

1.1 INTRODUCTION

This document is a draft environmental impact report (DEIR) that has been prepared to evaluate the potential environmental effects of the Feather River Levee Repair Project (FRLRP), which is proposed for implementation by the Three Rivers Levee Improvement Authority (TRLIA). The DEIR has been prepared on behalf of TRLIA in accordance with the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (14 California Code of Regulations [CCR] Section 15000 et seq.).

The FRLRP would improve flood protection in the Reclamation District (RD) 784 area of Yuba County. The project is an element of the Yuba-Feather Supplemental Flood Control Project (Y-FSFCP), which was initiated in 2001 by the Yuba County Water Agency (YCWA) using funding available through the Costa-Machado Water Act of 2000 (Water Act of 2000). The FRLRP DEIR incorporates by reference the programmatic environmental impact report (EIR) prepared for the Y-FSFCP, which was certified by YCWA in March 2004 (Yuba County Water Agency 2004) (see Section 2.5, “Type of EIR,” in Chapter 2, “Introduction,” of this document).

1.2 SUMMARY DESCRIPTION OF THE PROJECT ALTERNATIVES

The purpose of the proposed FRLRP is to correct deficiencies in the left (east) bank levees of the Feather and lower Yuba Rivers, and consequently to improve flood protection for the RD 784 area in Yuba County. The overall objectives of the project are:

- ▶ to secure flood protection for at least a flood event with a 0.5% (or 1-in-200) annual chance of exceedance,
- ▶ to help secure Federal Emergency Management Agency (FEMA) certification of the subject reaches of levee,
- ▶ to avoid increasing downstream flow and stage during peak-flow conditions,
- ▶ to achieve these objectives as soon as possible, and
- ▶ to incorporate environmental mitigation as appropriate.

The FRLRP project area is divided into three project segments, as shown in Figure 2-3, “FRLRP Project Area”:

- ▶ Project Segment 1 consists of the existing Feather River left bank levee from Project Levee Mile (PLM) 13.3 to PLM 17.1 (from approximately RD 784 Pump Station No. 2 upstream to Star Bend).
- ▶ Project Segment 2 consists of the existing Feather River left bank levee from PLM 17.1 to PLM 23.6 (from approximately Star Bend upstream to west of the Yuba County Airport).

- ▶ Project Segment 3 consists of the existing Feather River left bank levee from PLM 23.6 to PLM 26.1, and the Yuba River left bank levee from PLM 0.0 to PLM 0.3 (west of the Yuba County Airport to the railroad crossing adjacent to the SR 70 bridge).

The proposed project consists of implementation of one of three potential alternatives, each evaluated at an equal level of detail in this DEIR and described in detail in Chapter 4, “Description of the Proposed Project.” These potential alternatives are being designed and engineered to meet the project objectives listed above and to correct levee deficiencies for the Feather and lower Yuba Rivers in Yuba County:

- ▶ *Alternative 1 – The Levee Strengthening Alternative.* Under this alternative, repair and strengthening of the existing levees would be completed along the entire length of FRLRP project Segments 1, 2, and 3 (Figure 2-3, “FRLRP Project Area,” in Chapter 2). Implementation of Alternative 1 would involve removing existing RD 784 Pump Station No. 3 and installing a new pump station farther east of the Feather River levee, which would correct seepage deficiencies related to the existing pump station location. Establishment of soil borrow areas and construction of a detention basin is also included in this alternative.
- ▶ *Alternative 2 – The Levee Strengthening and ASB Setback Levee Alternative.* Under this alternative, repair and strengthening of the existing levees would be completed along project Segments 1 and 3. Repair and strengthening activities in these segments would be the same as for Alternative 1. In project Segment 2, a setback levee would be constructed roughly following the Above Star Bend (ASB) setback levee alignment identified in the Y-FSFCP EIR. Establishment of soil borrow areas and construction of a detention basin would be required. As under Alternative 1, a pump station would be installed to replace Pump Station No. 3, in this case just east of the ASB setback levee.
- ▶ *Alternative 3 – The Levee Strengthening and Intermediate Setback Levee Alternative.* Under this alternative, the same levee repair and strengthening activities described for Alternatives 1 and 2 would be conducted in project Segments 1 and 3. In Segment 2, a modified setback levee alignment (i.e., intermediate alignment) would be used that would allow less land to be placed in the new floodway than under Alternative 2. The general design, construction, and operational characteristics of an intermediate setback levee under Alternative 3, including the replacement of Pump Station No. 3, would be same as for the ASB setback levee under Alternative 2.

These three potential alternatives are evaluated at an equal level of detail in this DEIR. These alternatives are described in detail in Chapter 4, “Description of the Proposed Project.” It should be noted that in much of the EIR a single alignment is shown for the intermediate setback levee. However, for the portion of the intermediate setback levee that deviates from the ASB setback levee alignment, a specific route has not yet been confirmed and several options are being considered. The actual alignment could be located to the east or west of the alignment shown (as indicated by the area considered for the intermediate setback levee alignment shown in Figure 2-3). Considerations for final route selection include the suitability of underlying soil conditions for levee construction and the extent of flood control benefits (i.e., moving the alignment westward and reducing the size of the Feather River high-water channel would result in fewer

flood control benefits). The route in this EIR is considered to be representative of the various options considered for the intermediate setback levee alignment.

This EIR also evaluates a No-Project Alternative. The No-Project Alternative represents conditions that “would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services” (State CEQA Guidelines Section 15126.6[e][2]). In this case, the No-Project Alternative consists of a continuation of existing conditions. As required by CEQA, a No-Project Alternative has been included to allow TRLIA to compare the impacts of approving the proposed project (either Alternative 1, Alternative 2, or Alternative 3) with the impacts of not approving the proposed project.

Table 1-1, “Summary Comparison of Features of the FRLRP Alternatives,” shows some of the main features of the three project alternatives.

MBK Engineers performed hydraulic modeling that predicts water surface elevations at locations along the Feather River under different categories of flood events. Table 1-2, “Summary Comparison of Feather River Water Elevations of the FRLRP Alternatives,” shows water elevations at three locations along the Feather River within the project area for the three project alternatives.

Table 1-1
Summary Comparison of Features of the FRLRP Alternatives

Project Feature	Alternative 1	Alternative 2	Alternative 3
Potential Seepage Control Measures (<i>usage and locations of these measures would vary only in project Segment 2</i>)	<ul style="list-style-type: none"> ▶ Existing levee strengthened at select locations along project Segments 1, 2, and 3 with: <ul style="list-style-type: none"> ▪ Cutoff trenches/slurry cutoff walls ▪ Seepage/stability berms ▪ Relief wells ▶ Erosion repair and protection measures at identified locations along project Segment 2 (see note below) 	Existing levee strengthened at select locations along project Segments 1 and 3; same seepage control measures as for Alternative 1. New setback levee in Segment 2 constructed using modern construction techniques and built on a better foundation, with: <ul style="list-style-type: none"> ▶ Cutoff trenches/slurry cutoff walls ▶ Seepage/stability berms ▶ Relief wells 	Existing levee strengthened at select locations along project Segments 1 and 3; same seepage control measures as for Alternative 1. New setback levee along a modified alignment in Segment 2 constructed using modern construction techniques and built on a better foundation, with: <ul style="list-style-type: none"> ▶ Cutoff trenches/slurry cutoff walls ▶ Seepage/stability berms ▶ Relief wells
Borrow Volume (<i>approximate</i>)	1.6 million cubic yards	3.3 million cubic yards	3.3 million cubic yards
Length of Setback Levee (<i>approximate</i>)	NA	5.9 miles	5.5 miles
Size of Levee Setback Area and Levee Footprint (<i>approximate</i>)	NA	1,600 acres	1,250–1,300 acres

**Table 1-1
Summary Comparison of Features of the FRLRP Alternatives**

Project Feature	Alternative 1	Alternative 2	Alternative 3
Other Project Elements	<ul style="list-style-type: none"> ▶ Removal and relocation of Pump Station No. 3 east of the existing levee ▶ Construction of a detention basin northeast of Star Bend 	<ul style="list-style-type: none"> ▶ Removal and relocation of Pump Station No. 3 east of the setback levee ▶ Removal of portions of the existing levee in Segment 2 ▶ Construction of detention basin northeast of Star Bend ▶ Relocation/reinforcement of some utilities and other facilities in the levee setback area ▶ Removal of approximately 40 structures, including five to 10 residences 	<ul style="list-style-type: none"> ▶ Removal and relocation of Pump Station No. 3 east of the setback levee ▶ Removal of portions of the existing levee in Segment 2 ▶ Construction of detention basin northeast of Star Bend ▶ Relocation/reinforcement of some utilities and other facilities in the levee setback area ▶ Removal of approximately 30 structures, including five to 10 residences
Land Uses in the Levee Setback Area	NA	Farming operations and the potential for habitat restoration, consistent with the flood control function of the levee setback area, may be feasible in parts of the expanded Feather River floodway, which would total approximately 1,200 acres	Farming operations and the potential for habitat restoration, consistent with the flood control function of the levee setback area, may be feasible in parts of the expanded Feather River floodway, which would total approximately 900 acres

Notes: FRLRP = Feather River Levee Repair Project; NA = not applicable

If additional areas in the existing levee along project Segments 1 and 3 are found to have similar erosion conditions as those identified in Segment 2, erosion protection measures could be implemented in these locations as well.

If either Alternative 2 or Alternative 3 is selected for implementation, the seepage control system for the setback levee would be refined based on detailed field investigations and analyses, to be performed during detailed design.

Source: Data compiled by EDAW in 2006

**Table 1-2
Summary Comparison of Feather River Water Elevations of the FRLRP Alternatives**

Location	AEP	Alternative 1 – Water elevation (feet—NGVD)	Alternative 2 – Water Elevation (feet—NGVD)	Alternative 3 – Water Elevation (feet—NGVD)
Upper End of Levee Setback Area	1 in 100	68.8	66.9	67.4
	1 in 200	72.7	69.5	69.8
Confluence of Feather and Yuba Rivers	1 in 100	72.5	71.2	71.4
	1 in 200	76.2	74.7	75.0
Downstream of Levee Setback Area	1 in 100	59.4	59.5	59.5
	1 in 200	62.8	62.9	62.9

Notes: AEP = annual exceedance probability (the probability that a given flow will be exceeded in any year; for example, an AEP of 1 in 125 has a 1/125 or 0.8 percent probability of being exceeded in any year); NGVD = National Geodetic Vertical Datum

Conditions for Alternative 1 would be the same as those under the No-Project Alternative (i.e., hydrologic conditions in the Feather River channel would be unchanged under this alternative).

Source: Data provided by MBK Engineers in 2006

1.3 ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

1.3.1 ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

Tables 1-3a, 1-3b, and 1-3c, “Summary of Impacts and Mitigation Measures” (included at the end of this chapter), provide a summary of the environmental impacts of the three project alternatives, the level of significance of each impact before mitigation, recommended mitigation measures, and the level of significance of each impact after implementation of the mitigation. They also list the significant cumulative impacts to which the levee repair and strengthening activities and alternative levee setbacks would contribute. As shown in Tables 1-3a, 1-3b, and 1-3c, implementation of Alternative 1, Alternative 2, or Alternative 3 could significantly affect a number of environmental resources, mainly during construction of project features, but mitigation is included that would ensure the reduction of most of these impacts to a less-than-significant level. In addition, the three project alternatives have the potential to provide a substantial reduction of flood risk in the RD 784 area.

1.3.2 EFFECTS THAT WOULD REMAIN SIGNIFICANT FOLLOWING MITIGATION

As shown in Tables 1-3a, 1-3b, and 1-3c, Alternatives 1, 2, and/or 3 would result in direct or indirect significant and unavoidable impacts for the following issues:

- ▶ conflicts with land use policies for the preservation of agricultural land in agricultural use in the levee setback areas,
- ▶ conversion of Important Farmland to nonagricultural use in the levee setback areas,
- ▶ temporary construction-related air emissions, and
- ▶ temporary construction-related noise effects on sensitive receptors near the project area.

Implementation of any of the three project alternatives would also contribute to significant and unavoidable cumulative impacts on air quality and noise (during construction) and on Important Farmland (permanent conversion to nonagricultural uses). Mitigation has been included to reduce these direct, indirect, and cumulative impacts, but would not be sufficient to reduce them to a less-than-significant level.

1.4 AREAS OF CONTROVERSY

The primary areas of potential controversy associated with the FRLRP are the purchase of private land or easements on private land for project implementation, and the removal of Important Farmland from agricultural use. Alternative 1 would result in conversion of up to approximately 180 acres of farmland to another use (e.g., detention basin, seepage/stability berm). Under Alternative 2, a total of approximately 1,600 acres would be included in the setback levee footprint and the levee setback area (new floodway), most of which is privately owned and currently in cultivation. Alternative 3 would include approximately 1,250–1,300 acres of private land for the setback levee footprint and the setback area, most of which is privately owned and currently in cultivation. Aside from the acreage in the setback levee footprints, continued farming operations may be feasible in many parts of the levee setback areas

under Alternatives 2 and 3. Alternative 3 would include construction of a setback levee that would affect fewer acres of existing agricultural land; therefore, the effect on continued farming operations would be less than under Alternative 2.

Although no specific plans for habitat restoration in the setback area are proposed at this time, future management plans for portions of the levee setback areas under either Alternative 2 or Alternative 3 could include restoration of habitat and wetland areas as a substitute for agricultural uses where opportunities are present. Converting agricultural land to riparian and wildlife habitat is controversial in some agricultural communities, especially in the Sacramento Valley, where extensive areas are being converted or are proposed for conversion from agricultural use to riparian habitat. County tax revenues also may change as a result of potential land use changes.

This project would help resolve a current area of known and long-standing controversy, namely, the existing risk of flooding impacts in the RD 784 area, as demonstrated by recent catastrophic flooding events. The FRLRP would also address the deficiencies in the Feather River levee that have led to uncertainty and controversy surrounding the planned and ongoing development in the RD 784 area, which is subject to a higher flood risk than previously believed.

Overall, the FRLRP would reduce the ongoing concern and controversy over flood protection in the nearby communities. Any continuing controversy surrounding the project would be related primarily to the direct effects of the proposed levee setbacks under Alternatives 2 and 3 on landowners in the levee setback areas and/or the loss of productive agricultural land in the project area.

1.5 ISSUES TO BE RESOLVED

TRLIA will need to decide which alternative to approve among the three alternatives evaluated at an equal level of detail in this EIR. The decision will be based on numerous factors besides environmental impacts, including cost, availability of financing, effects on landowners, the potential for regional flood control benefits, future permitting requirements, and implementation schedule.

Regardless of which alternative is selected for implementation, detailed design of project features and planning of construction will need to be coordinated with mitigation requirements so that sensitive resources in the project area are avoided where practicable. Where sensitive resources cannot be physically avoided, detailed plans for mitigation of the loss of these resources will need to be developed (e.g., compensation for the loss of jurisdictional wetlands; refer to Section 5.5, "Terrestrial Biological Resources," for further discussion). Land uses in the levee setback area under Alternatives 2 and 3 could consist of agricultural operations and/or habitat restoration activities. Special operations and maintenance plans would need to be prepared and implemented to ensure the long-term maintenance of any agricultural and/or habitat areas, and to ensure that such areas would not conflict with the flood control function of the levee setback area. Any future management plans would require consultation with affected landowners, resource agencies, and other stakeholders.

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 Land Use			
<p>LS-5.1-a: Conflicts with Land Use Planning and Policies Resulting from Levee Repairs and the Levee Setback. Levee repair and strengthening could result in the removal of up to approximately 30 acres of agricultural land from production through the placement of seepage/stability berms and other structures. Construction of a detention basin would be required to accommodate peak flows from relief wells. Construction of the detention basin could result in the removal of up to approximately 150 additional acres of agricultural land. These uses would conflict with County land use policies regarding the preservation of agricultural land. However, the proposed improvements to the flood control system would benefit thousands of acres of valuable agricultural lands in the adjacent floodplain by providing increased protection from future flood damages. Therefore, while the direct land use changes associated with Alternative 1 would conflict with policies related to protection of agricultural lands, in the long term this alternative would provide greater protection for agricultural lands and soils, consistent with these policies. Therefore, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>LS-5.1-b: Conversion of Important Farmland to Nonagricultural Uses Resulting from Levee Repairs and Strengthening. Installation of seepage/stability berms and other structures associated with levee repairs and strengthening could permanently convert up to approximately 30</p>	S	<p>Minimize Losses of Important Farmland to the Extent Feasible. To minimize direct losses and indirect adverse effects on important farmland, TRLIA shall ensure that the following measures are implemented where feasible and practicable:</p> <p>(a) Minimize the disturbance of Important Farmland and continuing agricultural operations during construction by</p>	SU

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Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
acres of Prime Farmland to nonagricultural uses. Construction of the detention basin under Alternative 1 could convert up to an additional approximately 150 acres of Prime Farmland to nonagricultural uses. This impact would be significant .		<p>locating construction laydown and staging areas on sites that are fallow, that are already developed or disturbed, or that are to be discontinued for use as agricultural land, and by using existing roads to access construction areas to the extent possible.</p> <p>(b) When selecting the site and configuration of the detention basin, minimize the fragmentation of agricultural lands and retain contiguous parcels of agricultural land of sufficient size to support their efficient use for continued agricultural production.</p>	
5.2 Geology, Soils, and Mineral Resources			
LS-5.2-a: Risk of Geologic Hazards to the Levees. Characteristics of the soils along the existing Feather River and Yuba River levees could lead to structural deficiencies or failure of the levees if not addressed in construction design. Although no active faults are in the immediate vicinity of the existing levee alignments, some ground shaking is possible from earthquakes at distant sites. The levees would be strengthened according to geotechnical engineering recommendations that incorporate seepage control features, making them more stable than the existing levee and less likely to fail. Therefore, this would be a beneficial effect.	B	No mitigation is required.	B
LS-5.2-b: Soil Erosion Hazards Associated with Levee Repair and Strengthening Activities. Although levee repair and strengthening activities would disturb earth, thereby potentially accelerating erosion, construction disturbance would be temporary, and soils in disturbed areas would be vegetated or otherwise stabilized after construction	LTS	No mitigation is required.	LTS

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
is complete. In addition, part of Alternative 1 includes correction of existing erosion problem areas on the water side of the Feather River left bank levee in project Segment 2. Levee repair and strengthening activities would not expose persons or property to erosion hazards. This impact would be less than significant .			
5.3 Water Resources and River Geomorphology			
LS-5.3-a: Temporary Effects on Water Quality Associated with Levee Repair and Strengthening Activities. Ground-disturbing activities associated with repair and strengthening of the existing levees could cause soil erosion and sedimentation of local drainages and the Feather and Yuba River channels. Construction activities could also discharge waste petroleum products or other construction-related substances that could enter these waterways in runoff. Because the release of soil or other materials into these waterways could adversely affect river water quality, this impact would be potentially significant .	PS	<p>(1): Prepare a SWPPP, File an NOI, and Comply with the NPDES Stormwater Permit for Project Construction Activities. Before the start of any project construction work, site grading, or excavation, TRRIA or its primary construction contractor shall prepare a SWPPP detailing measures to control soil erosion and waste discharges from construction areas and shall submit an NOI to the Central Valley RWQCB for stormwater discharges associated with general construction activity. TRRIA shall require all contractors conducting construction-related work to implement the SWPPP to control soil erosion and waste discharges of other construction-related contaminants. The general contractor(s) and subcontractor(s) conducting the work shall be responsible for constructing or implementing, regularly inspecting, and maintaining the measures in good working order.</p> <p>The SWPPP shall identify the grading and erosion control BMPs and specifications that are necessary to avoid and minimize water quality impacts to the extent practicable. Standard erosion control measures (e.g., management, structural, and vegetative controls) shall be implemented for all construction activities that expose soil. Grading operations shall be conducted to eliminate direct routes for conveying potentially contaminated runoff to drainage channels. Erosion control barriers such as silt fences and mulching material shall be installed, and disturbed areas shall be</p>	LTS

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>reseeded with grass or other plants where necessary.</p> <p>The SWPPP shall contain specific measures for stabilizing soils at construction-related sites before the onset of the winter rainfall season. These standard erosion control measures shall be designed to reduce the potential for soil erosion and sedimentation of drainage channels.</p> <p>The following specific BMPs are recommended for implementation:</p> <ul style="list-style-type: none"> ▪ Conduct all work according to site-specific construction plans that identify areas for clearing, grading, and revegetation so that ground disturbance is minimized. ▪ Avoid riparian and wetland vegetation wherever possible and identify vegetation to be retained for habitat maintenance (i.e., as identified through preconstruction biological surveys), cover cleared areas with mulches, install silt fences near riparian areas or streams to control erosion and trap sediment, and reseed cleared areas with native vegetation. ▪ Stabilize disturbed soils at all construction sites (e.g., levee repair areas, borrow areas) and staging areas before the onset of the winter rainfall season. ▪ Stabilize and protect stockpiles from exposure to erosion and flooding. <p>The SWPPP also shall specify appropriate hazardous materials handling, storage, and spill response practices to reduce the possibility of adverse impacts from use or accidental spills or releases of contaminants. Specific measures applicable to the project include, but are not limited to, the following:</p> <ul style="list-style-type: none"> ▪ Develop and implement strict on-site handling rules to keep construction and maintenance materials out of drainages and waterways. 	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<ul style="list-style-type: none"> ▪ Conduct all refueling and servicing of equipment with absorbent material or drip pans underneath to contain spilled fuel. Collect any fluid drained from machinery during servicing in leakproof containers and deliver to an appropriate disposal or recycling facility. ▪ Maintain controlled construction staging, site entrance, concrete washout, and fueling areas at least 100 feet away from stream channels or wetlands to minimize accidental spills and runoff of contaminants in stormwater. ▪ Prevent raw cement; concrete or concrete washings; asphalt, paint, or other coating material; oil or other petroleum products; or any other substances that could be hazardous to aquatic life from contaminating the soil or entering watercourses. ▪ Maintain spill cleanup equipment in proper working condition. Clean up all spills immediately according to the spill prevention and response plan, and immediately notify DFG and the RWQCB of any spills and cleanup procedures. <p>(2): Obtain a Use Permit from Yuba County and Comply with Permit Conditions for Erosion Control. Before the start of any project-related grading, excavation, or fill activity, TRLIA or its primary construction contractor shall obtain a use permit from the Yuba County Planning Department in compliance with the Yuba County Ordinance Code. TRLIA shall require all contractors conducting construction-related work to implement the conditions of the permit. The general contractor(s) and subcontractor(s) conducting the work shall be responsible for constructing or implementing, regularly inspecting, and maintaining the required measures in good working order.</p>	
<p>LS-5.3-b: Changes in Groundwater Levels Resulting from Seepage Control Measures. Slurry cutoff walls that would be installed in</p>	<p>LTS</p>	<p>No mitigation is required.</p>	<p>LTS</p>

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
segments of the existing Feather River and Yuba River levees to control seepage could restrict groundwater flow and affect groundwater levels. Potential consequences are localized changes in well water levels and/or high groundwater levels east and south of the locations where slurry cutoff walls are installed. Such changes are not expected to substantially affect water supply or adversely affect land uses. This impact would be less than significant .			
5.4 Fisheries			
LS-5.4-a: Loss of Fish Habitat during Levee Repair and Strengthening Activities. Construction-related increases in sediments, turbidity, and contaminants could adversely affect fish habitats immediately adjacent to and downstream of project construction activities, possibly resulting in adverse effects on fish species listed or proposed for listing as threatened or endangered under ESA. This impact would be potentially significant .	PS	(1): Prepare a SWPPP, File an NOI, and Comply with the NPDES Stormwater Permit for Project Construction Activities. This measure is identical to Mitigation Measure LS-5.3-a(1) in Section 5.3, “Water Resources and River Geomorphology.” (2): Obtain a Use Permit from Yuba County and Comply with Permit Conditions for Erosion Control. This measure is identical to Mitigation Measure LS-5.3-a(2) in Section 5.3, “Water Resources and River Geomorphology.”	LTS
LS-5.4-b: Loss of Overhead Cover and Instream Woody Material Associated with Levee Repair and Strengthening Activities. Small amounts of riparian vegetation (i.e., individual trees) may need to be removed or cleared at the waterside toe of the existing levee during repairs at erosion problem areas in project Segment 2. The loss of overhead cover for fish would be negligible and temporary, however, and revegetation would occur over time. Therefore, this impact would be less than	LTS	No mitigation is required.	LTS

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
significant.			
5.5 Terrestrial Biological Resources			
<p>LS-5.5-a: Effects on General Biological Resources. Levee repair and strengthening and related activities would result in disturbance and/or loss of vegetation along the Feather and Yuba River levees and at staging areas and detention basin and borrow sites. These areas provide habitat for many common plant and wildlife species. Although local populations of common species could be affected, these species are locally and regionally abundant. This impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>LS-5.5-b: Effects on Sensitive Habitats. Levee repair and strengthening and related activities could result in disturbance and/or loss of sensitive habitats, including jurisdictional wetlands, other waters of the United States, and riparian habitats. This impact would be significant.</p>	S	<p>Avoid Disturbance of Sensitive Habitats to the Extent Feasible and Comply with Corps and DFG Processes to Mitigate Unavoidable Effects. Three Rivers Levee Improvement Authority (TRLIA) and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on sensitive habitats. As noted in the setting and impact discussions above, for purposes of this EIR the potential presence of sensitive habitats was assessed through reconnaissance surveys (where access was allowed) and literature review. The mapping and surveys identified below are intended to supplement and clarify these initial surveys and reviews by providing timely, detailed, and finely tuned biological information within the specific geographical areas subject to impact under the alternative selected for implementation. Each measure is accompanied by one or more performance standards to control the ultimate level of impact:</p> <p>(a) <u>Map potential waters of the United States and riparian habitat in the project area and, to the extent feasible and</u></p>	LTS

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p><u>practicable, plan project features and construction activity to avoid direct effects on these areas.</u> Before the beginning of any ground-disturbing project activities, a qualified biologist shall delineate potential waters of the United States and shall formally map all riparian habitat that could be affected by the proposed project.</p> <p>This activity will be performed following the requirements of a formal delineation of waters of the United States for CWA Section 404 permitting as described below. The primary engineering and construction contractors shall ensure, through coordination with the biologist, that the footprints of construction zones, borrow areas, staging areas, and access routes are designed to prevent disturbance of waters of the United States and riparian habitat to the extent feasible and practicable.</p> <p>All avoidable jurisdictional habitats that could potentially be affected by ground-disturbing project activity shall be protected during construction by temporary fencing and/or flagging, as appropriate. Qualified biological monitors shall be present during all construction activities that could potentially affect these protected habitats to ensure that project activity is excluded from these areas.</p> <p>(b) <u>Complete the Section 404 permitting process, and mitigate the acreage of affected jurisdictional wetland on a “no-net-loss” basis.</u> Before the initiation of any ground-disturbing project activities in areas that contain potentially jurisdictional wetlands, qualified biologists shall complete a delineation of wetlands and other waters of the United States that would be affected by the proposed project. The findings shall be documented in a detailed report and submitted to the Corps for verification as part of the formal Section 404 wetland delineation process. For all jurisdictional areas that</p>	

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THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>cannot be avoided as described above, TRLIA shall secure authorization for fill of wetlands and alteration of waters of the United States from the Corps through the Section 404 permitting process before project implementation. The acreage of jurisdictional wetland affected shall be mitigated (e.g., through restoration, rehabilitation, enhancement, and/or replacement) on a “no-net-loss” basis in accordance with Corps regulations. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by feasible methods agreeable to the Corps. TRLIA shall implement the feasible mitigation measures adopted through the permitting process.</p> <p>(c) <u>Obtain a streambed alteration agreement from DFG and mitigate affected riparian habitat on a “no-net-loss” basis.</u> Because project implementation would result in changes to the natural flow and bed and bank of a waterway (e.g., vegetated drainage canal, the Feather River), the project would likely require a Section 1602 streambed alteration agreement from DFG. If complete avoidance of identified riparian habitat is not feasible, the acreage of riparian habitat that would be removed shall be mitigated on a “no-net-loss” basis in accordance with DFG regulations and as specified in the streambed alteration agreement, if needed. Habitat mitigation (e.g., restoration, rehabilitation, and/or replacement) shall be at a location and by methods agreeable to DFG.</p>	
<p>LS-5.5-c: Loss of Special-Status Plants. Levee repair and strengthening and related activities could result in the loss of rose mallow and Wright’s trichocoronis if they exist in areas that would be disturbed during these activities. This impact would be potentially significant.</p>	<p style="text-align: center;">PS</p>	<p>Conduct Detailed Special-Status Plant Surveys and Establish Construction Buffers as Necessary to Minimize Effects on Special-Status Plants. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on special-status plants:</p>	<p style="text-align: center;">LTS</p>

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>(a) <u>Conduct detailed special-status plant surveys and document the results.</u> Before the initiation of any ground-disturbing project activities, a qualified botanist shall conduct detailed/focused surveys for rose mallow and Wright’s trichocoronis in appropriate habitat within the project area, in accordance with USFWS and DFG guidelines and at the appropriate time of year when the target species would be in flower or otherwise clearly identifiable (June to September for rose mallow and May to September for Wright’s trichocoronis). The findings shall be documented in a letter report that is retained by TRLIA. If rose mallow and Wright’s trichocoronis are not found during focused surveys, no further action shall be required.</p> <p>(b) <u>Establish buffers wherever possible to protect identified special-status plants from construction activity.</u> If special-status plants are found during focused surveys, the primary engineering and construction contractors shall ensure, through coordination with a qualified biologist, that the footprint of project features and construction zones, staging areas, and access routes are designed such that any disturbance of the plants is prevented to the extent feasible and practicable. The botanist shall clearly identify the locations of special-status plant populations in the field by staking or flagging before construction. No project activities shall be allowed within the marked areas.</p> <p>(c) <u>Compensate for losses of special-status plants.</u> If populations or individuals of rose mallow and Wright’s trichocoronis are found during implementation of item (a) above, and the individuals or populations cannot be avoided during implementation of item (b), a mitigation and monitoring plan for the affected species shall be developed and implemented. The plan shall be prepared by a qualified</p>	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
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Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>biologist. Before disturbance of the individuals or populations of the effected species, the mitigation and monitoring plan shall be submitted to TRLIA for review and approval. The plan shall be submitted concurrently to DFG for review and comment, and TRLIA may consult with DFG before approval of the plan. Possible mitigation for individuals or populations removed during construction includes:</p> <ul style="list-style-type: none"> ▪ removing and stockpiling topsoil with intact roots, rhizomes, and seed bank in the disturbance area, and either replacing the soil in the same location after construction is complete or placing it in a new area with suitable habitat; or ▪ collecting plants, seeds, or other propogules in the area to be disturbed, and placing propogules or cultivating nursery stock in the disturbed area after construction is complete or in a new area with suitable habitat. <p>Mitigation will be considered successful if populations of the affected species in mitigation areas are sustained for a minimum of 3 years and are of similar size and quality as the affected populations.</p>	
<p>LS-5.5-d: Effects on Valley Elderberry Longhorn Beetle. Levee repair and strengthening and related activities could result in the loss of blue elderberry shrubs that are occupied by valley elderberry longhorn beetle. This impact would be potentially significant.</p>	<p>PS</p>	<p>Conduct Protocol-Level Surveys, Establish Buffers, and Implement a Mitigation Plan as Necessary to Minimize Effects on Valley Elderberry Longhorn Beetle. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on valley elderberry longhorn beetles:</p> <p>(a) <u>Conduct protocol-level elderberry shrub surveys in the project area.</u> Before the beginning of ground disturbance within 100 feet of any area that may support elderberry shrubs, a qualified biologist shall conduct an elderberry</p>	<p>LTS</p>

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>shrub survey consistent with USFWS protocols for conservation of valley elderberry longhorn beetle (U.S. Fish and Wildlife Service 1999). All elderberry shrubs with potential to be affected by project activities shall be mapped and the number of stems greater than 1 inch in diameter on each shrub that may require removal shall be counted. (Elderberry plants with no stems measuring 1 inch or greater in diameter at ground level are considered unlikely to be habitat for the beetle because of their small size and/or immaturity [U.S. Fish and Wildlife Service 1999].)</p> <p>(b) <u>Protect elderberry shrubs from disturbance.</u> The primary engineering and construction contractors, through coordination with the biologist, shall ensure to the extent feasible and practicable that the footprint of project features and construction zones, staging areas, and access routes are designed to ensure that no project activities would affect an elderberry shrub with stems measuring 1 inch in diameter at ground level. Buffers of at least 100 feet shall be established around all elderberry shrubs with stems greater than 1 inch in diameter at ground level that can be retained undisturbed on-site. The buffer shall be clearly identified in the field by staking or flagging. All project activity shall be prohibited within the buffer areas. If complete avoidance of these buffers is not feasible, consultation with USFWS shall be conducted as described below.</p> <p>(c) <u>If effects on shrubs cannot be avoided, develop and implement a mitigation plan approved by USFWS.</u> If maintaining 100-foot protection buffers or otherwise avoiding construction-related effects on elderberry shrubs with a stem greater than 1 inch in diameter at ground level is not feasible, consultation with USFWS will be required, and an incidental take permit may be required. During this</p>	

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		consultation, an appropriate and feasible mitigation plan shall be developed and provided to USFWS for approval. The plan may include, but would not necessarily be limited to, reducing buffers around shrubs that would not be removed; transplanting shrubs to a conservation area; and planting additional seedling or cuttings at a ratio ranging from 1:1 or 1:6, depending on the number of stems greater than or equal to 1 inch in diameter and whether beetle exit holes are found on the shrubs on-site (U.S. Fish and Wildlife Service 1999).	
LS-5.5-e: Effects on Northwestern Pond Turtle. Levee repair and strengthening and related activities could result in disturbance and/or loss of suitable aquatic habitat for northwestern pond turtle and could result in direct loss of individuals. This impact would be potentially significant .	PS	Conduct Surveys as Part of Dewatering Activities and Minimize Effects on Northwestern Pond Turtle. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on northwestern pond turtles: (a) <u>Conduct surveys after dewatering.</u> A qualified biologist shall conduct surveys for northwestern pond turtles in aquatic habitats to be dewatered and/or filled during project construction and grading of aquatic habitat within the setback area. Surveys shall be conducted immediately after any dewatering and before any fill of aquatic habitat. If no pond turtles are found, no further mitigation will be required. (b) <u>Capture and move turtles.</u> If any pond turtles are found, the biologist shall capture them and move them to suitable habitat in the vicinity of the project site.	LTS
LS-5.5-f: Effects on Giant Garter Snake. Levee repair and strengthening and related activities would result in disturbance and/or loss of suitable aquatic and upland habitat for giant garter snake. Construction activities also have the potential to result in direct take of individuals. This impact	S	Implement Applicable Take Minimization Measures and a Mitigation Plan as Necessary for Giant Garter Snake. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize potential project effects on giant garter snakes:	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
would be significant .		<p>(a) <u>Verify potential habitat in the project area and, to the extent feasible and practicable, plan project features and construction activity to avoid direct effects on these areas.</u> Before the initiation of any ground-disturbing project activities, a qualified biologist approved by USFWS’s Sacramento Fish and Wildlife Office shall verify where suitable habitat conditions for giant garter snake occur in areas that could be affected by the proposed project. The primary engineering and construction contractors shall ensure, through coordination with the biologist, that the footprint of project features and construction zones, staging areas, and access routes are designed to prevent any disturbance of potential giant garter snake habitat to the extent feasible and practicable.</p> <p>(b) <u>Designate areas to be avoided during construction.</u> The primary engineering and construction contractors, through coordination with the biologist, shall designate giant garter snake habitat to be avoided during project construction as Environmentally Sensitive Areas. These areas shall be flagged by the biologist and avoided by all construction personnel.</p> <p>(c) <u>Limit the timing of construction activity within potential habitat.</u> All construction activities that must take place within potential giant garter snake habitat (aquatic habitat and adjacent upland habitat within 200 feet) shall be limited to the period of May 1 to October 1 to the extent feasible.</p> <p>(d) <u>Follow guidelines for habitat dewatering.</u> Dewatering of aquatic habitat shall not occur between October 1 and April 15. Any dewatered habitat must remain dry for at least 15 consecutive days after April 15 and before the excavation or filling of the dewatered habitat.</p> <p>(e) <u>Inspect suitable habitat within 24 hours of beginning</u></p>	

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p><u>construction</u>. Within 24 hours before the initiation of construction activities within suitable habitat, a qualified biologist who is approved by USFWS’s Sacramento Fish and Wildlife Office shall conduct preconstruction surveys for giant garter snakes. These areas shall be reinspected whenever a lapse of construction activity within suitable habitat occurs for a period greater than 2 weeks. If a giant garter snake is found, all activity that could result in death or injury of giant garter snake shall be delayed until consultation with USFWS and DFG has been completed and authorization to proceed has been received from those agencies.</p> <p>(f) <u>Minimize clearing of wetland vegetation</u>. Clearing of wetland vegetation shall be confined to the minimum area necessary. Excavation of channel banks shall be accomplished by using equipment located on and operated from the top of the bank, with the least interference practical for emergent vegetation that would not be affected by the project.</p> <p>(g) <u>Restrict movement of equipment</u>. Movement of heavy equipment to and from the project site shall be restricted to areas outside the identified suitable habitat, unless the equipment is being moved on established roadways or in areas that have been inspected by a qualified biologist.</p> <p>(h) <u>Participate in environmental awareness program</u>. Construction personnel shall participate in a USFWS-approved worker environmental awareness program. Under this program, workers shall be informed about the presence of giant garter snakes and habitat associated with the species and that unlawful take of the animal or destruction of its habitat is a violation of ESA.</p> <p>(i) <u>Restore disturbed areas</u>. After completion of construction</p>	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>activities, any construction debris shall be removed and disturbed areas within potential giant garter snake habitat shall be restored to preproject conditions.</p> <p>(j) <u>If impacts cannot be avoided, develop and implement a feasible mitigation plan approved by USFWS.</u> Consultation with USFWS and DFG shall be required for impacts that cannot be avoided, and an incidental take permit may be required. During this consultation, an appropriate and feasible mitigation plan shall be developed and provided to USFWS and DFG for approval. The mitigation plan may include, but would not necessarily be limited to, applicable take minimization measures outlined above, or modifications of those measures, and compensation for unavoidable impacts through replacement of habitat. Compensation ratios may range from 1:1 to 3:1 (replaced aquatic habitat to affected habitat), depending on the amount of habitat lost and the duration of the impact. Replacement habitat shall include both upland and aquatic habitat components at a ratio of 2:1 upland habitat to aquatic habitat.</p>	
<p>LS-5.5-g: Effects on Swainson’s Hawk and Other Nesting Raptors. Levee repair and strengthening and related activities would result in disturbance and/or loss of suitable nesting and/or foraging habitat for Swainson’s hawk and other raptors and could result in loss of active nests. This impact would be potentially significant.</p>	<p style="text-align: center;">PS</p>	<p>(1): Conduct Preconstruction Surveys and Protect Active Nests to Minimize Effects on Swainson’s Hawk. TRLIA and its primary construction contractor shall ensure that the following measures are implemented to minimize potential project effects on Swainson’s hawk:</p> <p>(a) <u>Conduct preconstruction surveys.</u> Because project construction activity would occur during the Swainson’s hawk breeding season (March 1 to September 15), a qualified biologist shall conduct preconstruction surveys to identify active nests in the nonorchard trees within 1/2 mile of construction areas (including staging and borrow areas). Because of the mostly linear nature of project construction, preconstruction surveys may be phased to accommodate</p>	<p style="text-align: center;">LTS</p>

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>construction activities; suitable nesting habitat shall be surveyed only when construction activities would encroach within 1/2 mile of unsurveyed areas. Surveys shall be conducted no less than 14 days and no more than 30 days before construction activities may encroach within 1/2 mile of unsurveyed areas. To the extent feasible, guidelines provided in <i>Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley</i> (Swainson's Hawk Technical Advisory Committee 2000) shall be followed.</p> <p>(b) <u>Establish protective buffers around active nests.</u> If an active nest is found, an appropriate buffer to avoid impacts shall be determined by a qualified biologist. No project activities shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active. The size of the buffer may vary, depending on the nest location, nest stage, and construction activity. Monitoring of the nest by a qualified biologist may be required if the activity could adversely affect the nest.</p> <p>(2): Conduct Preconstruction Surveys, Protect Occupied Burrows, and Relocate Individuals as Necessary to Minimize Effects on Burrowing Owl. TRLIA and its primary construction contractor shall ensure that the following measures are implemented to minimize potential project effects on burrowing owl:</p> <p>(a) <u>Conduct preconstruction surveys.</u> Before project-related activities in the project area, a qualified biologist shall conduct focused surveys for burrowing owls within 250 feet of construction areas (including staging and borrow areas). Surveys shall be conducted no less than 14 days and no more than 30 days prior to initiation of project activities, and surveys shall be conducted in accordance with DFG protocol</p>	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>(California Department of Fish and Game 1995).</p> <p>(b) <u>Establish protective buffers around occupied burrows.</u> If occupied burrows are found, an appropriate buffer shall be established to avoid impacts on the burrows. A buffer of 165 feet would be required during the nonbreeding season (September 1 through January 31), and a buffer of 250 feet would be required during the breeding season (February 1 through August 31). To the extent feasible, project activity shall be excluded from within the buffer areas.</p> <p>(c) <u>Relocate owls if necessary.</u> If impacts on occupied burrows are unavoidable, on-site passive relocation techniques approved by DFG shall be used to encourage owls to move to alternative burrows outside the impact area. However, no occupied burrows shall be disturbed during the nesting season unless a qualified biologist verifies through noninvasive methods that the burrow is no longer occupied.</p> <p>(3): Conduct Preconstruction Surveys and Protect Active Nests to Minimize Effects on Other Nesting Raptors. TRLIA and its primary construction contractor shall ensure that the following measures are implemented to minimize potential project effects on other nesting raptors:</p> <p>(a) <u>Conduct preconstruction surveys.</u> Because project construction activity would occur during the raptor breeding season (February 15 to September 15), a qualified biologist shall conduct preconstruction surveys to identify active nests in the nonorchard trees within 500 feet of potential construction areas (including staging and borrow areas). Because of the linear nature of project construction, preconstruction surveys may be phased to accommodate construction activities; suitable nesting habitat shall be surveyed only when construction activities would encroach within 500 feet of unsurveyed areas. Surveys shall be</p>	

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>conducted no less than 14 days and no more than 30 days before construction encroaches within 500 feet of unsurveyed areas. If no active nests are found, no further mitigation shall be required.</p> <p>(b) <u>Establish protective buffers around active nests.</u> If an active nest is found, an appropriate buffer to avoid impacts shall be determined by a qualified biologist. No project activities shall commence within the buffer area until a qualified biologist confirms that the nest is no longer active. The size of the buffer may vary, depending on the nest location, nest stage, and construction activity. Monitoring of the nest by a qualified biologist may be required if an activity could adversely affect the nest.</p>	
<p>LS-5.5-h: Effects on Other Special-status Birds. Levee repair and strengthening and related activities would result in disturbance and/or loss of potential nesting and/or foraging habitat for several special-status bird species. Special-status species are unlikely to nest in areas that would be affected, and large areas of nesting and foraging habitat of equal or higher quality are available elsewhere in the project area. Therefore, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>LS-5.5-i: Effects on Pacific Western Big-Eared Bat. Levee repair and strengthening and related activities would not affect the suitability of foraging habitat or result in loss of important roost or maternity sites. This impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>LS-5.5-j: Effects on Wildlife Corridors. Levee repair and strengthening and related activities would</p>	LTS	No mitigation is required.	LTS

**Table 1-3a
 SUMMARY OF IMPACTS AND MITIGATION MEASURES
 THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
result in limited temporary disturbance of the Feather River and Yuba River habitat corridors but are not expected to affect overall use of these corridors by wildlife. This impact would be less than significant .			
5.6 Recreation			
<p>LS-5.6-a: Temporary Changes in Recreational Opportunities during Levee Repairs. Construction noise could disrupt recreational uses in the project area, particularly in areas adjacent to the existing levee alignment. Some wildlife species present in or inhabiting natural areas are likely to be disturbed by noise and by the presence of project construction crews and equipment. Portions of the Feather River State Wildlife Area in project Segment 1 may need to be closed temporarily to hunting and other recreational activities for safety reasons while adjacent sections of the existing Feather River levee are being repaired. There would be no public access to the Star Bend Boat Launch and Fishing Access for several days while levee repairs were conducted in this area. Although these temporary disturbances may affect the recreation experience for bird-watchers, hunters, boaters, and other recreational users, displaced recreational uses could be accommodated by other nearby facilities (Whitmore, pers. comm., 2006). For this reason, and because of the temporary nature of this effect, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>LS-5.6-b: Long-Term Changes in Recreational Opportunities Resulting from Levee Repairs. In the long term, recreational opportunities along the left bank levee of the Feather River would not be adversely affected by levee repairs. Levee repair and strengthening of the existing levee would not change Feather River flood stage elevations, and hence would not alter the duration or frequency of inundation of recreational facilities relative to existing conditions. After completion of construction activities, the project site would be restored and reclaimed as appropriate to preexisting conditions. Recreational opportunities after project construction are expected to be available to the extent that these opportunities are available under preproject conditions. No substantial changes in recreational opportunities would be associated with levee repair and strengthening of the existing levee. This impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
5.7 Aesthetic Resources			
<p>LS-5.7-a: Temporary Changes in Visual Resources Associated with Levee Repairs. Levee repair and strengthening activities would temporarily reduce the aesthetic qualities of views by introducing earthmoving equipment and other construction equipment, materials, and work crews into the viewshed of recreationists, motorists on SR 70 and Feather River Boulevard, workers in nearby farming areas, and residents of the area. However, the construction areas would typically be distant from and/or screened from most viewers. Where residents would be near the construction area (e.g.,</p>	LTS	No mitigation is required.	LTS

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
in project Segment 3), construction would pass by these areas relatively quickly and changes in aesthetic conditions would be short term and temporary. For these reasons, this impact would be less than significant .			
LS-5.7-b: Changes in Light and Glare. There would be no substantial long-term sources of light or glare associated with levee repairs. However, equipment staging areas may be temporarily lit at night during construction, and portions of the construction areas may also need to be lit at night. Although such nighttime lighting may be visible from various residences, particularly in project Segment 3, in most locations views of the construction areas would be largely shielded by orchards, other vegetation, and structures. Where lit construction areas are visible, lighting would be short term and temporary. For these reasons, this impact would be less than significant .	LTS	No mitigation is required.	LTS
LS-5.7-c: Long-Term Modifications of Views from Levee Repairs. Levee repair and strengthening activities would not dramatically change the appearance of the project area, which is of low to moderate aesthetic value. There would be no substantial adverse effect on any scenic vista, and these repairs would not substantially alter the general character of views of the area. This impact would be less than significant .	LTS	No mitigation is required.	LTS
5.8 Cultural Resources			
LS-5.8-a: Damage to or Destruction of Resources Associated with Prehistoric Archaeological Sites	PS	(1): Conduct Further Evaluation and Subsurface Testing to Determine Whether Proposed Levee Improvements Could	LTS

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>CA-Yub-13 and CA-Yub-14. Prehistoric site CA-Yub-13 was previously documented adjacent to the water side of the levee in project Segment 1, and prehistoric site CA-Yub-14 was documented just west of Segment 1. The eligibility of these resources for CRHR and NRHP listing has not been determined. Prehistoric remains that may be considered significant resources under CEQA may still be present near the documented locations of these sites and could be damaged or destroyed by proposed levee repair and strengthening activities. This impact would be potentially significant.</p>		<p>Damage Significant Resources Associated with Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14. If levee improvements would include activities that could disturb subsurface soils in the vicinity (within 1,000 feet) of the recorded location of either CA-Yub-13 or CA-Yub-14, TRLIA shall have a qualified archaeologist conduct an evaluation designed to assess the potential for damage to resources associated with the site(s) before initiation of project-related ground-disturbing activities in these areas. The evaluation may require assessment of the condition and data potential of specific areas of anticipated construction disturbance and/or determination of whether one or both of the sites are eligible for inclusion in the CRHR and/or NRHP. This evaluation shall include additional surveys, subsurface test excavations, analyses of any discovered archaeological materials, and (if necessary) data recovery.</p> <p>If the testing indicates the presence of cultural resources, a qualified archaeologist shall evaluate the significance of the finds and shall recommend further mitigation measures. Because of the critical need to remedy weaknesses in the existing levee in Segment 1, it is unlikely that avoidance of any resources directly within the construction footprint would be possible, and data recovery would likely be required. Efforts involving testing, excavation, and monitoring shall be conducted in consultation with appropriate Native American representatives identified by the NAHC.</p> <p>(2): Monitor Ground-Disturbing Activities in the Vicinity of Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14. A qualified professional archaeologist and a Native American representative shall monitor all project-related ground-disturbing activities at and near the locations of prehistoric archaeological sites CA-Yub-13 and CA-Yub-14. If intact archaeological materials or human burials not recovered during the subsurface</p>	

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
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Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		testing and excavation programs described in Mitigation Measure LS-5.8-a(1) are uncovered during project-related ground-disturbing activities, the archaeologist shall determine their possible significance and shall formulate appropriate mitigation measures. Appropriate mitigation may include no action, avoidance of the resource, and potential additional data and burial recovery.	
LS-5.8-b: Damage to or Destruction of Cultural Resources in Unsurveyed Areas. Potential borrow or staging areas have not been definitively identified and therefore have not been surveyed for cultural resources. Significant cultural resources could be present in these areas, and could be damaged by project-related ground-disturbing activities. This impact would be potentially significant .	PS	Survey Unexamined Areas before Project Ground-Disturbing Activities and Implement Further Mitigation As Necessary. A qualified professional archaeologist shall conduct focused surveys of all portions of the project area that were not adequately surveyed during past efforts or during surveys for the current effort. The survey shall be conducted before activities associated with project preparation or construction are initiated, and during a fallow period, if possible, in the case of areas currently covered in agricultural crops or grasses. If cultural resources are identified as a result of the survey, the archaeologist shall evaluate the significance of the finds and recommend appropriate mitigation measures for significant resources. TRLIA and its construction contractors shall implement these mitigation measures. Mitigation may include, but shall not necessarily be limited to, the avoidance of significant and potentially significant resources through changes in project design and/or subsurface testing and data recovery. Such efforts, particularly those involving testing and excavation, shall be conducted in consultation with appropriate Native American representatives identified by the NAHC.	LTS
LS-5.8-c: Damage to or Destruction of Undocumented Buried Archaeological Resources during Construction. Project construction and related activities could damage or destroy previously	PS	Stop Work and Implement Measures to Protect Archaeological Resources If Discovered during Ground-Disturbing Activities. If previously undocumented archaeological materials such as historic building or structure	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>unknown significant or potentially significant buried archaeological resources. This impact would be potentially significant.</p>		<p>remains; historic artifact deposits or scatters; or prehistoric artifacts such as stone tool flaking debitage, mortars, pestles, shell, or bone are encountered during project construction, all ground-disturbing activity shall be suspended temporarily within a 100-foot radius of the find or a distance determined by a qualified professional archaeologist to be appropriate based on the potential for disturbance of additional resource-bearing soils. A qualified professional archaeologist shall identify the materials, determine their possible significance, and formulate appropriate mitigation measures. Appropriate mitigation may include no action, avoidance of the resource, and potential data recovery. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.</p>	
<p>LS-5.8-d: Damage to or Destruction of Undocumented Human Remains during Construction. It is possible that buried human remains could be unearthed during project-related ground-disturbing activities, causing damage to or destruction of such remains. This impact would be potentially significant.</p>	<p>PS</p>	<p>If Human Remains Are Discovered during Ground-Disturbing Activities, Stop Work and Comply with State Laws Pertaining to the Discovery of Human Remains. If human remains are uncovered during project construction, all ground-disturbing activities shall immediately be suspended within a 100-foot radius of the find or a distance determined by a qualified professional archaeologist to be appropriate based on the potential for disturbance of additional remains, and TRLIA or its designated representative shall be notified. TRLIA shall immediately notify the Yuba County Coroner and a qualified professional archaeologist, if one is not already on-site. The coroner shall examine the discovery within 48 hours. If the coroner determines that the remains are those of a Native American, he or she shall contact the NAHC by phone within 24 hours. The NAHC shall contact the Most Likely Descendant (MLD) of the remains. TRLIA or its appointed representative and the archaeologist shall consult with the MLD regarding the removal or preservation and avoidance of the remains, and the</p>	<p>LTS</p>

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		parties shall rebury or preserve the remains as appropriate. Ground disturbance in the zone of suspended activity shall not recommence without authorization from the archaeologist.	
5.9 Air Quality			
LS-5.9-a: Temporary Emissions of ROG, NO_x, and PM₁₀ during Construction. Maximum daily emissions of ROG, NO _x , and PM ₁₀ associated with levee repair and strengthening activities would exceed FRAQMD’s recommended significance thresholds and contribute to existing nonattainment conditions for ozone and PM ₁₀ in the NSVAB. This impact would be significant .	S	<p>Implement FRAQMD Pollution-Control Measures to Minimize Temporary Emissions of ROG, NO_x, and PM₁₀ during Construction. FRAQMD’s <i>Indirect Source Review Guidelines</i> and online CEQA guidance provide mitigation measures for reducing short-term air quality impacts. As recommended by FRAQMD, Three Rivers Levee Improvement Authority shall ensure that the following mitigation measures (summarized from FRAQMD guidance) are implemented during all project construction activities to the extent practicable. In addition, construction of the proposed project is required to comply with all applicable FRAQMD rules and regulations, in particular Rule 3.0 (“Visible Emissions”), Rule 3.16 (“Fugitive Dust Emissions”), and Rule 3.15 (“Architectural Coatings”).</p> <ol style="list-style-type: none"> 1. Implement a Fugitive Dust Control Plan that includes the following measures (see Appendix E): <ul style="list-style-type: none"> ▪ All grading operations on a project should be suspended when winds carry dust beyond the property line despite implementation of all feasible dust control measures. Consideration should be given to suspending all project grading when winds exceed 20 mph to minimize the risk of dust being carried beyond the property line. ▪ Construction sites shall be watered as directed by the [Yuba County] Department of Public Works or FRAQMD and as necessary to prevent fugitive dust violations. ▪ An operational water truck should be on-site at all times. 	SU

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>Apply water to control dust as needed to prevent visible emissions violations and off-site dust impacts.</p> <ul style="list-style-type: none"> ▪ On-site dirt piles or other stockpiled particulate matter should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce windblown dust emissions. Incorporate the use of approved nontoxic soil stabilizers according to manufacturer’s specifications to all inactive construction areas. ▪ All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions. ▪ Apply approved chemical soil stabilizers according to the manufacturers’ specifications, to all inactive construction areas (previously graded areas that remain inactive for 96 hours) including unpaved roads and employee/equipment parking areas. ▪ To prevent track-out, wheel washers should be installed where project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out. ▪ Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved, public thoroughfares from the project site. ▪ Provide temporary traffic control as needed during all phases of construction to improve traffic flow, as deemed appropriate by the Department of Public Works 	

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>and/or Caltrans [California Department of Transportation] and to reduce vehicle dust emissions.</p> <ul style="list-style-type: none"> ▪ Reduce traffic speeds on all unpaved surfaces to 15 mph or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, on-site enforcement, and signage. ▪ Reestablish ground cover on the construction site as soon as possible and prior to final occupancy, through seeding and watering. ▪ No open burning of vegetative waste (natural plant growth wastes) or other materials (trash, demolition debris et al.) may be conducted at the project site. Materials also may not be hauled off-site for disposal by open burning. Vegetative wastes should be chipped or delivered to waste to energy facilities (permitted biomass facilities), mulched, composted, or used for firewood. <p>2. Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0 (“Visible Emissions”) limitations (40% opacity or Ringelmann 2.0). Operators of vehicles and equipment found to exceed opacity limits shall take action to repair the equipment within 72 hours or remove the equipment from service. Failure to comply may result in a Notice of Violation.</p> <p>3. The primary contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of onsite operation.</p> <p>4. Limit vehicle and equipment idling times to 10 minutes— saves fuel and reduces emissions.</p> <p>5. Use existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.</p>	

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>6. Develop and implement a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.</p> <p>7. Portable engines and portable engine-driven equipment units used at the project work site, with the exception of on-road and off-road motor vehicles, may require ARB Portable Equipment Registration with the state or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with ARB or the District [FRAQMD] to determine registration and permitting requirements prior to equipment operation at the site.</p> <p>8. The proponent shall assemble a comprehensive inventory list (i.e., make, model, engine year, horsepower, and emission rates) of all heavy-duty off-road (portable and mobile) equipment (50 horsepower and greater) that will be used an aggregate of 40 or more hours for the construction project and apply the following mitigation measure:</p> <p><i>Reducing NO_x emissions from off-road diesel powered equipment</i></p> <p>The project shall provide a plan for approval by FRAQMD demonstrating that the heavy-duty (equal to or greater than 50 horsepower) off-road equipment to be used in the construction project, including owned, leased and subcontractor vehicles, will achieve a projectwide fleet-average 20% NO_x reduction¹ and 45% particulate reduction compared to the most recent ARB fleet average at time of</p>	

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>construction.</p> <p>The FRAQMD Fugitive Dust Control Plan is included in Appendix E.</p> <hr/> <p>¹ Acceptable options for reducing emissions may include use of late-model engines, low-emission diesel products, alternative fuels, engine retrofit technology (Carl Moyer Guidelines), after-treatment products, voluntary off-site mitigation projects, provide funds for air district off-site mitigation projects, and/or other options as they become available. The District [FRAQMD] should be contacted to discuss alternative measures.</p>	
<p>LS-5.9-b: Long-Term Changes in Emissions of ROG, NO_x, and PM₁₀ Associated with Levee Repairs and Strengthening. The proposed levee repairs and strengthening are expected to contribute only minimally, if at all, to long-term emissions of pollutants through potential vehicle trips related to occasional maintenance activities. The resulting increase in long-term emissions would be small; therefore, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>LS-5.9-c: Exposure of Sensitive Receptors to Toxic Air Emissions. Emissions of TACs associated with construction or operations under Alternative 1 would not result in exposure of receptors to concentrations of TACs in excess of applicable thresholds. This impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
5.10 Noise			
<p>LS-5.10-a: Temporary Increase in Noise Levels</p>	S	Limit Generation of Noise by Equipment during Project	SU

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>during Construction. Noise levels associated with construction activities could exceed the maximum permissible noise limits at residences. Construction equipment may operate between the hours of 10 p.m. and 7 a.m., and could operate within 500 feet of a residential zone during these hours. Therefore, construction activities occurring between 10 p.m. and 7 a.m. could result in annoyance and/or sleep disruption of certain receptors within the project area. In addition, construction operations may result in a noticeable temporary increase (3 dBA or more) in ambient noise levels at these residences. Therefore, this impact would be significant.</p>		<p>Construction. Three Rivers Levee Improvement Authority (TRLIA) shall ensure that the primary construction contractor implements the following mitigation measures during construction activities:</p> <ul style="list-style-type: none"> (a) To the extent practicable, construction activities shall be limited to the hours of 7 a.m. to 10 p.m. when operations occur within 500 feet of a residential or other noise-sensitive land use. Decisions as to whether nighttime construction is needed within 500 feet of residential or other noise-sensitive land uses shall only consider the need to complete project activities before the beginning of the flood season and the associated need to maintain human safety and the integrity of the flood control system. (b) All construction equipment shall be properly maintained and equipped with noise control, such as mufflers, in accordance with manufacturers' specifications. (c) To the extent feasible, the simultaneous operation of construction equipment within 50 feet of the project boundary shall be limited. <p>In addition, TRLIA shall implement the following measure:</p> <ul style="list-style-type: none"> (d) Before construction at each site near noise-sensitive receptors, TRLIA shall provide written notification to potentially affected receptors, identifying the type, duration, and frequency of construction operations. Notification materials will also identify a mechanism for residents to register complaints with TRLIA and Yuba County (the agency responsible for enforcement of the Yuba County noise ordinance) if construction noise levels are overly intrusive or construction occurs outside the permitted hours. TRLIA and/or Yuba County would then take corrective action. 	

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>LS-5.10-b: Exposure of Sensitive Receptors to Excessive Groundborne Vibration During Construction. Construction-generated vibration levels would not result in levels above 0.2 in/sec PPV (Caltrans’s recommended standard with respect to the prevention of structural building damage) or 80 VdB (FTA’s maximum acceptable vibration standard with respect to human response at residential uses) at the nearest land uses. Thus, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
5.11 Transportation and Circulation			
<p>LS-5.11-a: Increase in Traffic on Local Roadways near the Project Site during Construction. During the anticipated 20-month construction period, commute trips and haul truck trips associated with levee repair and strengthening activities would increase traffic on Feather River Boulevard, SR 70, and local roadways that provide access to the project alignment (e.g., Anderson Avenue, Country Club Avenue, Riverside Drive). However, construction-related trips would not exceed the thresholds established by ITE for temporary traffic increases and would not represent a substantial increase in traffic levels on these roadways or other local roads. This impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>LS-5.11-b: Increase in Traffic Hazards on Local Roadways near the Project Site during Construction. Construction-related traffic could track mud and gravel onto local roadways, and haul truck traffic could interfere with the flow of traffic on these roads. These conditions could pose hazards</p>	PS	Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways. To reduce hazards to vehicles on local roadways, Three Rivers Levee Improvement Authority (TRLIA) shall ensure that its primary construction contractor implements the following	LTS

Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>for travelers on local roadways. This impact would be potentially significant.</p>		<p>measures:</p> <p>(a) <u>Develop and implement a traffic safety plan in coordination with the County and Caltrans.</u> The construction contractor shall develop a plan for traffic safety assurance for the county roadways in the project vicinity. The contractor shall submit the plan to the County Public Works Department for approval before the initiation of construction-related activity that could adversely affect traffic on county roadways. A similar plan shall be prepared for SR 70 and submitted to Caltrans for review before initiation of construction-related activity that could adversely affect traffic on the highway. If both the County and Caltrans will accept the same traffic safety plan, then only one plan need be prepared. The plan(s) may call for the following elements, based on the requirements of each agency:</p> <ul style="list-style-type: none"> ▪ posting warnings about the potential presence of slow-moving vehicles; ▪ using traffic control personnel when appropriate; ▪ scheduling truck trips outside of peak morning and evening traffic periods to the extent feasible; ▪ placing and maintaining barriers and installing traffic control devices necessary for safety, as specified in Caltrans’s <i>Manual of Traffic Controls for Construction and Maintenance Works Zones</i> and in accordance with County requirements; and ▪ maintaining routes for passage of emergency response vehicles through roadways affected by construction activities. <p>The contractor shall train construction personnel in appropriate safety measures as described in the plan(s), and shall implement the adopted plan(s).</p>	

**Table 1-3a
 SUMMARY OF IMPACTS AND MITIGATION MEASURES
 THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		(b) <u>Minimize the accumulation of mud and dirt on local roadways.</u> All operations shall limit or expeditiously remove the accumulation of project-generated mud or dirt from adjacent public streets at least once every 24 hours when operations are occurring. The construction contractor shall sweep the paved roadways (water sweeper with reclaimed water recommended) at the end of each day if substantial volumes of soil material have been carried onto adjacent paved, public roads from the project sites. Also see a similar requirement under Mitigation Measure LS-5.9-a, "Implement FRAQMD Pollution-Control Measures to Minimize Temporary Emissions of ROG, NO _x , and PM ₁₀ during Construction."	
5.12 Public Services, Utilities, and Service Systems			
<p>LS-5.12-a: Damage of Public Utility Infrastructure and Disruption of Service in the Project Area. Various aboveground and buried utility lines identified in the project area either are near or cross the Feather River and Yuba River levee segments planned for repair and strengthening and the area considered for a detention basin/soil borrow site. The potential exists for additional buried gas, electrical, cable television, or telephone lines that have not already been identified to be located near or to cross these areas. Construction activities associated with project implementation could cause minor damage to public utility infrastructure or temporarily disrupt utility service. However, detailed project design would include consultation with all potential service providers to identify utility line locations and appropriate protection measures, and consultation would</p>	LTS	No mitigation is required.	LTS

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
continue during construction to ensure avoidance/protection of these utilities as construction proceeds. Implementation of Alternative 1 would not result in substantial interference with gas, electrical, cable television, or telephone service. This impact would be less than significant .			
LS-5.12-b: Damage of Water Supply and Drainage Facilities and Interference with Service in the Project Area. Various aboveground and buried water supply and drainage lines identified in the project area either are near or cross the Feather River and Yuba River levee segments planned for repair and strengthening and the area considered for a detention basin/soil borrow site. The potential exists for additional buried water supply and drainage facilities that have not already been identified to be located near or to cross these areas. Construction activities associated with project implementation could damage water supply and drainage infrastructure or temporarily disrupt service. However, detailed project design would include consultation with appropriate agencies and individuals responsible for water delivery and drainage facilities in the area to identify facility locations and appropriate protection measures, and consultation would continue during construction to ensure avoidance/protection of these utilities as construction proceeds. In addition, the project would be designed to maintain water supply and drainage service equivalent to existing conditions. Implementation of Alternative 1 would not result in	LTS	No mitigation is required.	LTS

**Table 1-3a
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
substantial interference with water supply or drainage service. This impact would be less than significant .			
LS-5.12-c: Potential for Conflicts with Emergency Response Vehicles during Construction. Feather River Boulevard is an emergency-vehicle route. The increased traffic on Feather River Boulevard associated with levee repair and strengthening activities could increase emergency response times and otherwise make access to the area more difficult for emergency service providers. This impact would be potentially significant .	PS	Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways. This measure is identical to Mitigation Measure LS-5.11-b, “Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways,” in Section 5.11, “Transportation and Circulation.”	LTS
5.13 Paleontological Resources			
LS-5.13-a: Disturbance of Unknown Paleontological Resources during Earthmoving Activities. Portions of the project area and immediate vicinity are underlain by the Modesto and Riverbank Formations, which are paleontologically sensitive rock formations. Construction activities in the Modesto and Riverbank Formations associated with proposed levee strengthening (e.g., slurry cutoff walls, relief wells), use of the soil borrow area/detention basin location, and related activities (e.g., relocation of Pump Station No. 3) could adversely affect unknown subsurface paleontological resources. This impact would be potentially significant .	PS	Conduct Training for Construction Personnel, Cease Work if Paleontological Resources are Encountered, and Implement an Appropriate Mitigation Strategy. Three Rivers Levee Improvement Authority (TRLIA) or its primary construction contractor shall implement the following measures: (a) Before the start of construction activities, construction personnel involved with earthmoving activities shall be informed of the possibility of encountering fossils, the appearance and types of fossils likely to be seen during construction activities, and proper notification procedures should fossils be encountered. This worker training may either be prepared and presented by an experienced field archaeologist at the same time as construction worker education on cultural resources, or be prepared and presented separately by a qualified paleontologist. (b) If paleontological resources are discovered during earthmoving activities, the construction crew shall	LTS

Table 1-3a

**SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING ALTERNATIVE (ALTERNATIVE 1)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		immediately cease work within at least 25 feet of the find. TRLIA shall retain a qualified paleontologist to evaluate the resource and prepare a proposed mitigation plan in accordance with SVP guidelines (1995). The proposed mitigation plan may include a field survey, construction monitoring, sampling and data recovery procedures, museum storage coordination for any specimen recovered, and a report of findings. Recommendations determined by TRLIA to be necessary and feasible shall be implemented before construction activities can resume at the site where the paleontological resources were discovered.	
Cumulative Impacts			
Alternative 1, The Levee Strengthening Alternative, would also contribute to significant cumulative impacts related to conversion of Important Farmland to nonagricultural uses; emissions of ROG, NO _x , and PM ₁₀ during construction; and potentially noise during construction. The mitigation described above would not reduce the project's contributions to these impacts to less-than-significant levels.			

B = Beneficial effect
 PB = Potentially beneficial effect
 NI = No impact

LTS = Less than significant
 PS = Potentially significant
 S = Significant

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 Land Use			
<p>ASB-5.1-a: Conflicts with Land Use Planning and Policies Resulting from Levee Repairs and the Levee Setback. Levee repair and strengthening of the existing levee in Segments 1 and 3 would result in removal of small areas of agricultural land from production associated with installation of seepage/stability berms and other structures. The setback levee footprint and levee easements in Segment 2 would cover approximately 240–250 acres of agricultural land, and setting back the levee could indirectly result in the removal of more land from agricultural production by dividing land parcels and allowing periodic flooding of agricultural land. Construction of a detention basin would be required to prevent adverse flooding effects on area properties, and this would likely occur on several hundred acres of existing agricultural land. These uses would conflict with County land use policies regarding the preservation of agricultural land and would be inconsistent with the current land use and zoning designations for the area. Because of these inconsistencies, this impact would be significant.</p>	S	<p>Resolve Inconsistencies between Proposed Uses of the Levee Setback Area and Yuba County Zoning. TRLIA shall coordinate with the County Planning Department to appropriately address inconsistencies between proposed land uses and County-planned land uses and zoning designations. Before permanent changes in allowable land uses in the levee setback area need to be established (i.e., before degradation of the existing levee at the latest), TRLIA shall apply for a general plan amendment if necessary and for appropriate rezoning, a zoning amendment, or other measures determined by the Planning Department to be necessary to ensure the consistency of proposed land uses with zoning. Consistency is defined as land uses and activities permitted by the County in the levee setback area, as reflected by zoning and other land use guidelines, that do not conflict with the flood control function of the levee setback area. The approach to resolving any land use planning inconsistencies shall be determined by, and conducted in coordination with, the County Planning Department.</p> <p>Any necessary modifications of general plan land use designations or of zoning, or placement of restrictions on existing zoning, will be determined by the Planning Department and approved by the County Planning Commission and Board of Supervisors as appropriate.</p>	SU
<p>ASB-5.1-b: Conversion of Important Farmland to Nonagricultural Uses Resulting from Levee Repairs and the Levee Setback. Levee repair and strengthening activities in project Segments 1 and 3 could permanently remove up to approximately 10 acres of Prime Farmland from production. Relocation of Pump Station No. 3 could potentially convert up to 1 acre of Prime Farmland in Segment</p>	S	<p>Preserve the Agricultural Productivity of Important Farmland to the Extent Feasible. It is not known at this time whether lands in the levee setback area would be retained in agricultural production, converted to habitat, or a mixture of both land uses. If lands classified as Important Farmland in the levee setback area are to be retained in agricultural production, the following measures would apply to these lands.</p> <p>To support the continued productive use of Important Farmland</p>	SU

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>2 to nonagricultural use. The levee setback footprint and levee easements in Segment 2 would permanently convert approximately 210 acres of Prime Farmland, 35 acres of Farmland of Statewide Importance, and 2 acres of Unique Farmland to nonagricultural uses, and would potentially convert several hundred additional acres of Important Farmland for the proposed detention basin. The ASB levee setback could potentially result in the conversion of up to approximately 1,025 acres of Prime Farmland, 10 acres of Farmland of Statewide Importance, and 10 acres of Unique Farmland to nonagricultural uses. Implementation of the levee setback also may indirectly lead to the conversion of additional Important Farmland to nonagricultural uses because some properties would be divided by the setback levee, which could make continued farming of some crops, or on some parcels, impractical. This impact would be significant.</p>		<p>in the levee setback area in project Segment 2, TRLIA shall ensure that the following measures are implemented, to the extent feasible and practicable, in the design and implementation of the levee setback:</p> <ul style="list-style-type: none"> (a) When selecting sites for borrow excavation, minimize the fragmentation of lands that are to remain in agricultural use. Where practical, retain contiguous parcels of agricultural land of sufficient size to support their efficient use for continued agricultural production. (b) Where the setback levee would transect agricultural properties and the continuation of agricultural use on the portions within the levee setback area would occur, ensure convenience of access to the levee setback properties sufficient to support ongoing agricultural operations. (c) Make the most productive salvaged topsoil from the levee footprint available to landowners with less productive agricultural lands in the vicinity of, but outside the levee setback area that could benefit from the introduction of good-quality soil. By agreement between TRLIA or landowners of affected properties and the recipient(s) of the topsoil, the recipient(s) would be required to work the topsoil into the agricultural lands where it is delivered. (d) Ensure that utilities currently in the levee setback area that are needed for ongoing agricultural uses, including wells, pipelines, and power lines, are appropriately relocated, replaced, or retrofitted to withstand flooding. Ensure that these systems and drainage systems are functioning as necessary after the project is in place so that agricultural uses are not unduly disrupted. <p>In addition, TRLIA shall ensure that the following measures are implemented, to the extent feasible and practical, inside and/or</p>	

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		outside the levee setback area: (a) Minimize the disturbance of Important Farmland and continuing agricultural operations during construction by locating construction laydown and staging areas on sites that are fallow, that are already developed or disturbed, or that are to be discontinued for use as agricultural land, and by using existing roads to access construction areas to the extent possible. (b) When selecting the site and configuration of the detention basin, minimize the fragmentation of agricultural lands and retain contiguous parcels of agricultural land of sufficient size to support their efficient use for continued agricultural production.	
ASB-5.1-c: Displacement of Existing Housing in the Levee Setback Area. Implementation of the ASB levee setback would result in the removal of five to 10 residences from the levee setback area. There are sufficient available residences in the area to accommodate these households; therefore, project implementation would not necessitate the construction of replacement housing elsewhere. Although CEQA does not require that economic and social effects be evaluated or considered significant impacts, it is acknowledged that displacement of five to 10 residences would have both economic and social effects on the occupants of these residences (finding replacement housing, moving to a new residence). However, appropriate compensation would be negotiated with landowners displaced by the project. In addition, eligible homeowners, renters/tenants, businesses, and farm operations would receive relocation assistance consistent with	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
the Federal Uniform Relocation Act and the California Relocation Assistance Law. This impact would be less than significant .			
5.2 Geology, Soils, and Mineral Resources			
ASB-5.2-a: Risk of Geologic Hazards to the Levees. Characteristics of the soils along the proposed ASB setback levee alignment could lead to structural deficiencies or levee failure if not addressed in construction design. Although no active faults are in the vicinity of the existing levees or the setback levee alignment, some ground shaking is possible from distant sites. Effects on the stability of the proposed ASB setback levee would be no greater than effects on the existing levee. Construction according to design recommendations by the geotechnical engineers, independent reviews of the project design and construction by a Board of Senior Consultants (BOSC), and engineering review and approval by the Corps and The Reclamation Board would ensure the incorporation of appropriate features to address any potential structural instability of the levee. The setback levee would be engineered and constructed to modern standards with appropriate seepage control features and, therefore, would be more stable than the existing levee and unlikely to fail. This would be a beneficial effect.	B	No mitigation is required.	B
ASB-5.2-b: Soil Erosion Hazards Associated with Construction of the ASB Setback Levee. Although construction activities associated with levee repair and strengthening and installation of the ASB setback levee would disturb earth, thereby	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
potentially accelerating erosion, construction disturbance would be temporary and soils in disturbed areas would be vegetated or otherwise stabilized after construction is complete. In addition, the levee setback area is nearly level and is well drained, and the risk of erosion and associated hazards is slight. Levee repair and strengthening activities and construction of the ASB setback levee would not expose persons or property to erosion hazards. This impact would be less than significant .			
ASB-5.2-c: Soil Erosion Hazards Associated with Flood Operations with the ASB Setback Levee. Floodwaters passing through the levee setback area could erode soil that is not currently subjected to flood flows on a frequent basis. However, levee construction would increase the width and decrease the depth and velocity of flood flows in the levee setback area, minimizing erosive forces. In addition, vegetative cover in the levee setback area (agriculture or habitat) would reduce the potential for erosion. This impact would be less than significant .	LTS	No mitigation is required.	LTS
5.3 Water Resources and River Geomorphology			
ASB-5.3-a: Temporary Effects on Water Quality Associated with Levee Repair and Strengthening Activities and Setback Levee Construction. Ground-disturbing activities associated with repairs and strengthening of the existing levees and construction of the ASB setback levee could cause soil erosion and sedimentation of local drainages and the Feather and Yuba River channels. Construction activities could also discharge waste	PS	(1): Prepare a SWPPP, File an NOI, and Comply with the NPDES Stormwater Permit for Project Construction Activities. This measure is identical to Mitigation Measure LS-5.3-a(1) above. (2): Obtain a Use Permit from Yuba County and Comply with Permit Conditions for Erosion Control. This measure is identical to Mitigation Measure LS-5.3-a(2) above.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>petroleum products or other construction-related substances that could enter these waterways in runoff. Because the release of soil or other materials into these waterways could adversely affect river water quality, this impact would be potentially significant.</p>			
<p>ASB-5.3-b: Disruption of Local Drainage Systems by the Levee Setback. The ASB setback levee would cross existing drainage infrastructure and sever parts of the drainage system for the local area. Drainage patterns within the levee setback area could be changed by project implementation as well. Because interruption of drainage patterns could cause or exacerbate local flooding, this impact would be significant.</p>	<p align="center">S</p>	<p>Coordinate with RD 784 to Modify Drainage Facilities that Would Be Affected by the Levee Setback and Ensure Appropriate Functioning of the Local Drainage System. TRLIA or its primary construction contractor shall coordinate with RD 784 to evaluate local drainage needs before and after construction of the setback levee and shall prepare and implement a plan for modification of the portion of the drainage system that would be affected by the levee setback. A drainage study shall be prepared that evaluates the effects on local drainage that would result from the levee setback and any proposed changes in land uses in the levee setback area. The study shall consider the design flows of the existing facilities that cross the proposed setback levee footprint (e.g., Lateral 7/8 and the Plumas Lake Canal). It shall develop appropriate plans for relocation or other modification of these facilities and construction of new facilities, as needed, to ensure equivalent functioning of the system during and after construction of the setback levee. Facility modification will include relocating Pump Station No. 3, and may include removing, filling, and/or rerouting drainage canals and culverts; regrading drainage alignments to redirect drainage; constructing new ditches and canals; and installing new culverts.</p> <p>The plan shall also consider the continuing and proposed uses of the levee setback area and shall incorporate appropriate drainage requirements for those uses to prevent any unintended flooding from stormwater runoff. The plan shall integrate environmental</p>	<p align="center">LTS</p>

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		mitigation requirements and drainage of restored borrow sites to the extent feasible and practical. The final plan shall be approved by RD 784. TRLIA and its construction contractor(s) shall ensure that the necessary modifications are implemented without interruption of the adequate functioning of the drainage system. TRLIA shall also ensure that any necessary environmental review requirements have been met before the drainage modifications are implemented.	
ASB-5.3-c: Changes in Local Flood Hydrology Resulting from the Levee Setback. Setting back the left bank Feather River levee along the ASB setback levee alignment would decrease flood stages on the river. The levee setback would also provide a well-designed, well-constructed levee that would be more reliable and less subject to seepage than the existing levee. These changes would improve local flood protection. This effect would be beneficial .	B	No mitigation is required.	B
ASB-5.3-d: Changes in Flood Hydrology Downstream of the Setback Levee. The ASB levee setback would lower water levels upstream of the levee setback area, which could increase flows downstream of project Segment 2. This condition could lead to increased flooding downstream of Segment 2 if flood events should occur. However, the passage of floodwaters downstream to the Feather River would increase floodwater elevation within adequately sized levees, and the increased potential for levee failure and flooding downstream would be very slight. In addition, the implementation of Forecast-Coordinated Operations of Lake Oroville and New Bullards Bar Reservoir	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
would reduce peak flows in the Feather-Yuba River system, and hence downstream of the levee setback area. Therefore, this impact would be less than significant .			
ASB-5.3-e: Change in Water Demand and Available Water Supply Resulting from the ASB Levee Setback. Implementation of the ASB levee setback would remove approximately 240–1,300 acres of land from irrigated agricultural use along the proposed setback levee footprint and in the setback area. Alternative uses (e.g., levee, habitat restoration) are not expected to increase demand for water supply but, rather, are expected to decrease water use. This would be a beneficial effect.	B	No mitigation is required.	B
ASB-5.3-f: Changes in Groundwater Levels Resulting from Installation of Slurry Cutoff Walls and the Levee Setback. Slurry cutoff walls that would be installed to control seepage in the existing Feather River and Yuba River levees in project Segments 1 and 3 and in the ASB setback levee in Segment 2 could restrict groundwater flow and affect groundwater levels. Potential consequences are localized changes in well water levels and/or high groundwater levels east of the setback levee and east and south of the locations where slurry cutoff walls are installed in Segments 1 and 3. Such changes are not expected to substantially affect water supply or adversely affect land uses. This impact would be less than significant .	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>ASB-5.3-g: Long-Term Effects on Water Quality Resulting from the Levee Setback. Potentially hazardous materials related to agricultural activities could be transported downstream when the levee setback area becomes inundated during flood events. These materials could contaminate floodwater and adversely affect river water quality. Because of the potential for adverse effects on water quality in the Feather River, this impact would be potentially significant.</p>	<p align="center">PS</p>	<p>(1): Conduct a Phase I Environmental Site Assessment for the Levee Setback Area and Implement Recommendations. Before the start of any ground-disturbing construction activity, TRLIA or its primary construction contractor shall have a qualified hazardous waste specialist perform a Phase I Environmental Site Assessment of the levee setback area to identify potential sources of surface and buried contaminants, and provide a report of assessment findings.</p> <p>The assessment shall include the following:</p> <ul style="list-style-type: none"> ▪ review of available information on property history, including, as appropriate, historical and current topographic maps, aerial photographs, property title and permit information, interviews of environmental regulatory agency and Yuba County personnel, and interviews of current occupants and landowners regarding the current and past uses of the land; ▪ review of federal, state, and county governmental records and databases to determine whether any sites in the area are listed as hazardous waste sites; and ▪ reconnaissance-level surveys to observe visual evidence of hazardous materials use. <p>A written report on the findings of the assessment, including recommendations for the disposition of any identified hazardous waste sites or potential hazardous waste sites, shall be provided to TRLIA. TRLIA or its construction contractor(s) shall implement recommendations made in the Phase I report. If hazardous materials or wastes are identified, recommendations could include, but would not be limited to, a Phase II assessment or cleanup of known identified hazardous waste sites. Presence of hazardous wastes would be determined using waste classification protocols described in CCR Title 22.</p>	<p align="center">LTS</p>

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>(2): Evaluate Levee Borrow Material for Potential Contaminants in Coordination with the RWQCB. Before the start of construction, TRLIA or its primary construction contractor shall have a qualified hazardous materials specialist collect and evaluate representative soil samples from the existing levee sections that would be used as sources of borrow, and from potential borrow sites. The soil samples shall be evaluated for contaminant residues (e.g., trace metals, organochlorine pesticides, polychlorinated biphenyls) that may be encountered in excavation and grading activities. This evaluation shall be conducted to address any requirements of the Central Valley RWQCB as part of the RWQCB's permitting and approval process for the project (e.g., Section 401 certification). Wastes that are encountered at hazardous levels shall be treated in accordance with CCR Title 22 procedures for hazardous materials reporting and disposal. Where the evaluation of soil samples detects the presence of wastes that are not present at hazardous levels, the results of the evaluation shall be reported to the RWQCB for classification in the RWQCB's designated waste classification program, and the RWQCB will determine the acceptability of the material for levee construction based on the potential of the waste to impair water quality and public health. Borrow material used for construction of the waterside levee face or other features with soil exposure to the aquatic environment (e.g., new drainage channels) that is deemed unacceptable by the RWQCB shall be properly disposed of in a landfill or made available for other approved uses.</p> <p>(3): Remove Nonhazardous Waste and Debris from the Levee Setback Area. Before the beginning of the first season of potential flood operations with the setback levee in place, TRLIA or its primary construction contractor shall ensure the removal from the levee setback area of all large slash and wood piles, nonhazardous waste dumps, and other nonhazardous debris that</p>	

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		could adversely affect water quality or create a hazard if carried downriver in flood flows. All removed materials shall be properly disposed of in approved off-site landfills.	
<p>ASB-5.3-h: Changes in Floodplain Sediment Deposition Associated with the Levee Setback. Inundation of the ASB levee setback area would result in the transport and deposition of sediments in the setback area that may contain elevated concentrations of trace metals and/or organic constituents. Because it is unlikely that the sediment constituent concentrations resulting from inundation would be any higher than existing concentrations in the levee setback area, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>ASB-5.3-i: Changes in Geomorphic Processes Along the River Channels Resulting from the Levee Setback. Increasing the conveyance area of the Feather River floodway along the ASB setback levee alignment would alter water velocities and depths in the existing river channel and floodway in this area and upstream during flood events large enough to inundate the levee setback area (greater than an approximately a 3-year flow). These changes in velocities and depths could lead to decreased shear stresses from Star Bend to just below Shanghai Bend (project Segment 2) and slightly increased shear stresses at Shanghai Bend (Segment 3) and some distance upstream on both the Feather River and the Yuba River. Shear stresses would not change downstream of the levee setback area. Portions of the riverbanks and channel bed along the Feather and Yuba Rivers where shear</p>	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>stresses increase could experience minor increases in erosive forces. However, any increases would not be sufficient to result in a substantial increase in the mobilization and/or deposition of sediments. This impact would be less than significant.</p>			
<p>ASB-5.3.j: Changes in Geomorphic Processes Along the Project Levees Resulting from the ASB Levee Setback. Increasing the conveyance area of the Feather River floodway along the ASB setback levee alignment would alter water velocities and depths in the existing floodway in this area and upstream during flood events large enough to inundate the levee setback area (greater than an approximately a 3-year flow). These changes in velocities and depths would lead to decreased shear stresses along the right and left bank Feather River levees from Star Bend to just below Shanghai Bend (project Segment 2) and increased shear stresses along the levees at Shanghai Bend (Segment 3) and some distance upstream on both the Feather River and the Yuba River. Shear stresses along the levees would not change downstream of the levee setback area. Portions of the levee area along the Feather and Yuba Rivers where shear stresses increase could experience minor increases in erosive forces. Any increases in shear stresses would not be sufficient to result in a substantial increase in the mobilization and/or deposition of sediments or increase exposure of persons or private property to flood hazards (i.e., through damage to the levees). This impact would be less than significant.</p>	<p>LTS</p>	<p>No mitigation is required.</p>	<p>LTS</p>

**Table 1-3b
 SUMMARY OF IMPACTS AND MITIGATION MEASURES
 THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.4 Fisheries			
<p>ASB-5.4-a: Loss of Fish Habitat during Levee Repair and Strengthening Activities and Setback Levee Construction. Construction-related increases in sediments, turbidity, and contaminants could adversely affect fish habitats immediately adjacent to and downstream of project construction activities, possibly resulting in adverse effects on fish species listed or proposed for listing as threatened or endangered under ESA. This impact would be potentially significant.</p>	PS	<p>(1): Prepare a SWPPP, File an NOI, and Comply with the NPDES Stormwater Permit for Project Construction Activities. This measure is identical to Mitigation Measure LS-5.3-a(1) in Section 5.3, “Water Resources and River Geomorphology.”</p> <p>(2): Obtain a Use Permit from Yuba County and Comply with Permit Conditions for Erosion Control. This measure is identical to Mitigation Measure LS-5.3-a(2) in Section 5.3, “Water Resources and River Geomorphology.”</p> <p>(3): Obtain and Comply with Terms and Conditions of a Streambed Alteration Agreement for Construction Activities Associated with the Setback Levee. Three Rivers Levee Improvement Authority (TRLIA) or its representative shall consult with DFG regarding potential disturbance to fish habitat as part of the process for obtaining a streambed alteration agreement, pursuant to Section 1602 of the California Fish and Game Code, for construction work associated with the setback levee. TRLIA shall comply with conditions set forth in the streambed alteration agreement to protect fish habitat.</p>	LTS
<p>ASB-5.4-b: Loss of Overhead Cover and Instream Woody Material Associated with Setback Levee Construction. In project Segment 2, vegetation may need to be removed to allow drainage from the levee setback area to the river channel, or it may be cleared at the waterside toe of the existing levee to accommodate levee removal. The loss in overhead cover for fish would be limited and temporary, however, and revegetation would occur over time. Therefore, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>ASB-5.4-c: Effects on Habitat from Contaminants in Borrow Material. If contaminants are present in soil in the levee setback area or in borrow material used for the setback levee, they could be released when the area is inundated during flood events, resulting in harm to sensitive fish and habitat. This impact would be potentially significant.</p>	PS	<p>(1): Conduct a Phase I Environmental Site Assessment for the Levee Setback Area and Implement Recommendations. This measure is identical to Mitigation Measure ASB-5.3-g(1) in Section 5.3, “Water Resources and River Geomorphology.”</p> <p>(2): Evaluate Levee Borrow Material for Potential Contaminants in Coordination with the RWQCB. This measure is identical to Mitigation Measure ASB-5.3-g(2) in Section 5.3, “Water Resources and River Geomorphology.”</p> <p>(3): Remove Nonhazardous Waste and Debris from the Levee Setback Area. This measure is identical to Mitigation Measure ASB-5.3-g(3) in Section 5.3, “Water Resources and River Geomorphology.”</p>	LTS
<p>ASB-5.4-d: Fish Stranding Following Flooding of the Levee Setback Area. Following construction of the setback levee, the levee setback area may contain depressions where water could pond following inundation and fish could become trapped as floodwaters recede to the main river channel. Stranded fish, particularly juvenile chinook salmon and steelhead, would be exposed to predators and increasing water temperatures; with no means to return to the river, they would inevitably die. This impact would be significant.</p>	S	<p>Develop and Implement a Drainage and Grading Plan that Minimizes Loss or Incidental Loss of Fish from Stranding. TRLIA and its primary contractors for engineering design and construction shall ensure that the following measures are implemented to minimize the potential for fish stranding in the levee setback area:</p> <p>(a) <u>Plan and implement drainage improvements.</u> TRLIA or its designated construction contractors, through a combination of grading and drainage improvements, shall minimize the potential for floodwater to pond in the levee setback area in such a way that substantial numbers of fish become stranded and consequently become exposed to hostile environments (warm water temperatures and increased predation).</p> <p>As part of the development of the final design for the levee setback area, TRLIA or its representatives shall determine the specific topographic and hydrologic characteristics of the levee setback area and shall define the anticipated flooding regime (depth, duration, and extent of flooding), drainage patterns, and potential for fish stranding risks there. The</p>	LTS

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>final project design shall include recontouring as necessary to ensure complete drainage and provide fish passage back to the main river channel as floodflows recede from the levee setback area. Features with substantial stranding risk shall be identified for filling and/or grading.</p> <p>Complete drainage is important to reduce the risk of stranding; however, maintaining some seasonal aquatic habitat in the levee setback area and/or hydrologic connectivity to the Feather River may also be important features if enhancement of fish habitat and production is selected as a management activity in the levee setback area.</p> <p>Before the design of the setback levee and levee setback area is finalized, TRLIA or its representatives shall obtain the approval of DFG and NMFS indicating that the planned drainage and grading features are sufficient to address concerns about fish stranding potential, similar to the process used for the Feather-Bear Rivers Levee Setback Project currently under construction downstream. The features of the setback levee and levee setback area shall be constructed in accordance with the approved final design.</p> <p>(b) <u>Monitor the success of the drainage features and adjust if necessary.</u> A long-term mitigation monitoring plan shall be developed by a qualified biologist on behalf of TRLIA and shall be approved by DFG and NMFS before implementation of the levee setback. This monitoring plan shall evaluate the effectiveness of the grading and drainage features in the levee setback area in reducing the risk of fish stranding and the stability of the drainage features and shall determine the need for maintenance or modification. The monitoring plan shall include provisions for remediation should the design of the levee setback area prove to be unsuccessful in preventing fish stranding. These measures</p>	

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>shall include, as appropriate, such activities as regrading or filling depressions in the levee setback area.</p> <p>The recommended monitoring scheme shall include annual monitoring for a period of 5 years following the removal of any part of the existing levee. Additional monitoring may be required for areas where remediation is necessary. Monitoring is recommended to include the following actions:</p> <ul style="list-style-type: none"> ▪ Visual assessment of the levee setback area by a qualified biologist before the flood season (i.e., by October 31). This assessment should note any substantial changes in the overall structure since implementation of the final design for the area, including reestablishment of vegetation and the presence of “holes” or pits. ▪ A visual survey by a qualified biologist at the end of each event that floods the levee setback area (i.e., after the recession of waters that inundate the floodplain). This survey should identify whether there is any ponding that would result in fish stranding, or whether channels have formed that flow through completely to the low-flow channel of the Feather River. <p>Following each flood season (i.e., after April 16), a letter report shall be submitted to NMFS and DFG summarizing the overall condition of the floodplain area and any changes that have occurred from the previous year(s). If any remediation measures are required, they shall be outlined in the letter report, along with a schedule specifying when the remediation activities will occur. Appropriate remediation measures shall be implemented as soon as is practicable to minimize the potential for fish stranding while maintaining the desired habitat values (if habitat enhancement is included</p>	

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>in the floodplain area) and hydraulic characteristics of the area.</p> <p>The performance of the mitigation measure shall be considered successful if there is no isolated standing water and/or barriers to fish passage capable of resulting in substantial fish stranding following a flood event that inundates the levee setback area.</p>	
<p>ASB-5.4-e: Increased Aquatic and Riparian Habitat in the Levee Setback Area. Setting back the Feather River levee in project Segment 2 could allow the expansion of the available aquatic and riparian habitat corridor and could improve the success of fish species that use the area. This effect would be potentially beneficial.</p>	PB	No mitigation is required.	PB
5.5 Terrestrial Biological Resources			
<p>ASB-5.5-a: Effects on General Biological Resources. Levee repair and strengthening activities in project Segments 1 and 3 would temporarily disturb ruderal habitat on the levee slopes and adjacent riparian and agricultural land. Construction of the ASB setback levee in Segment 2 would result in loss of primarily agricultural land. Agricultural lands could also be lost at potential borrow and detention basin sites. These temporary impacts and potential permanent land use changes would affect habitat for many common plant and wildlife species. Although local populations would be reduced by these activities, these species are locally and regionally abundant. This impact would be less than significant.</p>	LTS	No mitigation is required.	LTS

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
ASB-5.5-b: Effects on Sensitive Habitats. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities would result in disturbance and/or loss of sensitive habitats, including jurisdictional wetlands, other waters of the United States, and riparian habitats. This impact would be significant .	S	Avoid Disturbance of Sensitive Habitat to the Extent Feasible and Comply with Corps and DFG Processes to Mitigate Unavoidable Effects. This measure is identical to Mitigation Measure LS-5.5-b above.	LTS
ASB-5.5-c: Loss of Special-Status Plants. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities could result in the loss of rose mallow and Wright’s trichocoronis if they are present in areas that would be disturbed during these activities. This impact would be potentially significant .	PS	Conduct Detailed Special-Status Plant Surveys and Establish Construction Buffers as Necessary to Minimize Effects on Special-Status Plants. This measure is identical to Mitigation Measure LS-5.5-c above.	LTS
ASB-5.5-d: Effects on Valley Elderberry Longhorn Beetle. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities could result in loss of blue elderberry shrubs that are occupied by valley elderberry longhorn beetles. This impact would be potentially significant .	PS	Conduct Protocol-Level Surveys, Establish Buffers, and Implement a Mitigation Plan as Necessary to Minimize Effects on Valley Elderberry Longhorn Beetle. This measure is identical to Mitigation Measure LS-5.5-d above.	LTS
ASB-5.5-e: Effects on Northwestern Pond Turtle. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities would result in disturbance and/or loss of suitable aquatic habitat for northwestern pond turtle and could result in direct loss of individuals. This impact would be potentially significant .	PS	Conduct Surveys as Part of Dewatering Activities and Minimize Effects on Northwestern Pond Turtle. This measure is identical to Mitigation Measure LS-5.5-e above.	LTS
ASB-5.5-f: Effects on Giant Garter Snake. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities would	S	Implement Applicable Take Minimization Measures and a Mitigation Plan as Necessary for Giant Garter Snake. This measure is identical to Mitigation Measure LS-5.5-f above.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
result in disturbance and/or loss of suitable aquatic and upland habitat for giant garter snake. Construction activities also have potential to result in direct take of individuals. This impact would be significant .			
ASB-5.5-g: Effects on Swainson’s Hawk and Other Nesting Raptors. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities would result in disturbance and/or loss of suitable nesting and/or foraging habitat for Swainson’s hawk and other raptors and could result in loss of active nests. This impact would be potentially significant .	PS	<p>(1): Conduct Preconstruction Surveys and Protect Active Nests to Minimize Effects on Swainson’s Hawk. This measure is identical to Mitigation Measure LS-5.5-g(1) above.</p> <p>(2): Conduct Preconstruction Surveys, Protect Occupied Burrows, and Relocate Individuals as Necessary to Minimize Effects on Burrowing Owl. This measure is identical to Mitigation Measure LS-5.5-g(2) above.</p> <p>(3): Conduct Preconstruction Surveys and Protect Active Nests to Minimize Effects on Other Nesting Raptors. This measure is identical to Mitigation Measure LS-5.5-g(3) above.</p>	LTS
ASB-5.5-h: Effects on Other Special-status Birds. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities would result in disturbance and/or loss of potential nesting and/or foraging habitat for several special-status bird species. Special-status species are unlikely to nest in areas that would be affected, and large areas of nesting and foraging habitat of equal or higher quality are available elsewhere in the project area. Therefore, this impact would be less than significant .	LTS	No mitigation is required.	LTS
ASB-5.5-i: Effects on Pacific Western Big-Eared Bat. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities would not affect suitability of foraging habitat or result in loss of important roost or	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
maternity sites. This impact would be less than significant .			
ASB-5.5-j: Effects on Wildlife Corridors. Levee repair and strengthening activities, construction of the ASB setback levee, and related activities would result in limited temporary disturbance of the Feather River and Yuba River habitat corridors and minor corridors associated with canals and ditches in the levee setback area. However, such disturbance is not expected to affect overall use of these corridors by wildlife. This impact would be less than significant .	LTS	No mitigation is required.	LTS
5.6 Recreation			
ASB-5.6-a: Temporary Changes in Recreational Opportunities during Levee Repairs and Setback Levee Construction. Construction noise could disrupt recreational uses in the project area, particularly in areas adjacent to the existing levee. Some wildlife species present in or inhabiting natural areas are likely to be disturbed by noise and by the presence of project construction crews and equipment. Portions of the Feather River State Wildlife Area in project Segment 1 may need to be closed temporarily to hunting and other recreational activities for safety reasons while adjacent sections of the existing Feather River levee are being repaired. There would be no public access to the Star Bend Boat Launch and Fishing Access for several days while levee repairs were conducted in this area. Although these temporary disturbances may affect the recreation experience for bird-watchers, hunters, boaters, and other recreational	LTS	No mitigation is required.	LTS

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SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>users, displaced recreational uses could be accommodated by other nearby facilities (Whitmore, pers. comm., 2006). For this reason, and because of the temporary nature of this effect, this impact would be less than significant.</p>			
<p>ASB-5.6-b: Long-Term Changes in Recreational Opportunities Resulting from Levee Repairs and Setback Levee Construction. Implementing levee repairs along project Segments 1 and 3 would have little or no effect on recreational uses in the Lake of the Woods Management Unit or along the Feather River channel in these project segments. Implementing the levee setback in Segment 2 would slightly modify Feather River flood stage elevations in the project vicinity during high flows, possibly affecting recreational uses, and could affect survival rates of wildlife following high-flow periods, which could temporarily affect associated wildlife-related recreation. The changes in Feather River flood stage elevations that would result from expansion of the Feather River floodway in Segment 2, however, would be infrequent, of short duration, and during periods when river stage is already high; therefore, no new effects on recreational uses are expected. Sections of the existing Feather River levee would be left in place as part of the proposed project, which would minimize losses of wildlife that could adversely affect long-term recreational activities. This impact would be less than significant.</p>	<p>LTS</p>	<p>No mitigation is required.</p>	<p>LTS</p>

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.7 Aesthetic Resources			
ASB-5.7-a: Temporary Changes in Visual Resources Associated with Levee Repairs and Setback Levee Construction. Levee repair and strengthening activities and construction of the ASB setback levee would temporarily reduce the aesthetic qualities of views by introducing earthmoving equipment and other construction equipment, materials, and work crews into the viewshed of recreationists, motorists on SR 70 and Feather River Boulevard, workers in nearby farming areas, and residents of the area. However, the construction areas would typically be distant from and/or screened from most viewers. Where residents would be near the construction area (e.g., in project Segment 3), construction would pass by these areas relatively quickly and changes in aesthetic conditions would be short term and temporary. For these reasons, this impact would be less than significant .	LTS	No mitigation is required.	LTS
ASB-5.7-b: Changes in Light and Glare. There would be no substantial sources of light or glare associated with levee repairs or with the long-term presence of the ASB setback levee and detention basin. However, equipment staging areas may be temporarily lit at night during construction, and portions of the construction areas may also need to be lit at night. Although such nighttime lighting may be visible from various residences, particularly in project Segment 3, in most locations views of the construction areas would be largely shielded by orchards, other vegetation, and structures. Where lit	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
construction areas are visible, lighting would be short term and temporary. For these reasons, this impact would be less than significant .			
ASB-5.7-c: Long-Term Modifications of Views from Levee Repairs and Installation of the Setback Levee. Levee repair and strengthening activities would not dramatically change the appearance of project Segments 1 and 3. Construction of the ASB setback levee would change the appearance of Segment 2. However, all three project segments are of low to moderate aesthetic value, there would be no substantial adverse effect on any scenic vista, and these changes would not substantially alter the general character of views of the area. This impact would be less than significant .	LTS	No mitigation is required.	LTS
5.8 Cultural Resources			
ASB-5.8-a: Damage to or Destruction of Prehistoric Archaeological Site CA-Yub-5. Prehistoric archaeological site CA-Yub-5, which may be eligible for listing in the CRHR and NRHP, could be damaged or destroyed by construction activities or by inundation or scouring when flood flows pass through the levee setback area. Because this site may be a significant cultural resource, this impact would be potentially significant .	PS	Evaluate the Significance of Archaeological Site CA-Yub-5 and, If Determined to Be Significant, Protect the Site from Damage and/or Conduct Data Recovery Excavation. TRRIA shall have a qualified archaeologist evaluate the extent and significance/eligibility for NRHP and CRHR listing of site CA-Yub-5 through test excavations and analysis of the site's stratigraphy and artifactual constituents. If the site is determined to lack eligibility for NRHP and CRHR listing and is not found to be a significant cultural resource under CEQA, the archaeologist shall report these findings in a site investigation report and ensure that all remains discovered at the site are recorded and reported in accordance with professional practices, and no further protective measures will be necessary. If intact stratigraphy, features, additional human remains, or	LTS

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>artifacts indicate that the site may be eligible for NRHP or CRHR listing and therefore a significant historical resource according to CEQA criteria, TRLIA shall implement one or both of the measures described below in consultation with a professional archaeologist familiar with CA-Yub-5 to ensure that no significant cultural resources are damaged there. Two basic approaches are described: protecting the site from damage and conducting data recovery at the site. All site testing shall be conducted in consultation with appropriate Native American representatives designated by the NAHC, and a Native American monitor shall be present for monitoring during any excavation.</p> <p><u>Option 1: Protect CA-Yub-5 from Damage</u></p> <p>CA-Yub-5 can be protected from direct construction damage if the setback levee is realigned such that the site is beyond the footprint of ground-disturbing levee construction activity. This would require moving the levee alignment to the east of the site boundaries, thus placing the entire site within the levee setback area. It would be highly impractical to move the alignment to the west to place the site outside the project site and thereby avoid damaging it. Based on characteristics observed during archaeological field surveys, it is estimated that the setback levee would need to be constructed approximately 500 feet west of the proposed alignment in the area of CA-Yub-5 to ensure complete avoidance of the site. Geotechnical considerations render such a western shift of the alignment unrealistic because it would place this portion of the levee on a far less stable foundation (old riverbed) than under the proposed alignment.</p> <p>Once situated within the levee setback area (i.e., the expanded floodway), the site should be protected from future erosion and scour from surface flows, as well as human disturbance, through the use of engineered features and/or strategic plantings. In addition, sufficient site data should be collected and analyzed to</p>	

**Table 1-3b
 SUMMARY OF IMPACTS AND MITIGATION MEASURES
 THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		<p>establish the important archaeological characteristics of the site. One of the most potentially significant characteristics of CA-Yub-5 is the presence of at least 12 inches of midden soil, which can be a source of information regarding the age of the site (through radiocarbon dating) and prehistoric diets and paleoenvironmental reconstruction (through microconstituent and chemical analyses). Because floodwaters passing through the levee setback area could alter the soil properties that permit accurate radiometric dating or hasten the degradation of macrobotanical and microbotanical remains, scientific data would need to be collected, recorded, and reported before the site is subjected to inundation.</p> <p>It has been previously suggested that the site may be protected from future damage by use of a protective covering that is impermeable to water, which is also termed “capping.” However, “capping” CA-Yub-5 to protect it from water damage would be very impractical, if not impossible. It would be necessary to have a clear definition of the horizontal and vertical boundaries of CA-Yub-5, and the site would need to be completely encased in the covering so that it would be protected from saturation from all sides, including rising groundwater from below.</p> <p><u>Option 2: Conduct Data Recovery at CA-Yub-5</u></p> <p>Data recovery through destructive excavation is considered an acceptable mitigation measure for damage to archaeological sites if other mitigation measures are less feasible or wholly infeasible. The purpose of data recovery is to obtain scientifically consequential information from an archaeological site that would be partially or completely destroyed. Although much of the work required for data recovery is similar to that conducted during test excavations, the requirements for data recovery call for more extensive manual and perhaps mechanical excavation. Recovered materials shall be subjected to laboratory analysis (e.g., stone tool</p>	

Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		analysis, faunal analysis, radiocarbon assays, and obsidian hydration studies), and a report and interpretive material shall be prepared that documents the site investigation and findings.	
<p>ASB-5.8-b: Damage to or Destruction of Resources Associated with Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14. This impact would be the same as Impact LS-5.8-a, described under Alternative 1 above. For the same reasons as described above, this impact would be potentially significant.</p>	PS	<p>(1): Conduct Further Evaluation and Subsurface Testing to Determine Whether Proposed Levee Improvements Could Damage Significant Resources Associated with Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14. This measure is identical to Mitigation Measure LS-5.8-a(1) above.</p> <p>(2): Monitor Ground-Disturbing Activities in the Vicinity of Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14. This measure is identical to Mitigation Measure LS-5.8-a(2) above.</p>	LTS
<p>ASB-5.8-c: Damage to or Destruction of Cultural Resources in Unsurveyed Areas. Portions of the project area could not be surveyed for cultural resources because of ground conditions and lack of site access, and potential borrow or staging areas also have not been surveyed. Significant cultural resources could be present in these areas, and could be damaged by project-related ground-disturbing activities. This impact would be potentially significant.</p>	PS	<p>Survey Unexamined Areas before Project Ground-Disturbing Activities and Implement Further Mitigation As Necessary. This measure is identical to Mitigation Measure LS-5.8-b above.</p>	LTS
<p>ASB-5.8-d: Damage to or Destruction of Undocumented Buried Archaeological Resources during Construction. This impact would be similar to Impact LS-5.8-c, described under Alternative 1 above. In addition, ground-disturbing activities associated with the proposed levee setback in project Segment 2, such as construction of the slurry cutoff wall and the setback levee foundation, have the potential to damage or destroy previously</p>	PS	<p>Stop Work and Implement Measures to Protect Archaeological Resources If Discovered during Ground-Disturbing Activities. This measure is identical to Mitigation Measure LS-5.8-c above.</p>	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
unidentified archaeological resources in the setback levee construction area. For the same reasons as described for Alternative 1, this impact would be potentially significant .			
ASB-5.8-e: Damage to or Destruction of Undocumented Human Remains during Construction. This impact would be similar to Impact LS-5.8-d, described under Alternative 1 above. In addition, ground-disturbing activities associated with the proposed levee setback in project Segment 2, such as construction of the slurry cutoff wall and the setback levee foundation, have the potential to damage or destroy undocumented human remains in the setback levee construction area. For the same reasons as described for Alternative 1, this impact would be potentially significant .	PS	If Human Remains are Discovered during Ground-Disturbing Activities, Stop Work and Comply with State Laws Pertaining to the Discovery of Human Remains. This measure is identical to Mitigation Measure LS-5.8-d above.	LTS
5.9 Air Quality			
ASB-5.9-a: Temporary Emissions of ROG, NO_x, and PM₁₀ during Construction. Maximum daily emissions of ROG, NO _x , and PM ₁₀ associated with levee repair and strengthening activities in project Segments 1 and 3 and construction of the Above Star Bend (ASB) setback levee in Segment 2 would exceed FRAQMD's recommended significance thresholds and contribute to existing nonattainment conditions for ozone and PM ₁₀ in the NSVAB. This impact would be significant .	S	Implement FRAQMD Pollution-Control Measures to Minimize Temporary Emissions of ROG, NO_x, and PM₁₀ during Construction. This measure is identical to Mitigation Measure LS-5.9-a above.	SU
ASB-5.9-b: Long-Term Changes in Emissions of ROG, NO_x, and PM₁₀ Associated with Levee Repairs and Strengthening and the Levee	PB	No mitigation is required.	PB

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>Setback. The proposed levee repairs and strengthening in project Segments 1 and 3 and the ASB levee setback in Segment 2 would be expected to contribute only minimally, if at all, to long-term emissions of pollutants through vehicle trips related to occasional maintenance activities. The potential cessation of agricultural uses on some lands in the levee setback area could result in a decrease in long-term pollutant emissions in this area, particularly PM₁₀ emissions associated with agricultural land disturbance and burning operations. Such a reduction would be a small potentially beneficial effect on air quality.</p>			
<p>ASB-5.9-c: Exposure of Sensitive Receptors to Toxic Air Emissions. Emissions of TACs associated with construction or operations under Alternative 2 would not result in exposure of receptors to concentrations of TACs in excess of applicable thresholds. This impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
5.10 Noise			
<p>ASB-5.10-a: Temporary Increase in Noise Levels during Construction. Noise levels associated with construction activities could exceed the maximum permissible noise limits at residences. Construction equipment may operate between the hours of 10 p.m. and 7 a.m. and could operate within 500 feet of a residential zone during these hours. Therefore, construction activities occurring between 10 p.m. and 7 a.m. could result in annoyance and/or sleep disruption of certain receptors within the project area. In addition, construction operations may result</p>	S	<p>Limit Generation of Noise by Equipment during Project Construction. This measure is identical to Mitigation Measure LS-5.10-a above.</p>	SU

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
in a noticeable temporary increase (3 dBA or more) in ambient noise levels at these residences. This impact would be significant .			
<p>ASB-5.10-b: Exposure of Sensitive Receptors to Excessive Groundborne Vibration During Construction. This impact would be the same as Impact LS-5.10-b, described under Alternative 1 above. Construction processes under Alternative 2 would not occur any closer to sensitive land uses than discussed under Alternative 1, and no new construction equipment or processes that would generate additional groundborne vibration would be used. For the same reasons as described above, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
5.11 Transportation and Circulation			
<p>ASB-5.11-a: Increase in Traffic on Local Roadways near the Existing Levee and Setback Levee Alignment during Construction. During the anticipated 20-month construction period, commute trips and haul truck trips associated with levee repair and strengthening activities and setback levee construction would increase traffic on Feather River Boulevard, SR 70, and local roadways that provide access to the project alignment (e.g., Anderson Avenue, Country Club Avenue, Riverside Drive). However, construction-related trips would not exceed the thresholds established by ITE for temporary traffic increases and would not represent a substantial increase in traffic levels on these roadways or other local roads. This impact would be</p>	LTS	No mitigation is required.	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
less than significant.			
<p>ASB-5.11-b: Increase in Traffic Hazards on Local Roadways near the Existing Levee and Setback Levee Alignment during Construction. Construction-related traffic could track mud and gravel onto local roadways, and haul truck traffic could interfere with the flow of traffic on these roads. These conditions could pose hazards for travelers on local roadways. This impact would be potentially significant.</p>	PS	<p>Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways. This measure is identical to Mitigation Measure LS-5.11-b above.</p>	LTS
5.12 Public Services, Utilities, and Service Systems			
<p>ASB-5.12-a: Damage of Public Utility Infrastructure and Disruption of Service in the Levee Repair and ASB Levee Setback Areas. Impacts related to utilities in project Segments 1 and 3 and the area considered for a detention basin/soil borrow site would be the same as those described above in Impact LS-5.12-a under Alternative 1. Most of the public utilities in the proposed ASB levee setback area in Segment 2 would no longer be needed and would be removed. However, a PG&E transmission line and two PG&E distribution lines cross this area and would remain in place under project implementation, and floodwaters could threaten the stability of the steel towers and wooden poles that support these lines. In addition, buried utilities could be present in locations that have not been identified in preliminary surveys and contact with service providers. Utilities infrastructure remaining in the levee setback area could be damaged by levee construction, by a proposed soil borrow area, or by floodwaters passing through the</p>	PS	<p>Coordinate with Utility Providers to Remove, Reinforce, and Modify Public Utility Infrastructure in the ASB Levee Setback Area and Prevent Damage of Facilities. TRILIA, the design engineers, or the primary construction contractor for the levee setback, as appropriate, shall implement the following measures before the beginning of construction to ensure that the levee setback does not adversely affect public utility infrastructure or result in interruption of utility service:</p> <ul style="list-style-type: none"> (a) <u>Coordinate with PG&E to protect electrical lines that cross the levee setback area.</u> To maintain PG&E electrical service through the Bogue Loop 115-kV high-power transmission line and the two standard electrical lines that run along Ella Avenue and Country Club Avenue, TRILIA or its representative shall coordinate with PG&E to raise, relocate, or reinforce the steel towers and wood poles that stand in the proposed bypass area. (b) <u>Ensure that all utility lines in the setback area have been identified and removed or reinforced as necessary.</u> TRILIA or its representative shall ensure that any electrical, telephone, gas, and cable television lines within the levee setback area 	LTS

**Table 1-3b
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
setback area, possibly resulting in interruption of service. This impact would be potentially significant .		have been identified before the initiation of any ground-disturbing construction activity. Before the beginning of any construction-related ground disturbance, TRLIA or its representative shall coordinate with all potential service providers known to have, or potentially having, utility infrastructure in the levee setback area, including but not limited to PG&E, AT&T, Comcast, OPUD, and RD 784, to ensure that the utility lines are removed or reinforced as appropriate.	
ASB-5.12-b: Damage of Water Supply and Drainage Facilities and Interference with Service in the Levee Repair and ASB Levee Setback Areas. Impacts on water supply and drainage facilities in project Segments 1 and 3 and the area considered for a detention basin/soil borrow site would be the same as those described above in Impact LS-5.12-b under Alternative 1. Implementation of the levee setback would cut off local drainage systems and could damage privately owned water supply systems that serve agricultural uses. The preliminary design for the setback levee includes conceptual plans for abandoning, relocating, and modifying these systems. Three Rivers Levee Improvement Authority (TRLIA) and its design engineers would coordinate with RD 784 and local landowners to relocate pumps and replace wells and irrigation systems as necessary, as determined in final design. Effects of the levee setback on the drainage system are addressed in Section 5.3, "Water Resources and River Geomorphology." The impact on water supply and drainage facilities would be less than significant .	LTS	No mitigation is required.	LTS

Table 1-3b

**SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND ASB SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 2)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>ASB-5.12-c: Potential for Conflicts with Emergency Response Vehicles during Construction. This impact would be similar to Impact LS-5.12-a described under Alternative 1 above. However, construction traffic on Feather River Boulevard would potentially be greater under Alternative 2 because of the greater number of truck haul trips associated with construction of the setback levee. For the same reasons as described above, this impact would be potentially significant.</p>	PS	<p>Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways. This measure is identical to Mitigation Measure LS-5.11-b, “Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways,” in Section 5.11, “Transportation and Circulation.”</p>	LTS
5.13 Paleontological Resources			
<p>ASB-5.13-a: Disturbance of Unknown Paleontological Resources during Earthmoving Activities. Portions of the project area and immediate vicinity are underlain by the Modesto and Riverbank Formations, which are paleontologically sensitive rock formations. Construction activities in the Modesto and Riverbank Formations associated with proposed levee strengthening (e.g., slurry cutoff walls, relief wells), construction of the ASB setback levee, use of the soil borrow area/detention basin location, and related activities (e.g., relocation of Pump Station No. 3) could adversely affect unknown subsurface paleontological resources. This impact would be potentially significant.</p>	PS	<p>Conduct Training for Construction Personnel, Cease Work if Paleontological Resources are Encountered, and Implement an Appropriate Mitigation Strategy. This measure is identical to Mitigation Measure LS-5.13-a.</p>	LTS
Cumulative Impacts			
<p>Alternative 2, The Levee Strengthening and ASB Setback Levee Alternative, would also contribute to significant cumulative impacts related to conversion of Important Farmland to nonagricultural uses; emissions of ROG, NO_x, and PM₁₀ during construction; and potentially noise during construction. The mitigation described above would not reduce the project’s contributions to these impacts to less-than-significant levels.</p>			

B = Beneficial effect
PB = Potentially beneficial effect
NI = No impact

LTS = Less than significant
PS = Potentially significant
S = Significant

**Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 Land Use			
<p>IS-5.1-a: Conflicts with Land Use Planning and Policies Resulting from Levee Repairs and the Levee Setback. Levee repair and strengthening of the existing levee in project Segments 1 and 3 could result in removal of small areas of agricultural land from production associated with the installation of seepage/stability berms and other structures. The setback levee footprint and levee easements in project Segment 2 would cover approximately 220–230 acres of agricultural land, and setting back the levee could indirectly result in the removal of more land from agricultural production by dividing land parcels and allowing periodic flooding of agricultural land. Construction of a detention basin would be required to prevent adverse flooding effects on area properties, and this would likely occur on several hundred acres of existing agricultural land. These uses would conflict with County land use policies regarding the preservation of agricultural land and would be inconsistent with the current land use and zoning designations for the area. Because of these inconsistencies, this impact would be significant.</p>	S	<p>Resolve Inconsistencies between Proposed Uses of the Levee Setback Area and Yuba County Zoning. This measure is identical to Mitigation Measure ASB-5.1-a above.</p>	SU
<p>IS-5.1-b: Conversion of Important Farmland to Nonagricultural Uses Resulting from Levee Repairs and the Levee Setback. Levee repair and strengthening activities in project Segments 1 and 3 could permanently remove up to approximately 10 acres of Prime Farmland from production. Relocation of Pump Station No. 3 could potentially</p>	S	<p>Preserve the Agricultural Productivity of Important Farmland to the Extent Feasible. This measure is identical to Mitigation Measure ASB-5.1-b above.</p>	SU

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>convert up to 1 acre of Prime Farmland in Segment 2 to nonagricultural use. The levee setback footprint and levee easements in Segment 2 would permanently convert approximately 210 acres of Prime Farmland, 10 acres of Farmland of Statewide Importance, and 5 acres of Unique Farmland to nonagricultural uses, and would potentially convert several hundred additional acres of Important Farmland for the proposed detention basin. The intermediate levee setback area could potentially result in the conversion of approximately 700 acres of Prime Farmland, 10 acres of Farmland of Statewide Importance, and 10 acres of Unique Farmland to nonagricultural uses. Implementation of the levee setback also may indirectly lead to the conversion of additional Important Farmland to nonagricultural uses because some properties would be divided by the setback levee, which could make continued farming of some crops, or on some parcels, impractical. This impact would be significant.</p>			
<p>IS-5.1-c: Displacement of Existing Housing in the Levee Setback Area. This impact would be the same as Impact ASB-5.1-c, described under Alternative 2 above. Both Alternative 2 and Alternative 3 would result in the removal of five to 10 residences in the levee setback area. For the same reasons as described above, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>5.2 Geology, Soils, and Mineral Resources</p>			
<p>IS-5.2-a: Risk of Geologic Hazards to the Levees. This impact would be the same as Impact ASB-5.2-</p>	LTS	No mitigation is required.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
a, described under Alternative 2 above. For the same reasons as described above, this impact would be less than significant .			
IS-5.2-b: Soil Erosion Hazards Associated with Construction of the Setback Levee. This impact would be the same as Impact ASB-5.2-b, described under Alternative 2 above. For the same reasons as described above, this impact would be less than significant .	LTS	No mitigation is required.	LTS
IS-5.2-c: Soil Erosion Hazards Associated with Flood Operations with the Intermediate Setback Levee. This impact would be the same as Impact ASB-5.2-c, described under Alternative 2 above. For the same reasons as described above, this impact would be less than significant .	LTS	No mitigation is required.	LTS
5.3 Water Resources and River Geomorphology			
IS-5.3-a: Temporary Effects on Water Quality Associated with Levee Repair and Strengthening Activities and Setback Levee Construction. This impact would be the same as Impact ASB-5.3-a, described under Alternative 2 above. For the same reasons as described above, this impact would be potentially significant .	PS	(1): Prepare a SWPPP, File an NOI, and Comply with the NPDES Stormwater Permit for Project Construction Activities. This measure is identical to Mitigation Measure LS-5.3-a(1) above. (2): Obtain a Use Permit from Yuba County and Comply with Permit Conditions for Erosion Control. This measure is identical to Mitigation Measure LS-5.3-a(2) above.	LTS
IS-5.3-b: Disruption of Local Drainage Systems by the Levee Setback. The intermediate setback levee would cross existing drainage infrastructure and sever parts of the drainage system for the local area. Drainage patterns within the levee setback area could be changed by project implementation as well. Because interruption of drainage patterns could	S	Coordinate with RD 784 to Modify Drainage Facilities that Would Be Affected by the Levee Setback and Ensure Appropriate Functioning of the Local Drainage System. This measure is identical to Mitigation Measure ASB-5.3-b above.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
cause or exacerbate local flooding, this impact would be significant .			
IS-5.3-c: Changes in Local Flood Hydrology Resulting from the Levee Setback. Setting back the left bank Feather River levee along the intermediate setback levee alignment would decrease flood stages on the river. The levee setback would also provide a well-designed, well-constructed levee that would be more reliable and less subject to seepage than the existing levee. These changes would improve local flood protection. This effect would be beneficial .	B	No mitigation is required.	B
IS-5.3-d: Changes in Flood Hydrology Downstream of the Setback Levee. The intermediate levee setback would lower water levels upstream of the levee setback area, which could increase flows downstream of project Segment 2. This condition could lead to increased flooding downstream of Segment 2 if flood events should occur. However, the passage of floodwaters downstream to the Feather River would result in a increase in floodwater elevation within adequately sized levees, and the increased potential for levee failure and flooding downstream would be very slight. In addition, implementation of the F-CO for Lake Oroville and New Bullards Bar Reservoir would reduce peak flows in the Feather-Yuba River system, and hence downstream of the levee setback area. Therefore, this impact would be less than significant .	LTS	No mitigation is required.	LTS
IS-5.3-e: Change in Water Demand and	B	No mitigation is required.	B

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>Available Water Supply Resulting from the Intermediate Levee Setback. Implementation of the intermediate levee setback would remove approximately 220–950 acres of land from irrigated agricultural use along the proposed setback levee footprint and in the setback area. Alternative uses (e.g., levee, habitat restoration) are not expected to increase demand for water supply but, rather, are expected to decrease water use. This would be a beneficial effect.</p>			
<p>IS-5.3-f: Changes in Groundwater Levels Resulting from Installation of Slurry Cutoff Walls and the Levee Setback. This impact would be the same as Impact ASB-5.3-f, described under Alternative 2 above. For the same reasons as described above, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>IS-5.3-g: Long-Term Effects on Water Quality Resulting from the Levee Setback. Potentially hazardous materials related to agricultural activities could be transported downstream when the levee setback area becomes inundated during flood events. These materials could contaminate floodwater and adversely affect river water quality. Because of the potential for adverse effects on water quality in the Feather River, this impact would be potentially significant.</p>	PS	<p>(1): Conduct a Phase I Environmental Site Assessment for the Levee Setback Area and Implement Recommendations. This measure is identical to Mitigation Measure ASB-5.3-g(1) above.</p> <p>(2): Evaluate Levee Borrow Material for Potential Contaminants in Coordination with the RWQCB. This measure is identical to Mitigation Measure ASB-5.3-g(2) above.</p> <p>(3): Remove Nonhazardous Waste and Debris from the Levee Setback Area. This measure is identical to Mitigation Measure ASB-5.3-g(3) above.</p>	LTS
<p>IS-5.3-h: Changes in Floodplain Sediment deposition Associated with the Levee Setback. Inundation of the levee setback area would result in the transport and deposition of sediments in the</p>	LTS	No mitigation is required.	LTS

**Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>setback area that may contain elevated concentrations of trace metals and/or organic constituents. Because it is unlikely that the sediment constituent concentrations resulting from inundation would be any higher than existing concentrations in the levee setback area, this impact would be less than significant.</p>			
<p>IS-5.3-i: Changes in Geomorphic Processes Along the River Channels Resulting from the Levee Setback. Increasing the conveyance area of the Feather River floodway along the intermediate setback levee alignment would alter water velocities and depths in the existing river channel and floodway in this area and upstream during flood events large enough to inundate the levee setback area (greater than an approximately 3-year flow). These changes in velocities and depths could lead to decreased shear stresses from Star Bend to just below Shanghai Bend (project Segment 2) and slightly increased shear stresses at Shanghai Bend (Segment 3) and some distance upstream on both the Feather River and the Yuba River. Shear stresses would not change downstream of the levee setback area. Portions of the riverbanks along the Feather and Yuba Rivers where shear stresses increase could experience minor increases in erosive forces. However, any increases would not be sufficient to result in a substantial increase in the mobilization and/or deposition of sediments. This impact would be less than significant.</p>	<p>LTS</p>	<p>No mitigation is required.</p>	<p>LTS</p>

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>IS-5.3-j: Changes in Geomorphic Processes Along the Project Levees Resulting from the Intermediate Levee Setback. Increasing the conveyance area of the Feather River floodway along the intermediate setback levee alignment would alter water velocities and depths in the existing floodway in this area and upstream during flood events large enough to inundate the levee setback area (greater than an approximately a 3-year flow). These changes in velocities and depths would lead to decreased shear stresses along the right and left bank Feather River levees from Star Bend to just below Shanghai Bend (project Segment 2) and increased shear stresses along the levees at Shanghai Bend (Segment 3) and some distance upstream on both the Feather River and the Yuba River. Shear stresses along the levees would not change downstream of the levee setback area. Any increases in shear stresses would not be sufficient to result in a substantial increase in the mobilization and/or deposition of sediments or increase exposure of persons or private property to flood hazards (i.e., through damage to the levees). This impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
5.4 Fisheries			
<p>IS-5.4-a: Loss of Fish Habitat during Levee Repair and Strengthening Activities and Setback Levee Construction. This impact would be the same as Impact ASB-5.4-a, described under Alternative 2 above. For the same reasons as described above, this impact would be potentially significant.</p>	PS	<p>(1): Prepare a SWPPP, File an NOI, and Comply with the NPDES Stormwater Permit for Project Construction Activities. This measure is identical to Mitigation Measure LS-5.3-a(1) in Section 5.3, “Water Resources and River Geomorphology.”</p> <p>(2): Obtain a Use Permit from Yuba County and Comply with Permit Conditions for Erosion Control. This measure is</p>	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
		identical to Mitigation Measure LS-5.3-a(2) in Section 5.3, "Water Resources and River Geomorphology." (3): Obtain and Comply with Terms and Conditions of a Streambed Alteration Agreement for Construction Activities Associated with the Setback Levee. This measure is identical to Mitigation Measure ASB-5.4-a(3) above.	
IS-5.4-b: Loss of Overhead Cover and Instream Woody Material Associated with Setback Levee Construction. This impact would be the same as Impact ASB-5.4-b, described under Alternative 2 above. For the same reasons as described above, this impact would be less than significant .	LTS	No mitigation is required.	LTS
IS-5.4-c: Effects on Habitat from Contaminants in Borrow Material. If contaminants are present in soil in the levee setback area or in borrow material used for the setback levee, they could be released when the area is inundated during flood events, resulting in harm to sensitive fish and habitat. This impact would be potentially significant .	PS	(1): Conduct a Phase I Environmental Site Assessment for the Levee Setback Area and Implement Recommendations. This measure is identical to Mitigation Measure ASB-5.3-g(1) in Section 5.3, "Water Resources and River Geomorphology." (2): Evaluate Levee Borrow Material for Potential Contaminants in Coordination with the RWQCB. This measure is identical to Mitigation Measure ASB-5.3-g(2) in Section 5.3, "Water Resources and River Geomorphology." (3): Remove Nonhazardous Waste and Debris from the Levee Setback Area. This measure is identical to Mitigation Measure ASB-5.3-g(3) in Section 5.3, "Water Resources and River Geomorphology."	LTS
IS-5.4-d: Fish Stranding Following Flooding of the Levee Setback Area. Following construction of the setback levee, the levee setback area may contain depressions where water could pond following inundation and fish become trapped as floodwaters recede to the main river channel. Stranded fish, including chinook salmon and	S	Develop and Implement a Drainage and Grading Plan that Minimizes Loss or Incidental Loss of Fish from Stranding. This measure is identical to Mitigation Measure ASB-5.4-d above.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
steelhead, would be exposed to predators and increasing water temperatures; with no means to return to the river, they would inevitably die. This impact would be significant .			
IS-5.4-e: Increased Aquatic and Riparian Habitat in the Levee Setback Area. Setting back the Feather River levee in project Segment 2 could allow the expansion of the available aquatic and riparian habitat corridor and could improve the success of fish species that use the area. This effect would be potentially beneficial .	PB	No mitigation is required.	PB
5.5 Terrestrial Biological Resources			
IS-5.5-a: Effects on General Biological Resources. This impact would be the same as Impact ASB-5.5-a, described under Alternative 2 above, although the extent of the impact would be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same reasons as described above, this impact would be less than significant .	LTS	No mitigation is required.	LTS
IS-5.5-b: Effects on Sensitive Habitats. This impact would be the same as Impact ASB-5.5-b, described under Alternative 2 above, although the extent of the impact would be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same reasons as described above, this impact would be significant .	S	Avoid Disturbance of Sensitive Habitat to the Extent Feasible and Comply with Corps and DFG Processes to Mitigate Unavoidable Effects. This measure is identical to Mitigation Measure LS-5.5-b above.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
IS-5.5-c: Loss of Special-Status Plants. This impact would be the same as Impact ASB-5.5-c, described under Alternative 2 above, although the extent of the impact would be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same reasons as described above, this impact would be potentially significant .	PS	Conduct Detailed Special-Status Plant Surveys and Establish Construction Buffers as Necessary to Minimize Effects on Special-Status Plants. This measure is identical to Mitigation Measure LS-5.5-c above.	LTS
IS-5.5-d: Effects on Valley Elderberry Longhorn Beetle. This impact would be the same as Impact ASB-5.5-d, described under Alternative 2 above, although the extent of the impact could be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same reasons as described above, this impact would be potentially significant .	PS	Conduct Protocol-Level Surveys, Establish Buffers, and Implement a Mitigation Plan as Necessary to Minimize Effects on Valley Elderberry Longhorn Beetle. This measure is identical to Mitigation Measure LS-5.5-d above.	LTS
IS-5.5-e: Effects on Northwestern Pond Turtle. This impact would be the same as Impact ASB-5.5-e, described under Alternative 2 above, although the extent of the impact would be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same reasons as described above, this impact would be potentially significant .	PS	Conduct Surveys as Part of Dewatering Activities and Minimize Effects on Northwestern Pond Turtle. This measure is identical to Mitigation Measure LS-5.5-e above.	LTS
IS-5.5-f: Effects on Giant Garter Snake. This impact would be the same as Impact ASB-5.5-f, described under Alternative 2 above, although the extent of the impact would be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same	S	Implement Applicable Take Minimization Measures and a Mitigation Plan as Necessary for Giant Garter Snake. This measure is identical to Mitigation Measure LS-5.5-f above.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
reasons as described above, this impact would be significant .			
IS-5.5-g: Effects on Swainson’s Hawk and Other Nesting Raptors. This impact would be the same as Impact ASB-5.5-g, described under Alternative 2 above, although the extent of the impact would be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same reasons as described above, this impact would be potentially significant .	PS	<p>(1): Conduct Preconstruction Surveys and Protect Active Nests to Minimize Effects on Swainson’s Hawk. This measure is identical to Mitigation Measure LS-5.5-g(1) above.</p> <p>(2): Conduct Preconstruction Surveys, Protect Occupied Burrows, and Relocate Individuals as Necessary to Minimize Effects on Burrowing Owl. This measure is identical to Mitigation Measure LS-5.5-g(2) above.</p> <p>(3): Conduct Preconstruction Surveys and Protect Active Nests to Minimize Effects on Other Nesting Raptors. This measure is identical to Mitigation Measure LS-5.5-g(3) above.</p>	LTS
IS-5.5-h: Effects on Other Special-status Birds. This impact would be the same as Impact ASB-5.5-h, described under Alternative 2 above, although the extent of the impact would be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same reasons as described above, this impact would be less than significant .	LTS	No mitigation is required.	LTS
IS-5.5-i: Effects on Pacific Western Big-Eared Bat. This impact would be the same as Impact ASB-5.5-i, described under Alternative 2 above, although the extent of the impact would be slightly less because of the reduced setback area associated with the intermediate setback levee alignment. For the same reasons as described above, this impact would be less than significant .	LTS	No mitigation is required.	LTS

**Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>IS-5.5-j: Effects on Wildlife Corridors. This impact would be the same as Impact ASB-5.5-j, described under Alternative 2 above. For the same reasons as described above, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>5.6 Recreation</p>			
<p>IS-5.6-a: Temporary Changes in Recreational Opportunities during Levee Repairs and Setback Levee Construction. Construction noise could disrupt recreational uses in the project area, particularly in areas adjacent to the existing levee. Some wildlife species present in or inhabiting natural areas are likely to be disturbed by noise and by the presence of project construction crews and equipment. Portions of the Feather River State Wildlife Area in project Segment 1 may need to be closed temporarily to hunting and other recreational activities for safety reasons while adjacent sections of the existing Feather River levee are being repaired. There would be no public access to the Star Bend Boat Launch and Fishing Access for several days while levee repairs were conducted in this area. Although these temporary disturbances may affect the recreation experience for bird-watchers, hunters, boaters, and other recreational users, displaced recreational uses could be accommodated by other nearby facilities (Whitmore, pers. comm., 2006). For this reason, and because of the temporary nature of this effect, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>IS-5.6-b: Long-Term Changes in Recreational Opportunities Resulting from Levee Repairs and</p>	LTS	No mitigation is required.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>Setback Levee Construction. Implementing levee repairs along project Segments 1 and 3 would have little or no effect on recreational uses in the Lake of the Woods Management Unit or along the Feather River channel in these project segments.</p> <p>Implementing the levee setback in Segment 2 would slightly modify Feather River flood stage elevations in the project vicinity during high flows, possibly affecting recreational uses, and could affect survival rates of wildlife following high-flow periods, which could temporarily affect associated wildlife-related recreation. The changes in Feather River flood stage elevations that would result from expansion of the Feather River floodway in Segment 2, however, would be infrequent, of short duration, and during periods when river stage is already high; therefore, no new effects on recreational uses are expected. Sections of the existing Feather River levee would be left in place as part of the proposed project, which would minimize losses of wildlife that could adversely affect long-term recreational activities. This impact would be less than significant.</p>			
5.7 Aesthetic Resources			
<p>IS-5.7-a: Temporary Changes in Visual Resources Associated with Levee Repairs and Setback Levee Construction. Levee repair and strengthening activities and construction of the intermediate setback levee would temporarily reduce the aesthetic qualities of views by introducing earthmoving equipment and other construction equipment, materials, and work crews into the viewshed of recreationists, motorists on SR</p>	LTS	No mitigation is required.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
70 and Feather River Boulevard, workers in nearby farming areas, and residents of the area. However, the construction areas would typically be distant from and/or screened from most viewers. Where residents would be near the construction area (e.g., in project Segment 3), construction would pass by these areas relatively quickly and changes in aesthetic conditions would be short term and temporary. For these reasons, this impact would be less than significant .			
IS-5.7-b: Changes in Light and Glare. There would be no substantial long-term sources of light or glare associated with levee repairs or with the long-term presence of the intermediate setback levee and detention basin. However, equipment staging areas may be temporarily lit at night during construction, and portions of the construction areas may also need to be lit at night. Although such nighttime lighting may be visible from various residences, particularly in project Segment 3, in most locations views of the construction areas would be largely shielded by orchards, other vegetation, and structures. Where lit construction areas are visible, lighting would be short-term and temporary. For these reasons, this impact would be less than significant .	LTS	No mitigation is required.	LTS
IS-5.7-c: Long-Term Modifications of Views from Levee Repairs and Installation of the Setback Levee. Levee repair and strengthening activities would not dramatically change the appearance of project Segments 1 and 3. Construction of the intermediate setback levee	LTS	No mitigation is required.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
would change the appearance of Segment 2. However, all three project segments are of low to moderate aesthetic value, there would be no substantial adverse effect on any scenic vista, and these changes would not substantially alter the general character of views of the area. This impact would be less than significant .			
5.8 Cultural Resources			
IS-5.8-a: Damage to or Destruction of Prehistoric Archaeological Site CA-Yub-5. This impact would be the same as Impact ASB-5.8-a, described under Alternative 2 above. For the same reasons as described above, this impact would be potentially significant .	PS	Evaluate the Significance of Archaeological Site CA-Yub-5 and, If Determined to Be Significant, Protect the Site from Damage and/or Conduct Data Recovery Excavation. This measure is identical to Mitigation Measure ASB-5.8-a above.	LTS
IS-5.8-b: Damage to or Destruction of Resources Associated with Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14. This impact would be the same as Impact LS-5.8-a, described under Alternative 1 above. For the same reasons as described above, this impact would be potentially significant .	PS	(1): Conduct Further Evaluation and Subsurface Testing to Determine Whether Proposed Levee Improvements Could Damage Significant Resources Associated with Prehistoric Archaeological Sites CA-Yub-13 and CA-Yub-14. This measure is identical to Mitigation Measure LS-5.8-a(1) above. (2): Monitor Ground-Disturbing Activities in the Vicinity of Archaeological Sites CA-Yub-13 and CA-Yub-14. This measure is identical to Mitigation Measure LS-5.8-a(2) above.	LTS
IS-5.8-c: Damage to or Destruction of Cultural Resources in Unsurveyed Areas. Portions of the project area could not be surveyed for cultural resources because of ground conditions and lack of access, and potential borrow or staging areas also have not been surveyed. Significant cultural resources could be present in these areas, and could be damaged by project-related ground-disturbing activities. This impact would be potentially	PS	Survey Unexamined Areas before Project Ground-Disturbing Activities and Implement Further Mitigation As Necessary. This measure is identical to Mitigation Measure LS-5.8-b above.	LTS

**Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)**

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
significant.			
IS-5.8-d: Damage to or Destruction of Undocumented Buried Archaeological Resources during Construction. This impact would be the same as Impact ASB-5.8-d, described under Alternative 2 above. For the same reasons as described above, this impact would be potentially significant .	PS	Stop Work and Implement Measures to Protect Archaeological Resources If Discovered during Ground-Disturbing Activities. This measure is identical to Mitigation Measure LS-5.8-c above.	LTS
IS-5.8-e: Damage to or Destruction of Undocumented Human Remains during Construction. This impact would be the same as Impact ASB-5.8-e, described under Alternative 2 above. For the same reasons as described above, this impact would be potentially significant .	PS	If Human Remains Are Discovered during Ground-Disturbing Activities, Stop Work and Comply with State Laws Pertaining to the Discovery of Human Remains. This measure is identical to Mitigation Measure LS-5.8-d above.	LTS
5.9 Air Quality			
IS-5.9-a: Temporary Emissions of ROG, NO_x, and PM₁₀ during Construction. This impact would be the same as Impact ASB-5.9-a, described under Alternative 2 above. For the same reasons as described above, this impact would be significant .	S	Implement FRAQMD Pollution-Control Measures to Minimize Temporary Emissions of ROG, NO_x, and PM₁₀ during Construction. This measure is identical to Mitigation Measure LS-5.9-a above.	SU
IS-5.9-b: Long-Term Changes in Emissions of ROG, NO_x, and PM₁₀ Associated with Levee Repairs and Strengthening and the Levee Setback. This impact would be the same as Impact ASB-5.9-b, described under Alternative 2 above. Potential beneficial effects on air quality could be slightly less because the levee setback area would be smaller, and, thus, slightly less agricultural land has the potential to be converted to nonagricultural use. However, operational emissions would still be	PB	No mitigation is required.	PB

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
negligible under Alternative 3. As a result, for the same reasons as described above, this impact would be potentially beneficial .			
IS-5.9-c: Exposure of Sensitive Receptors to Toxic Air Emissions. This impact would be the same as Impact ASB-5.9-c, described under Alternative 2 above. For the same reasons as described above, this impact would be less than significant .	LTS	No mitigation is required.	LTS
5.10 Noise			
IS-5.10-a: Temporary Increase in Noise Levels during Construction. This impact would be similar to Impact ASB-5.10-a, described under Alternative 2 above. Although the intermediate setback levee alignment is in a different location than the ASB alignment relative to some sensitive receptors, and traffic generation may be somewhat different based on needs for borrow material, the extent and nature of the impact would not be appreciably different. For the same reasons as described above, this impact would be significant .	S	Limit Generation of Noise by Equipment during Project Construction. This measure is identical to Mitigation Measure LS-5.10-a above.	SU
IS-5.10-b: Exposure of Sensitive Receptors to Excessive Groundborne Vibration During Construction. This impact would be the same as Impact LS-5.10-b, described under Alternative 1 above. Construction processes under Alternative 2 would not occur any closer to sensitive land uses than those discussed under Alternative 1, and no new construction equipment or processes that would generate additional groundborne vibration would be used. For the same reasons as described above, this	LTS	No mitigation is required.	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
impact would be less than significant .			
5.11 Transportation and Circulation			
IS-5.11-a: Increase in Traffic on Local Roadways near the Existing Levee and Setback Levee Alignment during Construction. During the anticipated 20-month construction period, commute trips and truck haul trips associated with levee repair and strengthening activities and setback levee construction would increase traffic on Feather River Boulevard, SR 70, and local roadways that provide access to the project alignment (e.g., Anderson Avenue, Country Club Avenue, Riverside Drive). However, construction-related trips would not exceed the thresholds established by ITE for temporary traffic increases and would not represent a substantial increase in traffic levels on these roadways or other local roads. This impact would be less than significant .	LTS	No mitigation is required.	LTS
IS-5.11-b: Increase in Traffic Hazards on Local Roadways near the Existing Levee and Setback Levee Alignment during Construction. Construction-related traffic could track mud and gravel onto local roadways, and haul truck traffic could interfere with the flow of traffic on these roads. These conditions could pose hazards for travelers on local roadways. This impact would be potentially significant .	PS	Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways. This measure is identical to Mitigation Measure LS-5.11-b above.	LTS
5.12 Public Services, Utilities, and Service Systems			
IS-5.12-a: Damage of Public Utility Infrastructure and Disruption of Service in the Levee Repair and Intermediate Levee Setback	PS	Coordinate with Utility Providers to Remove, Reinforce, and Modify Public Utility Infrastructure in the Intermediate Levee Setback Area and Prevent Damage of Facilities. This	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>Areas. This impact would be similar to Impact ASB-5.12-a, described under Alternative 2 above. However, the extent of affected utilities would be somewhat less under Alternative 3 because the intermediate setback levee alignment is located farther to the west, resulting in a smaller setback area and effects on fewer facilities. For the same reasons as described above, this impact would be potentially significant.</p>		measure is identical to Mitigation Measure ASB-5.12-a above.	
<p>IS-5.12-b: Damage of Water Supply and Drainage Facilities and Interference with Service in the Levee Repair and Intermediate Levee Setback Areas. This impact would be similar to Impact ASB-5.12-b, described under Alternative 2 above. However, the extent of affected water supply and drainage facilities would be somewhat less under Alternative 3 because the intermediate setback levee alignment is located farther to the west, resulting in a smaller setback area and effects on fewer facilities. For the same reasons as described above, this impact would be less than significant.</p>	LTS	No mitigation is required.	LTS
<p>IS-5.12-c: Potential for Conflicts with Emergency Response Vehicles during Construction. This impact would be the same as Impact ASB-5.12-c, described under Alternative 2 above. For the same reasons as described above, this impact would be potentially significant.</p>	PS	Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways. This measure is identical to Mitigation Measure LS-5.11-b, “Limit the Potential for Construction-Related Traffic Hazards on Feather River Boulevard and Other Local Roadways,” in Section 5.11, “Transportation and Circulation.”	LTS
5.13 Paleontological Resources			
<p>IS-5.13-a: Disturbance of Unknown Paleontological Resources during Earthmoving Activities. Portions of the project area and</p>	PS	Conduct Training for Construction Personnel, Cease Work if Paleontological Resources are Encountered, and Implement an Appropriate Mitigation Strategy. This measure is identical	LTS

Table 1-3c
SUMMARY OF IMPACTS AND MITIGATION MEASURES
THE LEVEE STRENGTHENING AND INTERMEDIATE SETBACK LEVEE ALTERNATIVE (ALTERNATIVE 3)

Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
<p>immediate vicinity are underlain by the Modesto and Riverbank Formations, which are paleontologically sensitive rock formations. Construction activities in the Modesto and Riverbank Formations associated with proposed levee strengthening (e.g., slurry cutoff walls, relief wells), construction of the intermediate setback levee, use of the soil borrow area/detention basin location, and related activities (e.g., relocation of Pump Station No. 3) could adversely affect unknown subsurface paleontological resources. This impact would be potentially significant.</p>		to Mitigation Measure LS-5.13-a.	
Cumulative Impacts			
<p>Alternative 3, The Levee Strengthening and Intermediate Setback Levee Alternative, would also contribute to significant cumulative impacts related to conversion of Important Farmland to nonagricultural uses; emissions of ROG, NO_x, and PM₁₀ during construction; and potentially noise during construction. The mitigation described above would not reduce the project's contributions to these impacts to less-than-significant levels.</p>			

B = Beneficial effect
 PB = Potentially beneficial effect
 NI = No impact

LTS = Less than significant
 PS = Potentially significant
 S = Significant