or entity is responsible for implementing a mitigation measures and what, if any, coordination is required (e.g., approval from Caltrans). If more than one party has responsibility under a given mitigation measure, the tasks of each individual party is identified parenthetically (e.g., "implementation" or "monitoring").

- **Verification:** Provides spaces to be initialed and dated by the individual responsible for verifying compliance with each specific mitigation measure.

RESOLUTION OF NONCOMPLIANCE COMPLAINTS

Any person or agency may file a complaint that states noncompliance with the mitigation measures that were adopted as part of the approval process for the project. The complaint shall be directed to Reclamation at the TRRP office (P.O. Box 1300, 1313 South Main Street, Weaverville, CA 96093) and to the Regional Water Board at 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403, in written form, providing detailed information on the purported violation. Reclamation and the Regional Water Board shall conduct an investigation and determine the validity of the complaint. If noncompliance with a mitigation measure is verified, Reclamation shall take the necessary action(s) to remedy the violation. The complainant shall receive written confirmation indicating the results of the investigation or the final corrective action that was implemented in response to the specific noncompliance issue.

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
3.3 Geology, Fluvial Geomorphology, and Soils			
Impact 3.3-2: Construction activities associated with the Proposed Project could result in increased erosion and short-term sedimentation of the Trinity River.			
4.3-2a Reclamation will implement the following measures during construction activities: • Areas where ground disturbance will occur will be identified in advance of construction and limited to only those areas that have been approved by Reclamation. • All vehicular construction traffic will be confined to the designated access routes and staging areas. • Disturbance will be limited to the minimum necessary to complete all rehabilitation activities. • All supervisory construction personnel will be informed of environmental concerns, permit conditions, and final project specifications.		Reclamation (implementation) Regional Water Board (Storm Water Pollution Prevention Plan [SWPPP] review and approval) BLM (SWPPP review)	
4.3-2b Reclamation will prepare an erosion and sedimentation control plan (SWPPP). Measures for erosion control will be prioritized based on proximity to the river. Reclamation will provide the SWPPP for review by associated agencies (e.g., BLM, the Regional Water Board, NMFS, and CDFW) upon request. Reclamation's project manager will ensure the preparation and implementation of an erosion and sediment control plan prior to the start of construction. The following measures will be used as a guide to develop this plan: • Restore disturbed areas to pre-construction contours to the fullest extent feasible. • Salvage, store, and use the highest quality soil for revegetation. • Discourage noxious weed competition and control noxious weeds. • Clear or remove roots from steep slopes immediately prior to scheduled construction. • Leave drainage gaps in topsoil and spoil piles to accommodate surface water runoff. • To the fullest extent possible, cease excavation activities during significantly wet or windy weather. • Use bales, wattles, and/or silt fencing as appropriate. • Before seeding disturbed soils, work the topsoil to reduce compaction caused by construction vehicle traffic. • Rip feathered edges (and floodplain surfaces where appropriate) to approximately 18 inches deep. The furrowing of the river's edge will remove plant roots to allow mobilization of the bed, but will also intercept sediment before it reaches the waterway. • Spoil sites will be located such that they do not drain directly into a surface water feature, if possible. If a spoil site will drain into a surface water feature, catch basins will be constructed to intercept sediment before it reaches the feature. Spoil sites will be graded and vegetated to		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
reduce the potential for erosion. • Sediment control measures will be in place prior to the onset of the rainy season to ensure that surface water runoff does not occur. Project areas will be monitored and maintained in good working condition until disturbed areas have been seeded and mulched or revegetated in another fashion. If work activities take place during the rainy season, erosion control structures will be in place and operational at the end of each construction day.			
4.5 Water Quality			
Impact 3.5-1: Construction of the proposed project could result in short-term, temporary increases in turbidity and total suspended solids levels during construction.			
4.5-1a The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2011), is summarized below. • Turbidity levels will not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. • Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. • Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.		Reclamation (implementation) Regional Water Board (review of monitoring data)	
4.5-1b To ensure that turbidity levels do not exceed the thresholds described above (4.4-1a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of		Reclamation	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. • If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.		(implementation) Regional Water Board (review of monitoring data)	
4.5-1c Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.		Reclamation (implementation)	
4.5-1d Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	
4.5-1e To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: • Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed as needed to reduce short-term erosion prior to the start of the rainy season. • Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels or other water bodies. • Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
occurs.			
Impact 3.5-2: Construction of the proposed project could result in short-term, temporary increases in turbidity and total suspended solids levels following construction.			
4.5-2a Turbidity increases associated with project activities will not exceed the water quality objectives for turbidity in the Trinity River Basin (North Coast Regional Water Quality Control Board 2011).		Reclamation (implementation)	
4.5-2b To ensure that turbidity levels do not exceed the threshold following construction, Reclamation will monitor turbidity and total suspended solids during and after representative rainfall events to determine the effect of the project on Trinity River water quality. At a minimum, field turbidity measurements will be collected whenever a visible increase in turbidity is observed. • If increases in turbidity and total suspended solids are observed as a result of erosion from constructed features, field turbidity measurements will be collected 50 feet upstream of a point adjacent to the end of the feature and 500 feet downstream of the feature. • If the grab sample indicates that turbidity levels exceed the established thresholds identified in the Basin Plan, the Regional Water Board will be notified. The need to implement erosion control measures for turbidity that is expected to result from overland river flows (versus surface run-off) will be evaluated with Regional Water Board staff to determine if remediation measures are needed.		Reclamation (implementation)	
4.5-2c To reduce the potential for the access routes to continually contribute soil materials to the Trinity River following project construction, thereby increasing turbidity and total suspended solids in the river, these routes will be stabilized or decommissioned upon completion of work in those areas consistent with the requirements outlined in at the end of this appendix (Design Elements and Construction Criteria). Decommissioning is defined as removing those elements of a road that reroute hillslope drainage and present slope stability hazards.		Reclamation (implementation)	
Impact 3.5-3: Construction of the proposed project could cause contamination of the Trinity River from hazardous materials spills.			
4.5-3a Reclamation will prepare and implement a spill prevention and containment plan in accordance with applicable federal and state requirements.		Reclamation (implementation)	
4.5-3b Reclamation will ensure that any construction equipment that will come in contact with the Trinity River be inspected daily for leaks prior to entering the flowing channel. External oil, grease, and mud will be removed from equipment using steam cleaning. Untreated wash and rinse water will be adequately treated prior to discharge if that is the desired disposal option.			

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.5-3c Reclamation will ensure that hazardous materials, including fuels, oils, and solvents, not be stored or transferred within 150 feet of the active Trinity River channel. Areas for fuel storage, refueling, and servicing will be located at least 150 feet from the active river channel or within an adequate secondary fueling containment area. Gas pumps and engines will be stored and maintained on impermeable barriers so that any leaking petroleum products are isolated from the ground. In addition, the construction contractor will be responsible for maintaining spill containment booms onsite at all times during construction operations and/or staging of equipment or fueling supplies. Fueling trucks will maintain a spill containment boom at all times.			
Impact 3.5-5: Construction and maintenance of the proposed project could result in the degradation of Trinity River beneficial uses identified in the Basin Plan.			
Water Quality Mitigation Measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, 4.5-1e, 4.5-2a, 4.5-2b, 4.5-2c, 4.5-3a, 4.5-3b, and 4.5-3c described above shall be implemented to protect the beneficial uses of the Trinity River.		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	
3.6 Fishery Resources			
Impact 3.6-1: Implementation of the proposed project could result in effects on potential spawning and rearing habitat for anadromous fishes, including the federally and state-listed coho salmon.			
4.6-1a The proposed construction schedule avoids in-channel work during the period in which it could affect spawning spring- and fall-run Chinook salmon, coho salmon, and steelhead or their embryos once in the gravel. As directed by the 2000 Biological Opinion (National Marine Fisheries Service 2000), Reclamation will ensure that all in-channel construction activities are conducted during late-summer, low-flow conditions (e.g., July 15-September 15).		Reclamation (implementation)	
4.6-1b Alluvial material used for coarse sediment additions will be composed of washed, spawning-sized gravels (3/8- to 5-inches diameter) from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter; will be free of contaminants, such as petroleum products; and will pass Caltrans cleanliness test #227 with a value of 85 or greater.		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
Impact 3.6-2: Implementation of the proposed project could result in increased erosion and sedimentation levels that could adversely affect fishes, including the federally and state-listed coho salmon.			
4.6-2a The water quality objective for turbidity levels in the Trinity River, as listed in the Basin Plan for the North Coast Region (North Coast Regional Water Quality Control Board 2011), is summarized below. • Turbidity levels shall not be increased more than 20 percent above naturally occurring background levels. Allowable zones of dilution within which higher percentages can be tolerated may be defined for specific discharges upon the issuance of discharge permits or waiver thereof. • Due to the nature of the proposed restoration activities and the clarity of the Trinity River during low flow conditions, the Regional Water Board has determined that an allowable zone of turbidity dilution is appropriate and necessary in order for Trinity River restoration activities to be accomplished in a meaningful, timely, and cost-effective manner that fully protects beneficial uses without resulting in a violation of the water quality objective for turbidity. • Project activities that occur in areas outside of the active river channel will not increase turbidity levels by more than 20 percent above naturally occurring background levels. During in-river construction activities and until the first extended period of post-construction high flow (i.e., flows of at least 6,000 cfs inundate the project areas and floodplain for a minimum of 7 days) a zone of turbidity dilution within which higher percentages will be tolerated will be defined in discharge permits as the full width of the river channel within 500 linear feet downstream of any project activity that increases naturally occurring background levels, provided that all other required controls and appropriate BMPs for sediment and turbidity control are in place and downstream beneficial uses are also fully protected. When naturally occurring background levels are less than or equal to 20 NTUs, turbidity levels immediately downstream of the zone of turbidity dilution shall not exceed 20 NTUs. If naturally occurring background levels are greater than 20 NTUs, turbidity levels immediately downstream of the 500 linear foot zone of dilution shall not be increased by more than 20 percent above the naturally occurring background level.		Reclamation (implementation)	
4.6-2b To ensure that turbidity levels do not exceed the thresholds described above (4.6-2a) during in-river project construction activities, Reclamation shall monitor turbidity levels upstream within 50 feet of project activities (i.e., natural background) and 500 feet downstream of the in-river construction activities that could increase turbidity. At a minimum, field turbidity measurements shall be collected whenever a visible increase in turbidity is observed. Monitoring frequency shall be a minimum of every two hours during in-river work periods and when activities commence that are likely to increase turbidity levels above any previously monitored levels. If grab sample results indicate that turbidity levels exceed 20 NTU at 500 feet downstream from construction activities, remedial actions will be implemented to reduce and maintain turbidity at or below 20 NTU immediately downstream of the 500 linear foot zone of dilution. Potential remedial actions		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
include halting or slowing construction activities and implementation of additional BMPs until turbidity levels are at or below 20 NTU.			
4.6-2c Fill gravels used on the streambeds, stream banks, and river crossings will be composed of washed, spawning-sized gravels from a local Trinity River Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater.		Reclamation (implementation)	
4.6-2d Reclamation will prepare and implement a SWPPP that describes BMPs for the project, including silt fences, sediment filters, and routine monitoring to verify effectiveness. Proper implementation of erosion and sediment controls will be adequate to minimize sediment inputs into the Trinity River until vegetation regrowth occurs. All required controls and BMPs, including sediment and erosion control devices, will be inspected daily during the construction period to ensure that the devices are properly functioning. Excavated and stored materials will be kept in upland activity areas with erosion control properly installed and maintained. Excavated and stored materials will be staged in stable upland activity areas. All applicable erosion control standards will be required during stockpiling of materials.		Reclamation (implementation) Regional Water Board (SWPPP review and approval) BLM (SWPPP review)	
4.6-2e To minimize the potential for increases in turbidity and suspended sediments entering the Trinity River as a result of access routes (e.g., roads), Reclamation will implement the following protocols: • Keep bare soil to the minimum required by designs. Erosion control devices/measures will be applied to areas where vegetation has been removed to reduce short-term erosion prior to the start of the rainy season. • Keep runoff from bare soil areas well dispersed. Dispersing runoff keeps sediment on-site and prevents sediment delivery to streams. Direct any concentrated runoff from bare soil areas into natural buffers of vegetation or areas with more gentle slopes where sediment can settle out. • Disconnect and disperse flow paths, including roadside ditches, that might otherwise deliver fine sediment to stream channels. • Decompact or rip floodplain areas so that surfaces are permeable and no surface water runoff occurs.		Reclamation (implementation)	
Impact 3.6-3: Construction activities associated with the Proposed Project could result in the accidental spill of hazardous materials that could adversely affect fishes, including the federally and state-listed coho salmon.			
4.6-3a Construction specifications will include the following measures to reduce potential impacts associated with accidental spills of pollutants (fuel, oil, grease, etc.) on vegetation and aquatic habitat resources within the project boundary:		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
• Equipment and materials will be stored away from wetland and surface water features. • Vehicles and equipment used during construction will receive proper and timely maintenance to reduce the potential for mechanical breakdowns leading to a spill of materials. Maintenance and fueling will be conducted in an area at least 150 feet away from waters of the Trinity River or within an appropriate secondary fueling containment area. Gasoline engines and pumps operated on the floodplain will be isolated from the ground by an impermeable barrier. • The contractor will develop and implement site-specific BMPs, a water pollution control plan, and emergency spill control plan. The contractor will be responsible for immediate containment and removal of any toxins released.			
Impact 3.6-4: Construction activities associated with the Proposed Project could result in the mortality of rearing fishes, including the federally and state-listed coho salmon.			
4.6-4a To avoid impacts to spawning and incubating salmonids, instream work will only occur between July 15 and September 15.		Reclamation (implementation)	
4.6-4b To avoid or minimize potential injury and mortality of fish during riverine activities (e.g., addition and grading of coarse sediment), equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area.		Reclamation (implementation)	
4.6-4c Reclamation will minimize potential injury and mortality of fish during the use of low-flow channel crossings. This will be accomplished by minimizing vehicle traffic and by operating equipment and vehicles slowly and deliberately to alert and scare adult and juvenile salmonids away from the crossing area, or by having a person wade ahead of equipment to scare fish away from the crossing area.		Reclamation (implementation)	
4.6-4d To avoid or minimize potential injury and mortality of fish during excavation and placement of fill materials in the active low-flow channel, equipment will be operated slowly and deliberately to alert and scare adult and juvenile salmonids away from the work area. Reclamation will ensure that before submerging an excavator bucket or laying gravel below the water surface, the excavator bucket will be operated to "tap" the surface of the water, or a person will wade ahead of fill placement equipment to scare fish away from the work area. To avoid impacts to mobile life stages of salmonids that may be present in the water column, the first layers of clean gravel that are being placed into the wetted channel will be added slowly and deliberately to allow fish to move from the work area.		Reclamation (implementation)	
4.6-4f Monitoring of the constructed inundation surfaces for salmon fry stranding will be performed by a qualified fishery biologist immediately after recession of flood flow events designated as a 1.5- year or less frequent event (i.e., $Q \geq$6,000 cfs) for a period of 3 years following construction. These flows, and associated fry stranding surveys, will typically occur between January and May. If substantial stranding is		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
observed, Reclamation will take appropriate measures to return stranded fishes to river habitats and to subsequently modify the constructed surfaces prior to the next managed flow release to reduce the likelihood of future occurrences of fry stranding.			
Impact 3.6-5: Implementation of the Proposed Project would result in the permanent and temporary loss of SRA for anadromous salmonids.			
4.6-5a Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes necessary for the projects to ensure that these features avoid and/or minimize to the fullest extent impacts to riparian habitats and wetland waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain flagged areas on a regular basis throughout the construction phase.		Reclamation (implementation)	
4.6-5b Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net-loss of riparian habitat and jurisdictional wetlands within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD.		Reclamation (implementation)	
4.6-5c Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be redelineated 5 years post-project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after project implementation and wetland delineation 5 years after implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian and jurisdictional wetland habitat within rehabilitation site boundaries after 10 years.		Reclamation (implementation)	
Impact 3.6-6: Implementation of the Proposed Project would result in fish passage being temporarily impaired during the in-stream construction phase.			
4.6-6a Low water crossings will only be constructed and used between July 15 and September 15. Fill gravels used on the low-water crossings, streambeds, and stream banks will be composed of washed, spawning-sized gravels from a local Trinity Basin source. Gravel will be washed to remove any silts, sand, clay, and organic matter and will be free of contaminants such as petroleum products. Washed		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
gravel will pass Caltrans cleanliness test #227 with a value of 85 or greater. Abutment and embankment materials used for bridges will be native alluvium obtained from within the boundaries of the Remaining Phase 1 or Phase 2 sites.			
4.6-6b Reclamation will construct the low-flow channel crossings to allow adequate depths and velocities for adult and juvenile salmonids to pass safely. Flows associated with storm events are not considered critical because the width and hydrologic conditions associated with low-flow channel crossings in the Trinity River are not considered to limit fish passage at elevated flows and would be comparable to hydrologic conditions in local riffle-and-run features. For Trinity River low-flow channel crossings at base flows, velocities will not exceed 2 feet per second to allow for juvenile fish passage and water depths will not be less than 12 inches in two-thirds of the river channel to provide adequate depth for adult salmon and steelhead passage.		Reclamation (implementation)	
4.6-6c The number of vehicle and equipment crossings of the Trinity River will be minimized.		Reclamation (implementation)	
4.6-6d Reclamation will not impede the physical features or hydraulic process of the Trinity River in a fashion that would be inconsistent with the 2000 Biological Opinion (National Marine Fisheries Service 2000), or result in a temporary impairment to fish passage related to a bridge.		Reclamation (implementation)	
3.7 Vegetation, Wildlife, and Wetlands			
Impact 3.7-1: Construction activities associated with the Proposed Project could result in the loss of jurisdictional waters including wetlands.			
4.7-1a Prior to the start of construction activities, Reclamation will retain a qualified biologist to identify potential construction access routes to ensure that these features avoid and/or minimize to the fullest extent impacts to jurisdictional waters. In addition, Reclamation will clearly identify, and flag in the field, biologically sensitive areas (e.g., jurisdictional waters and riparian habitat) to be protected, and will provide the contractor with specific instructions to avoid any construction activity within these features. Reclamation will inspect and maintain marked areas on a regular basis throughout the construction phase.		Reclamation (implementation)	
4.7-1b Reclamation will continue to implement the Riparian Revegetation and Monitoring Plan during Proposed Project implementation. The plan acknowledges that the ultimate goals of the TRRP include enhancement and maintenance of functional riparian habitat and no net loss of riparian habitat and jurisdictional wetlands both within channel rehabilitation site boundaries and generally throughout the 40-mile reach of the Trinity River below the TRD.		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.7-1c Reclamation will initiate a 10-year mitigation monitoring program after the first growing season following project implementation. Monitoring and maintenance of planted vegetation will take place in the first several years after planting. After a period of 5 years, the need for additional riparian habitat and wetland enhancement will be evaluated in a written report. At that time, Reclamation, in consultation with the USACE, Regional Water Board, and CDFW, will determine whether there is a need to further enhance or create additional areas of riparian habitat or jurisdictional wetlands within the project boundary so that there will be no net loss of wetlands at the end of a 5 year period and no net loss of riparian habitat after a 10-year monitoring period. In addition, wetlands will be re-delineated 5 years after project implementation to ensure no net loss of wetland habitat. Riparian habitat reporting 5 years after planting and wetland delineation 5 years after project implementation will provide Reclamation with needed data in a timely fashion to take additional pro-active measures towards meeting the goals of no net loss of riparian habitat and jurisdictional wetlands within boundaries established for TRRP rehabilitation sites after 10 years.		Reclamation (implementation)	
Impact 3.7-4: Construction activities associated with the Proposed Project could result in impacts to the state-listed little willow flycatcher (*Empidonax traillii*).			
4.7-4a Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable nesting habitat for the little willow flycatcher is present. If suitable habitat is present, Mitigation Measure 4.7-4b will be implemented.		Reclamation (implementation)	
4.7-4b Grading and other construction activities will be scheduled to avoid the nesting season to the extent possible. The nesting season for this species in Trinity County extends from June 1 through July 31. If construction occurs outside of the breeding season, no further mitigation is necessary. If the breeding season cannot be completely avoided, Mitigation Measures 4.7-4c and 4.7-4d will be implemented.		Reclamation (implementation)	
4.7-4c A qualified biologist will conduct a minimum of one pre-construction survey for the little willow flycatcher within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The pre-construction survey(s) will be used to ensure that no nests of this species within or immediately adjacent to the rehabilitation site will be disturbed during project implementation. To the extent possible given timing for construction and with the contract award, pre-construction surveys will conform to methodologies identified in a Willow Fly Catcher Survey Protocol for California available online at: http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html#Birds . If an active nest is found, CDFW will be contacted prior to the start of construction to determine the appropriate mitigation measures.		Reclamation (implementation)	
4.7-4d If vegetation is to be removed by the projects and all necessary approvals have been obtained, potential nesting substrate (e.g., shrubs and trees) that will be removed by the projects will be removed		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.			
Impact 3.7-5: Construction activities associated with the Proposed Project could result in impacts to the foothill yellow-legged frog (*Rana boylii*).			
4.7-5a If any construction in the Trinity River channel will occur prior to August 1 of any construction season, a pre-construction survey for the foothill yellow-legged frog larvae and/or eggs will be conducted by a qualified biologist. This survey will be conducted within the construction boundary no more than 2 weeks prior to the start of in-stream construction activities. If larvae or eggs are detected, the biologist will relocate them to a suitable location outside of the construction boundary.		Reclamation (implementation)	
4.7-5b In the event that a foothill yellow-legged frog is observed within the construction boundary, the contractor will temporarily halt in-stream construction activities until qualified personnel have moved the frog(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.		Reclamation (implementation)	
4.7-5c Mitigation measures identified in Section 3.5 (Water Quality) of this EA/IS for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for potential indirect impacts to dispersal habitat for the foothill yellow-legged frog due to sedimentation and accidental spills.		Reclamation (implementation)	
4.7-5d Mitigation measures associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.		Reclamation (implementation)	
Impact 3.7-6: Construction activities associated with the Proposed Project could result in impacts to the western pond turtle (*Actinemys marmorata pallida*).			
4.7-6a A minimum of one survey for western pond turtle nests will be conducted during the nesting season (generally late June-July) prior to construction. A qualified biologist will be retained by Reclamation to conduct the survey. If a western pond turtle nest is found, the biologist will flag the site and determine whether construction activities can avoid affecting the nest. If the nest cannot be avoided, the nest will be excavated by the biologist and reburied at a suitable location outside of the construction limits.		Reclamation (implementation)	
4.7-6b Prior to construction in open water habitat, a qualified biologist will trap and move western pond turtles out of the construction area to nearby suitable habitats.		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.7-6c During construction, in the event that a western pond turtle is observed within the construction limits, the contractor will temporarily halt construction activities until qualified personnel have moved the turtle(s) to a safe location within suitable habitat outside of the construction limits. Planned locations for placement of transferred animals will be downstream of the construction limits and will be reported to the CDFW prior to construction.		Reclamation (implementation)	
4.7-6d Mitigation measures presented in Section 4.5 (Water Quality) for addressing erosion and sedimentation and accidental spills will be fully implemented to mitigate for the potential indirect impacts to potential dispersal habitat due to sedimentation and accidental spills.		Reclamation (implementation)	
4.7-6e The mitigation measure associated with the disturbance to riparian habitat (Mitigation Measures 4.7-1a, 4.7-1b, and 4.7-1c) will be fully implemented.			
Impact 3.7-7: Construction activities associated with the Proposed Project could result in impacts to nesting Vaux's swift (C*haetura vauxi*), California yellow warbler (*Dendroica petechia*), and yellow-breasted chat (*Icteria virens*).			
4.7-7a Prior to the start of construction, a qualified biologist will conduct surveys of the rehabilitation sites to determine whether suitable nesting habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-7b will be implemented.		Reclamation (implementation)	
4.7-7b Grading and other construction activities will be scheduled to avoid the nesting season for these species to the extent possible. The nesting season for these species in Trinity County extends from March 15 through July 31. If construction occurs outside the breeding season, no further mitigation is necessary. If construction during the breeding season cannot be completely avoided, Mitigation Measures 4.7-7c and 4.7-7d will be implemented.		Reclamation (implementation)	
4.7-7c A qualified biologist will conduct a minimum of one preconstruction survey for these species within the rehabilitation sites and a 250-foot buffer around the sites. The survey will be conducted no more than 15 days prior to the initiation of construction in any given area. The preconstruction surveys will be used to ensure that no nests of these species within or immediately adjacent to the rehabilitation sites will be disturbed during project implementation. If an active nest is found, a qualified biologist will determine the extent of a construction-free buffer zone to be established around the nest.		Reclamation (implementation)	
4.7-7d If vegetation is to be removed by the project and all necessary approvals have been obtained, potential nesting habitat (e.g., shrubs and trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts.		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
Impact 3.7-8: Construction activities associated with the Proposed Project could result in impacts to bald eagle (*Haliaeetus leucocephalus*) and northern goshawk (*Accipiter gentilis*).			
Due to the removal of the bald eagle from the endangered species list, and the availability of the National Bald Eagle Management Guidelines provided by the US Fish and Wildlife Service to protect the bald eagle, additional measures are outlined below. These measures are now stricter than those outlined in the 2009 Master EIR/Programmatic EA, and provide additional protections for the bald eagle to abide by directives within the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d):			
4.7-8a Prior to the start of construction, a qualified biologist will conduct a survey of the rehabilitation sites to determine whether suitable habitat for the species is present. If suitable habitat is present, Mitigation Measure 4.7-8b will be implemented.		Reclamation (implementation)	
4.7-8b Construction will be scheduled to avoid the nesting season for bald eagles and northern goshawks to the extent feasible. The nesting season for most raptors in Trinity County extends from February 15 through July 31. Thus, if construction can be scheduled to occur between August 1 and February 14, the nesting season will be avoided and no impacts to nesting bald eagles and northern goshawks will be expected. If it is not possible to schedule construction during this time, mitigation measures 4.7-8c and 4.7-8d will be implemented.		Reclamation (implementation)	
4.7-8c Pre-construction surveys for bald eagles and nesting northern goshawks will be conducted by a qualified biologist to ensure that no disturbance will occur during project implementation. These surveys will be conducted no more than 14 days prior to the initiation of construction activities. The biologist will conduct surveys immediately adjacent to the impact areas for bald eagles and northern goshawk nests. If eagles or an active nest are found within 500 feet of the construction areas to be disturbed by these activities, the biologist, in consultation with the CDFW and the National Bald Eagle Management Guidelines, will determine the extent of a construction-free buffer zone to be established.		Reclamation (implementation)	
4.7-8d If vegetation is to be removed as part of the project and all necessary approvals have been obtained, potential nesting habitat (i.e., trees) that will be removed by the projects will be removed before the onset of the nesting season, if feasible. This will help preclude nesting and substantially decrease the likelihood of direct impacts. Directives under the Bald and Golden Eagle Management Protection Act will be adhered to.		Reclamation (implementation)	
Impact 3.7-9: Construction activities associated with the Proposed Project could result in impacts to special status bats and the ring-tailed cat (*Bassariscus astutus*).			

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.7-9a Pre-construction surveys for roosting bats and ring-tailed cats will be conducted prior to the start of construction activities. The surveys will be conducted by a qualified biologist. No activities that will result in disturbance to active roosts of special status bats or dens of ring-tailed cats will proceed prior to completion of the surveys. If no active roosts or dens are found, no further action is needed. Because bats are known to abandon young when disturbed, if a maternity roost is located, a qualified bat biologist will determine the extent of a construction-free zone to be implemented around the roost. If a bat maternity roost or hibernaculum is present, or a ring-tailed cat den is present, Mitigation Measures 4.7-9b and/or 4.7-9c will be implemented. CDFW will also be notified of any active bat nurseries within the disturbance zones.		Reclamation (implementation)	
4.7-9b If an active maternity roost or hibernaculum is found, the projects will be redesigned to avoid the loss of the tree or structure occupied by the roost, if feasible. If the projects cannot be redesigned to avoid removal of the structure, demolition of that structure will commence before bat maternity colonies form (i.e., prior to March 1) or after young are volant (flying) (i.e., after July 31). The disturbance-free buffer zones described above will be observed during the bat maternity roost season (March 1–July 31). If a non-breeding bat hibernaculum is found in a tree or structure to be razed, the individuals will be safely evicted under the direction of a qualified bat biologist, by opening the roosting area to allow air to flow through the cavity. Demolition will then follow no sooner than the following day (i.e., there will be no less than one night between initial disturbance for air flow and the demolition). This action will allow bats to leave during dark hours, thus increasing their chance of finding new roosts with a minimum of potential predation during daylight. Trees with roosts that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow bats to escape during darker hours.		Reclamation (implementation)	
4.7-9c Ring-tailed cats are fully protected species under Fish and Game Code Section 4700. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research. If an active ring-tailed cat nest is found, the projects will be redesigned to avoid the loss of the tree occupied by the nest if feasible. If the projects cannot be redesigned to avoid removal of the occupied tree, the CDFW will be contacted for their input. If approved by CDFW, demolition of the tree will commence outside of the breeding season (February 1 to August 30). If a non-breeding den is found in a tree scheduled to be removed, prior to disturbance, the CDFW will be notified to review and approve proposed procedures to ensure that no take occurs as a result of the action. Trees with dens that need to be removed will first be disturbed at dusk, just prior to removal that same evening, to allow ring-tailed cats to escape during the darker hours.		Reclamation (implementation)	
Impact 3.7-11: Construction activities associated with the proposed project could result in impacts to BLM and USFS sensitive species.			

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
Mitigations measures identified previously would reduce impacts to BLM and USFS sensitive species to less than significant. Mitigation measures 4.7-4a, 4.7-4b, and 4.7-4c would reduce impacts to the little willow flycatcher to a less than significant level. Mitigation measures 4.7-5a, 4.7-5b, 4.7-5c, and 4.7-5d would reduce the impacts to the foothill yellow-legged frog to a less than significant level. Mitigation measures 4.7-6a, 4.7-6b, 4.7-6c, and 4.7-6d would reduce the impacts to the western pond turtle to a less than significant level. Mitigation measures 4.7-8a, 4.7-8b, and 4.7-8c would reduce the impacts to the northern goshawk to a less than significant level. Mitigation measures 4.7-9a and 4.7-9b would reduce impacts to special status bats and the ring-tailed cat to less than significant.		Reclamation (implementation)	
Impact 3.7-13: Implementation of the proposed project could result in the spread of non-native and invasive plant species.			
4.7-13a When using imported erosion control materials (as opposed to rock and dirt berms), use only certified weed-free materials, mulch, and seed.		Reclamation (implementation)	
4.7-13b Preclude the use of rice straw in riparian areas.		Reclamation (implementation)	
4.7-13c Limit any import or export of fill to materials to those that are known to be weed free.		Reclamation (implementation)	
4.7-13d Ensure all construction equipment is thoroughly washed prior to entering and leaving the worksite. Equipment will be inspected to ensure that it is free of plant parts as well as soils, mud, or other debris that may carry weed seeds.		Reclamation (implementation)	
4.7-13e Use a mix of native grasses, forbs, and non-persistent non-native species for seeding disturbed areas that are subject to infestation by non-native and invasive plant species. Where appropriate, a heavy application of mulch will be used to discourage introduction of these species. Use of planting plugs of native grass species may also be used to accelerate occupation of disturbed sites and increase the likelihood of reestablishing a self-sustaining population of native plant species.		Reclamation (implementation)	
4.7-13f Within the first 3 to 5 years post-project, if it is determined that the project has caused non-native invasive vegetation to out-compete desired planted or native colonizing riparian vegetation, opportunities to control these non-native species will be considered. When implementing weed control techniques, the approach will consider using all available control methods known for a weed species.		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.7-13g Within the first 3 to 5 years post-project, if it is determined that on-site revegetation/post-project conditions do not meet landowner requirements, opportunities to revisit the site and remedy the concern will be considered.		Reclamation (implementation)	
3.8 Recreation			
Impact 3.8-1: Construction associated with the proposed project could disrupt recreation activities such as boating, fishing, and swimming in the Trinity River.			
4.8-1a Reclamation shall provide precautionary signage to warn recreational users of the potential safety hazards associated with project construction activities. Signs and/or buoys shall be placed within and directly adjacent to the project boundaries along the Trinity River in accordance with the requirements specified in Title 14, Article 6 of the California Code of Regulations. Notification signs shall be posted at public river access areas located within the project area and managed by BLM. Additionally, public notification of proposed project construction activities and associated safety hazards shall be circulated in the local *Trinity Journal* newspaper prior to the onset of project construction.		Reclamation (implementation)	
4.8-1b Reclamation will repair and/or replace any facilities associated with the Proposed Project that are impacted by project activities. This measure includes installation of interpretive signage consistent with the requirements of the BLM. Preconstruction meetings between Reclamation and landowners/land managers will identify the amount of vegetative screening to be retained at each recreation site within the project area.		Reclamation (implementation)	
Impact 3.8-2: Construction of the proposed project could result in an increased safety risk to recreational users or resource damage to lands within the project boundaries.			
Implementation of Mitigation Measures 4.8-1a and 4.8-1b described above would make this impact less than significant.		Reclamation (implementation)	
Impact 3.8-3: Construction activities associated with the proposed project could lower the Trinity River's aesthetic values for recreationists by increasing its turbidity.			
Mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described above for impact 3.5-1 would reduce impacts to less than significant.		Reclamation (implementation)	
3.10 Cultural Resources			
Impact 3.10-2: Implementation of the proposed project could potentially result in disturbance of undiscovered prehistoric or historic resources.			

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.10-2a Prior to initiation of construction or ground-disturbing activities, all construction workers will be alerted to the possibility of discovering cultural resources. This includes prehistoric and/or historic resources. Personnel will be instructed that upon discovery of buried cultural resources, work within 50 feet of the find will be halted and Reclamation's designated archaeologist will be consulted. Once the find has been identified, Reclamation will be responsible for developing a treatment plan for the cultural resource including an assessment of its historic properties and methods for avoiding any adverse effects, pursuant to the PA and in compliance with the NHPA.		Reclamation (implementation)	
Impact 3.10-3: Implementation of the proposed project could potentially result in disturbance of undiscovered human remains.			
4.10-3a If human remains are encountered during construction on non-federal lands, work in that area will be halted and the Trinity County Coroner's Office will be immediately contacted. If the remains are determined to be of Native American origin, the Native American Heritage Commission (NAHC) will be notified within 24 hours of determination, as required by PRC, Section 5097. The NAHC will notify designated Most Likely Descendants, who will provide recommendations for the treatment of the remains within 24 hours. The NAHC will mediate any disputes regarding treatment of remains. If Native American human remains and associated items are discovered on federal lands, they will be treated according to provisions set forth in the Native American Protection and Repatriation Act (25 USC 3001) as well as Reclamation's Directives and Standards LND 02-01. If the find is determined to be a historical resource or a unique archaeological resource, as defined by CEQA, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or other appropriate mitigation will be made available. Work may continue on other parts of the project while mitigation for historical or unique archaeological resources takes place.		Reclamation (implementation)	
3.11 Air Quality			
Impact 3.11-1: Construction activities associated with the proposed project could result in an increase in fugitive dust and associated particulate matter (PM_{10} and $PM_{2.5}$) levels.			
4.11-1a Reclamation will implement a dust control program to limit fugitive dust and particulate matter emissions. The dust control program will include the following elements as appropriate: • Inactive construction areas will be watered as needed to ensure dust control. • Pursuant to the California Vehicle Code (Section 23114), all trucks hauling soil or other loose material to and from the construction site will be covered or will maintain adequate freeboard to ensure retention of materials within the truck's bed (e.g., ensure 1-2 feet vertical distance between top of load and the trailer). • Excavation activities and other soil-disturbing activities will be conducted in phases to reduce the		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
amount of bare soil exposed at any one time. Mulching with weed-free materials will be used to minimize soil erosion, as described in Section 3.3, Geology, Fluvial Geomorphology, and Soils, and Section 3.5, Water Quality. • Watering (using equipment and/or manually) will be conducted on all stockpiles, dirt/gravel roads, and exposed or disturbed soil surfaces, as necessary, to reduce airborne dust. • All paved access roads, parking areas, and staging areas will be swept (with water sweepers), as required by Reclamation. • Paved roads will be swept (with water sweepers) if visible soil material is carried onto adjacent private and public roads, as required by Reclamation. • All ground-disturbing activities with the potential to generate dust will be suspended when winds exceed 20 mph, as directed by the NCUAQMD. • Reclamation or its contractor will designate a person to monitor dust control and to order increased watering as necessary to prevent transport of dust offsite. This person will also respond to citizen complaints.			
Impact 3.11-2: Construction activities associated with the proposed project could result in an increase in construction vehicle exhaust emissions.			
4.11-2a Reclamation will comply with NCUAQMD Rule 104 (4.0) Particulate Matter. This compliance could occur by using portable internal combustion engines registered and certified under the state portable equipment regulation (Health & Safety Code 41750 through 41755).		Reclamation (implementation)	
Impact 3.11-4: Construction activities would generate short-term and localized fugitive dust, gas, and diesel emissions, and smoke that could affect adjacent residences and schools.			
4.11-5a Construction activity occurring within 300 feet of elementary schools will be limited to the period when school is not in session.		Reclamation (implementation)	
4.11-5b Construction activity occurring within 300 feet of residences will be limited to Monday through Saturday, from the hours of 9 a.m. to 5 p.m.		Reclamation (implementation)	
4.11-5c Reclamation will notify residences within 300 feet of the site and project activity and elementary schools will be notified of construction activity located near the school prior to site construction activities.		Reclamation (implementation)	
4.11-5d Reclamation will ensure that a notice is posted at/adjacent to the rehabilitation site, which contains a phone number for the public to contact for concerns related to air quality.		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
3.12 Visual Resources			
Impact 3.12-1: Implementation of the proposed project could result in the degradation and/or obstruction of a scenic view from key observation areas.			
Implementation of mitigation measures 4.7-1a, 4.7-1b, and 4.7-1c described above for Impact 3.7-1 and mitigation measures 4.5-1a, 4.5-1b, 4.5-1c, 4.5-1d, and 4.5-1e described above for Impact 3.5-1 would reduce impacts to less than significant.		Reclamation (implementation)	
3.14 Noise			
Impact 3.14-1: Construction activities associated with the proposed project would result in noise impacts to nearby sensitive receptors.			
4.14-1a Construction activities near residential areas will be scheduled between 7:00 a.m. and 7:00 p.m., Monday through Saturday. No construction activities will be scheduled for Sundays or other hours and days established by the local jurisdiction (i.e., Trinity County). The contractor may submit a request for variances in construction activity hours, as needed.		Reclamation (implementation)	
4.14-1b Reclamation will require that all construction equipment be equipped with manufacturer's specified noise muffling devices.		Reclamation (implementation)	
4.14-1c Reclamation will require placement of all stationary noise-generating equipment as far away as feasibly possible from sensitive noise receptors or in an orientation minimizing noise impacts (e.g., behind existing barriers, storage piles, unused equipment).		Reclamation (implementation)	
3.15 Public Services and Utilities/Energy			
Impact 3.15-3: Implementation of the proposed project could result in disruption to emergency services, school bus routes, or student travel routes during construction activities.			
4.15-3a Reclamation will require that staging and construction work, including temporary road or bridge closures occurs in a manner that allows for access by emergency service providers.		Reclamation (implementation)	
4.15-3b Reclamation will provide 72-hour notice to the local emergency providers and affected users prior to the start of temporary closures.		Reclamation (implementation)	

Table D-1. Summary of Mitigation Monitoring Requirements.

Mitigation Measure	Timing/ Implementation	Responsible Parties (task)	Verification (date and initials)
4.15-3c Reclamation will coordinate road closures occurring during the school year (mid-August through mid-June) with the appropriate school districts to avoid disruption of school attendance and student access to bus service.		Reclamation (implementation)	
3.16 Transportation/Traffic Circulation			
Impact 3.16-2: Construction activities would generate short-term increases in vehicle trips.			
4.16-2a Reclamation will post signs during gravel haul activities notifying travelers of trucks entering the roadway. Reclamation will ensure that gravel trucks maintain a speed limit of 15 mph on residential and private roads and operate only between the hours of 7 a.m. and 7 p.m., Monday through Saturday.		Reclamation (implementation)	
Impact 3.16-4: Construction activities would increase wear and tear on local roadways.			
4.16-4a Reclamation will perform a pre-construction survey of local federal and state roads to determine the existing roadway conditions of the construction access routes, and will consult with the relevant agencies/private parties about road conditions prior to construction activity and post construction activity. An agreement will be entered into prior to construction that will detail the pre-construction conditions and post-construction requirements for potential roadway rehabilitation.		Reclamation (implementation)	
Impact 3.16-5: Construction activities could pose a safety hazard to motorists, bicyclists, pedestrians, and equestrians.			
4.16-5a Reclamation will prepare and implement a traffic control plan that will include provision and maintenance of temporary access through the construction zone, reduction in speed limits though the construction zone, signage and appropriate traffic control devices, illumination during hours of darkness or limited visibility, use of safety clothing/vests to ensure visibility of construction workers by motorists, and fencing as appropriate to separate bicyclists, pedestrians, and equestrians from construction activities. Reclamation will obtain encroachment permits from the appropriate entities to work within road easements. These permits will require traffic control and signage to meet California standards.		Reclamation (implementation)	

PROJECT DESIGN ELEMENTS

Project design elements are specific design features proposed by the project applicant and incorporated into the project to prevent the occurrence of, or reduce the significance of potential environmental effects. Because project design elements have been incorporated into the project, they do not constitute mitigation measures as defined by CEQA. However, project design elements are identified to ensure that they are included in the MMRP to be developed and implemented as part of the Proposed Project. The design elements discussed below are common to the Proposed Project. These elements are excerpted from Chapter 2 of the Draft Master EIR.

DESCRIPTION OF COMMON ACTIVITIES AND CONSTRUCTION CRITERIA AND METHODS

Common Activities

Vegetation Removal

Vegetation removal would involve the following:

- Remove vegetation to provide access to activity areas using a combination of manual labor and heavy equipment (i.e., chainsaw, excavator, and vegetation masticator).
- Remove stumps, roots, and vegetative matter to allow river scour on excavated floodplain surfaces. Some LWD would be retained for use in the floodplain to enhance fish habitat.
- Dispose of removed vegetation by chipping, hauling offsite, burning, burying within spoil areas, or other appropriate methods. Reclamation would continue to work with local agencies to encourage the efficient use of chipping as a priority method of disposing of vegetative waste.
- Protect vegetation designated for preservation within clearing limits. Vegetation outside the clearing limits would be preserved and protected.
- Mechanically remove submerged roots from river fringe areas with ripping bars or excavator buckets. Equipment chassis (i.e., tires, tracks) would remain outside of the wetted portion of the river channel when removing submerged roots.

Water Use

Water would be used at all sites, in accordance with the following:

- Riparian water rights held by public and private landowners on the Trinity River would be used to obtain Trinity River water to support restoration. Dust abatement water would be obtained from on-site seep wells or the Trinity River. When drafting from the Trinity River, pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

In the event irrigation is necessary for revegetation efforts, the primary water source would be the Trinity River. Any surface water sources used for irrigation would be developed in order to comply

with the water rights of land management agencies and landowners. Pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

Monitoring

The ROD provided a restoration strategy for the TRRP but did not identify methods for assessing the effectiveness of the management actions in achieving TRRP goals or management targets. Instead, it directed the TRRP to organize assessments around the principles of AEAM and to use this to rigorously assess the river's response to management actions. The Integrated Assessment Plan (IAP) provides the basis for applying the AEAM principles outlined in the ROD.

These principles would be applied to quantitatively determine the overall status and trend of river system attributes relative to TRRP objectives, using appropriate data to describe each attribute, with data collected based upon scientifically defensible monitoring designs. The causal relationship between rehabilitation of the fluvial nature of the river and increasing salmonid production would be the major focal point for monitoring and modeling. The focus of the IAP is to identify key assessments that:

- Evaluate long-term progress toward achieving program goals and objectives; and
- Provide short-term feedback to improve program management actions by testing key hypotheses and reducing management uncertainties.

The IAP provides a general framework for integrating and linking assessments across monitoring domains. Integration of assessments would be essential for evaluating the TRRP's overall restoration strategy, involving coordinated actions to support multiple ecosystem processes and components. This integration allows development of coordinated sampling designs and assessments that serve multiple or complementary objectives, and is intended to improve the understanding of qualitative and quantitative functional relationships associated with the mainstem Trinity River.

The IAP framework focuses on six key elements; each of these would be integrated into the MMRP to ensure that authorized activities are consistent with the AEAM. Key elements of the IAP include:

1. Create and maintain spatially complex channel morphology.

2. Increase/improve habitats for freshwater life stages of anadromous fish to the extent necessary to meet or exceed production goals.

3. Restore and maintain natural production of anadromous fish populations.

4. Restore and sustain the natural production of anadromous fish populations downstream of Lewiston Dam to pre-dam levels to facilitate dependent tribal, commercial, and sport fisheries' full participation in the benefits of restoration via enhanced harvest opportunities.

5. Establish and maintain riparian vegetation that supports fish and wildlife.

6. Rehabilitate and protect wildlife habitats and maintain or enhance wildlife populations following implementation.

Additional information on the IAP is available on the TRRP website: *http://www.trrp.net/science/IAP.htm*

Design Elements

Attachment 1 following the appendices in Volume IV of the Master EIR/Programmatic EA is a glossary of design and construction terms for use by the design team.

Hydraulics

The Proposed Project would occur in areas that FEMA has designated as Special Hazard Zones AE and X, as described in Section 3.2 of this document. In the Zone AE areas, Reclamation has established a design criterion stating that not only would the County's floodplain ordinance be followed, but implementation of the Proposed Project would not increase the flood risk for the community. This criterion resulted in a stipulation that coarse sediment and excavated material would be strategically placed to ensure that 100-year flood elevations would not increase over current conditions. As previously described, the site boundaries generally conform to the river corridor, bounded by prominent geographic features such as roads and fences.

The design of the activity areas was based on an understanding of the relationships between the flow regime and the hydrologic/hydraulic characteristics of the action. A fundamental constraint was to *do nothing to increase the flood risk in the general vicinity, and to not raise the water surface elevation above the current FEMA estimated 100-year base flood elevation.* Evaluation of the Proposed Project requires comparing estimated seasonal base flows and estimated return-period flows. USACE's HEC-RAS hydraulic model would be used by the design team during final design activities to predict changes in flood elevations at various points along the project reach. Table D-2 lists the components of the flow regime, the seasonal or other periodic return intervals, and the flow rates that would be used during final design to ensure that the action meets the flood constraints described above.

Table D-2. Estimated Mainstem Trinity River Flow Conditions Used for Design.

Flow Description	Flow Event	Flow Rate (Cfs)
Summer base flow[a] (July 22 to October 15 of each year)	Q_s	450
1.5-year return interval design flow	$Q_{1.5}$	6,000
Estimated FEMA 100-year flow below Rush Creek	Q_{100}	19,300
Estimated FEMA 100-year flow below Grass Valley Creek	Q_{100}	23,600

a Base flow defined as cfs from TRD release and accretion flow
Q = flow rate; Q1.5 = 1.5 year return interval design flow; Q100 = 100-year flood flow; Qs = summer base flow

A HEC-RAS model for the Trinity River from Lewiston Dam to the North Fork Trinity River was developed by California DWR and provided to the TRRP as part of the administrative record. This

model was calibrated to match measured WSEs in the Trinity River within and adjacent to the site boundaries for the design flow. Since WSEs have not been measured (validated) for the 100-year flow, the predicted WSEs are based on the output of the model using carefully selected Manning's "n" values that reflect the overbank conditions at each site. The model incorporates empirical data from surveyed cross-sections, including bathymetric and overbank/floodplain topography in the general vicinity of the rehabilitation sites. To obtain WSEs for design flows, the model was calibrated using surveyed WSEs and known flows (from gage data). The model was determined to be accurate for the level of evaluation and design required.

There are several significant flow conditions that are important to the design of the Proposed Project. Two of the most important flow conditions are summertime low flows of about 450 cfs, which is the release from Lewiston Dam, and the 1.5-year-event (ordinary high water) flow of 6,000 cfs, as measured below Rush Creek. The design team regards the design flows portrayed in Table D-1 as the "best available information" per FEMA requirements. The FEMA Q_{100} "near Douglas City" (38,500 cfs) was established in the 1976 USACE report (USACE 1976) used by FEMA to develop the current FIRMs for the Trinity River. The 6,000 cfs 1.5-year event is based on the ROD flow release. This flow information provides the basis for the designs incorporated into the Proposed Project.

The HEC-RAS hydraulic model was developed and calibrated for the existing conditions to calculate the WSE at various flow releases. The calibration was based on water-surface profiles surveyed at low flow and water profiles and points surveyed at different flows, ranging from 4,500 cfs to 10,000 cfs releases from Lewiston Dam. After the model was properly calibrated, various WSEs were determined for the activity areas and used to develop the design topography. The illustrations at the end of this chapter portray the design topography concepts. The final designs would ensure that constructed surfaces are self-draining in order to minimize potential fish stranding.

Roadway Approaches

As an alternative to disposing of excavated materials onsite, materials may be hauled to commercially approved off-site locations. This option would reduce the impact of spoiling excavated materials in upland habitats. Hauling a portion of excavated materials generated under the Proposed Project could require substantial truck traffic to off-site locations. The traffic would be staged over the project duration, generally between August 1 and November 15. Traffic control measures would be applied in accordance with BLM, Trinity County, and Caltrans requirements.

Recreation Facilities

As appropriate, recreation facilities (e.g., parking areas, access trails, picnic areas) affected by project activities would be returned to the same level of service as those offered prior to project implementation. Reclamation, in consultation with the BLM, California DWR, and CDFW, could enhance one or more of these facilities consistent with project objectives. Examples of enhancement could be updated signage, surfacing of trails or parking areas with permeable materials, improvements to fishing access locations or establishment of interpretive features intended to increase public awareness of the ongoing efforts to restore the Trinity River.

Drainage

As appropriate, culverts or other drainage structures would be constructed at temporary stream crossings or cross-drainage channels to allow for unimpeded surface drainage.

Rights-of-Way/Easements

Prior to construction, formal realty agreements would be made between Reclamation; land managers for BLM, California DWR, and CDFW; and private landowners whose property would be affected. These agreements would clarify the terms and conditions under which Reclamation would work on private property. In addition, these agreements would compensate landowners, based on fair market value of identified construction easements, and would hold property owners harmless during construction activities.

Utilities

There are a number of utility features located within and/or adjacent to the site boundaries. Water intakes, power and telephone poles, and water supply lines parallel or cross the Trinity River in a number of locations. These utilities are considered in the project design to ensure that service would not be disrupted.

Construction Criteria and Methods

Construction Process Overview

- Vegetation removal would occur as necessary and in compliance with all regulatory requirements. An expected August 1 start date for clearing and grubbing of vegetation would allow completion of nesting by avian species. Alternatively, vegetation may be removed prior to the start of the nesting season, which is early March for this area.

- Where available, existing roads (activity L) would be used to access the activity areas. New access roads and haul routes (activity M) would be constructed when necessary and restored to a stable condition in accordance with landowner requirements at the completion of the project.

- Excavation would begin on the floodplain to bring it down to grade.

- When specified, finer grained materials (e.g., sand) excavated from riverine activity areas may be stockpiled for use at upland or other riverine activity areas.

- Any riverine treatment areas (e.g., constructed inundation surfaces) that have been compacted from construction activities would be ripped to a depth of approximately 18 inches. The furrows developed by this ripping would ensure that most storm water runoff is retained and filtered on-site so that there is little or no construction-related turbidity. This action would effectively control the release of storm water runoff and turbidity from the site and eliminate the need for use of post-construction sediment-control measures (e.g., silt fences, berms).

- The timing for work adjacent to the river may be affected by river flows. If for some reason the flow is low when construction starts, but it is anticipated that flows would increase before the floodplain can be excavated, excavation would occur at the lower elevations (adjacent to river) first and at the higher floodplain elevations last.

- In-channel activities would generally take place during low flows (July 15 to September 15 as allowed by the coho salmon in-river work window in NMFS' 2000 Trinity River biological

opinion) to create immediate point bars and allow mobilization of in-channel materials at high flows.

- Alcoves and side channels would be constructed from the existing grade down slope. Measures would be taken (e.g., sediment plug, sandbags) to isolate the work area from flowing water. If necessary, pumps would be used to dewater the excavation to inhibit any sediment from entering the river. Typically, reconnecting these features to the river relies on high-flow events. If necessary, the TRRP would remove materials used to isolate these side channels after they have been constructed.

- Final grading would occur as necessary for all activity areas.

- Demobilization of construction equipment and site clean-up would be accomplished consistent with Reclamation requirements.

- Revegetation would take place during wet conditions (fall/winter) and would generally occur in riparian areas to maximize use by fish and wildlife species. Projects would be designed and implemented to achieve no net loss in riparian vegetation (within the project site boundaries) from planting and natural revegetation consistent with the Draft Riparian Revegetation Plan.

In-River Construction

- Where necessary, heavy equipment would be used to grub tree and shrub roots from the edge of the river. Vegetation would often be maintained along the river's active channel to maintain the currently available low-water fish habitat. During root removal, equipment chassis would generally not enter the low-water river channel.

- In-river excavation would generally begin at the far edge of the activity area and work back toward the riverbank so that heavy equipment is on dry land or in shallow water.

- In-river materials or coffer dams may be used to temporarily redirect flow around work areas and to create platforms from which to work. In addition to providing the means for volitional fish passage (upstream and downstream), at least one navigable (by raft/boat) passage through the activity area would remain open at all times.

Traffic Control/Detour

Short-term traffic control is expected and would be in conformance with the following requirements established by the appropriate jurisdictional authority for mobilization and demobilization of heavy equipment or wide-load vehicles:

- Reclamation would coordinate with jurisdictional agencies to identify specific requirements that shall be included for use of existing roadways and haul routes. Requirements may include seasonal or other limitations or restrictions, payment of excess size and weight fees, and posting of bonds conditioned upon repair of damage.

- Temporary construction access may be required; access routes shall be of a width and load-bearing capacity to provide unimpeded traffic for construction purposes.

Staging Areas

Staging areas and storage facilities for the Proposed Project are shown on Figure 3. These areas would be used throughout the duration of the project activities. Some short-term staging and equipment storage and parking would be needed in the activity areas as the project is implemented.

Air Pollution and Dust Control

Efforts would be made to minimize air pollution and reduce greenhouse gas emissions related to construction operations. Reclamation specifications require that the contractor comply with all applicable air pollution control rules, regulations, ordinances, and statutes. In addition, project contractors would be given educational material about fuel efficiency and the benefits of using vehicles powered by alternative energy sources to enhance awareness of global warming issues. Contractors would also be required to provide recycling bins for on-site waste materials.

Contract documents would also specify that the contractor would be responsible for limiting dust by watering construction site areas used by trucks and vehicles. If water is taken from the river, pump intakes would be in conformance with criteria established by NMFS and CDFW to prevent impacts to aquatic organisms. Make-up water pumped from the river would pass through a screen at the inlet with maximum ¼-inch openings and a maximum intake velocity of 0.8 fps.

Fire Protection and Prevention

Due to the high fire hazard and history of equipment-caused fires in Trinity County, construction contractors would be required to follow applicable regulations of Public Resource Code 4428-4442 during dry periods to minimize the potential for the initiation and spread of fires from the work site.

Water Pollution Prevention

Reclamation would implement water pollution control measures that conform to applicable and appropriate permits. Reclamation would require the contractor to use extreme care to prevent construction dirt, debris, storm water run-off, and miscellaneous byproducts from entering the stream. Some key water pollution control measures that would be implemented by Reclamation are listed below:

- Every reasonable precaution would be exercised and BMPs would be implemented to protect the Trinity River from being polluted by fuels, oils, petroleum byproducts, and other harmful materials and shall conduct and schedule operations to avoid or minimize muddying and silting of the river. Care shall be exercised to preserve roadside vegetation beyond the limits of construction.

- Construction equipment would be cleaned of dirt and grease prior to any in-channel activities. All construction equipment would be inspected daily and maintained to ensure that fuel or lubricants do not contaminate the Trinity River. Spill containment kits would be onsite at all times and, where feasible, berms or other containment methods would be kept in place around the work areas when performing in-channel work.

- Water pollution control work is intended to provide prevention, control, and abatement of water pollution in the Trinity River, and would consist of constructing those facilities that

may be shown on the plans, specified herein or in the special provisions, or directed by the Contracting Officer.

- Furrowing of riparian areas that have been compacted during construction activity is expected to minimize or stop delivery of storm water runoff to the river. As necessary, Reclamation would provide temporary water pollution control measures, including, but not limited to, dikes, basins, ditches, and straw and seed application, that may become necessary as a result of the contractor's operations.

- Before starting any work on the project, Reclamation would develop an agency-approved SWPPP to effectively control water pollution during construction of the project. The SWPPP would show the schedule for the erosion control work included in the contract and for all water pollution control measures Reclamation proposes to take in connection with construction of the project to minimize the effects of the operations on adjacent streams and other bodies of water. Reclamation would not perform any clearing and grubbing or earthwork on the project until the SWPPP has been accepted by responsible agencies.

- Oily or greasy substances originating from Reclamation's operations would not be allowed to enter, or be placed where they would later enter, a live stream, soil, or groundwater.

Appendix E

Compliance with Standards and Guidelines for Survey and Manage Species

The Trinity River Channel Rehabilitation Sites: Deep Gulch and Sheridan Creek (River Mile 81.6-82.9) project is consistent with court orders relating to the Survey and Manage mitigation measure of the Northwest Forest Plan, as incorporated into the 1993 Redding Resource Management Plan.

On December 17, 2009, the U.S. District Court for the Western District of Washington issued an order in *Conservation Northwest, et al. v. Rey*, et al., No. 08-1067 (W.D. Wash.) (Coughenour, J.), granting Plaintiffs' motion for partial summary judgment and finding a variety of NEPA violations in the BLM and USFS 2007 ROD eliminating the Survey and Manage mitigation measure. Judge Coughenour deferred issuing a remedy in his December 17, 2009 order until further proceedings, and did not enjoin the BLM from proceeding with projects. Plaintiffs and Defendants entered into settlement negotiations that resulted in the 2011 Survey and Manage Settlement Agreement, adopted by the District Court on July 6, 2011.

The Ninth Circuit Court of Appeals issued an opinion on April 25, 2013, that reversed the District Court for the Western District of Washington's approval of the 2011 Survey and Manage Settlement Agreement. The case is now remanded back to the District Court for further proceedings. This means that the December 17, 2009, District Court order which found NEPA inadequacies in the 2007 analysis and records of decision removing Survey and Manage is still valid.

Previously, in 2006, the District Court (Judge Pechman) had invalidated the agencies' 2004 RODs eliminating Survey and Manage due to NEPA violations. Following the District Court's 2006 ruling, parties to the litigation had entered into a stipulation exempting certain categories of activities from the Survey and Manage standard (hereinafter "Pechman exemptions").

Judge Pechman's Order from October 11, 2006 directs: "Defendants shall not authorize, allow, or permit to continue any logging or other ground-disturbing activities on projects to which the 2004 ROD applied unless such activities are in compliance with the 2001 ROD (as the 2001 ROD was amended or modified as of March 21, 2004), except that this order will not apply to:

A. Thinning projects in stands younger than 80 years old (emphasis added):

B. Replacing culverts on roads that are in use and part of the road system, and removing culverts if the road is temporary or to be decommissioned;

C. Riparian and stream improvement projects where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the

stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions; and

D. The portions of project involving hazardous fuel treatments where prescribed fire is applied.

Any portion of a hazardous fuel treatment project involving commercial logging will remain subject to the survey and management requirements except for thinning of stands younger than 80 years old under subparagraph a. of this paragraph."

Following the District Court's December 17, 2009 ruling, the Pechman exemptions still remained in place. The BLM has reviewed the Trinity River Channel Rehabilitation Sites: Deep Gulch and Sheridan Creek (River Mile 81.6-82.9) EA/IS in consideration of both the December 17, 2009 partial summary judgment and Judge Pechman's October 11, 2006 order. Because these sites are the focus of a riparian and stream improvement project where the riparian work is riparian planting, obtaining material for placing in-stream, and road or trail decommissioning; and where the stream improvement work is the placement large wood, channel and floodplain reconstruction, or removal of channel diversions, the BLM has made the determination that this project meets Exemption C of the Pechman Exemptions (October 11, 2006 Order), and therefore may still proceed even if the District Court sets aside or otherwise enjoins use of the 2007 Survey and Manage ROD since the Pechman exemptions would remain valid in such case.

Appendix F

Deep Gulch and Sheridan Creek Rehabilitation Project Wild and Scenic River, Section 7 Analysis and Determination

INTRODUCTION

The Trinity River was designated as a National Wild and Scenic River (WSR) in 1981 under the Federal Wild and Scenic Rivers Act (WSRA). In addition to the mainstem Trinity River from the confluence with the Klamath River to 100 yards below Lewiston Dam, three other sections of the river were designated: the North Fork from the Trinity River confluence to the southern boundary of the Trinity Alps Wilderness Area, the South Fork from the Trinity River confluence to the California State Highway 36 bridge crossing, and the New River from the Trinity River confluence to the Trinity Alps Wilderness Area.

These sections of the Trinity River were designated as Wild and Scenic to preserve the river's free-flowing condition, water quality, and the Outstandingly Remarkable Values (ORVs) identified on the date of designation: the anadromous and resident fisheries, outstanding geologic resource values, scenic values, recreational values, and cultural and historic values. The section of the Trinity River identified for the Deep Gulch/Sheridan Creek Rehabilitation Project was found to have outstandingly remarkable values (ORV's), due to its anadromous fishery. Under an interagency agreement between the National Park Service, the Bureau of Land Management (BLM), and the U.S. Forest Service, the BLM generally has the responsibility for conducting WSRA Section 7 determinations for the mainstem Trinity River from Lewiston Dam to the confluence with the North Fork Trinity River. After the designation, BLM classified the mainstem Trinity River as a Recreational River from 100 yards below Lewiston Dam downstream to Cedar Flat.

The proponent for the Proposed Action (Deep Gulch/Sheridan Creek Rehabilitation Site: River Mile 81.6-82.9) is the Bureau of Reclamation, Trinity River Restoration Program (TRRP). Because a portion of the proposed activity would occur on lands it manages, BLM serves as a co-lead federal agency along with the TRRP for the environmental assessment (EA) portion of the integrated NEPA/CEQA document (EA/IS) prepared for this project. This analysis and subsequent determination evaluates the effects of the proposed activity on the Trinity River's free-flowing condition, water quality, and the ORVs and ensures their protection as required under Section 7 of the WSRA. Because of the length and level of detail provided in the EA/IS, this WSR analysis is presented in summary form and refers the reader to the specific sections of Chapters 2, 3, and 4 of the EA/IS for additional information on water quality, fisheries, wildlife, flora and fauna, recreational, and aesthetic values.

Existing conditions at the Sheridan Creek site are influenced by early channel rehabilitation efforts implemented by the Bureau of Reclamation in the 1990's, prior to the formation of the TRRP. This

previous project essentially removed the riparian berm on the left side of the river with the objective of reestablishing an active floodplain. Because the flow regime was not changed until the TRRP implemented channel management flows in 2006, this riparian berm was reestablished over time. Additionally, a variety of natural and management disturbance mechanisms have occurred at both of these sites over the past 175 years. The channelization of the Trinity River associated with historic dredge activities was exacerbated by the modifications to the flow regime of the Trinity River downstream of Lewiston Dam beginning in 1964, when the Trinity River Division (TRD) of the Central Valley Project (CVP) became fully operational. At the date of designation, the riparian berms that were essentially channelizing the river at a number of locations had been developing for more than 15 years, and scientists recognized that the alluvial nature of the river had been modified extensively due to changes in the flow regime and sediment flux. Although changes in the flow regime since 2005 have provided some opportunity to modify the form and function of the river, the Record of Decision (ROD) for the Trinity River Mainstem Fishery Restoration Environmental Impact Statement/Environmental Impact Report (Department of Interior, 2000) required establishment of the TRRP and stipulated that mechanical channel rehabilitation, including management of sediment input (reduction in fine sediments (sand) and augmentation of coarse sediment (gravel), would be required to reconfigure sections of the river and provide opportunities for alluvial processes to become reestablished, albeit at a smaller scale than had occurred prior to the construction and operation of TRD facilities (e.g., Lewiston Dam) in 1964.

SECTION 7 ANALYSIS

Section 7(a) of the WSRA provides that water resource projects upstream or downstream of a WSR may occur as long as the project "will not invade the area, unreasonably diminish or have a direct adverse effect on the scenic, recreational, fish and wildlife values present in the area as of the date of designation." This section also requires river-administering agency (i.e., BLM) to determine whether the proposed water resource project is consistent with its river-resource protection requirements. This determination evaluates the effects of proposed activities that involve construction below the ordinary high water mark within the WSR corridor on the river's free-flowing condition, water quality, and scenic, recreational, fish and wildlife values. This analysis and determination follows the Evaluation Procedure provided to Reclamation by BLM's Redding Field Office for the Klamath Facilities Removal Project prepared by the BLM, Forest Service and National Park Service in 2012.

The conditions that were present on the Trinity River when it was designated and included in the National System constitute the basis for evaluating the Proposed Action as described in the EA/IS. Therefore, the baseline conditions for the Trinity WSR are those present in 1981.

The initial question to be addressed in this WSR Section 7(a) determination is whether the Proposed Project described in the EA/IS invades or directly adversely affects the designated reach of the Trinity River; defined as encroachment or intrusion upon.

The next question to be answered, relative to the standard set forth in the WSRA, Section 7 and Section 7(a) is whether the proposed action will "unreasonably diminish or directly adversely affects" the scenic, recreational fish or wildlife values of the designated river. This standard implies that it's acceptable to diminish or effect one or more of these values to some degree, therefore two additional questions must be considered:

1. Does the Proposed Action evaluated in the EA/IS cause the scenic, recreational, fish or wildlife values to be diminished or directly adversely affect relative to the date of designation?

2. If one or more value is diminished or directly adversely affected, is it unreasonable?

Definition of the Proposed Action

The overarching purpose of the TRRP is to restore fish populations to pre-dam levels and restore dependent fisheries, including those held in trust by the federal government for the Hoopa Valley Tribe (HVT) and the Yurok Tribe (YT). The fundamental purpose of the proposed activity is to enhance the fishery and other values provided by the Trinity River in the general vicinity of the project area site by implementing the rehabilitation activities illustrated on Figure 2-2 in Chapter 2 of the EA/IS. Specifically, the Proposed Action would recreate complex salmon and steelhead habitat, enhance natural river processes for the benefit of wildlife, and provide conditions suitable for reestablishing native riparian vegetation. The Proposed Action was one of the original 43 projects listed in the 2000 ROD to restore the fish resources of the Trinity River. It is intended to enhance channel complexity and refugia habitat (e.g., large wood) that have emerged as important rehabilitation components as a result of the TRRP's ongoing monitoring efforts.

As part of the TRRP's Phase 2 channel rehabilitation efforts, the Proposed Action is one of about 1 channel rehabilitation projects that the TRRP expects to implement in the next 10 years. These Phase 2 projects are in addition to the ongoing flow/sediment management and watershed restoration elements of the TRRP.

Implementation of the Proposed Action will incorporate environmental commitments and project design features to ensure that it is consistent with the management goals and objectives established by BLM for the Trinity River under its Redding Resource Management Plan, specifically to support management actions intended to enhance the fishery and recreational ORVs of the Trinity River.

The Proposed Action was developed through a cooperative effort by the TRRP, BLM, and Yurok and Hoopa Valley tribes. It is intended to improve the conveyance of flows by reestablishing the alluvial attributes of the Trinity River, namely floodplains and side channels, while decreasing the potential for channel constriction by modifying floodplain widths and elevations.

The project proponents, the purpose and need for the project, and the geographic location of the proposed activity are described in Chapter 1 of the EA/IS. Specific information on the duration of the proposed activities and their magnitude and extent is provided in Chapter 2 of the EA/IS. Chapter 4 describes the relationship to past and future management activities with an emphasis on cumulative effects.

Does the Proposed Action Diminish or Directly Adversely Affect WSR Values?

The following criteria were applied to evaluate potential for diminishment or direct adverse effects of the Trinity WSR. This Determination evaluates potential project effects upon four WSR values; scenery, recreation, fish and wildlife. The criteria presented below were also applied to evaluate effects upon these values within the Trinity WSR.

Scenery Value Evaluation Criteria

Scenery was evaluated using the following criteria:

- Water flow character (river flows and accompanying geomorphic character)
- Water Appearance (clarity, turbidity, color)
- Fish and wildlife viewing
- Riparian vegetation
- Natural appearing landscape character (visual effects of facilities and structures as viewed from the designated WSR corridor)

Recreation Value Evaluation Criteria

Recreation was evaluated using the following criteria:

- Whitewater boating
- Recreational fishing
- Other recreational activities (birding, swimming, camping)
- Recreational setting (water quality related aesthetics and public health and safety aspects)

Fisheries Value Evaluation Criteria

Fishery was evaluated using the following criteria:

- Stream flow regime
- Water temperature
- Water quality (physical, biological and chemical)
- Aquatic habitat (geomorphic condition, sediment transport regime and substrate quality)
- Fish species population conditions, specifically:
  - Anadromous salmonid fish species
  - Resident fish species
  - Species traditionally used and culturally important to Native Americans

Wildlife Value Evaluation Criteria

Wildlife was evaluated using the following criteria:

- Changes in habitat for affected species

Trinity Wild and Scenic River Evaluation

Scenery Value

Scenery was not identified as an ORV; however it is included in this evaluation consistent with the requirements of Section 7 of the WSRA. This evaluation focuses on river's unique landform, diverse vegetation, water and lack of negative cultural modification.

- Water Flow Character: Implementation of the Proposed Action (channel rehabilitation activities) is intended to restore the form and function of the treated reach to provide ability to convey flow, sediment and large wood in a manner similar to how the river functioned prior to construction of the TRD. The result would be to restore a more historic and natural appearing flows, increase the amount and diversity or riparian vegetation, and thereby improve scenic quality.

- Water Appearance: Implementation of the Proposed Action (e.g., channel rehabilitation activities) would result in short-term effects anticipated during project implementation, associated with: the removal of riparian and upland vegetation and excavation and placement of alluvial materials within and adjacent to the active channel/floodplain; grading activities within and adjacent to the wetted channel; placement of coarse sediment to enhance spawning habitat; construction of side-channel habitat; construction of off-channel wetlands complexes; and placement of large wood and/or boulder clusters to increase habitat complexity. In-channel construction actions would result in short-term increases in turbidity as well as a potential for short-term decreases in juvenile rearing habitat as a result of excavation and placement of alluvial materials. Consistent with the conditions of the General Permit issued to the TRRP by the North Coast Regional Water Quality Control Board (Water Board), mitigation and turbidity monitoring measures will be implemented to ensure that the overall appearance of the Trinity River will not be affected.

- Fish Viewing: Short-term impairment to fish viewing within the project area, and to varying degrees downstream in the WSR would result from localized increases in turbidity during the in-channel work window (July 15-September 15). However, in the long-term, the Proposed Action would increase the overall population of native fish and other aquatic organisms in the WSR. This would increase the overall number of salmonids and other native fish species that may be viewed.

- Wildlife Viewing: Improvements in riparian and upland habitat is a fundamental element of the purpose and need for the Proposed Action. Expansion of floodplain habitat and extensive revegetation efforts are key activities at a number of locations throughout the project area. Rehabilitation of large, barren dredge tailings would include both grading and revegetation intended to reestablish and enhance upland habitat for a wide array of species that utilize riparian and upland habitat throughout the project area. Increases in populations of fish and other aquatic organisms (e.g., mussels, turtles, frogs) would provide increased forage for riparian and riverine wildlife species that depend on these organisms as a prey base. Therefore, wildlife viewing opportunities would increase.

- Riparian Vegetation: The Proposed Action would change the gradient of the river, expand the floodplain, increase off-channel riparian and wetland habitat and remove the monoculture of willows that became established as a result of long-term flow reductions after Lewiston Dam became operational. The Proposed Action would result in a more natural looking channel and facilitate establishment of a complex and diverse assemblage of riparian vegetation typical of free flowing alluvial rivers.

- Natural Appearing Landscape Character: Implementation of the Proposed Action (e.g., channel rehabilitation activities) would result in reshaping the bed and banks of the WSR within the project area and to varying degrees downstream reach in a manner that reestablishes the alluvial process that occurred prior to historic large-scale dredging activities and that were subsequently impeded by modification of the flow and sediment regimes in the years following completion of the TRD. This project would result in a more natural setting ad character within and adjacent to the project area.

Conclusion

There would be short-term negative impacts to scenery due to project activities (e.g., clearing, grading, in-channel construction) and water appearance (localized turbidity increases). However, the long-term beneficial effects of the Proposed Action would enhance scenery of the Trinity WSR.

Recreation Value Evaluation

Recreation was not identified as an ORV; however it is included in this evaluation consistent with the requirements of Section 7 of the WSRA. This evaluation focuses on boating opportunities, fishing for anadromous salmonids and other recreational uses.

- Boating: Since the 2005 ROD flows were implemented during the period from April to August, whitewater boating on the Trinity River has increased substantially, particularly during wetter water years. The reach of the river associated with the Proposed Action is primarily alluvial in nature and there are limited opportunities for whitewater boating within or in close proximity to the project area, other than during high flow periods resultant from TRD releases and/or large runoff events. One undeveloped public access point is available near the upstream end of the Deep Gulch site. Access to this site requires a high clearance vehicle, typically with four-wheel drive during low-flow conditions based on the depth and condition of sand at this location. While there are several private boat access locations within the project area, use at these locations is intermittent and tightly controlled by land owners. Within the project area, the primary boating activity is related to recreational fishing. Drift boats, prams and float tubes are used for fishing throughout the year, other than during large flow events that may last for several days or as much as several months. Public access for boaters would be restricted for short periods of time (several days to several weeks) at locations throughout the project area. In-channel construction and public notification efforts would occur in a manner that ensures that visitor use and public safety are not affected. Alternative locations for public access are available upstream at Lorenz Gulch and Dutton Creek; downstream at Oregon Gulch and Junction City boat launch sites. Impacts on boating would be limited to short-term affects at site-specific locations within the project area.

- Recreational Fishing: The fundamental objective for the Proposed Action is to restore the form and function of the Trinity River to enhance the fishery; specifically for anadromous salmonids. While there would be short-term impacts on recreational fishing within and adjacent to the project area due to construction closures. Public access will be available to BLM lands at various locations, some intermittently during project implementation. Consistent with the long-term goals of the TRRP, improvements in the flow and sediment regimes, coupled with channel rehabilitation efforts would increase fish populations. Therefore, recreational fishing would improve.

- Other Recreational Uses: During implementation of the Proposed Project, and for a period of time after grading is completed and revegetation activities are being implemented, short-term erosional processes could result in an increase in turbidity. These brief changes to water quality could have some impacts to other recreational uses (e.g., wildlife viewing, hiking) in the immediate vicinity of the Deep Gulch and Sheridan Creek sites.

Conclusion

There would be short-term, negative impacts on water quality that could impair recreational beneficial uses. The short-term access restrictions to some BLM parcels, limitations on fishing access and changes in the appearance of the Trinity River at this location will not substantially limit recreational uses.

Fishery Value Evaluation

Fish are an ORV in the Trinity River. The river supports a number of native and non-native fish and other aquatic organisms. Prior to the installation of the TRD, the river provided habitat for numerous anadromous fish species, including Chinook salmon, Coho salmon, steelhead trout and Pacific lamprey. A fundamental objective of the TRRP is restoration and enhancement of the Trinity River fishery.

Although it is generally recognized that the alluvial features existed on the date of designation, the transitory nature of riverine environments precludes the ability to fully quantify these features. The extensive body of scientific evidence available for the Trinity River suggests that the riparian berms and floodplain features had extensive riparian communities that were well established on the date of designation.

- Stream Flow Regime: The modification of the flow regime beginning in 1964 has provided the conditions for establishing a monoculture of riparian vegetation on the riparian berms on either side of the Trinity River and essentially channeling flows and inhibiting floodplain function during higher flows. The interaction between vegetation and fine sediment continued to expand this condition, although large floods (e.g., 1997) modified this riparian community to some degree. In addition to modifying the riparian vegetation, the riparian berm inhibited access of flows to the floodplain (1.5-year return interval) and subsequently affected the amount and types of vegetation on the floodplain. Since 2005, the flow regime of the Trinity River has been managed in accordance with the 2000 ROD to improve riparian and floodplain conditions in conjunction with channel rehabilitation projects like those proposed at the Bucktail site. Since 2005, the TRRP has made substantial changes to the flow regime of the Trinity River consistent with the requirement of the 2000 ROD to manage flows in a manner that rehabilitates and enhances the Trinity River fishery.

- Water Temperature: Prior to full implementation of the ROD in 2005, up to 90 percent of the natural Trinity River flow was diverted to the Sacramento River basin through facilities associated with the TRD. Beginning in 1964, water quality in the Trinity River, particularly its temperature and sediment regimes were substantially altered. The influence of Trinity Lake and Lewiston Reservoir on downstream conditions diminishes with distance. In general, the greater the release volumes from Lewiston Dam, the less susceptible the river's temperature is to other factors. Releases from the TRD are generally cold (42 to 47 degrees Fahrenheit [°F]). These temperatures are transmitted through Lewiston Reservoir to the Trinity River below Lewiston Dam. Although the Proposed Action would remove riparian vegetation, this action is not expected to have a negative impact on water temperatures in the river.

- Water Quality: In 1992, the Environmental Protection Agency (EPA) added the Trinity River to its list of impaired rivers under the provisions of Section 303(d) of the CWA in response to a determination by the State of California that the water quality standards for the river were not being met due to excessive sediment. In 2001, the EPA established a Total Maximum Daily Load for sediment in the river. The Regional Water Board has continued to identify the Trinity River as impaired in subsequent listing cycles. The primary adverse impacts associated with excessive sediment in the Trinity River pertain to degradation of habitat for anadromous salmonids. The restriction of streamflows downstream of the TRD has greatly contributed to the impairment of the Trinity River below Lewiston Dam (EPA 2001). With implementation of ROD flows and placement of coarse sediment in the Lewiston area, local reductions in fine sediment in the river bed have been observed and fish spawning has increased. Recent TRRP monitoring efforts provide data to compare in-channel fine sediment concentrations, pre- and post-ROD flows. This data indicates that gravel quality and river bed oxygen permeability have increased through the 40-mile reach.

- Aquatic Habitat: The Trinity River Flow Evaluation Final Report (USFWS and HVT 1999) determined that lack of spawning and rearing habitat for juvenile salmonids is likely a primary factor limiting the recovery of salmonid populations in the Trinity River. Activities associated with the Proposed Action within the project area are specifically designed to increase the abundance of habitat for Trinity River salmonids by reconnecting the river with its floodplain, increasing channel sinuosity, creating complex off-channel aquatic and riparian habitat, and providing shallow low velocity habitats in close proximity to the river's edge. The Proposed Action is designed to restore the alluvial processes of the Trinity River within the 1.3-mile reach associated with the Deep Gulch and Sheridan sites. As described in Chapter 3 of the EA/IS, increases in salmonid rearing habitat range from 1.4 acres (24% increase) under low-flow conditions (300 cfs) to more than more than 6.5 acres (67% increase) under high flows (7,150 cfs). As described in Chapter 2, 4.9 acres of off-channel ponds and riparian wetlands would be constructed and 7.3 acres of floodplain would be enhanced and/or improved as a result of the Proposed Action.

- Fish Species Population Conditions: Flows in the Trinity River downstream from Trinity and Lewiston Dams have been regulated since Trinity Dam closed in 1960. Diversion of up to 90 percent of the Trinity streamflow to the Sacramento River basin in the 1960s and 1970s led to substantial geomorphic change in many locations along the river, with the predominant responses being channel narrowing and vegetative encroachment along the channel margins. Concurrently, reductions in salmonid populations in the Trinity River resulted in congressional action to restore the Trinity River and its fishery. Activities included in the Proposed Project are intended to have beneficial effects on fisheries within the project area, and these benefits are expected to increase over time. While protecting high quality holding and spawning habitat as illustrated on Figure 2-1 of the EA/IS, in-channel activities would:

  – increase channel complexity and shallow low velocity refuge at a variety of flows and would provide almost 300,000 square feet of fry and juvenile rearing habitat that meets criteria for depth, velocity, and with the placement of habitat structures;

- construct riffles that would provide adult salmonid spawning areas and increases food resources (benthic macroinvertebrates) for fry and juvenile salmonids during critical winter and spring rearing periods;

- provide slow water refuge within side channel and off-channel habitat features to provide fry and juvenile habitat at flows ranging between 300 cfs and 4,500 cfs; and

- increase channel sinuosity and channel complexity, providing fry and juvenile rearing opportunities at a wide range of flows over existing conditions.

Conclusion

Although there would be short-term effects on riparian and floodplain habitat as a result of construction-related actions (e.g., clearing, grading, in-river excavation), the long-term effects on the fishery values of the Trinity River are expected to be positive and substantial.

Wildlife Value Evaluation

Wildlife habitat within the project area includes riparian and upland habitat. Habitat that typically occurs below the ordinary high water mark (6,000 cfs) of the Trinity River is characterized as riparian. Habitat that occurs above this elevation is considered upland habitat. The riparian corridor adjacent to the Trinity River provides habitat for a wide array of special-status plants and wildlife species. A full discussion of riparian-dependent species is provided in Chapter 3 of the EA/IS.

- Riparian Habitat: The Proposed Action would convert almost 5 acres of non-riparian areas (e.g., tailings, terrace deposits) to off-channel riparian habitat, including ponds and wetlands within a three-five year post project time frame. A revegetation program will be incorporated into the proposed activity and will emphasize reestablishing native species and increasing the diversity of vegetation throughout the project area. As described in Chapter 2 of the EA/IS, there are a number of environmental commitments to address a diverse array of riparian dependent species. These include pre-construction surveys and avoidance measures to protect nesting birds; relocation of amphibian species if encountered; and use of construction monitors to identify and avoid impacts to fully protected species (e.g., ringtailed cats).

- Upland Habitat: Most of the upland habitat that occurs within the project area has been subject to wide array of modification as a result various types of human disturbances. In addition to large-scale bucket-line dredge activity that occurred in and adjacent to the Trinity River between 1930 and 1950, more recent mining for sand and gravel has severely altered the landscape within and adjacent to the project area. To a lesser degree, residential development and recreational uses have also had effects on upland habitat. The Proposed Action would involve removing material (primarily fine-textured sediments) from the riparian berm and floodplain and placing this material on dredge tailings in the immediate area upslope of the 100-year floodplain; essentially converting about 11 acres of tailing piles into functional upland habitat. These tailing deposits are remnants of the bucket-line dredge activity that occurred at the many locations along the Trinity River. These features are long, linear piles of sand, gravel, cobbles, and boulders that are piled on the floodplains and terrace features adjacent to the present channel of the river and are essentially devoid of vegetation. Placement of excavated material on the dredge tailings would provide an opportunity to

enhance about 11 acres of upland habitat by reestablishing native upland plant communities while reducing the area occupied by non-native vegetation, thereby making the tailings more productive in terms of vegetation and wildlife species. A revegetation program is a critical element of the Proposed Action and emphasize reestablishing native species and increasing the diversity of vegetation throughout the project area.

Conclusion

Short-term and localized negative effects to wildlife species and their respective habitats due to the Proposed Action are expected. However, long-term improvements to riparian and upland habitat and increased wildlife forage opportunities resulting from this project, in conjunction with other TRRP actions would have long-term beneficial effects.

SECTION 7 DETERMINATION

The evaluations presented in the previous section provide the basis for the determination to be made in this document. This determination will be made by the Redding Field Manager, Jennifer Mata. The next question relative to standard in Section 7(a) of the WSRA, is whether the Proposed Action will "unreasonably diminish or directly adversely effect" the scenic, recreational fish or wildlife values of the designated river. Given that the standard implies some diminishment or direct adverse effects of values may be acceptable, there are two questions to consider.

1. Does the Proposed Action evaluated in the EA/IS prepared for the Deep Gulch and Sheridan project cause diminution or adverse effects of the scenic, recreational, fish or wildlife values of the Trinity River as present at the date of designation?

2. If there is diminution or adverse effects, are they unreasonable? This would suggest an evaluation of the magnitude of the loss. Factors to be considered include: (1) whether the values contributed to the designation of the river (i.e., outstandingly remarkable); and (2) the current conditions and trends of the resource, (if diminution is determined unreasonable, measures may be recommended to reduce adverse effects to acceptable levels).

The information provided in the EA/IS, in conjunction with the project record has been fully considered in arriving at the following conclusions. A tabular summary of these conclusions is provided in Table 1.

The short-term effects of the Proposed Action, with the inclusion of environmental commitments and project design features would be short-term in nature (1-2 years as areas subject to clearing and grading within and adjacent to the Trinity River stabilize and become revegetated). The referenced commitments include a number of specific measures to protect native salmonids and other aquatic and riparian dependent species. Measures to protect upland wildlife species are also included as part of the Proposed Action.

Table 1. Invade and Unreasonably Diminish Conclusions – Proposed Project at the Deep Gulch and Sheridan Sites

WSR Segment Designation	Invade the WSR	Unreasonable Diminishment of WSR Values			
		Scenery Value	Recreation Value	Fishery Value	Wildlife Value
Trinity River Recreational	Yes	Enhanced (rehabilitates river reach to a condition that is improved from the date of designation)	Boating (No Change) Fishing and other Recreation Enhanced	Enhanced	Enhanced

In the long-term, the Proposed Action, in conjunction with other actions undertaken by the TRRP to rehabilitate and enhance habitat for anadromous salmonids and other aquatic and upland species will result in overall improvement to the scenery, recreation, fish and wildlife values in the Trinity WSR.

I have carefully considered the short-term closure of the high-clearance vehicle public access to BLM lands in the vicinity of Ice Box Hole at the upstream end of the Deep Gulch site. While public access to BLM lands throughout the project area is limited by adjoining private lands, access via the river corridor will not be restricted during construction activities. The overarching purpose and need for the Proposed Action is to improve the Trinity River fishery, thereby meeting the goals of the TRRP with respect to tribal trust resources and recreational fishing opportunities. Fishing opportunities for tribal members and recreational user would increase due to increase in the spawning and rearing habitat for anadromous salmonids and other aquatic and riparian dependent species.

The Proposed Action would result in long-term benefits to the scenery, recreation, fish and wildlife values present when the Trinity WSR was designated as a National W&SR in 1981. Since there would be no "direct adverse effects" of the Trinity WSR or "unreasonable diminishment" of its values, I find the Proposed Action as described in Chapter 2 of the EA/IS to be fully consistent with the protections afforded by the WSRA.

Jennifer Mata
Redding Field Manager
Bureau of Land Management

Date