

State Route 70 Freeway Extension/Ophir Road Interchange



FINAL ENVIRONMENTAL IMPACT REPORT/ FINDING OF NO SIGNIFICANT IMPACT (FONSI)

State Route 70 Freeway Extension from 1.6 kilometers (1 mile) north of Palermo Road to 0.5 kilometer (0.3 mile) south of the State Route 162 Junction in Butte County southwest of Oroville
03-But-70, KP 16.2/21.8 (PM 10.0/13.6)
EA 3A6300

November 2005



General Information About This Document

What's in this document?

This document is a Final Environmental Impact Report/Finding of No Significant Impact (FEIR/FONSI) which examines the environmental impacts of the proposed project on State Route 70 in Butte County, California.

This document complies with both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA), which require the preparation of an Environmental Impact Report (EIR) and an Environmental Assessment (EA) when it has been determined that a project involving State and/or Federal funds may have substantial impacts on the environment. While CEQA requires that each effect having a “significant impact” be identified in an EIR, NEPA does not. In this document references to “significant impact” are made to fulfill this requirement under CEQA, pursuant to California law. No representation as to significance made in this document represents an assessment as to the magnitude of such an impact under the requirements of Federal law. Under NEPA, no such determination need be made for a specific environmental effect.

The Draft Environmental Impact Report/Environmental Assessment (DEIR/EA) was circulated to the public for 45 days, from November 15, 2003 to December 31, 2003. A public workshop was held on December 4, 2003. Comments received on the DEIR/EA, including comments received at the public workshop, and Caltrans' responses are contained in Appendix B. Changes to the DEIR/EA text in response to comments received are contained in this FEIR/EA, as indicated by a vertical line in the margin.

What happens after this?

Following review and approval of this FEIR/EA, the Federal Highway Administration and Caltrans may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project is given environmental approval and funding is appropriated, Caltrans could design and construct all or part of the project.

FEDERAL HIGHWAY ADMINISTRATION

FINDING OF NO SIGNIFICANT IMPACT

FOR

State Route 70 Freeway Extension/Ophir Road Interchange

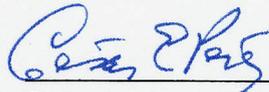
KP16.2-21.8
(PM 10.0-13.6)
Butte County, California

This project would upgrade a 5.6 kilometer (km) (3.6 mile) segment of State Route 70 from 1.6 km (1.0mi) north of Palermo Road and terminate 0.5 (0.3mi) south of the SR 162 junction, where the freeway currently begins.

The Federal Highway Administration (FHWA) has determined that the build Alternative D (Middle Interchange) will have no significant impacts on the human environment. This Finding Of No Significant Impact is based on the attached Environmental Assessment (EA) and incorporated technical reports, which has been independently evaluated by the FHWA and determined to adequately and accurately discuss the need, environmental issues, and impacts of the proposed project and appropriate mitigation measures. These documents provide sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required. The FHWA assumes responsibility for the accuracy, scope, and content of the attached Environmental Assessment and incorporated technical reports.

12/7/05

Date



for

Gene K. Fong

Division Administrator

Federal Highway Administration

State Route 70 Freeway Extension from 1.6 kilometers (1 mile) north of Palermo Road to 0.5 kilometer (0.3 mile) south of the State Route 162 Junction in Butte County south of Oroville

Final Environmental Impact Report / Final Environmental Assessment

Submitted Pursuant to: (Federal) 42 USC 4332(2)(C)
(State) Division 13, Public Resources Code

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
THE STATE OF CALIFORNIA
Department of Transportation

Responsible Agencies:
California Department of Fish and Game
California Regional Water Quality Control Board, Central Valley Region

12 / 6 / 05
Date of Approval

Jody Jones
Jody E. Jones
Director, District 3
California Department of Transportation

12/7/05
Date of Approval

Gene K. Fong
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Abstract

The proposed project would extend State Route (SR) 70 5.6 km (3.6 mi) beginning 1.6 km (1 mi) north of Palermo Road and terminating 0.5 km (0.3 mi) south of the SR 162 junction, where the freeway currently ends. The proposed project would be constructed in three phases: Safety, Phase 1, and Phase 2 (Ultimate). The purpose of the proposed project is to improve safety, correct roadway deficiencies, and provide concept level of service (LOS) D through the year 2025. The estimated project cost is \$40-42 million. Two build alternatives and the no build alternative was considered in the draft document. Alternative D (middle alternative) was selected as the preferred alternative and LEDPA. Mitigation measures have been developed to reduce the projects impacts to Waters of the U.S. and biological resources including vernal pool special status species, valley oaks and blue oak woodland, valley elderberry longhorn beetle, giant garter snake, and Swainson's hawk. There would be no significant impacts or cumulatively significant impacts.

State Route 70 Freeway Extension from 1.6 kilometers (1 mile) north of Palermo Road to 0.5 kilometer (0.3 mile) south of the State Route 162 Junction in Butte County south of Oroville

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Summary

The Final Environmental Impact Report/Environmental Assessment (FEIR/EA) has been prepared to meet requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) for projects that could have adverse impacts on the environment. It is based on detailed technical studies for the purpose of informing the public and to present reasonable alternatives that would avoid or minimize impacts.

The following summary identifies major items of importance to decision-makers regarding the proposed project. Detailed project information is presented in the body of the document.

Proposed Action

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to upgrade a 5.6-kilometer (km) (3.6-mile (mi)) segment of State Route (SR) 70 from expressway to four-lane freeway. The proposed project would be constructed in three phases: Safety, Phase 1, and Phase 2 (Ultimate). Project construction would begin 1.6 km (1 mi) north of Palermo Road and terminate at a point 0.5 km (0.3 mi) south of the SR 162 junction, where the freeway currently begins. The mainline freeway would be constructed as close to the current highway alignment as possible.

The proposed project would accomplish the following objectives:

- Improve safety at the Ophir Road/Pacific Heights intersection by protecting the turn movement, which will reduce the number and severity of accidents at this location (safety phase).
- Improve safety by restricting access to State Route (SR) 70 through the elimination of at-grade intersections (phase 2).
- Correct roadway deficiencies within the project limits by bringing SR 70 up to current design standards (all three phases).

accommodate existing and future traffic volumes at a level of service (LOS) D through the year 2025 (all phases).

The following improvements are included in the proposed project:

- Relocation of SR 70/Ophir Road intersection approximately 150 meters (m)[492 feet (ft)] to the north to provide a flatter stop landing for the installation of traffic signal (Safety phase).
- Installation of a 4-way traffic signal and associated storage lanes at the Ophir Road intersection (Safety phase).
- Construction of two additional 3.6-m (12-ft) lanes with a 22-m to 6.7-m (72-ft to 22-ft) median, 3-m (10-ft) outside shoulders, and 1.5-m (5-ft) median shoulders (Phase 1 & 2).
- Elimination of driveway access points. (Phase 1 & 2)
- Rehabilitation of the existing SR 70 roadway. (All phases)
- Construction of an interchange at Ophir Road and an overcrossing at Georgia Pacific Way. (Phase 2)
- Realignment of the frontage road system to accommodate the proposed interchange and overcrossing. (Phase 2)

The project has been divided into three phases to facilitate safety, funding and construction programming.

Project Alternatives

Five alternatives were considered, including a non-highway alternative and a “no-project” alternative. Caltrans, in consultation with FHWA, the Federal Transit Administration (FTA) and local metropolitan planning organizations (MPOs), determined that a non-highway strategy would not satisfy the project need. In addition, Alternative C (South Interchange) was eliminated from detailed study because of extensive impacts to wetlands and vernal pools. Two build alternatives were analyzed in the Draft environmental document:

Alternative D: Middle Interchange

Alternative E: North Interchange

Project features such as an interchange and overcrossing design and frontage road system would be the same for each of the alternatives.

A “No Project” alternative was also considered where SR 70 would remain a two-lane expressway with no improvements. Figure 1-1 gives the project location and Chapter 2 gives a detailed discussion of project alternatives.

Identification of the Preferred Alternative

Alternative D (Middle Alternative) has been identified as the preferred alternative under NEPA, and as the Least Environmentally Damaging Practicable Alternative (LEDPA) under Section 404(b)(1) of the Clean Water Act. The U.S. Environmental Protection Agency (USEPA) and the U.S. Army Corps of Engineers (USACE) have concurred with these determinations as required by the NEPA/404 Integration Memorandum (Appendix A).

Summary of Impacts by Alternatives

Summary of Impacts By Alternative

Potential Impact		Alternative D (Middle Interchange)	Alternative E (Northern Alternative)	No-Project Alternative	Mitigation
Agricultural displacements		None	None	None	N/A
Farmland converted	Prime	None	None	None	N/A
	Unique	None	None	None	N/A
Annual agricultural revenue loss		None	None	None	N/A
Business displacements		19	19	None	Relocation Assistance
Housing displacements		5	4	None	Relocation Assistance
Utility service relocation		4 relocations	4 relocations	None	Coordination with utilities
Consistency with the Oroville General Plan		Yes	Yes	No	N/A
Consistency with the Butte County General Plan		Yes	Yes	No	N/A

Summary

Air quality		None	None	None	N/A
Noise	# of receptors \geq 66 Leq	None	None	None	N/A
	# of receptors increasing by \geq 12 dBA	None	None	None	N/A
Water quality		None	None	None	Standard BMPs
Total wetlands & waters of the U.S.		0.75 (1.85)	1.52 (3.75)	None	Compensate at appropriate ratios to achieve no net loss of wetland acreage
Freshwater shrimp Habitat:				None	Preservation and creation at ratios determined in consultation with USFWS
Direct Impacts		1.36 ha (3.37 ac)	1.36 ha (3.37 ac)		
Indirect Impacts		1.33 ha (3.28 ac)	1.33 ha (3.28 ac)		
Valley Elderberry Longhorn Beetle		5 shrubs	5 shrubs	None	Transplantation or replacement at a location and ratio determined in consultation with USFWS
Giant garter snake habitat		0.75 ha (1.87ac)	7.40 ha (18.29 ac)	None	Mitigation credit at USFWS approved bank
Blue Oak woodland		2.14 ha (5.28 ac)	0.92 ha (2.27)	None	Compensation to be determined in consultation
Increase in Floodplain		None	None	None	N/A
Cultural resources		None	None	None	N/A
Risks associated with Dioxins/furans		Less	Greater	None	Dust control, soil sampling, ground water sampling, site-specific health and safety plan
Volume of fill imported as % of total cut & fill volume		6%	47%	None	N/A
Maximum projected cut and fill heights		20 m/20 m	16 m/10 m	None	N/A
Visual impacts		1 interchange, 1 overcrossing; grading, tree/vegetation removal	1 interchange, 1 overcrossing; grading, tree/vegetation removal	None	Appropriate landscaping and erosion control

Cumulative impacts	Minimal incremental contribution	Minimal incremental contribution	None	Per each resource impacted
Growth inducement	Accommodate planned growth	Accommodate planned growth	Would not accommodate planned growth	N/A

Summary of Impacts, Minimization Measures and Proposed Mitigation

The following abatement, avoidance, minimization and/or mitigation measures are based on impacts associated with Alternative D (Middle Alternative), which has been identified as the preferred alternative.

Business/Housing Displacements

Property owners would receive fair market value compensation for any land or improvements acquired by the State. Caltrans and FHWA would provide relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

Water Quality

The practices outlined in the Storm Water Management Plan (SWMP) and Statewide Storm Water Practice Guidelines ensure that certain minimum design elements be incorporated into projects to maintain or improve water quality. The key elements are as follows:

- Minimize impervious surfaces - The intent is to reduce total runoff volume by reducing impervious areas.
- Prevent downstream erosion – Design drainage facilities to avoid causing or contributing to downstream erosion. Drainage outfalls, when appropriate, would discharge to suitable control measures.
- Stabilize disturbed soil areas – Design would incorporate stabilization of disturbed areas (when appropriate) with seeding, vegetative, or other types of cover.
- Maximize existing vegetative surfaces – Design would limit footprints of cuts and fills to minimize removal of existing vegetation.

The project would, therefore, not create a substantial increase in downstream erosion or siltation.

The Construction General Permit (Order No. 99-08-DWQ)(CAS000002) requires that all storm water discharges associated with construction activities that result in soil disturbance of at least .8 ha (2 ac) of total land area must comply with the provisions specified in the General Permit, including development and implementation of an effective Storm Water Pollution Prevention Plan (SWPPP). A SWPPP is a document that addresses water pollution controls for the project during construction. It is normally prepared by the contractor and approved by the Caltrans resident engineer prior to commencement of soil-disturbing activities.

Air Quality

Dust control measures would need to be incorporated into the project to mitigate the impacts from suspended particulate matter generated during construction. The dust control practices used would comply with Caltrans' Standard Construction Specifications. These practices include, but are not limited to, watering with reclaimed water in active excavation and grading areas, and cultivation of a vegetation cover on completed cuts and fills. Below is a list of mitigation measures that comply with the rules and specifications and reduce the emissions of fugitive dust:

- Covering open-bodied trucks when used for transporting materials likely to cause airborne dust.
- Watering to control dust during the construction process and during the grading of roads or the clearing of land.
- Watering disturbed areas to form a compact surface after grading and earthwork.
- Watering disturbed (graded or excavated) surfaces as necessary, increasing frequency when weather conditions require.
- Promptly removing from paved streets earth or other material that has been deposited by trucks or earth moving equipment.

Wetlands and Waters of the U.S.

Waters of the U.S.

After avoidance and minimization measures were implemented to the greatest extent, a total of .75 ha (1.85 ac) of USACE jurisdictional wetlands will be impacted by

Alternative D (Middle Alternative). The safety phase and phase 1 would impact .55 ha (1.36 ac), while phase 2 would impact the remaining 0.20 ha (0.49 ac) of Waters of the U.S.. Mitigation for Waters of the U.S. will incorporate creation, preservation and/or restoration of aquatic resources to compensate for the loss of seasonal wetlands, freshwater marshes, and seasonal riparian wetlands.

Vernal Pools and Swales

Mitigation for permanent impacts to 0.20 ha (0.49 ac) of vernal pools and swales, which would occur during the construction of phase 2, would be covered by the mitigation for impacts to vernal pool fairy shrimp/tadpole shrimp habitat.

Marsh

Permanent impact to .23 ha (.57 ac) of freshwater marsh near the SR 70/Pacific Heights Road intersection would be mitigated off site at an appropriate mitigation site. This impact would occur during the safety phase of the project.

Other Wetland

Mitigation for permanent impacts to other wetlands, such as emergent wetlands, would be mitigated offsite at a USACE approved location.

Blue Oak/Valley Oak Woodlands

Permanent impacts to 2.14 ha (5.30 ac) of Blue Oak woodland would be minimized through the replacement plantings and other mitigation measures still to be determined in consultation with California Department of Fish and Game (CDFG). Oak trees to be avoided during construction would be identified on project plans as Environmentally Sensitive Areas (ESAs) and marked in the field by staking or fencing the tree canopies.

Hazardous Waste

The concentrations of dioxins/furans were found to be higher closer to Koppers Industries, Incorporated and Louisiana Pacific Corporation. The Screening Level Toxicology and Risk Assessment (HRA), therefore, finds that the risk is less to encounter dioxins/furans with Alternative D (Middle Alternative) since it is farther from these wood treatment operations. The HRA also states that dust control measures during construction are recommended but not essential to avoid an unacceptable risk to workers or neighboring residents.

Visual Impacts

The visual quality of the site after mitigation should be equal to or better than the existing visual quality. The following mitigation measures apply to Alternative D (Middle Interchange), and would help accomplish the above goal.

- Ensure that landscape and erosion control planting is consistent with the regional species and the local visual character. Use a mixture of grass and wildflowers to provide a seasonal display of color and to mitigate the visual impacts associated with the additional pavement.
- The proposed interchange and overcrossing would be located in a setting in which highway planting is warranted. A separate mitigation and planting project, funded by the proposed project, would be programmed to occur within two years after construction is completed.
- Trees and shrubs would be planted near the overpasses to soften the contrast between the horizontal structures and the surrounding surface.
- Trees and shrubs would be planted around the proposed park and ride facility to establish shade relief and visual interest.
- Trees would be planted to replace those that are removed. Oak trees would be replaced at a rate of 1 seedling per 1 inch of removed tree measured at breast height (DBH) (i.e. 12-inch oak removed = 12 seedlings planted).
- New cuts and slopes would be rounded at the top and bottom of the slope and laid back to a minimum of 1.5-to-1 to encourage plant growth. Local, clean topsoil would be added to the top layer of exposed soil to replenish lost nutrients and minerals. Large graded areas would be terraced at two-foot intervals, and slope runs longer than 20 feet would require a minimum four-foot ledge. Trees would be planted on new cut and fill areas to resemble the natural surrounding slopes as much as possible.
- Areas within the Ophir Road interchange that serve as seasonal storm water retention ponds would be graded with meandering edges and elevations to replicate naturally occurring ponds.
- In areas where businesses are removed or relocated, screening with berms (hydraulics permitting) or plantings would further improve the visual quality of the site.

Cumulative Impacts

Regional growth is expected to be concentrated in established community centers and along transportation upgrades on existing State facilities, which would be a source for cumulative losses to sensitive biological resources. The SR 70 Freeway Extension/Ophir Road Interchange project would result in a minimal contribution to losses of water quality, valley elderberry longhorn beetle, wetlands, and habitat which support federally and state listed species (Giant Garter snake and vernal pool fairy shrimp/tadpoles). These losses are not substantial with implementation of proposed project mitigation, considering the extensive resources available in the cumulative effects area. Despite the likelihood of cumulative effects to these resources in the region, the cumulative individual mitigation and conservation measures identified in planning documents and required on Caltrans/FHWA transportation projects by resource agencies would contribute to offset these effects.

Proposed minimization and mitigation measures would reduce direct and indirect project impacts to less than significant levels.

Summary of Endangered Species Consultation and Mitigation

Caltrans and FHWA have completed formal Section 7 consultation with the United States Fish and Wildlife Service (USFWS) in accordance with the Federal Endangered Species Act (ESA) of 1973, as amended, for the proposed SR 70 Freeway Extension/Ophir Road Interchange project in Butte County. In compliance with the California Endangered Species Act (CESA), Caltrans has consulted with the California Department of Fish and Game (CDFG).

United States Fish and Wildlife Service

The USFWS issued a Biological Opinion (B.O.) on July 1, 2005 contained in Appendix D, addressing the adverse effects of the proposed action on the threatened giant garter snake (*Thamnophis gigas*), threatened valley elderberry longhorn beetle (*Desmocerus californicus*), endangered vernal pool tadpole shrimp (*Lepidurus packardi*); and endangered vernal pool fairy shrimp (*Brachinecta lynchii*). Implementation of the proposed project is not likely to adversely affect the threatened California red-legged frog (*Rana aurora draytonii*), the endangered Butte County meadowfoam (*Limnanthes floccose ssp. Californica*), endangered Greenes' s tuctoria (*Tuctoria greenei*), endangered hairy Orcutt grass (*Orcuttia Pilosa*), endangered slender Orcutt grass (*Orcuttia tenuis*), and the Hoover's spurge (*Chamaesyce hooveri*).

The USFWS B.O. states that the proposed project may adversely affect the giant garter snake (*Thamnophis gigas*), threatened valley elderberry longhorn beetle (*Desmocerus californicus*), endangered vernal pool tadpole shrimp (*Lepidurus packardii*); and endangered vernal pool fairy shrimp (*Brachinecta lynchii*). The FHWA and Caltrans have proposed avoidance, minimization, and conservation measures sufficient to minimize the adverse effects of the proposed action to these species, and the B.O. concludes that the proposed action is not likely to jeopardize their continued existence.

Proposed avoidance, minimization and conservation measures include the following, would apply to all phases of construction.

General Measures:

- Establishment of Environmentally Sensitive Areas (ESA) areas that will be avoided during construction.
- Implementation of Best Management Practices (BMP) during construction which focus on maintaining water quality, properly winterizing construction areas, preventing erosion and keeping hazardous materials away from water.
- The contractor will need to prepare a SWPPP, which would be compliant with the Caltrans National Pollution Discharge Elimination System permit.

Giant Garter snake:

1. Construction activities will be avoided within 60.96 m (200 ft) from the banks of giant garter snake aquatic habitat. Movement of heavy equipment will be confined to existing roadways to minimize habitat disturbance.
2. Construction activity within giant garter snake habitat will be conducted between May 1 and October 1. If construction occurs from October 2 to April 30, Caltrans will contact the USFWS Sacramento Fish and Wildlife office to determine if additional measures are necessary to avoid take.
3. Clearing will be confined to the minimal area necessary to facilitate construction activities.
4. Construction personnel will receive USFWS-approved worker environmental awareness training.

5. The biologist/environmental monitor will conduct a survey for giant garter snake within 24 hours of the start of construction in identified habitat. If lapse in construction activities of two weeks or greater occurs, surveys for the snake within the proposed project area will be repeated. If a snake is encountered during construction activities, all activities will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. The USFWS will be notified of the presence of the snake within 24 hours.
6. Any dewatered habitat must remain dry for at least 15 days after April 15 and prior to excavating and filling.
7. After completion of construction activities, all temporary fill and construction debris will be removed.
8. All avoided snake habitat will be designated as ESAs and will continue to be avoided throughout all the phased construction period. Orange mesh fencing will be placed along the limits of all snake habitat, and no construction activities will be allowed within the ESAs.

Vernal pool fairy shrimp and vernal pool tadpole shrimp:

Conservation measures for loss of vernal pool fairy shrimp and tadpole shrimp habitat due to direct and/or indirect effects would consist of both preservation and creation components to ensure “no net loss” of habitat. Caltrans has proposed to compensate for direct effects to 1.36 ha (3.37 ac) and indirect effects to 1.32 ha (3.279 ac) of habitat. Mitigation measures would include preserving and creating vernal pool habitat off site at an approved site in Butte County. If Caltrans or the USFWS determines that it is not feasible to use either non-bank parcels for preservation/creation of vernal pool habitat, Caltrans will instead purchase the appropriate amount of vernal pool conservation credits at a Service-approved conservation bank that services the proposed project site area. Total preservation and created vernal pool wetlands will be determined by utilizing the ratios specified in the USFWS’s Programmatic Formal Endangered Species Act Consultation on Issuance of 404 Permits for Projects with Relatively Small Effects on Listed Vernal Pool Crustaceans within the Jurisdiction of the Sacramento Field Office, California (Programmatic Consultation).

Valley Elderberry Longhorn Beetle

Mitigation for direct /permanent impacts to valley elderberry longhorn beetle, “VELB” would follow the USFWS 1999 Conservation Guidelines for the valley longhorn elderberry beetle. The proposed project would directly affect five elderberry shrubs (*Sambucus* sp.) during the safety phase, which are the sole host to the beetle. The five elderberry shrubs have a combined total of 26 stems greater than 1.0 inches, Caltrans has proposed to use 12 of their current 98 VELB conservation credits at the Sheridan Conservation Bank to compensate for the loss of the 26 elderberry stems.

CDFG Consultation

Consultation with CDFG is ongoing but the following standard measure would be included as measures to minimize and fully mitigate impacts.

Swainson’s hawk

- Caltrans will compensate for the loss of Swainson’s hawk foraging habitat.

Issues to be Resolved

Issues to be resolved before implementation of the proposed project are listed below.

- Final project design
- Right of way acquisition and utility relocation
- Permits and approvals

Permits and Approvals

The following permits and/or approvals would be required before implementation of the proposed project:

- Streambed Alteration Agreement (Section 1602) from the CDFG
- Section 401 certification/waiver from the Regional Water Quality Control Board (RWQCB)
- Section 404 of the Clean Water Act individual permit from USACE

In addition, an Incidental Take Permit pursuant to Section 2082 of the California Fish and Game Code may be required. This determination would be made after pre-construction surveys for presence/absence of State-listed species.

NEPA/404 Concurrence Process

In September 2001, Caltrans initiated the NEPA/404 MOU process for this project with a tour of the project site and a discussion of known resources and physical constraints within the project study area. In February 2002, FHWA requested that the signatory agencies concur with the purpose and need for the project, the range of alternatives and the selection criteria. All four of the agencies have submitted written concurrence to FHWA. In May 2004, and then again in November 2004, Caltrans requested concurrence on the LEDPA and the Conceptual Mitigation Plan from USFWS, USACE and USEPA. Both USACE and USEPA, concurred on June 2005 and December 2004, respectively identifying Alternative D (Middle Alternative) as the LEDPA/preferred alternative (Appendix C).

Notice of Determination/Finding Of No Significant Impact

Upon certification of the Final EIR by Caltrans and approval of the Final EA by FHWA, Caltrans will file a Notice of Determination (NOD) and FHWA will prepare a Finding of No Significant Impact (FONSI). Caltrans will prepare Findings and a Statement of Overriding Consideration for impacts considered significant under CEQA.

Table of Contents

Summary	i
Table of Contents	xv
List of Figures	xviii
List of Tables	xix
List of Abbreviated Terms	xx
1. Purpose of and Need for Project	1-1
1.1. Project Purpose	1-1
1.1.1. Project Vicinity	1-1
1.1.2. Project Location	1-2
1.2. Project Need	1-2
1.2.1. Introduction	1-2
1.2.2. Route Concept	1-2
1.2.3. Existing Facility	1-2
1.2.4. Need for the Project	1-5
1.3. Project Background	1-9
1.3.1. State Routes 70 and 99 Corridor Study	1-9
1.3.2. Major Investment Study	1-9
1.3.3. Interregional Transportation Strategic Plan	1-9
1.3.4. Butte County 2001 Regional Transportation Plan	1-10
1.3.5. Butte County General Plan	1-10
1.3.6. General Plan for the City of Oroville	1-11
1.3.7. Project Study Reports, SR 70 between Marysville and Oroville	1-12
1.4. Project Description	1-14
1.4.1. NEPA/404 Coordination	1-15
1.4.2. Consultation with Permitting Agencies	1-17
1.5. Required Permits	1-17
2. Project Alternatives	2-1
2.1. Alternative Development Process	2-1
2.2. Project Alternatives	2-1
2.2.1. Alternative B (“No-Project” Alternative)	2-1
2.2.2. Build Alternatives –Common Features	2-2
2.3. Alternatives Considered and Withdrawn	2-9
2.3.1. Alternative A (Non-Highway Alternative)	2-9
2.3.2. Alternative C (South Interchange)	2-9
3. Affected Environment, Environmental Consequences, and Avoidance, Minimization and Compensation Measures	3-1
3.1. Geology, Soils and Seismology	3-1
3.1.1. Affected Environment	3-1
3.1.2. Impacts	3-2
3.1.3. Avoidance, Minimization and Compensation Measures	3-3
3.2. Water Quality and Storm Water Runoff	3-3
3.2.1. Regulatory Setting	3-3
3.2.2. Affected Environment	3-4
3.2.3. Impacts	3-5
3.2.4. Avoidance, Minimization and Compensation Measures	3-9
3.3. Hazardous Waste/Material	3-12
3.3.1. Regulatory Setting	3-12

3.3.2.	Affected Environment	3-12
3.3.3.	Impacts	3-13
3.3.4.	Avoidance, Minimization and Compensation Measures	3-13
3.4.	Air Quality	3-14
3.4.1.	Regulatory Setting	3-14
3.4.2.	Affected Environment	3-14
3.4.3.	Impacts	3-18
3.4.4.	Avoidance, Minimization and Compensation Measures	3-18
3.5.	Noise.....	3-19
3.5.1.	Regulatory Setting.....	3-19
3.5.2.	Affected Environment	3-19
3.5.3.	Impacts	3-22
3.5.4.	Avoidance, Minimization and Compensation Measures	3-23
3.6.	Energy	3-23
3.7.	Wetlands and Other Waters of the United States	3-23
3.7.1.	Regulatory Setting.....	3-23
3.7.2.	Affected Environment	3-24
3.7.3.	Impacts	3-24
3.7.4.	Avoidance, Minimization and Compensation Measures	3-29
3.8.	Vegetation and Wildlife	3-30
3.8.1.	Regulatory Environment	3-30
3.8.2.	Affected Environment	3-31
3.8.3.	Impacts	3-38
3.8.4.	Avoidance, Minimization and Compensation	3-42
3.9.	Special Status Species	3-44
3.9.1.	Regulatory Environment	3-44
3.9.2.	Affected Environment	3-44
3.9.3.	Impacts	3-55
3.9.4.	Avoidance, Minimization and Compensation Measures	3-60
3.10.	Hydrology and Floodplains	3-63
3.10.1.	Regulatory Setting.....	3-63
3.10.2.	Affected Environment	3-63
3.10.3.	Impacts	3-64
3.11.	Land Use.....	3-65
3.11.1.	Regulatory Setting.....	3-65
3.11.2.	Affected Environment	3-65
3.11.3.	Impacts	3-66
3.12.	Growth.....	3-67
3.12.1.	Regulatory Setting.....	3-67
3.12.2.	Affected Environment	3-67
3.12.3.	Impacts	3-67
3.13.	Farmlands/Agricultural Lands.....	3-68
3.13.1.	Regulatory Setting.....	3-68
3.13.2.	Affected Environment	3-68
3.13.3.	Impacts	3-69
3.14.	Community Impacts (Social and Economic) and Environmental Justice.....	3-69
3.14.1.	Regulatory Setting.....	3-69
3.14.2.	Affected Environment	3-69
3.14.3.	Impacts	3-75
3.14.4.	Avoidance, Minimization and Compensation	3-77
3.15.	Utilities/Emergency Services	3-78

3.15.1.	Affected Environment.....	3-78
3.15.2.	Impacts.....	3-79
3.15.3.	Avoidance, Minimization and Compensation Measures	3-79
3.16.	Public Transportation, Pedestrian and Bicycle Facilities.....	3-80
3.16.1.	Regulatory Setting	3-80
3.16.2.	Affected Environment.....	3-80
3.17.	Visual/Aesthetics	3-80
3.17.1.	Regulatory Setting	3-80
3.17.2.	Affected Environment.....	3-81
3.17.3.	Impacts.....	3-82
3.17.4.	Cumulative Impacts	3-87
3.17.5.	Avoidance, Minimization and Compensation Measures	3-87
3.18.	Cultural Resources	3-88
3.18.1.	Regulatory Setting	3-88
3.18.2.	Affected Environment.....	3-89
3.18.3.	Impacts.....	3-90
3.18.4.	Avoidance, Minimization and Compensation Measures	3-90
4.	Cumulative Impacts	4-1
4.1.	Cumulative Effects Areas	4-2
4.2.	Projects Considered in Cumulative Effects Evaluation	4-2
4.3.	Cumulative Effects Discussion	4-4
4.3.1.	Water Quality.....	4-4
4.3.2.	Wetlands	4-6
4.3.3.	Oak Woodlands.....	4-7
4.3.4.	Giant Garter Snake.....	4-9
4.3.5.	Valley Elderberry Longhorn Beetle.....	4-11
4.3.6.	Vernal Pool Fairy Shrimp/Tadpole Shrimp	4-11
5.	California Environmental Quality Act Evaluation.....	5-1
5.1.	Determining Significance Under CEQA.....	5-1
5.2.	Discussion of Potential Impacts to Sensitive Resources.....	5-1
5.2.1.	Vernal Pools/Swales and Associated Sensitive Plant and Animal Species ...	5-1
5.2.2.	Wetlands and Waters of the U.S.	5-2
5.2.3.	Valley Elderberry Longhorn Beetle	5-3
5.2.4.	Other Biological Resources	5-3
6.	Summary of Public Involvement Process/Tribal Coordination	6-1
6.1.	Public Involvement	6-1
6.2.	NEPA/404 Integration Process	6-1
6.3.	Tribal Coordination.....	6-2
7.	List of Preparers.....	7-1
8.	Distribution List.....	8-1
9.	References.....	9-1
10.	Index	10-1
Appendix A	Coordination and Consultation	A-1
Appendix B	Comments Received on Draft EIR/EA	B-1
Appendix C	USEPA and USACE LEDPA Concurrence Letters.....	C-1
Appendix D	USFWS Biological Opinion.....	D-1
Appendix E	Final NEPA/ 404 (b)1 Alternatives Analysis.....	E-1
Appendix F	Wetland Only Practicable Alternative Finding	F-1
Appendix G	Summary of Mitigation and Monitoring Commitments	G-1

Appendix H	CEQA Checklist	H-1
Appendix I	Title IV Policy Statement	I-1
Appendix J	Summary of Relocation Benefits.....	J-1

List of Figures

Figure 1-1	Project Location.....	1-3
Figure 1-2	City of Oroville Target Annexation Areas	1-13
Figure 1-3	Project Phases	1-16
Figure 2-1	Typical Cross Section	2-3
Figure 2-2	Alternatives C, D and E (Common Alignment)	2-5
Figure 2-3	Alternative D (Middle Interchange)	2-6
Figure 2-4	Alternative E (North Interchange)	2-7
Figure 2-5	Alternative C (South Interchange).....	2-8
Figure 2-5	Alternative C (South Interchange).....	2-10
Figure 3-1	Occurrences of Serpentine in Ultramafic Rock	3-17
Figure 3-2	Sound Measurement Locations.....	3-20
Figure 3-3	Sound Measurement Locations.....	3-21
Figure 3-4	Jurisdictional Wetlands, Alternative D (Middle Interchange).....	3-26
Figure 3-5	Jurisdictional Wetlands, Alternative E (North Interchange).....	3-27
Figure 3-6	Wetland Resources	3-28
Figure 3-7	Biological Resources	3-33
Figure 3-8	Biological Resources	3-34
Figure 3-8	Biological Resources	3-34
Figure 3-9	Cuts and Fills	3-40
Figure 3-10	U.S. Census Tract Block Groups Affected by Project.....	3-72
Figure 3-11	Existing SR 70 looking north towards Georgia Pacific Way	3-84
Figure 3-12	Simulation of proposed Georgia Pacific Way Overcrossing	3-84
Figure 3-13	Existing SR 70 looking south to Ophir Road and bluff.....	3-85
Figure 3-15	Existing SR 70 looking south to Ophir Road and bluff.....	3-86
Figure 3-16	Alternative E - Simulation of proposed north Ophir Road Interchange	3-86
Figure 4-1.	Water Quality/Wetland Cumulative Effects Area Map	4-5
Figure 4-2.	Oak Woodlands Cumulative Effects Area.....	4-8
Figure 4.3.	Giant Garter Snake Cumulative Effect Analysis Area.....	4-10
Figure 4-4.	Valley Elderberry Longhorn Beetle Cumulative Analysis Area	4-12
Figure 4-5.	Vernal Pool Habitat Cumulative Effects Analysis Area.....	4-13

List of Tables

Table 1.2 Levels of Service (LOS)	1-8
Table 3.1 Active Fault Lines Nearest Proposed Project	3-2
Table 3.2 Attainment Status of Butte County Air Quality Management District	3-15
Table 3.3 Summary of Air Quality Screening	3-18
Table 3.4 Modeled Noise Levels	3-22
Table 3.5 Areas of Impacts to USACE Jurisdictional Waters of U.S./Wetlands.....	3-25
Table 3.6 Typical Compensation Ratios for Permanent Impacts to Waters of the U.S.	3-29
Table 3.7 Permanent Impacts to Riparian Habitat by Alternative	3-39
Table 3.8 Regional Sensitive Species Table	3-44
Table 3.9 Valley Elderberry Longhorn Beetle Impacts and Proposed Mitigation.....	3-58
Table 3.10 Housing Characteristics in Project Area	3-70
Table 3.11 Population in the Project Area by Census Tract	3-71
Table 3.12 2000 Census Update for Study Area.....	3-73
Table 3.13 Poverty Rates	3-74
Table 3.14 Median Family and Household Incomes	3-75
Table 3.15 Residential and Non-residential Displacements by Alternative.....	3-75
Table 4.1 Resource Areas Considered for Cumulative Impacts Analysis	4-2
Table 4.2 Projects Evaluated as part of the Cumulative Impacts Analysis.....	4-3

List of Abbreviated Terms

Abbreviation	Term
ac	acre
AC	asphalt concrete
ADT	Average Daily Traffic
APE	Area of Potential Effects (Cultural Resources)
BAT	Best Available Technology Economically Achievable
BCAG	Butte County Association of Governments
BCAQMD	Butte County Air Quality Management District
BCM	Butte County Meadowfoam (special status plant)
BCT	Best Conventional Technology
BMP	Best management practices (Water Quality)
Cal/EPA	California Environmental Protection Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFG	California Department of Fish & Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide (Air Quality)
CTC	California Transportation Commission
CWA	Clean Water Act
dBA	Decibels (noise level measurement)
DBH	Diameter at Breast Height or four feet
DEIR	Draft Environmental Impact Report (CEQA document – State)
DEIS	Draft Environmental Impact Statement (NEPA document – Federal)
DRIR	Draft Relocation Impact Report
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
ESA	Environmentally Sensitive Area
ESA	Endangered Species Act (Federal)
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FPPA	Farmland Protection Policy Act
ft	foot / feet
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program
ha	hectare
HPSR	Historic Property Survey Report (cultural resources)
IS	Initial Study
ITSP	Interregional Transportation Strategic Plan
km	kilometer

KP	kilopost
kph	Kilometers per hour
LAFCo	Local Agency Formation Commission
L _{eq}	Equivalent Noise level
LOS	Level of Service
m	meter
mi	mile
MIS	Major Investment Study
mph	miles per hour
MPO	Metropolitan Planning Organization
MTP	Metropolitan Transportation Plan
MOU	Memorandum of Understanding
NAC	Noise Abatement Criteria
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NES	Natural Environment Study (Biological Resources)
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
PG&E	Pacific Gas and Electric
PHV	Peak Hour Volume
PM	Particulate Matter (Air Quality)
PM	Postmile
ppm	Parts per million
PRC	Public Resources Code (State)
PSR	Project Study Report
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SACOG	Sacramento Area Council of Governments
SHPO	State Historic Preservation Office
SIP	State Implementation Plan (Air Quality)
SR	State Route
SSP	Standard Special Provisions
STIP	State Transportation Improvement Plan
SVAB	Sacramento Valley Air Basin
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TASAS	Traffic Accident and Surveillance Analysis System
TMP	Traffic Management Plan
TCR	Transportation Concept Report

List of Abbreviated Terms

TDM	Travel Demand Management
TSM	Transportation System Management
USACE	US Army Corps of Engineers
USC	United States Code
USFWS	US Fish & Wildlife Service
UST	Underground storage tank (hazardous materials)
WPCP	Water Pollution Control Plan

1. Purpose of and Need for Project

1.1. Project Purpose

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to upgrade a portion of the interregional transportation facility (State Route 70) between Sacramento and Chico at Ophir Road near Oroville to accomplish the following objectives:

- Improve safety by restricting access to State Route (SR) 70 through the elimination of at-grade intersections.
- Correct roadway deficiencies within the project limits by bringing SR 70 up to current design standards.
- Accommodate existing and projected future traffic volumes at a level of service (LOS) D through the year 2025.

1.1.1. Project Vicinity

State Route 70 begins in Sutter County just north of Sacramento where it splits from SR 99 at the SR 70/99 junction. State Route 70 proceeds north through Marysville and Oroville, then continues easterly along the Feather River and its tributaries across the Sierra Nevada range to its terminus at Hallelujah Junction on SR 395 in Lassen County. As an all-weather, trans-Sierra route, SR 70 serves as an emergency alternate route between Sacramento and Reno when Interstate 80 is closed or impaired during major winter storms and, therefore, is designated a “gateway route” (Caltrans 2000).

North of Oroville, SR 149 links SR 70 with SR 99, providing the primary regional corridor between Sacramento and Chico. The SR 99 corridor extends the length of the central valley from Bakersfield through Sacramento and Chico north to Red Bluff in Tehama County, where it connects with Interstate 5. Chico, with a population of 60,000, is the largest city in Butte County and one of the largest urbanized areas in the State that is not linked to a four-lane freeway system. The SR 70/SR 99 corridor is heavily utilized for the interregional movement of people, goods and services to and through Central and Northern California, and for major interstate commerce and goods movement.

1.1.2. Project Location

The project is located at the south edge of the City of Oroville, the Butte County seat. The southern terminus is a point 1.6 km (1 mi) north of Palermo Road; the northern terminus is a point 0.5 km (0.3 mi) south of the SR 162 junction, where the freeway currently begins (Figure 1-1).

1.2. Project Need

1.2.1. Introduction

The segment of SR 70 that includes the proposed project serves the Oroville urban area, which has expanded in size over time. As a result, the volume of local traffic has increased, and the State highway facility has become an integral part of the local circulation system in addition to serving interregional and interstate traffic.

1.2.2. Route Concept

The Interregional Transportation Strategic Plan (ITSP) identifies the portion of SR 70 between its junction with SR 99 in Sutter County and its junction with SR 149 in Butte County as a high-emphasis “Focus Route,” making it one of Caltrans’ highest priority routes for project planning and programming (Caltrans 1998). Caltrans, in partnership with the Sacramento Area Council of Governments (SACOG), Butte County Association of Governments (BCAG), and local communities along the corridor, proposes to eventually bring all of this portion of SR 70 to full freeway standard. The ultimate facility concept as defined in the Transportation Concept Report (TCR) is a six-lane freeway (Caltrans 2000).

1.2.3. Existing Facility

The facility within the project limits is a two-lane, access-controlled expressway with at-grade intersections and driveways. It was constructed in 1958 on the east half of a planned four-lane expressway. The cross-section features include one westbound and one eastbound travel lane, each 3.6 m (12 ft) in width. The typical outside shoulder width is 2.4-m (8-ft).

Proceeding from the southern terminus of the project north toward Oroville, SR 70 is on almost level grade until it descends a 5 percent grade to the floodplain of the Feather River 21 m (69 ft) (approximately Ophir Road intersection). From just north of the Ophir Road intersection,

Figure 1-1 Project Location

the highway returns to almost level grade, curving to the north and then continuing straight to the end of the project.

Two public roads and two private driveways intersect this segment of SR 70. There are left-turn lanes at the two public road intersections, Ophir Road and Georgia Pacific Way. There are right-turn lanes for eastbound and westbound SR 70 traffic at Ophir Road, and a right-turn lane for eastbound SR 70 traffic at Georgia Pacific Way. North of the project limits, SR 70 is a four-lane freeway for seven miles; to the south of the project limits, SR 70 is a two-lane undivided conventional highway to Marysville. The speed limit is posted at 55 mph (89 kph).

1.2.4. Need for the Project

The following conditions describe the existing facility within the project limits. In combination, these conditions demonstrate the need for this project.

1.2.4.1. Accident Data

Accident rates for the highway segment under study are considerably higher than the statewide average for similar facilities. This is primarily due to the presence of at-grade intersections and private driveways. Slow-moving vehicles entering or exiting the two-lane, high-speed expressway create conflicts with through traffic and increase the potential for accidents. Failure to yield is the primary contributing factor in the at-grade intersection accidents.

Table 1.1 shows accident history data from the Traffic Accident and Surveillance and Analysis System (TASAS) for the study segment, including the two intersections, for the three-year period from January 1, 1999, through December 31, 2001.

**Table 1.1 Accident Rates for Project Study Segment of State Route 70
(January 1, 1999-December 31, 2001)**

Location	Total Accidents	Actual Rate ¹			Statewide Average Rate ¹		
		FAT ²	F + I ³	TOT ⁴	FAT ²	F + I ³	TOT ⁴
Intersection SR 70 / Ophir Road	21	.059	.59	1.23	.004	.14	.34
Intersection SR 70 / Georgia Pacific Way	15	.135	.47	1.01	.004	.14	.34
Study segment: KP 16.2/21.8 (PM 10.0/13.6)	55	.167	.60	1.15	.036	.36	.76

¹For intersections, rate is per million vehicles; for mainline segment, rate is per million vehicle miles.

²Fatal accidents

³Fatal plus Injury accidents

⁴All reported accidents

The accident rate at the SR 70/Ophir Road-Pacific Heights intersection is approximately four times higher than the statewide average. At the SR 70/Georgia Pacific Way intersection, the accident rate is approximately three times higher than the statewide average for similar facilities. A total of 55 accidents were reported during the three-year period for the 4.8 km (3.5 mi) of roadway within the project limits. Thirty-six of the accidents were associated with the two at-grade intersections. Twenty-one of the accidents at an intersection were caused by motorists failing to yield to oncoming traffic. Eight of the accidents involved fatalities, and 21 were injury accidents. The fatal accident rate for this segment of SR 70 is more than twice the statewide average for similar facilities.

1.2.4.2. Highway Characteristics

State Route 70 within the project study limits does not meet the current minimum standard for design speed¹ for an expressway. The current design speed standard for an expressway with limited access in a rural area is 110-130 kph (68-80 mph). Based on existing geometric elements, the design speed of the facility within the project limits is approximately 80 kph (50 mph). The posted speed within the study limits is 55 mph (89 kph).

¹ Design speed establishes specific minimum geometric design elements for a particular section of highway. These design elements include vertical and horizontal alignment and sight distance.

1.2.4.3. Roadway Capacity

According to the September 2000 TCR for SR 70, traffic growth for the segment of SR 70 that includes this project is estimated at 8 percent per year². The Caltrans Office of Travel Forecasting and Modeling projects the average daily traffic (ADT) through the SR 70/Ophir Road intersection will increase from 12,800 vehicles in the year 2000 to 37,800 vehicles in the year 2025. The peak-hour volume (PHV) is estimated to increase from 940 vehicles to 3025 vehicles during the same time period. Trucks constitute 12 percent of the total traffic within the study segment.

The existing two-lane expressway will not accommodate predicted traffic increases at the accepted route concept level of service (LOS), which is LOS D (see Table 1.2 for explanation of level of service). The LOS for the two-lane facility is predicted to decline to LOS F by the year 2025.

² Calculated as straight line growth based on a 20-year growth factor of 2.68.

Table 1.2 Levels of Service (LOS)

LEVELS OF SERVICE

for Two-Lane Highways

Level of Service	Flow Conditions	Operating Speed (mph)	Technical Descriptions
A		55+	Highest quality of service. Free traffic flow with few restrictions on maneuverability or speed. No delays
B		50	Stable traffic flow. Speed becoming slightly restricted. Low restriction on maneuverability. No delays
C		45	Stable traffic flow, but less freedom to select speed, change lanes or pass. Minimal delays
D		40	Traffic flow becoming unstable. Speeds subject to sudden change. Passing is difficult. Minimal delays
E		35	Unstable traffic flow. Speeds change quickly and maneuverability is low. Significant delays
F			Heavily congested traffic. Demand exceeds capacity and speeds vary greatly. Considerable delays

Source: 2000 HCM, Exhibit 20-2, LOS Criteria for Two-Lane Highways in Class 1

1.3. Project Background

Several studies have been conducted as part of the transportation planning process for the corridor. A 1990 corridor study and a 1995 major investment study addressed issues for the entire SR 70/SR 99 corridor. In addition, regional and county transportation plans identified the improvement of interregional transportation along the SR 70 corridor as a priority for planning and programming. The recommendations of these studies are consistent with the goals set forth in the Butte County and Oroville General Plans. In 1992-93, project study reports (PSRs) were prepared for two projects that included the current study area.

1.3.1. State Routes 70 and 99 Corridor Study

A corridor study was prepared in 1990 by DKS Associates for SACOG and BCAG (DKS 1990). This study recommended a four-lane freeway (initially to be constructed as an expressway) on SR 70 from the SR 70/SR 99 wye to SR 149, bypassing Marysville; a four-lane freeway on SR 149 connecting SR 70 with SR 99; and a four-lane freeway on SR 99 from SR 149 to the completed freeway section south of Chico. The study, which concluded that this routing would provide the best service to the corridor's population centers, received strong local support.

1.3.2. Major Investment Study

A major investment study (MIS) completed in 1995 addressed the continuing need for a transportation link sufficient to accommodate demand volumes of both persons and goods moving among the urbanized areas of Sacramento, Yuba City/Marysville and Chico (Caltrans 1995). The MIS also evaluated transportation alternatives that would meet the transportation needs within the SR 70/SR 99 corridor.

The MIS found that population and employment estimates for the periods from 1995-2020 indicate extensive growth for the corridor. The MIS reaffirmed the recommendation of the local jurisdictions that the most feasible method of accommodating the resulting transportation demand would be to construct a freeway to connect the major metropolitan areas within the corridor. The MIS concluded that no reasonable alternative to a freeway system would adequately provide for the efficient movement of people, goods and services within the corridor.

1.3.3. Interregional Transportation Strategic Plan

The Caltrans Interregional Transportation Strategic Plan (ITSP) dated June 1998 designates SR 70 as a "High Emphasis Focus Route." State Route 70 is a high-

capacity, north-south facility that provides a consistently high level of service for interregional movement and connectivity of people, goods and services to and through the urban and rural areas of Central and Northern California. High-emphasis routes are a priority for planning and programming for construction to the minimum facility standards for all State Transportation Improvement Program (STIP) projects.

The ITSP identifies SR 70 as a “gateway” route providing access across the northern Sierra to US 395 for major interstate commerce and goods movement.

1.3.4. Butte County 2001 Regional Transportation Plan

The Regional Transportation Plan (RTP) for Butte County is a long-range planning document that addresses regional transportation needs over a 20-year period. Federal and California (State) programs administered through Caltrans require that projects be identified in a current RTP. The Butte County Association of Governments (BCAG), designated as the metropolitan planning organization (MPO) for Butte County, is responsible for developing and adopting the RTP.

The 2001 RTP proposes several projects to reduce traffic delays and congestion and to improve safety and travel operations for State highways and local roads in Butte County. In the action element of the plan, BCAG identifies improved interregional transportation along the SR 70 corridor from Oroville to Marysville as the region’s top priority. The action element includes the proposed project, identified as “the SR 70 at Ophir Rd Project,” and states that the project will be entirely funded as part of the 2002 or 2004 STIP.

1.3.5. Butte County General Plan

The Butte County General Plan (Butte 2000) has not undergone a comprehensive update since 1977; however, the Land Use element, which is the principal focus of the General Plan, was updated and adopted in 1979, with revisions through 2000. In addition, the Circulation element was adopted in 1971 and revised in 1988, and the Housing element was adopted in 1981 and revised in 1994.

The Butte County General Plan applies to incorporated as well as unincorporated areas within the county. Policies and land use designations set forth in the General Plan for incorporated areas within the county are generally consistent with those of associated city general plans.

The Circulation Element of the Butte County General Plan is closely tied to the RTP. Countywide guidance and programs delineated in the General Plan influence those programs stated in the RTP. The Circulation Element provides long-term transportation planning guidance, while the RTP focuses on shorter term transportation development programs that include both city and county plans.

1.3.6. General Plan for the City of Oroville

The State mandates that a city prepare a comprehensive, long-term general plan for the physical development of the city, including any land outside its physical boundaries that, in the planning agency's judgement, bears relation to its planning. The Land Use element is the core of a general plan, establishing a framework of objectives and implementing policies to guide a community's physical form and growth through the next 20 years.

The General Plan for the City of Oroville (Oroville 1995) was adopted in 1995. This project is consistent with the following objectives contained in the Land Use element of the General Plan:

- Encourage the concentration of visitor accommodations on Feather River Boulevard and maintain easy access to and from the freeway .
- Designate traveler-services clusters at freeway interchanges; potential new commercial development should be limited to the SR 70 freeway interchange areas at the Garden Drive and the proposed Ophir Road interchanges.

The Land Use element identifies three annexation target areas to guide development of properties along the west side of SR 70 because of this area's highly visible location as the main entrance to the Oroville community. Target areas one and two are bounded by SR 70 and Pacific Heights/Ophir Road; target area three is bisected by Ophir Road east of the Union Pacific Railroad right-of-way (Figure1-2). The City of Oroville is committed to facilitating the annexation of these target areas.

Annexation will be coordinated with the appropriate property owners and service providers in conformance with Butte County Local Agency Formation Commission (LAFCo) guidelines.

1.3.7. Project Study Reports, SR 70 between Marysville and Oroville

In 1992 a project study report (PSR) was prepared for the Marysville to Oroville Freeway project (Caltrans 1992), and in 1993 a PSR was prepared for the Marysville Bypass to Oroville Freeway project (Caltrans 1993). Both projects proposed a four-lane freeway between Marysville and Oroville, and both included the segment of SR 70 which is the subject of this environmental document. The primary difference between the two projects was the location of the southern terminus, which was moved from SR 20 in the 1992 PSR to the SR 65/70 junction in the 1993 PSR. No environmental document was prepared for either project.

In January 1999, Caltrans resumed studies for the segment of SR 70 between Marysville and Oroville by initiating preparation of an environmental document. Now called the Marysville to Oroville Freeway project, the new study limits reflect Caltrans' and BCAG's mutual decision to create a separate project consisting of the northernmost 5.6 km (3.6 mi) of the original project limits. This new project is the proposed SR 70 Freeway Extension and Ophir Road Interchange project.

The decision to separate these two projects was made in response to the high accident fatality rate for the portion of SR 70 between kp 16.2 (pm 10.0) and kp 21.8 (pm 13.6). The two resulting projects each meet the three criteria used by FHWA to define a highway project (23 CFR 771.111(f)):

- Each project connects logical termini and has independent utility.
- Each project represents a reasonable expenditure of funds even if the other is not built and/or no additional transportation improvements in the area are made.
- Neither project restricts consideration of alternatives for the other project or for other reasonably foreseeable transportation improvements in the area.

Finally, each of the two projects currently being studied provides sufficient overlap of the terminus it shares with the other project to allow either project to be completed before the other is begun.

Figure 1-2 City of Oroville Target Annexation Areas

1.4. Project Description

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to upgrade a 5.6-km (3.6-mi) segment of State Route (SR) 70 from expressway to four-lane freeway. Project construction would begin 1.6 km (1 mi) north of Palermo Road and terminate at a point 0.5 km (0.3 mi) south of the SR 162 junction, where the freeway currently begins. The mainline freeway would be constructed as close to the current highway alignment as possible.

The proposed project would be accomplished in three phases (Figure 1-3):

Safety Phase

The safety phase would include the relocation of the SR 70/Ophir Road intersection approximately 150 meters (492 ft) to the north to provide a flatter stop landing for the installation of a 4-way stop signal. In addition, this phase would also include:

- Signal storage lanes would be designed to lengthen the design life of the intersection and improve the stopping sight distance (the ability to see vehicles which have stopped).
- The southbound truck climbing lane will also be extended 200 meters (656 ft) to improve merge Decision Sight Distance (the time that drivers have to make decisions without making last minute erratic maneuvers).

Phase 1

Phase 1 includes widening SR 70 to four lanes from the new Ophir Road signalized intersection north to the existing four-lane section just south of SR 162. This phase would have following design features:

- 3.6 m (12 ft) lanes, 18.6 m (61 ft) median, 3.0 m (10 ft) outside shoulder, and 1.5 m (5.0 ft) median shoulders.
- This phase would reconstruct the Georgia Pacific Way intersection to accommodate four lanes and would include the relocation of approximately 720 meters of existing Pacific Heights road which currently serves as frontage road for the existing SR 70.

Phase 2 (Ultimate)

Phase 2 would include the widening of SR 70 to four lanes from one mile north of Palermo Road to the new Ophir Road (Safety Phase) signalized intersection and the following items:

- Construction of an interchange at Ophir Road and an overcrossing at Georgia Pacific Way.
- Construction of two additional 3.6-m (12-ft) lanes with a 22-m to 6.7-m (72-ft to 22-ft) median, 3-m (10-ft) outside shoulders, and 1.5-m (5-ft) median shoulders.
- Rehabilitation of the existing SR 70 roadway
- Realignment of the frontage road system to accommodate the proposed interchange and overcrossing
- Elimination of driveway access points.

1.4.1. NEPA/404 Coordination

In 1994, the USFWS, USACE, EPA, National Marine Fisheries Service (NMFS), FHWA and Caltrans joined with five other signatory agencies to implement a memorandum of understanding (MOU) defining a joint process for integrating the requirements of the National Environmental Policy Act (NEPA) and Section 404 of the Clean Water Act (CWA) as they apply to surface transportation projects in California, Arizona and Nevada. The MOU was developed to improve coordination among, and expedite project review by, these agencies while protecting and enhancing waters of the U.S.

In September 2001, Caltrans initiated the NEPA/404 MOU process for this project with a field review of the project site and a discussion of known resources and physical constraints within the project study area. In February 2002, FHWA requested that the signatory agencies concur with the purpose of and need for the project, the selection criteria, and the range of alternatives. All four of the agencies have submitted written concurrence to FHWA. In May 2004, and then again in November 2004, Caltrans requested concurrence on the LEDPA and the Conceptual Mitigation Plan from USFWS, USACE and USEPA. Both USACE and USEPA have submitted written concurrence on the LEDPA and the Conceptual Mitigation Plan (Appendix C).

Figure 1-3 Project Phases

1.4.2. Consultation with Permitting Agencies

Informal consultation with USFWS was began with a request for a species list. Formal consultation for compliance with Section 7 of the Endangered Species Act (ESA) was conducted with USFWS through FHWA for impacts to Federally listed species. USFWS issued the Biological Opinion on July 1, 2005.

California Department of Fish and Game (CDFG) requires consultation for State listed and sensitive species, sensitive habitats such as riparian and vernal pools/swales, and any work conducted in streams or other waterways.

The USACE requires consultation for impacts to waters of the U.S. and wetlands.

1.5. Required Permits

The following permits, reviews, and approvals have either been received or will be prior to project construction:

Agency	Permit/Approval	Status
U.S. Fish and Wildlife Service	Section 7 Consultation for Threatened and Endangered Species	Non-jeopardy Biological Opinion issued on July 1, 2005.
U.S. Army Corps of Engineers	Section 404 Permit for filling and dredging waters of the U.S.	Concurrence on the LEDPA as part of NEPA/404 received on June 15, 2005. Application for Section 404 has been submitted.
CA Department of Fish & Game	1602 Agreement for Streambed Alteration	Application for 1602 permit will be submitted after environmental approval.
Regional Water Quality Control Board	Section 401 certification	Application for 401 permit has been submitted.

2. Project Alternatives

2.1. Alternative Development Process

Caltrans initiated this project by preparing a PSR (environmental only), which was approved in January 1999. This report proposed upgrading 5.6 km (3.6 mi) of SR 70 to a four-lane freeway, with an interchange at Ophir Road and a possible overcrossing or undercrossing at Georgia Pacific Way in lieu of closing the existing intersection. Determination of the type of interchange was deferred until the project report stage. Cost estimates were prepared, and a feasible schedule was established for programming the next phase, which would include preparation of the project report (preliminary engineering) and environmental document.

In November 2000 a supplemental project study report was approved. The project as presented in this document included an interchange at Ophir Road and an overcrossing at Georgia Pacific Way. Because this project would potentially impact wetlands and waters of the U.S., additional alternatives were developed to avoid or minimize these impacts. In addition to a non-highway and a “no project” alternative, three build alternatives were proposed and studied.

The project is physically constrained by the proximity of the Feather River and a bluff south of Ophir Road. In addition, one property within the study area is on the Superfund National Priorities List (NPL), and one was recently removed from the NPL. It was necessary, therefore, to develop potential interchange designs to the extent necessary to determine their feasibility. The three alternatives considered represent a full range of practicable alternatives capable of achieving all or a portion of the project purpose while avoiding or minimizing impacts to wetlands and other resources.

2.2. Project Alternatives

2.2.1. Alternative B (“No-Project” Alternative)

The “no project” alternative would leave SR 70 within the project limits as a two-lane expressway with no improvements to the Ophir Road or Georgia Pacific Way intersections.

2.2.2. Build Alternatives –Common Features

Both of the build alternatives (Alternative D and Alternative E) would include the following improvements:

- Relocation of the SR 70/Ophir Road intersection and 4-way stop signal.
- Construction of an interchange at Ophir Road and an overcrossing at Georgia Pacific Way.
- Construction of two additional 3.6-m (12-ft) lanes with a 22-m to 6.7-m (72-ft to 22-ft) median, 3-m (10-ft) outside shoulders, and 1.5-m (5-ft) median shoulders.
- Rehabilitation of the existing SR 70 roadway.
- Realignment of the frontage road system to accommodate the proposed interchange and overcrossing.
- Elimination of driveway access points.

Figure 2-1 is a typical cross-section of Alternatives D and E.

Figure 2-1 Typical Cross Section

2.2.2.1. Alternative D (Middle Interchange)

Alternative D (Figures 2-2 and 2-3) proposes construction of the Ophir Road interchange overcrossing within approximately 75 m (250 ft) of the Ophir Road at-grade intersection. Interchange ramp construction and ramp/local road at-grade intersection spacing requirements would necessitate relocation of the Pacific Heights Road and Feather River Boulevard frontage roads. Approximately 690 m (2260 ft) of Ophir Road from east of its intersection with Feather River Boulevard to the new overcrossing would need to be realigned. The estimated cost of Alternative D is \$40 million for right-of-way acquisition and construction (not including environmental mitigation).

2.2.2.2. Alternative E (North Interchange)

Alternative E (Figures 2-2 and 2-4) proposes construction of the Ophir Road interchange overcrossing about 830 m (2720 ft) north of the Ophir Road at-grade intersection. This northern location limit is controlled by the mandatory minimum rural interchange spacing of 3 km (1.86 mi) to the existing SR 70/162 interchange on the northern limits of this project. Interchange ramp construction and ramp/local road at-grade intersection spacing requirements would necessitate relocation of the Pacific Heights Road and Feather River Boulevard frontage roads. Approximately 700 m (2300 ft) of Ophir Road from the Baggett/Marysville Road intersection to the new overcrossing would need to be realigned. Estimated cost of Alternative E is \$43 million for right-of-way acquisition and construction (not including environmental mitigation).

2.2.2.3. Identification of Preferred Alternative

Following the public comment period, and after carefully considering the comments received a Project Development Team (PDT) meeting was held to make a formal recommendation regarding the Preferred Alternative. The team was comprised of both internal and external stakeholders. During the meeting, the PDT reviewed:

- Detailed design of Alternatives D and E.
- Environmental impacts related to Alternatives D and E

Alternative D (Middle Interchange) was subsequently selected by Caltrans as the preferred alternative. Alternative D would accomplish the objectives set forth in the purpose and need statement for the project while minimizing the impact on affected resources.

Figure 2-2 Alternatives C, D and E (Common Alignment)

Figure 2-3 Alternative D (Middle Interchange)

Figure 2-4 Alternative E (North Interchange)

Figure 2-5 Alternative C (South Interchange)

2.3. Alternatives Considered and Withdrawn

2.3.1. Alternative A (Non-Highway Alternative)

A Major Investment Study (MIS) for the SR 70 and SR 99 corridor was prepared in 1995. Based on consultation with the FHWA, the Federal Transit Administration (FTA), the local metropolitan planning organizations (MPOs) and other interested local agencies, the MIS concluded that the most feasible method of accommodating predicted transportation demand would be to construct a freeway to connect the major metropolitan areas within the corridor. Inter-city rail and bus service, as well as transportation system management and travel demand management (TSM/TDM) strategies, were examined for their ability to meet the project purpose. It was determined that such non-highway strategies would not offer reasonable alternatives to a modern freeway system within this corridor; therefore, Alternative A was eliminated from further study.

2.3.2. Alternative C (South Interchange)

Alternative C (Figures 2-2 and 2-5) proposes construction of the Ophir Road interchange overcrossing about 690 m (2260 ft) south of the Ophir Road at-grade intersection. Proposed width of the lanes, median and shoulders, as well as other improvements, would be the same as for Alternatives D and E.

The proposed interchange would require construction of an additional frontage road to connect Pacific Heights Road with the new interchange. Approximately 700 m (2300 ft) of Ophir Road would need to be realigned from just east of the Feather River Boulevard intersection to Lone Tree Road. In addition, a portion of Power House Hill Road would need to be replaced to accommodate additional traffic redirected from Ophir Road. A new road from Lone Tree Road to the new overcrossing would also be required. Additional frontage road relocation for ramp and freeway construction would be required for Power House Hill Road, Feather River Boulevard, and Pacific Heights Road.

Alternative C has been eliminated from further study because of extensive impacts to wetlands and vernal pools. Early in the study process, direct impacts to vernal pools and swales were estimated to be in excess of 6.5 ha (16 ac). Additional impacts to dredge tailings, ponds and drainages, and a drainage ditch at Georgia Pacific Way brought the total area of wetlands that would be directly impacted by Alternative C to more than 8.5 ha (21 ac), or over three times the amount that would be directly impacted by Alternative D and four times the amount that would be directly impacted by Alternative E.

Figure 2-5 Alternative C (South Interchange)

3. Affected Environment, Environmental Consequences, and Avoidance, Minimization and Compensation Measures

This chapter describes the current state of the environmental resources in the project area and identifies the likely impacts of implementing the proposed project. In general, each subsection below describes the present conditions, discusses the likely impacts of building the proposed project, and indicates what measures would be taken to mitigate those impacts. More detailed information may be obtained from individual technical studies (see Appendix D).

3.1. Geology, Soils and Seismology

3.1.1. Affected Environment

3.1.1.1. Soils

In the project area along the Feather River, soils vary in origin and are predominantly coarse loam. The U.S.G.S. soil survey shows a large area of dredge tailings deposited during earlier hydraulic gold mining operations along the Feather River in the Oroville area. This coarse debris layer, typically gravel- to cobble-sized, is of variable thickness, ranging from 1.5 to 7 m (4.9 to 23 ft). Very soft, fine-grained layers of variable thickness occur at random depths in the coarse debris. These layers, called slickens deposits, are also the result of hydraulic mining activities.

The southern portion of the project is situated on relatively flat terrain above the Feather River valley. This area, referred to as the Tuffs of Oroville, is composed of volcaniclastic sediments with gold bearing sands, gravel, and tuff. Tuff is a general term for pyroclastic materials formed by volcanic explosions and dust from a volcanic vent. These layered deposits range in hardness, with some layers as hard as a soft rock, and others composed of firm to moderately soft soils. The layers composed of very fine grained material often trap perched water tables.

A limited boring program for geotechnical information only was completed in April 2001 by Caltrans Drilling Services Branch. These borings encountered small amounts of groundwater in the dense layered materials of the southern portion of the project. The depth of groundwater was found to vary from near surface to 5.4 m (17.7 ft) below the surface. In the river valley (northern) portion of the project, relatively large amounts of water were encountered in the loose and coarse materials,

where the regional water table is 3 to 5 m (9.8 to 16.4 ft) below the surface. The rate of infiltration of water in the project area is slow to moderate.

3.1.1.2. Topography

The project area is located in Butte County on the west edge of Oroville, east of the Feather River. The topography between Highway 162 to the north and Ophir Road to the south is relatively flat with an elevation of 46 m (150 ft). South of Ophir Road the elevation rises sharply from the floodplain to 67 m (219 ft) at the valley floor.

The native side slope of the river valley is standing at a slope ratio of 1-to-3; however, the highway cut slopes south of Ophir Road appear to have been built to a slope ratio of 1-to-1.5. Numerous signs of surface instability occur in this area. The cut slopes reveal layers of silty materials that lack the cohesion necessary to remain standing at the slope ratio of 1-to-1.5 under the influence of rain. These silty soil layers are sloughing off the slope in numerous locations.

3.1.1.3. Seismology

There are five active faults in the vicinity of the proposed project. Table 3.1 lists these faults and the maximum credible earthquake associated with each, according to the California Seismic Hazards Map, 1996:

Table 3.1 Active Fault Lines Nearest Proposed Project

Fault Line	Distance in km (mi)	Direction from Proposed Project	Maximum Credible Earthquake
Cleveland Hill	19.3 km (12 mi)	East	6.5
Prairie Creek	48 km (30 mi)	Southeast	6.5
Paynes Peak	32 km (20)	East	6.5
Big Bend	101 km (63 mi)	North	6.25
Big Bend/Wolf Creek	105 km (65 mi)	East	6.5

3.1.2. Impacts

3.1.2.1. Soils and Topography

Impacts associated with soil types and topography within the project area are discussed in section 3.2, Water Quality and Storm Water Runoff, below.

3.1.2.2. Seismology

Based on the presence of fine-grained materials (slickens deposits) that were discharged during hydraulic mining operations in the project area, the possibility of

settlement of a structure due to liquefaction exists; however, expected damage to the structure would be of limited scope.

3.1.3. Avoidance, Minimization and Compensation Measures

3.1.3.1. Soils and Topography

Mitigation for potential impacts associated with soil types and topography of the project area are discussed in section 3.2, Water Quality and Storm Water Runoff, below.

3.1.3.2. Seismology

Caltrans Office of Earthquake Engineering provides design support for seismic design. The standard reference is the Caltrans “Seismic Design Criteria,” Version 1.2. Caltrans structural engineers would assess the potential seismic hazard based on the proximity of the active fault lines to the proposed project. Structures would be designed for the level of energy expected to result from the maximum credible earthquake in order to reduce the impact on that structure. Some damage is still expected to occur to the structure; the intent is to avoid the kind of catastrophic failures that lead directly to the loss of life.

3.2. Water Quality and Storm Water Runoff

3.2.1. Regulatory Setting

The Federal Clean Water Act (CWA) strives to restore and maintain the chemical, physical, and biological integrity of the nation’s water through the establishment of water quality standards, discharge limitations, and permits.

Section 404 of the CWA regulates the discharge of dredged and fill material into waters of the U.S., including wetlands. The USACE enforces Section 404 provisions and issues general and individual dredge and fill permits.

Section 402 of the CWA establishes the National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into navigable waters. The EPA is the responsible agency; however, the State Water Resources Control Board (SWRCB) administers the program and issues storm water permits. Caltrans has been issued a general NPDES storm water permit covering the discharge of pollutants into the storm water drainage systems serving Caltrans’ properties, including highways. This permit requires the submittal of an annual report, including a revised Storm Water Management Plan (SWMP). These documents provide guidance and

report on Caltrans' program to reduce the discharge of pollutants from construction sites, both during construction and after construction has been completed.

The Porter-Cologne Water Quality Control Act (California Water Code) requires the Regional Water Quality Control Board (RWQCB) to establish water quality standards (objectives) for a particular region. The RWQCB develops a basin plan to protect surface water and groundwater quality as required by the CWA. The basin plan designates beneficial uses and water quality objectives to protect these uses for each water body within the region.

The USFWS and the CDFG are responsible for plant and animal species protected by the Federal Endangered Species Act (ESA) and the California Endangered Species Act (CESA) respectively. Fish, plants and other wildlife use water beneficially. The protection and enhancement of these beneficial uses require that certain quality and quantity objectives are met for both surface and ground waters. The CDFG issues 1602 permits for construction activities that would divert, obstruct, or change the natural flow, bed, channel or bank of a stream. When fish or other wildlife resources may be adversely affected, CDFG is required to propose reasonable project changes to protect the resource. The resulting Streambed Alteration Agreement becomes part of the project plans and specifications.

3.2.2. Affected Environment

The project is located in the Sacramento River Basin within the jurisdiction of the Central Valley Regional Water Quality Control Board (CVRWQCB) (Region 5). The runoff from the project area is collected by Tailings Creek, a small, intermittent, non-fish-bearing stream that drains into the Feather River between Oroville and Marysville. The water quality of this section of the Feather River, a major tributary of the Sacramento River, supports most beneficial uses most of the time, including municipal and domestic supply; agriculture irrigation; contact recreation; non-contact recreation; warm and cold freshwater habitat; warm and cold migration and spawning and wildlife habitat.

The water in the Feather River is derived from melting snow that enters the river by managed discharges of water from reservoirs. Because the snow is pure, the water has low concentrations of dissolved minerals. Although water quality of the Feather River is good most of the year, seasonal events, such as agricultural runoff or runoff from historical mining operations, may affect this quality. The beneficial uses of the Feather River are impaired by elevated levels of Diazinon, Group A pesticides, and

unknown toxic materials. Mercury is known to occur within the Feather River streambed deposits because of geologic and manmade sources, especially from historical mining operations for both mercury and gold. In addition, the project is near a superfund site, the control of sediments on the project is especially important, since pollutants can be carried in the sediments.

The project is located in the northern tip of the Southeastern Sacramento Valley Aquifer. In general, the groundwater quality in this aquifer is suitable or potentially suitable, at a minimum, for municipal and domestic water supply, agricultural supply, industrial service supply, and industrial process supply (U.S.G.S. 1996).

3.2.3. Impacts

Alternatives D and E both involve construction activities to widen the existing roadway throughout the length of the project. The proposed project would require excavation, grading, roadway construction and loss of vegetation, all which have the potential to result in erosion and adverse impacts to water quality. It is assumed that construction practices and, therefore, construction-related impacts for both alternatives, would be generally the same.

Due to increased impermeable surface that would result from a widened roadway, there would be an increase in the amount of runoff water during peak flows. The contribution of storm water runoff from the project's impervious area to the entire hydrologic subarea would be extremely small. Metals, oils, greases and other contaminants from construction could potentially run offsite into receiving waters. In addition, changes to existing drainage patterns and/or increases in storm water runoff caused by the project could result in impacts.

The following potential short- and long-term impacts apply to both of the build alternatives.

3.2.3.1. Short-Term Impacts Associated with Construction Activities

Sediments, Turbidity, and Floating Material

Suspended material in storm water runoff is considered a primary pollutant. Storm water runoff from construction activities could have an impact on water quality, contributing sediment and other pollutants exposed at construction sites. Short-term mercury levels could be increased in the immediate project area if large amounts of sediments were to be disturbed.

The following construction activities could contribute to increases in sediment, turbidity, and floating materials in receiving waters:

- Daily contractor activity - Routine construction activities such as material delivery, storage and usage, waste management, vehicle/equipment cleaning and operation, and use of a construction staging area could result in generation of dust, sediments, and debris.
- Vegetation removal/trimming - Removal or trimming of vegetation would be required for both construction and access. This activity would eliminate the groundcover that protects the topsoil from erosion. Additionally, trimmings could fall or be carried by runoff into surface waters, resulting in introduction of floating material and the potential for increased organic loading in the creeks.
- Grading - Grading would include removal of the natural and/or stabilizing cover (topsoil) and the creation of new slopes using fill material. Prior to establishment of temporary or permanent erosion control measures, graded material would be highly susceptible to erosion.
- Temporary roads - Construction of temporary roads would require grading, vegetation removal, and other changes to the topography and drainage characteristics of the watershed. These temporary roads are typically composed of native material and/or aggregate base rock.
- Activities within the Tailings Creek corridor - Construction of culverts could require long-term work within stream corridors. These activities could also require construction of temporary access roads and temporary cofferdams.
- Dewatering - Construction could require localized dewatering in areas of shallow groundwater. Dewatering activities would be continuous but temporary for the duration of work in a particular area. Discharged groundwater could be high in turbidity.
- Seeding and application of fertilizers and nutrients - To prepare the ground for temporary and/or permanent cover and to promote growth, fertilizers and plant nutrients are often applied before and after planting. In the early stages of the seeding process, surface runoff could wash some of the revegetation material, fertilizers, nutrients, and seeds into surface waters.

Oil, Greases, and Chemical Contamination

Chemicals, oils, and greases that might be spilled during construction activities could be carried by runoff to surface water, if not properly managed. The following are some common construction activities that could impact waterways:

- Cement and grout – During culvert construction, materials such as concrete could be spilled into Tailings Creek, which empties into the Feather River, increasing turbidity and altering the pH. Management of concrete waste is a critical part of the SWPPP.
- Application and storage of chemicals - Accidental spills, improper storage, and improper application of chemicals during construction could potentially impact water quality. Chemicals such as herbicides and fertilizers could also be washed into the creeks, poisoning fish and aquatic plants. Conversely, fertilizers might promote algae growth, which would reduce dissolved oxygen levels.
- Application and storage of oils, greases, and fuels - Improper storage of oils and fuels could result in accidental spills or leaks during refueling and maintenance of construction vehicles and equipment. Surface runoff could transport these materials to the local creeks. Similarly, application of petroleum chemicals during road construction could be washed into surface waters, polluting the habitat of aquatic organisms.

Increases in Temperature

Construction-related temperature increases in receiving waters could impair a wetland or other aquatic resources. Certain construction activities could contribute to short-term temperature changes of the surface water:

- Concrete curing – Piers or abutments are typically constructed using reinforced concrete. Once concrete is poured into the forms, it takes up to several weeks to set, during which time heat is released into the surrounding environment. Water is often used during this process. If this water were to reach surface waters, it could cause a localized increase in stream or river temperature.
- Vegetation removal/trimming - During construction, vegetation at or near Tailings Creek would require trimming or removal. Vegetation provides shade, which maintains cooler water temperature in the creeks. Once vegetation is removed or trimmed, water temperatures could increase due to exposure to direct sunlight.

3.2.3.2. Long-Term Impacts Associated with Operations and Maintenance Activities

Sediments, Turbidity, and Floating Material

Sediment is of specific concern in the project area since it has the potential to be a source of impairment.

- Hydrologic impacts - An increase in impervious area could cause both an increase in the peak flow and higher runoff volumes, which could, lead to stream downcutting, stream bank erosion, and loss of stream structure. The result could be an increase in sediment and turbidity in receiving waters.
- Concentration of runoff - Typical highway drainage design involves collecting runoff in pipes or ditches and discharging this collected runoff, either directly or indirectly, into receiving waters. Collected runoff should be treated in detention basins or filtration areas and discharged into perennial creeks.

Oils, Greases, and Chemical Contamination

Highway runoff and other long-term maintenance activities could introduce chemicals, oils, and greases into surface waters. Typical highway-related activities and maintenance that could affect runoff quality are:

- Highway runoff - Contaminants generated by traffic, pavement materials, and airborne particles that settle have the potential to be carried by runoff into receiving waters.
- Accidental spills - Spills caused by highway-related traffic accidents have the potential to impair water quality, depending on the type and quantity of the material spilled.
- Application of chemicals – Chemicals applied during landscaping operations and maintenance activities could enter receiving waters. Herbicides could be poisonous to fish, other aquatic animals, and aquatic plants. Conversely, fertilizers might promote growth of algae, which would reduce dissolved oxygen levels.

3.2.3.3. Cumulative Effects

The incremental effect of this project on the quality of groundwater or surface water would not be cumulatively considerable.

3.2.4. Avoidance, Minimization and Compensation Measures

3.2.4.1. Water Quality Permits

In compliance with the Statewide NPDES Storm Water (Order No. 99-06-DWQ)(CAS 000003), Caltrans maintains a Storm Water Management Plan (SWMP), which is a policy document that describes how the Department conducts its storm water management procedures and practices. The practices outlined in the SWMP and Statewide Storm Water Practice Guidelines ensure that certain minimum design elements be incorporated into projects to maintain or improve water quality. The key elements are as follows:

- Minimize impervious surfaces - The intent is to reduce total runoff volume by reducing impervious areas.
- Prevent downstream erosion – Design drainage facilities to avoid causing or contributing to downstream erosion. Drainage outfalls, when appropriate, would discharge to suitable control measures.
- Stabilize disturbed soil areas – Design would incorporate stabilization of disturbed areas (when appropriate) with seeding, vegetative, or other types of cover.
- Maximize existing vegetative surfaces – Design would limit footprints of cuts and fills to minimize removal of existing vegetation.

The project would, therefore, not create a substantial increase in downstream erosion or siltation.

The Construction General Permit (Order No. 99-08-DWQ)(CAS000002) requires that all storm water discharges associated with construction activities that result in soil disturbance of at least 0.4 ha (1 ac)³ of total land area must comply with the provisions specified in the General Permit, including development and implementation of an effective SWPPP. A SWPPP is a document that addresses water pollution controls for the project during construction. It is normally prepared by the contractor and approved by the Caltrans' resident engineer prior to commencement of soil-disturbing activities.

³ Change effective March 2003.

3.2.4.2. Physical and Chemical Impacts

Caltrans' NPDES permit requires that the Department consider the installation of permanent water quality treatment systems for any major construction project. The additional lanes and associated impervious surface area qualify this as a major construction project. Additional runoff from highways has the potential to increase contaminants in nearby water bodies. The addition of vegetated strips would mitigate that effect by providing additional areas for infiltration and filtration of highway runoff.

The project includes many areas that currently act as biofiltration swales⁴ and help improve storm water runoff through infiltration, sedimentation, and natural biological actions. Disturbance of those existing areas that naturally treat storm water would be avoided during construction to the maximum extent practicable. These measures would provide treatment through infiltration, filtration, sedimentation, and biological processes and would mitigate potentially adverse physical and chemical impacts on the quality of receiving waters.

Sediments, Turbidity, and Floating Material

Appropriate erosion control measures would be applied to embankment slopes, excavated slopes, and other disturbed areas. Permanent erosion control measures would be identified and designed to reduce pollutant discharge to natural water courses.

Current cuts and embankments are constructed at a 1-to-1.5 slope. The proposed maximum slope of 1-to-2 excepting spot locations is flatter and would more readily revegetate, thereby reducing the potential for erosion.

A Storm Water Pollution Prevention Plan (SWPPP) would be prepared for this project to identify pollution sources that could affect the quality of storm water discharges associated with construction activity, and identify non-storm water discharges. The SWPPP would also identify best management practices (BMPs) to reduce or eliminate pollutants in storm water discharges. The SWPPP would include a time schedule for implementation and maintenance for BMPs installed during construction. The SWPPP would be prepared in accordance with the provisions in the General Permit for Storm Water Discharges Associated with Construction Activity, Order 99-08-DWQ.

The pollutant of most concern is the presence of dioxins in the right-of-way and parcels adjacent to the highway (see Section 3.3 Hazardous Waste/Materials). Dioxins are not water soluble and are transported by dust particles in the wind and in muddy water; therefore, the existing detention basins and biofiltration swales would be perpetuated or expanded on this project to silt out mud particles for biodegradation. Bio-strips would also be incorporated onto side slopes and into medians to trap and biodegrade dioxin molecules absorbed onto soil particles.

Unprotected soil that could be carried by surface runoff or wind to watercourses would be stabilized by mulches and revegetated with native California plants. Construction site BMPs would be implemented during construction to reduce the pollutants in storm water discharge. Caltrans would require from its contractors a SWPPP containing effective erosion and sediment control measures. These measures must address soil stabilization practices, sediment control practices, tracking control practices, and wind erosion control practices. In addition, the project plan must include non-storm water controls, waste management and material pollution controls. It is generally accepted that practices that perform well by themselves can be complemented by other practices to raise the collective level of erosion control effectiveness and sediment retention.

Oils, Greases, and Chemical Contamination

Adverse impacts due to “in-water” construction activities would be avoided, minimized, or rectified by a combination of Caltrans standard specifications and procedures for construction and additional conditions required by permitting and regulatory agencies.

The Clean Water Act (33 USC 1251-1376), as amended by the Water Quality Act of 1987, requires an applicant for any federal permit that proposes an activity which may result in a discharge to waters of the United States to obtain a Section 401 Water Quality Certificate certifying that the discharge will comply with other provisions of the Act (i.e. will restore and maintain the chemical, physical, and biological integrity of the water.). All “in-water” work will comply with conditions of the Section 401 Water Quality Certificate issued by the Central Valley Regional Water Quality Control Board.

⁴ Biofiltration swales are vegetated channels that receive directed flow and convey storm water. Pollutants are removed by filtration through the grass, sedimentation, adsorption to soil particles, and infiltration through the soil.

3.3. Hazardous Waste/Material

3.3.1. Regulatory Setting

Studies performed to determine the potential for hazardous waste issues for the proposed project were conducted pursuant to the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, and its implementing regulations (40 CFR 260-271); and the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA), as amended, and its implementing regulations (40 CFR 300 and 43 CFR 11). Both acts require coordination with the U.S. Environmental Protection Agency (EPA) or an EPA-approved State agency for any project that might require right-of-way containing a hazardous substance.

The Environmental Health Division of the Butte County Department of Public Health regulates land pollution within the study area. The RWQCB (Region 5) regulates groundwater pollution within the study area; the Butte County Air Quality Management District (BCAQMD) administers the Clean Air Act, including hazardous emissions within the project area (see Section 3.4); and the Occupational Safety and Health Act (OSHA), 29 U.S.C. 651 et seq. (1970) governs exposure to, handling, and cleanup of hazardous materials to ensure worker safety.

3.3.2. Affected Environment

Consistent with Caltrans protocol, parcels that would need to be acquired in order to construct any of the proposed build alternatives were investigated for the potential presence of chemicals of concern (COCs). Based on historic use, industrial activities in the area, and geological factors, the soil and groundwater analyses of parcels common to the build alternatives focused on the following COCs: motor fuel (diesel and gas), organic chemicals, wood treatment materials and their byproducts, and heavy metals.

Soil and groundwater samplings and analyses of the area resulted in the following findings:

- “Gasoline range petroleum hydrocarbons and significant concentrations of volatile organic compounds (VOC) and semi-volatile organic compounds (SVOC) were not detected in soil.” (Geocon 2003)
- Low levels of motor fuel and motor oil were detected in one ground water sample.

- Heavy metals were generally detected at assumed naturally occurring background levels.
- Low levels of dioxins/furans were detected in surface soil within the project boundaries. The dioxin/furan congeners were converted to 2,3,7,8-tetrachlorodibenzodioxin (2,3,7,8-TCDD) equivalents using the Department of Toxic Substances Control Toxic (DTSC) Equivalency Factors (TEFs) (CalEPA, 1992). No dioxin/furan sample exceeded the California hazardous waste standard of 10 ppb 2,3,7,8-TCDD equivalents. All dioxin/furan samples were below EPA's recommended cleanup range of 5 ppb to 20 ppb 2,3,7,8-TCDD equivalents for construction and maintenance workers.

3.3.2.1. Screening Level Toxicology and Risk Assessment

A Screening Level Toxicology and Risk Assessment (HRA) was conducted to verify that the proposed project (vs potential right of way to be acquired) would not pose an unacceptable risk to workers or neighboring residents for exposure to motor fuel, organic chemicals, wood treatment materials and their byproducts, or heavy metals during construction. The HRA determined only arsenic and dioxins/furans required further consideration. Additionally, the HRA concluded that dioxins/furans are unlikely to pose an unacceptable risk to construction workers or the surrounding community (nearby residents or workers).

3.3.3. Impacts

The HRA did not identify any significant soil or groundwater contamination issues for the proposed project. The HRA did recommend Alternative D (Middle Interchange) since it is located farther from inactive wood treatment operations.

3.3.4. Avoidance, Minimization and Compensation Measures

Neither the site investigation nor the HRA identified significant amount of soil or groundwater contamination. The following avoidance and/or minimization measures are recommended.

- Based on soil balance calculations, this project will result in a net import of soil to the project site. Therefore, no soil is expected to be exported offsite. Although there are no identified issues related to exporting soil from this site, if excess soil is accumulated during project construction, it would be sampled, analyzed and if applicable, disposed of in compliance with all state and federal laws.

- Since low levels of TPH diesel and TPH motor oil were previously detected, target site investigations will be performed to evaluate groundwater quality in areas where dewatering would occur during construction of the proposed project.
- The contractor would be required to prepare a site-specific health and safety plan that addresses the following: specific hazards associated with the site, employee training requirements, and implementation of measures such as providing personal protection equipment and using dust control practices.
- Construction dust control measures will be consistent with the the Butte County Air Quality Management District (BCAQMD) air pollution control rules, such as Rule 200 Nuisance and Rule 205 Fugitive Dust Emissions.

3.4. Air Quality

3.4.1. Regulatory Setting

National and California Ambient Air Quality Standards have been established to define clean air. The standards establish the concentration at which a pollutant is known to cause adverse health effects to sensitive groups within the population, such as children and the elderly. Both the California (State) and Federal governments have adopted health-based standards for the criteria pollutants, which include ozone, particulate matter (PM₁₀ and PM_{2.5}) and carbon monoxide (CO). For some pollutants, the State and Federal standards are similar; for other pollutants, the State standards are more stringent. In addition, the State standards incorporate a margin of safety to protect sensitive individuals.

The California Air Resources Board (CARB) coordinates and oversees both State and Federal air quality control programs in California. The CARB establishes State air quality standards, monitors existing air quality, limits allowable emissions from mobile and stationary sources, and is responsible for developing the State Implementation Plan (SIP). The CARB has divided California into many single- and multi-county air basins.

3.4.2. Affected Environment

The proposed project is located in Butte County, which is part of the Butte County Air Quality Management District (BCAQMD). Butte County is located in the Sacramento Valley Air Basin (SVAB). The SVAB includes the counties of Butte, Colusa, Glenn, Sacramento, Shasta, Sutter, Tehama, Yolo, Yuba, and portions of

Placer and Solano. The SVAB is bounded on the north by the Cascade Range, on the south by the San Joaquin Valley Air Basin, on the east by the Sierra Nevada, and on the west by the Coast Range. The attainment status of the BCAQMD is listed below in Table 3.2.

Table 3.2 Attainment Status of Butte County Air Quality Management District

Attainment Status of Butte County Air Quality Management District with the State and Federal Standards			
Pollutant		State Standard	Federal Standard
O ₃ (Ozone)	1 Hour Standard	Non-Attainment	Transitional
	8 Hour Standard	Not Applicable	Transitional
PM ₁₀ (Particulate Matter)		Non-Attainment	Attainment/Unclassified
NO ₂ (Nitrogen Dioxide)		Attainment/Unclassified	Attainment/Unclassified
SO ₂ (Sulfur Dioxide)		Attainment/Unclassified	Attainment/Unclassified
CO (Carbon Monoxide)		Attainment	Attainment/Maintenance
Sulfates		Attainment/Unclassified	Attainment/Unclassified

3.4.2.1. Conformity with State Implementation Plan

This project is in an air quality State non-attainment area for ozone that has transportation control measures in the currently applicable State Implementation Plan (SIP). The project is in a conforming Butte County Association of Governments (BCAG) Federal Transportation Improvement Plan (FTIP) and in the Metropolitan Transportation Plan (MTP). The 2002 FTIP was approved for air quality conformity by the BCAG Board on July 25, 2002, and received joint FHWA/FTA and EPA approval on October 4, 2002 (approval letter in Appendix A). The design and scope of the project have not changed from what was included in the MTP and FTIP. There were no CO violations identified within the area affected by this project, and the analysis demonstrates that this project would not cause any new violations. Therefore, this project is found to be in conformity with the SIP and NEPA.

3.4.2.2. Asbestos

In California, naturally occurring asbestos is known to exist in serpentine rock. Asbestos is a potent carcinogen, particularly when inhaled; therefore, it is regulated as

an airborne toxic material, and strict limits are placed on its use and handling in working environments.

There are known locations of serpentine rock in the eastern portion of Butte County (Figure 3-1). There are no known locations near the project area. Construction of this project would not be expected to release any asbestos into the air; however, if naturally occurring asbestos were to be found during project construction, the Butte County Air Quality Management District Rule 1000 would be adhered to when handling this material.

Figure 3-1 Occurrences of Serpentine in Ultramafic Rock

3.4.3. Impacts

Air quality impacts of the project were assessed using a microscale screening analysis for carbon monoxide (CO) outlined in the “Transportation Project-Level Carbon Monoxide Protocol” by the Institute of Transportation Studies, University of California Davis, 1997. For all build alternatives, receptors within the project limits would experience CO concentrations well below the State one-hour standard of 20 parts per million (ppm). For all build alternatives, receptors also would be well below the CO Federal and State eight-hour standard of 9.0 ppm. In summary, the proposed project would not result in any violations of the CO standards (see Table 3.3), and would be in compliance with CEQA.

Table 3.3 Summary of Air Quality Screening

Distance from Traveled Way (meters)	State Air Quality Standards		Screening Results - Build 2025	
	1 Hour (ppm)	8 Hour (ppm)	1 Hour (ppm)	8 Hour (ppm)
30	20.0	9.0	7.0	4.9

3.4.3.1. Construction Phase Impacts

Construction of the project would result in the generation of suspended particulate matter. Although the amount of dust generated would result in an impact, this impact would be temporary, local, and limited to the areas of construction.

3.4.3.2. Cumulative Impacts

The incremental effect of this project on the air quality of the BCAQMD would not be cumulatively considerable.

3.4.4. Avoidance, Minimization and Compensation Measures

Dust control measures would need to be incorporated into the project to mitigate the impacts from suspended particulate matter generated during construction. The dust control practices used would comply with Caltrans’ Standard Construction Specifications. These practices include, but are not limited to, watering with reclaimed water in active excavation and grading areas, and cultivation of a vegetation cover on completed cuts and fills. Below is a list of minimization measures that comply with the rules and specifications and reduce the emissions of fugitive dust:

- Covering open-bodied trucks when used for transporting materials likely to cause airborne dust.
- Watering to control dust during the construction process and during the grading of roads or the clearing of land.
- Watering disturbed areas to form a compact surface after grading and earthworking.
- Watering disturbed (graded or excavated) surfaces as necessary, increasing frequency when weather conditions require.
- Promptly removing from paved streets earth or other material that has been deposited by trucks or earth moving equipment, erosion by water, or other means.

3.5. Noise

3.5.1. Regulatory Setting

Federal guidelines for assessing highway traffic noise are contained in Title 23 of the Code of Federal Regulations, Part 772 (23 CFR Part 772), “Procedures for Abatement of Highway Traffic Noise and Construction Noise.”

The noise study for this project was conducted in accordance with guidelines and procedures contained in the Traffic Noise Analysis Protocol for New Highway Construction and Highway Reconstruction Projects and Technical Noise Supplement (Caltrans 1998).

3.5.2. Affected Environment

Noise in the vicinity of the project is predominately from vehicular traffic on SR 70 and Pacific Heights Road, a frontage road. The northern portion of the study area is developed and includes several recreational vehicle (RV) parks, some businesses, and many commercial buildings. In the southern portion of the project area there are a few residences along with undeveloped lands.

Caltrans conducted short-term traffic noise level measurements along SR 70 at three representative locations selected on the basis of proximity to SR 70 and adjacent residential and recreational uses (Figure 3-2 and 3-3). The Sound-32 model, Caltrans’ version of the FHWA Traffic Noise Prediction Model, was used to describe existing noise levels within the study area and project noise levels based on traffic volume estimates for both build alternatives.

Figure 3-2 Sound Measurement Locations

Figure 3-3 Sound Measurement Locations

Table 3.4 summarizes the results of the measured and modeled noise levels for the given traffic counts.

Table 3.4 Modeled Noise Levels

Receptor ID	Existing Noise Level dBA-Leq(h)	Modeled Noise Levels dBA-Leq(h)	BUILD Predicted Noise Levels 2025 dBA-Leq(h)	Noise Abatement Criteria (NAC) dBA-Leq(h)	Meets NAC Criteria
1	51.3	51	62	67	No
2	64.2	65	**	67	No
3	47.7	48	57	67	No
4	*	*	58	67	No

* Existing noise levels were not taken in the field

** Receptor will no longer exist

3.5.3. Impacts

The Federal guidelines define traffic noise impacts as “impacts which occur when the predicted traffic noise levels approach or exceed the noise abatement criteria (NAC), or when the predicted traffic noise levels substantially exceed the existing noise levels.” The criteria are based on the noisiest hour average (peak hour) noise level in a 24-hour period. The noise abatement criteria for outdoor noise exposure are typically applied in the primary outdoor use area for a parcel, such as in the backyard or patio of a residence. The Caltrans Traffic Noise Protocol adopts the Federal noise abatement criteria.

There would be a slight increase in noise at the closest receptors (Table 3.4).

Receptor 2 is the only location where noise levels would reach or exceed the NAC.

Receptor 2 is located in the River Reflections RV Park located on the frontage road.

The measurement was taken near the entrance to the RV Park.

According to the preliminary design plans of the realigned Georgia Pacific overcrossing and the frontage road, and the right-of-way maps, receptor 2 would no longer exist after project completion. The new frontage road would be located where that measurement was taken. The Draft Relocation Impact Report (DRIR) shows that only a portion of the RV Park would be taken to accommodate the new roads. In order to determine the impact to residences located west of the existing measurement, a fourth location was modeled (receptor 4). This value is much lower than the existing and modeled receptor 2. Because the proposed overcrossing is elevated above the existing freeway and would act as an earthen berm, the noise levels at the

RV Park would be reduced; therefore, there would be no noise impacts to any existing receptors as a result of the construction of this project.

3.5.3.1. Construction Phase Impact

During construction, noise from the contractor's equipment would be unavoidable; however, this would be a temporary noise source regulated by Section 7-1.01I of Caltrans' Standard Specifications, which would be included in the contract.

3.5.3.2. Cumulative Impacts

The incremental effect of this project on the noise level in the project vicinity would not be cumulatively considerable.

3.5.4. Avoidance, Minimization and Compensation Measures

During construction the contractor would be required to comply with all local sound control and noise level rules, regulations, and ordinances.

3.6. Energy

This project would not result in any unreasonable commitment of energy resources.

3.7. Wetlands and Other Waters of the United States

3.7.1. Regulatory Setting

The term "waters of the U.S." is defined as any area that might be considered a waterway, either for commerce or recreation, even on a limited scale. Wetlands are a subcategory of waters of the U.S. Wetlands have legal protection under Section 404 of the Clean Water Act (33 U.S.C. Section 1344). A permit from the USACE is required for most activities that impact wetlands. Delineation of waters and wetlands results in "potential jurisdictional areas" that must be verified by the USACE. Upon verification, these waters are referred to as "jurisdictional wetlands."

For the regulatory process, the USACE and EPA jointly define wetlands as follows: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (EPA, 40 CFR 230.3 and USACE, 33 CFR 328.3).

Caltrans recognizes this definition and uses it in the assessment of biological impacts from transportation projects. The EPA, USACE, U.S. Fish & Wildlife Service (USFWS), and California Department of Fish and Game (CDFG) work together in reviewing and approving the permits most frequently required for projects that impact wetlands. The EPA, USACE, and USFWS have concurred with the purpose and need and range of alternatives evaluated in this document (Appendix A). The Regional Water Quality Control Board (RWQCB) may provide Section 401 certification for water quality effects. A Section 404 permit is required from the USACE when a project requires fill or other modification to waters of the U.S and other wetlands.

3.7.2. Affected Environment

3.7.2.1. Wetlands/Other Waters of the U.S.

A total of 23.39 ha (57.81 ac) of potential jurisdictional waters of the U.S., including wetlands, has been identified within the project study area. This includes Tailings Creek and two unnamed tributaries, vernal pools and swales, forested wetlands, willow riparian wetlands, a freshwater marsh, wet meadows, and open water. Half of the total wetland area within the study area is comprised of a large vernal pool complex of 11.7 ha (29 ac) located east of Power House Hill Road. This area is part of a larger vernal pool complex that has been bisected by SR 70.

Wetlands in the study area were evaluated based on field observations and other available data. Factors used in the assessment include wetland condition, whether the wetland is natural or artificial, commonness or rarity, presence or absence of sensitive species, size, magnitude of potential impacts, and regional status of wetlands. For this project area, the vernal pool complex that lies on both sides of SR 70 ranks high because of its regional status, importance to water quality, rarity of wetland type, and support of vertebrate and sensitive invertebrate populations (see Section 3.9).

3.7.3. Impacts

Table 3.5 lists types of waters of the U.S./wetlands within the project area that are under the jurisdiction of the USACE, and areas of direct impact for each alternative.

Table 3.5 Areas of Impacts to USACE Jurisdictional Waters of U.S./Wetlands

Type of wetland	Alternative D (Middle Interchange)		Alternative E (North Interchange)	
	hectares	acres	hectares	acres
Vernal pools/swales	0.20	0.49	0.20	0.49
Drainage's, streams	0.11	0.28	0.11	0.28
Seasonal riparian wetland	0.15	0.37	0.15	0.37
Other waters (ponds) and Associated wetlands	0.00 0	0.00 0	0.39 0.22	0.96 0.54
Freshwater marsh	0.23	0.57	0.23	0.57
Seasonal wetlands	0.06	0.15	0.06	0.15
Total wetland impacts	.75	1.85	1.36	3.35

Source: Caltrans Office of Environmental Management, 2003

USACE jurisdictional wetlands that potentially would be impacted by this project have been mapped in Figure 3-4, Alternative D (Middle Interchange), and Figure 3-5, Alternative E (North Interchange).

Construction of Alternative D (Middle Interchange) would impact 0.75 ha (1.85 ac) of USACE jurisdictional wetlands, or 3.2 percent of wetlands within the project study area. Alternative E (North Interchange) would be constructed through open water, impacting a total of 1.36 ha (3.35 ac) of jurisdictional wetlands, or 5.8 percent of the wetlands in the project study area. Figure 3-6 shows wetland resources depicted on a black and white aerial map.

Figure 3-4 Jurisdictional Wetlands, Alternative D (Middle Interchange)

Figure 3-5 Jurisdictional Wetlands, Alternative E (North Interchange)

Figure 3-6 Wetland Resources

3.7.4. Avoidance, Minimization and Compensation Measures

When a project requires fill or other modifications to wetlands, consultation with, and a Section 404 permit from, the USACE are required. Linear transportation projects filling more than one-half acre of wetlands require an individual permit; therefore, either proposed alternative would require an individual permit. A Water Quality Certification (Section 401 of the Clean Water Act) would also be required.

Additional consultation with CDFG would be necessary in connection with permits to work in streambeds. Construction of a bridge over Tailings Creek would require a 1601 Streambed Alteration Agreement from CDFG.

After avoidance and minimization to the greatest extent practicable, remaining impacts would be mitigated to achieve no net loss of acreage, function, or value of wetland resources. Table 3.6 illustrates typical compensation ratios for permanent impacts to Waters of the U.S.

Table 3.6 Typical Compensation Ratios for Permanent Impacts to Waters of the U.S.

Fairy shrimp habitat (vernal pools), USFWS jurisdiction	Impact ha (ac)	Ratio ha (ac)	Total ha (ac)
Preservation			
Direct impacts	1.36 (3.37)	3:1	4.08 (10.11)
Indirect impacts	1.327 (3.28)	3:1	3.98 (9.84)
Creation			
Direct impacts	1.36 (3.37)	2:1	2.73 (6.74)
Wetlands, USACE jurisdiction			
Vernal pool creation	0.20 (0.49)	2:1	(see creation above)
Seasonal wetlands	0.06 (0.15)	1:1	0.06 (0.15)
Marsh	0.23 (0.57)	1:1	0.23 (0.57)
Drainages	0.11 (0.28)	1:1	0.11 (0.28)
Seasonal riparian wetlands	0.15 (0.36)	1:1	0.15 (0.36)

Source: Caltrans Office of Environmental Management, 2003

During construction, disturbances to wetlands would be avoided whenever practicable. Impacts to wetlands would be minimized by using standard best management practices (BMPs) to prevent water quality degradation. Wetlands would be designated as environmentally sensitive areas (ESAs) and delineated with orange ESA fencing to protect them.

In accordance with Section 404 requirements, Executive Order 11990 (Protection of Wetlands (1977)), and the USFWS Mitigation Policy (1981), unavoidable impacts to wetlands would be mitigated at a ratio to be determined by the Regional Water Quality Control Board (RWQCB) and the USACE. Compensation may be achieved through enhancement or preservation of existing wetlands through the purchase of credits at an approved mitigation bank in Butte County. Compensation may be also achieved by purchase of conservation easements on property which have appropriate wetlands.

Temporary impacts to wetlands would be mitigated on site following construction. The affected areas would be returned to their pre-construction state. Appropriate native plant species would be used to revegetate disturbed areas.

3.8. Vegetation and Wildlife

This section presents information about plant and animal species that occur within the project study area and that could be impacted by the proposed project, but do not have a special status designation as rare, threatened or endangered. Special status species are discussed in Section 3.9. Invasive species are also discussed in this section.

3.8.1. Regulatory Environment

Executive Order (EO) 13112 (February 3, 1999) directs all Federal agencies to prevent the introduction or spread of invasive plant species in the United States. The EO and directives from FHWA require consideration of invasive species in NEPA analyses, and NEPA approval cannot be provided until an appropriate analysis is conducted.

The California Senate passed a resolution effective September 1, 1990, protecting heritage oak stands. State agencies are required to “assess and determine the effects of their land use decisions or actions within any oak woodland.” Oak woodland is defined as “a five-acre circular area containing five or more trees per acre of blue, Englemann, valley, or coast live oak.” State agencies are directed to “preserve and protect native oak woodlands to the maximum extent feasible...or provide for replacement plantings.” Consultation with CDFG is required for projects which will impact heritage oaks.

3.8.2. Affected Environment

Much of the land surrounding Oroville and the project area is undeveloped, agricultural, or preserved as natural parkland. The floodplain is largely commercially developed, although there are patches of undeveloped land near the Feather River. The Oroville Wildlife Area, managed by the Department of Fish and Game, is across the Feather River from the project area and is home to many species of wildlife. Some of these same species may inhabit the project area in wetlands, riparian habitat, woodlands, or vernal pool complexes.

From the south, the first mile of the project study area lies in annual grassland and in part of a vernal pool complex. Continuing north, the vernal pools decrease in number to the east of the highway. West of the highway, the study area extends to include the oak riparian wetlands on a strip of dredge tailings.

The study area includes part of the blue oak woodland on the bluffs south of Oroville, on both sides of SR 70. This woodland is part of the Sierra Nevada foothill woodlands, which extended to the Feather River before SR 70 was built.

Further north on the floodplain, the study area lies along SR 70 within the right-of-way. At Georgia Pacific Way the study area includes Tailings Creek to the Feather River, and also property east of the highway where the proposed overcrossing would be constructed. The study area along SR 70 north of the proposed Georgia Pacific Way overcrossing consists of disturbed ruderal grassland within the right-of-way.

Biological communities in the project area include seasonal wetlands, ponds, vernal pools, blue oak woodland, valley oaks, riparian vegetation, and annual grassland.

3.8.2.1. Invasive Species/Noxious Weeds

Grassland habitats in the project area contain numerous species that have been identified by the California Department of Food and Agriculture as noxious weeds. There are eight “C” rated species, i.e., having the lowest threat ranking: yellow starthistle (*Centaurea solstitialis*), Russian thistle (*Salsola kali*), St. Johnswort (*Hypericum perforatum*), field bindweed (*Convolvulus arvensis*), puncturevine (*Tribulus terrestris*), bermudagrass (*Cynodon dactylon*), Johnsongrass (*Sorghum halpense*) and medusahead (*Taeniatherum caput-medusae*).

For this ranking, the State recommends eradication only when found in a nursery, and actions to retard spread are at the discretion of the county agricultural commissioners.

There are six additional plants in the study area that are identified on the State Noxious Weed Index but are “non-rated.” These species are bullthistle (*Cirsium vulgare*), common groundsel (*Senecio vulgaris*), loosestrife (*Lythrum salicaria*), ladythumb (*Polygonum persicaria*), nightshade (*Solanum americanum*), and witchgrass (*Panicum capillare*).

3.8.2.2. Natural Communities of Special Concern

Communities of special concern are those that are naturally rare, diminished because of human activities, or ecologically valuable. Impacts to these communities could contribute to declines in distribution or viable population numbers of sensitive species, or could threaten the continued existence of rare, threatened, or endangered species. Impacts could also alter the functioning of important ecosystems, such as groundwater recharge provided by wetlands, or erosion control supported by riparian vegetation.

Communities of special concern in the project area include valley oak, blue oak woodland, wetland, and riparian habitat. Figures 3-7 and 3-8 show the locations of these sensitive biological resources in the project area.

Valley Oak Community

Several mature valley oaks (*Quercus lobata*), interior live oaks (*Q. wislizenii*), cottonwoods, and willows are located in the right-of-way in the commercial area west of SR 70. These trees are growing between SR 70 and Pacific Heights Road in a grassy strip of previously disturbed ground. Although they are located along the highway, the oaks provide nesting habitat and roosts for birds, as well as foraging habitat for birds and small mammals; however, because of the proximity of the traffic, their habitat value is reduced. Native forbs commonly seen in this community are bicolored lupine (*Lupinus bicolor*), silver bush lupine (*L. albifrons* var. *albifrons*), dense-leaved madia (*Madia elegans* ssp. *densifolia*), and johnny tuck (*Tryphysaria eriantha*).

Blue Oak Woodland Community

In the project area, approximately 20.42 ha (50.48 ac) of blue oak woodlands (*Q. douglasii*) occupy the bluffs south of Ophir Road and Pacific Heights Road on both sides of SR 70. Other species in the woodland include interior live oak (*Q. wislizenii*), poison oak (*Toxicodendron diversiloba*), grasses and forbs. These woodlands provide cover and foraging habitat for deer, bird species, bats and other small mammals.

Figure 3-7 Biological Resources

Figure 3-8 Biological Resources

Annual Grassland Community

At the south end of the project where land use is agricultural, the grassland consists of native grasses and forbs found in meadows and vernal pool/swale landscapes.

Dominant native plant species include blow wives (*Achyrachaena mollis*), goldfields (*Lasthenia fremontii*), yellow mariposa lily (*Calochortus luteus*), popcornflower (*Plagiobothrys* sp.), Fremont's tidytops (*Layia fremontii*), and blue dicks (*Dichelostemma multiflora*). Non-natives include storksbill (*Erodium botrys*), medusahead (*Taeniathrum caput-medusae*), soft chess (*Bromus hordeaceus*) and yellow star thistle (*Centaurea solstitialis*). These grasslands provide habitat for species such as western meadowlark (*Sturnella neglecta*), killdeer (*Charadrius vociferus*), horned lark (*Eremophila alpestris*), and small rodents. Annual grassland in the project vicinity provides foraging habitat for Swainson's hawk and other raptors.

Several hundred acres of quality vernal pool/swale complexes are located in these annual grasslands. These vernal pool complexes are bisected by SR 70. Culverts connect swales and drainages on both sides of the highway. These complexes support plant species endemic to California vernal pools and exhibit a wildflower display in late winter and early spring that includes goldfields (*Lasthenia fremontii*), large-flowered stalked popcorn flower (*Plagiobothrys stipitatus* var. *s.*), downingia (*Downingia* sp.), and Douglas' pogogyne (*Pogogyne douglasii*). Potential habitat exists for Federally listed orcutt grasses in this area, including *Orcuttia pilosa*, *O. tenuis*, and *Tuctoria greenei*, and for Federal and State endangered Shippee (Butte County) meadowfoam.

Although vernal pools are ephemeral habitats, many invertebrates, amphibians, and waterfowl depend on the habitat they provide. Amphibians such as the western spadefoot toad (*Scaphiopus hammondi*) (Federal and State Species of Concern) and Pacific tree frog (*Hyla regilla*) occupy this habitat and use the pools for feeding, egg laying, and tadpole rearing. During the winter, many species of waterfowl use the pools for resting and foraging. Songbirds such as the horned lark (*Eremophila alpestris*), western kingbird (*Tyrannus verticalis*), killdeer (*Charadrius vociferus*) and black phoebe (*Sayornis nigricans*) feed on invertebrates that inhabit pool areas.

Riparian Community

Wetlands have legal protection in accordance with Section 404 of the Clean Water Act (33 U.S.C. Section 1344). A permit from the USACE is required for most activities that fill or dredge jurisdictional wetlands (See 3.6 Wetlands and Other Waters of the United States).

Riparian wetlands are subject to the jurisdiction of the CDFG (Fish and Game Code Section 1386). These are wet areas that have developed riparian vegetation consisting of trees such as willows, oaks, and sycamores, and have an understory of shrubs and possibly herbs. These wetlands may or may not be under the jurisdiction of USACE.

Seasonal Freshwater Marsh

Two seasonal freshwater marshes are located at the intersection of SR 70 and Pacific Heights Road. Aquatic plants such as cattails (*Typha* sp.) provide habitat for mallard ducks and red-winged blackbirds, which were observed during the spring of 2001. These marshes cover 0.15 ha (0.36 ac) and were developed from catch basins fed by groundwater and a culvert from a pond located east of SR 70. Another culvert drains water from these catch basins into a ditch adjacent to Pacific Heights Road.

Seasonal Riparian Wetlands

Four small seasonal riparian wetlands are located on both sides of the SR 70 right-of-way within the area of the proposed interchange. The total wetland area is 0.15 ha (0.36 ac). These wetlands are fed by pond overflow and by drainage from culverts. A high water table during the rainy season may contribute to subsurface moisture. Vegetation in these small wetlands is dominated by willows (*Salix lasiolepis* and *S. exigua*), Himalayan blackberry (*Rubus discolor*), and small valley oaks (*Q. lobata*).

Seasonal Forested Riparian Wetlands

Seasonal forested riparian wetlands are characterized by an overstory canopy of trees and shrubs. Valley oaks dominate the seasonal forested riparian wetlands located in the dredge tailings west of SR 70 at about PM 11 (KP 17.7). Historically, topographic maps show that this riparian area marks the remnants of a natural drainage that emptied into the Feather River. Seasonal wetlands occur among small mounds of dredge tailings left by mining operations, and a valley oak riparian community has become established in the tailings. This riparian wetland area totals 4.84 ha (11.96 ac). Dominant vegetation consists of a mature overstory of valley oaks (*Q. lobata*) and cottonwoods (*Populus fremontii*), and an understory of live oak (*Q. wislizenii*) and poison oak (*Toxicodendron diversiloba*) shrubs. The herb layer is comprised of annual grasses, forbs, and wetland vegetation.

Seasonal freshwater marsh habitat occurs in association with the oak riparian vegetation on the dredge tailings. These marshes are dominated by emergent wetland plants and remain wet into spring. Dominant plant species include Baltic rush (*Juncus balticus*), creeping spikerush (*Eleocharis machrostachya*), tall cyperus

(*Cyperus eragrostis*), sedge (*Carex* sp.), dallisgrass (*Paspalum dilatatum*), and rabbits-foot grass (*Polypogon monspeliensis*). In the spring of 2002, wood ducks (*Aix sponsa*) were observed in one of the wetlands in the dredge tailings. Federally listed tadpole shrimp were found in these wetlands in the winter of 2000.

Mixed Riparian

Mixed riparian, sometimes called valley foothill riparian, is characterized by an overstory of diverse tree species, such as valley oak, sycamore, and cottonwood, and an understory of shrubs. Mixed riparian habitat is used by many species of birds, mammals, reptiles, and amphibians. Mixed riparian communities are found at three locations within the project area: Tailings Creek, the permanent water site (ponds), and the drainage ditch adjacent to Pacific Heights Road.

Tailings Creek is a channelized waterway that carries flow through culverts underneath SR 70 at Georgia Pacific Way to the Feather River, draining winter runoff from lower Oroville. The streambed is dry during the summer. This drainage has been straightened and, east of SR 70, it is maintained relatively free of vegetation. A narrow strip of mixed riparian vegetation totaling 0.75 ha (1.85 ac) borders Tailings Creek west of SR 70. This riparian vegetation is dominated by Fremont's cottonwood (*Populus fremontii*), sycamore (*Platanus racemosa*), foothill pine (*Pinus sabiniana*), and valley oak (*Q. lobata*). The understory consists mainly of live oak (*Q. wislizenii*), Himalayan blackberry, (*Rubus discolor*), tree-of-heaven (*Ailanthus altissima*), and poison oak (*Toxicodendron diversilobum*). Vegetation increases in density closer to the mouth of the creek at the Feather River.

The second area of mixed riparian vegetation is along the permanent water (ponds) and seasonal wetlands at Ophir Road and Feather River Boulevard. This riparian area totals 0.54 ha (1.33 ac). Dominant vegetation is blue oaks (*Q. douglasii*), foothill pine, willows, blackberries, and poison oak. In the large pond and wetland area, fallen logs and overhanging roots provide cover for amphibians and reptiles (turtles). Wildlife use it as a summer watering hole. During surveys of the pond and wetlands conducted in the summer of 2002, wildlife observed included mallard ducks, a coyote, a beaver, a lark sparrow (Federal Species of Concern), a red-shouldered hawk, two turtles believed to be northwestern pond turtles, and numerous bullfrogs. Bats were heard in a roost. Other bird species were also observed and muskrats were seen in a later survey. The wetland is potential habitat for the Federally listed giant garter snake and red-legged frog.

The third area of riparian vegetation is located along a manmade drainage ditch adjacent to Pacific Heights Road at the interchange site. Mixed riparian vegetation that has developed along this ditch consists primarily of small valley oaks, live oaks, and Himalayan blackberries. This drainage ditch is fed by water from culverts that extend from the pond on Feather River Boulevard, underneath SR 70 to the catch basin (seasonal freshwater marsh), and then beneath Pacific Heights Road. The drainage empties into the oak woodlands to the west outside the project area.

This drainage is not under the jurisdiction of the USACE (Tom Cavanaugh 2001); however, CDFG may take jurisdiction over scattered riparian habitat that has developed in the ditch.

3.8.3. Impacts

3.8.3.1. Invasive Species/Noxious Weeds

The proposed construction project would alter the topography and remove vegetation, opening up areas and providing the opportunity for the establishment of introduced or weedy species. Weedy species could also be introduced from vehicles during construction, in materials, or from erosion control, landscape or wildflower plantings. Highway corridors and drainages could provide opportunities for the movement of invasive species' seeds through the environment.

3.8.3.2. Natural Communities of Special Concern

Valley Oak Community

Fourteen mature valley oaks, five large interior live oaks, three willow clones, and five cottonwoods located in the right-of-way west of SR 70 would have to be removed in order to widen the highway. Three large valley oaks in the frontage road construction zone adjacent to Tailings Creek would also have to be removed.

Blue Oak Woodland Community

Blue oak woodland would be removed on both sides of SR 70. Construction of Alternative E (North Interchange) would require the removal of 0.19 ha (0.46 ac) of blue oak woodland at the southeast corner of the intersection of SR 70 and Ophir Road. This woodland includes 59 oak trees and two elderberry shrubs. Construction of Alternative D (Middle Interchange), including the straightening of Power House Hill Road east of SR 70, would require the removal of 1.66 ha (4.12 ac) of blue oak woodland. The number of trees that would be impacted by Alternative D is estimated

to be 530. Figure 3-9 shows the cuts and fills required for construction of Alternative D and the highway widening.

Construction of Alternative D also would directly impact oak woodland at the southwest corner of SR 70 and Pacific Heights Road. At this location 0.48 ha (1.18 ac) of blue oak woodland would need to be removed, impacting about 150 trees. In total, approximately 2.14 ha (5.30 ac) of blue oak habitat would be removed. The total number of blue oaks that would be affected by construction of Alternative D is estimated to be 680.

Annual Grassland Community

The proposed project would directly impact 5.69 ha (14.07 ac) of annual grassland. Species dependent on annual grassland, as well as vernal pool endemic plants and animals, would be adversely affected by the proposed project. Grassland bird species such as western meadowlark, killdeer, horned lark, sparrows, raptors, and overwintering waterfowl could be affected by construction. Killdeer and avocets are known to feed on fairy shrimp in vernal pools. Small mammals, western fence lizards, snakes, and spadefoot toads might be negatively impacted by this project.

Vernal pools within the project area provide habitat for several Federal and State listed species of animals, plants and invertebrates (see 3.8 Sensitive Species).

Riparian Community

Table 3.7 lists the riparian areas in the project study area that would be permanently impacted by the two alternatives.

Table 3.7 Permanent Impacts to Riparian Habitat by Alternative

Type of wetland	Alternative D (Middle Alternative) Hectares (acres)	Alternative E (North Alternative) Hectares (acres)
Seasonal riparian wetlands (roadside)	0.15 (0.36)	0.15(0.36)
Seasonal forested riparian wetlands (dredge tailings)	0	0
Mixed riparian at permanent waters (Ophir Road and Feather River Blvd.)	0	0.54 (1.33)
Mixed riparian at Tailings Creek	0.15 (0.37)	0.15 (0.37)
Mixed riparian on artificial drainage (ditch)	0.21 (0.52)	0
Total	0.51 (1.25)	0.84(2.06)

Source: Caltrans Office of Environmental Management, 2003

Figure 3-9 Cuts and Fills

Seasonal Riparian Wetlands

Construction of either of the proposed alternatives would fill four small seasonal riparian wetlands in the right-of-way on both sides of SR 70. The area of impact would total 0.15 ha (0.36 acres).

Seasonal Forested Riparian Wetlands

The seasonal forested riparian area and associated seasonal wetlands in the dredge tailings are located within 30 to 76 m (100 to 250 ft) of the proposed highway construction area. Widening of SR 70 could indirectly impact all or part of 4.84 ha (11.96 ac) of the forested wetland by altering swales and drainages that feed the wetland. Biofiltration swales that may be added on the roadside to filter storm water runoff from the highway also could change the hydrology of the wetlands.

Mixed Riparian

Riparian vegetation at Tailings Creek would be directly impacted by the highway widening, construction of the frontage road and bridge, and new culverts. Total riparian vegetation along the creek from Pacific Heights Road to the Feather River is 0.75 ha (1.85 ac). The total area of mixed riparian vegetation that would be impacted is 0.15 ha (0.36 ac) along 96 m (315 ft) of the creek. A box girder bridge would be constructed across the creek for the frontage road overcrossing, and box culverts would be necessary underneath the two new southbound lanes of SR 70. Sycamores, cottonwoods, and oaks may need to be removed, as well as understory shrubs and other vegetation.

Mixed riparian vegetation at the ponds and associated wetlands would be impacted by construction of Alternative E (North Interchange), since fill in the ponds and removal of riparian habitat would be required to build the infrastructure. The area of direct impacts to riparian vegetation (not including waters) would be 0.54 ha (1.33 ac). In addition, the proximity of the roads to riparian habitat could have an indirect, permanent effect on wildlife species that utilize this community.

Mixed riparian vegetation in the manmade ditch at Pacific Heights Road would be directly impacted by construction of Alternative D (Middle Interchange). This ditch would be moved to the north approximately 57 m (157 ft).

3.8.4. Avoidance, Minimization and Compensation

3.8.4.1. Invasive Species/Noxious Weeds

Due to the abundance of weeds in the existing right-of-way, it is assumed that the species currently present would become re-established at the completion of construction. Given the amount of weedy vegetation adjacent to the right-of-way, eradication or control would not be feasible without rigorous, long-term actions. Measures would be implemented to prevent the introduction of new species, reduce the spread of existing weedy species, and promote the establishment of the native flora.

In accordance with Executive Order 13112, which addresses the introduction of invasive species, the following measures would be undertaken:

- Construction vehicles would be cleaned and inspected prior to entering the project area.
- All erosion control materials (including straw bales and mulch) would be certified weed-free.
- All disturbed areas would be stabilized and revegetated at the completion of construction. This would involve the placement of seed, slow release organic fertilizer, compost and mulch.
- Seed and container plants used for the project would be species native to the project area and would be genetic stock from the Sacramento Valley.

3.8.4.2. Natural Communities of Special Concern

Valley Oak Community

Loss of the valley oaks and other tree species would be addressed by replanting within the right-of-way or at another agency-approved site. Reducing the impacts to valley oaks is required at a ratio of one tree per inch diameter DBH (diameter at breast height, or four feet). A Caltrans biologist would consult with the Landscape Architecture Branch when planning and implementing the oak revegetation.

Blue Oak Woodland Community

Appropriate minimization measures would be determined in consultation with CDFG. The blue oak woodland losses would be addressed through the purchase of five acres

of blue oak woodland in Butte County to be preserved by planting or through the purchase of credits an agency-approved bank.

Annual Grassland Community

Vernal pools and swales in annual grasslands provide habitat for Federally listed vernal pool fairy shrimp. Mitigation measures to compensate for loss of fairy shrimp habitat are covered in Section 3.8.4.2 Special Status Animal Species – Crustaceans.

Loss of Swainson's hawk foraging area would be mitigated in accordance with recommendations from CDFG. The proposed project, which is within ten miles of an active nest tree but greater than five miles from an active nest tree, would be mitigated at a ratio of 0.5 acres of habitat management land⁵ for each acre of urban development authorized.

Riparian Community

Seasonal Riparian Wetlands

The loss of roadside seasonal riparian wetlands would be mitigated by creation or preservation at a 1:1 ratio onsite or offsite or at an approved mitigation bank to ensure no net loss of habitat. Specific requirements for mitigation would be determined through consultation with the CDFG.

Mixed Riparian

The mixed riparian habitat would be mitigated by onsite restoration or offsite preservation in accordance with consultation with CDFG. Loss of mixed riparian habitat at Tailings Creek could be mitigated in conjunction with mitigation of project impacts on the Highway 70/149/99 Interchange project, or by preservation or restoration at another local site, such as the Oroville Wildlife Area.

Seasonal Forested Riparian Wetlands

There would be no direct impacts to seasonal forested riparian wetlands on the dredge tailings, since the highway would be widened to the east. A major swale carries runoff from east of SR 70 via a culvert to the wetland on the west. By preserving this swale and other small swales on the slope between the highway and the wetland, existing hydrology could be maintained. In addition, construction of filtration basins to treat highway runoff would keep pollutants from reaching the wetland.

⁵ Land protected through fee title acquisition or a conservation easement on agricultural lands

3.9. Special Status Species

The species addressed in this section are sensitive species that were identified during project surveys, have the potential to occur in the project area, or required focused/protocol surveys.

3.9.1. Regulatory Environment

Special status species are plant or animal species that are: (1) Federally listed or proposed threatened or endangered species, or candidate species; (2) bird species protected under the Migratory Bird Treaty Act; (3) species protected under State endangered species laws and regulations, plant protection laws and regulations, Fish and Game codes, or species of special concern listings and policies, or (4) species recognized by national, state, or local environmental organizations (e.g., the California Native Plant Society (CNPS)).

3.9.2. Affected Environment

To identify species of potential concern that may occur in the project area, Caltrans consulted State and Federal sensitive species lists and the California Natural Diversity Database (CNDDDB, 2001). Table 3.8 lists the sensitive species that could occur in the region, habitat description, and presence or absence of habitat. Many of the species listed have not been observed in the project area, but potential habitat is present.

Table 3.8 Regional Sensitive Species Table

Scientific Name	Common Name	Status	General Habitat Description	Habitat Present/Absent	Rationale
Birds					
<i>Agelaius tricolor</i>	Tricolored blackbird	FSC/SSC	Marshes with dense vegetation	A	Habitat marginal
<i>Ammodramus savannarum</i>	Grasshopper sparrow	FSC	Grasslands, weedy fields	P	Not found in survey
<i>Asio flammeus</i>	Short-eared owl	FSC/SSC	Weedy fields; ground nester	P	Not found in survey
<i>Athene cunicularia hypugea</i>	Burrowing owl	FSC/SSC	Inhabits burrows in grassland	P	Potential near perm. pond and seasonal wetland
<i>Buteo regalis</i>	Ferruginous hawk	FSC/SSC	Dry, open country	P	Foraging habitat
<i>Buteo swainsoni</i>	Swainson's hawk	ST	Central valley	P	Foraging habitat, roosts
<i>Chondestes grammacus</i>	Lark sparrow	FSC	Roadsides, open woodlands, farms	P	Observed in pond and seasonal wetlands
<i>Circus cyaneus</i>	Northern harrier	SSC	Wetlands, open fields	P	Foraging habitat
<i>Coccyzus americanus occidentalis</i>	Western yellow-billed cuckoo	C/SE	Dense mixed riparian	A	Inadequate riparian vegetation

Chapter 3 Effected Environment, Environmental Consequences and Avoidance, Minimization and Compensation Measures

<i>Empidonax trailii brewsteri</i>	Little willow flycatcher	SE	Willow stands	P	Willow habitat at perm. pond and seasonal wetlands; adjacent to Feather River
<i>Haliaeetus leucocephalus</i>	Bald eagle	FT/SE	Coniferous forests near water	A	No habitat; not known from immed. area
<i>Lanius ludovicianus</i>	Loggerhead shrike	FSC	Riparian edges, grasslands	P	Not found in survey
<i>Melanerpes lewis</i>	Lewis' woodpecker	FSC	Open woodlands	P	Not found in survey
<i>Plegadis chihi</i>	White-faced ibis	FSC/SSC	Marshes, flooded fields	A	No habitat
<i>Riparia riparia</i>	Bank swallow	ST	Nests in burrows in banks of river	A	No habitat
Reptiles					
<i>Clemmys marmorata marmorata</i>	Northwestern pond turtle	FSC	Ponds, streams with vegetation	P	Habitat, species present
<i>Phrynosoma coronatum frontale</i>	California horned lizard	FSC	Sparsely vegetated floodplains, sandy areas	A	No habitat
<i>Thamnophis gigas</i>	Giant garter snake	FT/ST	Ponds, marshes, canals with aquatic vegetation	P	Found in Oroville Wildlife Area (DFG); pot. at perm. pond wetl.
Amphibians					
<i>Rana aurora dratonii</i>	California red-legged frog	FT/SSC	Ponds, creeks with emergent vegetation	P	Permanent pond and wetlands; surveyed for.
<i>Rana boylei</i>	Foothill yellow-legged frog	FSC/SSC	Ponds, creeks with emergent vegetation	P	Permanent pond and wtlands; surveyed for
<i>Scaphiopus hammondi hammondi</i>	Western spadefoot toad	FSC/SSC	Vernal pools in grasslands	P	Potential habitat
<i>Ambystoma californiense</i>	California tiger salamander	FSC/SSC	Vernal pools in woodlands, grasslands	A	Known only from Sutter Buttes south
Fish					
<i>Lampetra tridentata</i>	Pacific lamprey	FSC	Permanent creeks, rivers	A	No habitat
<i>Oncorhynchus mykiss</i>	Steelhead	FT	Creeks, rivers	A	No migration corridors or spawning habitat
<i>Oncorhynchus tshawytscha</i>	Chinook salmon (winter run)	FE/SE		A	No migration corridors or spawning habitat
<i>Oncorhynchus tshawytscha</i>	Chinook salmon (fall run)	FPT		A	No migration corridors or spawning habitat
<i>Oncorhynchus tshawytscha</i>	Chinook salmon (spring run)	FT/ST		A	No migration corridors or spawning habitat
<i>Pogonichthys macrolepidotus</i>	Sacramento splittail	FT	Estuaries	A	No habitat; range now further south
Crustaceans					
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	FE		P	Potential habitat
<i>Branchinecta lynchi</i>	Vernal pool fairy shrimp	FT	Vernal pools	P	Potential habitat
<i>Lepidurus packardii</i>	Vernal pool tadpole shrimp	FE	Vernal pools	P	Potential habitat
<i>Lindleriella occidentalis</i>	California lindleriella fairy shrimp	FSC	Vernal pools	P	Potential habitat
Invertebrates					
<i>Desmocercus</i>	Valley	FT	Elderberry species	P	Scattered shrubs—4

californicus dimorphus	elderberry longhorn beetle		Sambucus mexicana		impacted
Mammals					
Antrozous pallidus	Pallid bat	FSC/SSC		P	Potential habitat
Corynorhinus townsendii pallescens	Pale Townsend's big-eared bat	FSC/SSC	Woodlands	P	Potential habitat
<i>Eumops perotis californicus</i>	Greater western mastiff-bat	FSC/SSC	Wetlands	P	Potential habitat and detected with Anabat
<i>Myotis yumanensis</i>	Yuma myotis	FSC/SSC		P	Potential habitat
Plants					
Astragalus tener var. ferrisiae	Ferris milk-vetch	FSC/1B	Vernally mesic meadows, subalkaline	P	Potential habitat
Fritillaria pluriflora	Adobe lily	FSC/1B	Clay, grasslands	P	Potential habitat; none found in surveys
Juncus leiospermus v. ahartii	Ahart's dwarf rush	FSC/1B	Vernal pools	P	Potential habitat
Juncus leiospermus v. l.	Red Bluff dwarf rush	FSC/1B	Vernally mesic sites	P	Potential habitat
Limnathes floccosa ssp. californica	Shippee meadowfoam	FE/SE/1B	Vernal swales, pools	P	Potential habitat; none found in surveys
Myosurus minimus ssp. apus	Little mousetail	FSC	Vernally moist sites	P	Potential habitat
Orcuttia pilosa	Hairy orcutt grass	FE/SE	Vernal pools	P	Potential habitat
Orcuttia tenuis	Slender orcutt grass	FT/SE	Vernal pools	P	Potential habitat
Paronychia ahartii	Ahart's paronychia	FSC/1B	Upland grassland	P	Potential habitat
Sagittaria sanfordii	Valley sagittaria	FSC/CNPS List 4	Slow running or standing water; Central Valley	P	Requires permanent water; no plants found
Tuctoria greenei	Greene's tuctoria	FE/State Rare/1B	Vernal pools	P	Potential habitat

Absent [A] means no further work needed. Present [P] means general habitat is present and species may be present. Status: Federal Endangered (FE); Federally Threatened (FT); Federal Proposed (FP, FPE, FPT); Federal Candidate (FC), Federal Species of Concern (FSC); State Endangered (SE); State Threatened (ST); Fully Protected (FP); State Rare (SR); State Species of Special Concern (SSC); California Native Plant Society (CNPS), etc.

3.9.2.1. Special Status Plant Species

Hairy Orcutt Grass, (*Orcuttia pilosa*) (Federal and State Endangered, CNPS 1B)

This species of annual vernal pool grass is known to exist in only six counties--Butte, Glenn, Madera, Merced, Stanislaus, and Tehama—in vernal pools at elevations of 55 to 200 m (180 to 656 ft). No hairy orcutt grass was found during surveys of the project although habitat exists for this species.

Slender Orcutt Grass (*Orcuttia tenuis*) (Federally Threatened, State Endangered, CNPS 1B)

Slender orcutt grass is known to exist in vernal pools in eight counties, including Butte County, at elevations of 35 to 1760 m (115 to 5775 ft).

Slender orcutt grass has been observed by Caltrans biologists at two locations in vernal pools in a pasture adjacent to the project study area.

Greene's Tuctoria (*Tuctoria greenei*) (Federal Endangered, State Rare, CNPS 1B)

Greene's tuctoria is known from vernal pools in ten counties at elevations of 30 to 1070 m (98 to 1070 ft).

The three related grasses listed above are endemic to California and grow only in vernal pools. They germinate after water in the pool has evaporated and bloom from May until September, depending on weather conditions. They thrive only in pristine pools that have not been heavily invaded by exotic species that compete for survival. These grasses exude a sticky resin that discourages animals from grazing on them. All three grasses are threatened by development, agriculture, overgrazing, introduced species, and trampling. Although habitat for this species exists within the project area, no individuals of this species were found during surveys.

Little Mousetail (*Myosurus minimus ssp. apus*) (Federal Species of Concern)

Little mousetail has the potential to occur in vernal pools in the project area and is subject to the same threats as the above grasses. No little mousetail was found within the project area.

Butte County (Shippee) Meadowfoam (*Limnanthes floccosa ssp. californica*) (Federal and State Endangered)

Shippee meadowfoam is a low-growing winter annual found only in vernal pools and ephemeral drainages in a narrow strip near the foothills of Butte County. There are fewer than 15 occurrences of this species and less than 200,000 plants (CNPS 2001). This subspecies is threatened by habitat loss, overgrazing, and hydrology alteration. No members of this species were found during surveys of the project area.

Ahart's Dwarf Rush (*Juncus leiospermus* var. *ahartii*) and Red Bluff Dwarf Rush (*J. leiospermus* var. *l.*) (Federal Species of Concern, CNPS 1B)

These two, small monocot annuals are members of the rush family (Juncaceae) and are known to exist only in California. Potential habitat exists for these rushes in clay soils of vernal pools and vernal mesic sites in chaparral, woodland, and valley-foothill grassland. *Juncus leiospermus* var. *ahartii* is known from only five occurrences in Butte, Calaveras, Placer, and Sacramento Counties. *J. leiospermus* var. *l.* is known from Butte, Tehama and Shasta Counties and reportedly was found at the Oroville Municipal Airport (Rarefind 2000), not far from the project area. No occurrences of dwarf rush were found in surveys of the project area, although habitat exists for them.

Ahart's paronychia (*Paronychia ahartii*) (Federal species of concern, CNPS 1B)

This is a diminutive annual herb that occurs in well-drained, rocky outcrops, volcanic uplands and vernal pool edges. Paronychia is known from the northern Sacramento Valley. Typically, it blooms from March to June. Suitable habitat may exist in the project area, but the plant was not observed during project surveys.

Adobe lily (*Fritillaria pluriflora*) (Federal species of concern, CNPS 1B)

Adobe lily is a bulbiferous perennial herb from Butte, Colusa, Glenn, Lake, Napa, Solano, Tehama, and Yolo Counties. It is found in patches of clay soil in grasslands, blooming from February through April. Adobe lily was not found in surveys of the project area, and it is not expected to be found, due to disturbance from grazing and development.

Hoover's spurge (*Chamaesyce hooveri*) (Federally Threatened, CNPS List 1B)

Hoover's spurge is a summer vernal pool annual found in Butte, Glenn, Merced, Stanislaus, Tehama, and Tulare Counties. It blooms in July through October in vernal pools on volcanic mudflow or clay substrate. This plant was not found during project area vernal pool surveys conducted in the summer of 2000.

Sanford's arrowhead (*Sagittaria sanfordii*) (Federal species of concern, CNPS List 1B)

Sanford's arrowhead, an infrequent but widespread plant found throughout Northern and Central California, occurs in slow moving water with a silt or muddy substrate. It

blooms from May through October. This plant was not observed in surveys of the ponds and wetlands conducted in 2002.

Ferris' milkvetch (*Astragalus tener* var. *ferrisiae*) (Federal species of concern, CNPS 1B)

Ferris' milkvetch is an annual herb that blooms in April and May in vernal mesic meadows, in valley and foothill grasslands at an elevation of 1.5 to 23 m (5 to 75 ft). It is known from only Butte, Colusa, Glenn, Solano, Sutter, and Yolo Counties, but most habitat has been lost to agriculture. Habitat for this plant exists within the project area, but none was found in surveys.

3.9.2.2. Special Status Animal Species

Crustaceans

Conservancy Fairy Shrimp (*Branchinecta conservatio*) (Federal Endangered)

The conservancy fairy shrimp inhabits large vernal pools with highly turbid water. This species consists of six distinct populations: Vina Plains, Tehama County; Butte County south of Chico; Solano County at Jepson Prairie; Glenn County at Sacramento National Wildlife Refuge; Merced County near Haystack Mountain northeast of Merced; and the Lockwood Valley of northern Ventura County. This species is not expected to be found in the project area as it is typically found in large, deep pools.

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*) (Federally Threatened)

Vernal pool fairy shrimp inhabits vernal pools, small swales, earth slumps, and basalt-flow depression basins of unplowed grasslands in and near the Central Valley. This species is found in clear to tea-colored water, most commonly in grass or mud-bottomed swales. There are 32 known populations of the vernal pool fairy shrimp, extending from Shasta County through most of the length of the Central Valley. In the winter of 2000, *B. lynchi* was found in the project area.

Vernal Pool Tadpole Shrimp (*Lepidurus packardii*) (Federal Endangered)

Tadpole shrimp is known from 18 populations in the Central Valley, ranging from west of Redding south to the San Luis National Wildlife refuge in Merced county, and from a single vernal pool complex located within the San Francisco Bay National Wildlife Refuge in Alameda county. Tadpole shrimp inhabit pools containing clear

to highly turbid water, ranging in size from 5 m² (54 ft²) in the former Mather Air Force Base area of Sacramento County, to the 36-ha (89-ac) Olcott Lake at Jepson prairie. *L. packardi* exoskeletons were found in vernal pools near the project area at Dingerville in 1995.

California linderiella (*Linderiella occidentalis*) (Federal Species of Concern)

California linderiella has been found in scattered grasslands south and west of the project area. In the winter of 2003, *L. occidentalis* was found in a vernal pool in the SR 70 right-of-way.

Invertebrates

Valley Elderberry Long-Horned Beetle (*Desmocerus californicus dimorphus*) (Federally Threatened)

This action would occur within critical habitat of the valley elderberry long-horned beetle. Habitat consists of the blue elderberry (*Sambucus mexicana*), a shrub common to riparian areas and floodplains of the Central Valley. The beetle is completely dependent on its host plant, the elderberry, a common component of the remaining riparian forests and adjacent grasslands of the Central Valley. Adult beetles feed on the foliage and perhaps flowers of at least one, and possibly as many as three, species of elderberry.

Seven elderberry shrubs were found in the project study area. Two large shrubs are located in a patch of blue oak woodland on the bluff south of Ophir Road. One small shrub grows under a cottonwood at the north end of the dredge tailings wetlands. A fourth shrub is in the west right-of-way at the fence near the north end of the project. Three juvenile elderberry shrubs were found in the riparian vegetation along Tailings Creek in the spring of 2000. Two of these shrubs were located more than 30 m (100 ft) from proposed construction but have not been located in subsequent surveys. The seventh shrub, a juvenile with stems less than one inch in diameter, is within the construction zone. None of these elderberries had elderberry beetle exit holes.

Amphibians

California Red-Legged Frog (*Rana aurora dratonii*) (Federally Threatened, California Species of Concern)

Foothill Yellow-Legged Frog (*Rana boylei*) (Federal and State Species of Concern)

The red-legged frog inhabits quiet pools of streams, marshes, and occasionally ponds, preferring heavily vegetated shorelines and permanent water. Eggs are deposited in permanent pools attached to emergent vegetation. This species is believed to have been extirpated from the Central Valley prior to 1960 (U.S. Fish and Wildlife Service, January 2000). Only four populations are known from the Sierra Nevada. One population occurs in the foothills east of Lake Oroville.

Like the red-legged frog, the yellow-legged frog is a resident of slow moving creeks and ponds.

Protocol surveys were conducted according to the USFWS “Guidance on Site Assessment and Field Surveys for California Red-legged Frogs,” dated February 18, 1997. The ponds and seasonal wetlands were surveyed during two days and two evenings in April and in August of 2002. No red-legged or yellow-legged frogs were found, but numerous bullfrogs, which are known to prey on the less aggressive red- and yellow-legged species, were seen. These two species are not known to occur within the project area or in the Oroville Wildlife Area; however, there is potential habitat for red- and yellow-legged frog in both locations.

Mammals

Pallid Bat (*Antrozous pallidus*) (Federal and State Species of Concern)

Yuma Myotis (*Myotis yumanensis*) (Federal and State Species of Concern)

Pale Townsend’s Big-Eared Bat (*Corynorhinus townsendii ssp. pallescens*) (Federal and State Species of Concern)

Three sensitive bat species have the potential to occur in the project study area and to use woodlands, grasslands, wetlands, and buildings for roosting and foraging. The pallid bat selects a variety of day roosts, including rock outcrops, tree cavities, buildings and bridges, and is highly sensitive to roost disturbance. *Yuma myotis* also occupies a variety of habitats, utilizing buildings and bridges for day and night roosts, and trees, mines, caves and rock crevices for day roosts. The Townsend’s big-eared bat is widely distributed in California but is suffering serious declines in population due to oak woodland conversion. These bats are primarily cave and mine dwellers but will inhabit buildings. Other species that have been observed in the project study area are big brown bats (*Eptesicus fuscus*) and Mexican free-tail (*Tadarida brasiliensis*). Bats frequent streams, rivers, and wetlands to forage for insects.

A bat colony was found at the pond and seasonal waters site at Ophir Road and Feather River Boulevard. Mexican free-tailed bats, big brown bats, *Yuma myotis*, and

mastiffs were observed in a bat survey conducted on September 25, 2002. The colony evidently has a maternal roost at this location. Several bat species are Federal and State species of concern (table 3.9). Pallid bats inhabit woodlands and may be found in the blue oak woodlands within the project area.

Bat roosts could also be present in buildings that would be razed during construction. These buildings would need to be surveyed for the presence of bat colonies prior to construction.

Fish

Central Valley Spring-Run Chinook Salmon (*Oncorhynchus tshawytscha*)

(Federally Threatened, State Threatened)

Central Valley Steelhead (*O. mykiss*) (Federally Threatened)

Winter-run chinook (*O. tshawytscha*) (Federal Endangered, State Endangered)

The above salmonid species are known to migrate upstream in the Feather River as far as the hatchery; however, the river is outside the project area, and no drainages in the project area are known to be corridors for fish migration or to have habitat for salmonids.

Sacramento Splittail (*Pogonichthys macrolepidotus*) (Federally Threatened)

Individuals were collected by Rutter (1908) as far upstream as Oroville and have been known from as far north as the Sacramento River at Redding. Currently splittail are confined to the Delta, Suisun Bay, Suisun Marsh, Napa Marsh, and other parts of the Sacramento/San Joaquin Estuary. Splittail require flooded vegetation for spawning and rearing of young, habitat that has largely disappeared because of development, dams, and levees (Federal Register 1999). This habitat does not occur within the project area.

Birds

Bald Eagle (*Haliaeetus leucocephalus*) (Federally Threatened, State Endangered)

Bald eagles have been known to overwinter in the Oroville Wildlife Area adjacent to the proposed project but are not known to nest in the Wildlife Area. The project area does not have foraging or nesting habitat for bald eagles, and no eagles have been observed in the vicinity of the project.

Swainson's Hawk (*Buteo swainsoni*) (California Threatened)

This species forages in open grassland habitats and has adjusted to foraging in certain types of agricultural lands. These raptors typically forage within a 16-km (10-mi) radius of nest sites but may range up to 18 miles from a nest site in search of suitable foraging habitat and available prey.

A California Natural Diversity Data Base search in 2001 found no records of Swainson's hawk occurrences or nests within 10 miles of the project area; however, an active nest was found within five miles of the project (Bogener 2003). Hawks were observed foraging nearby in a one-year old walnut orchard. Two offspring were produced in the year 2002.

Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*) (Federal Candidate for Listing, State Endangered)

This species is a rare to uncommon species that inhabits open woodland with dense undergrowth, parks, and riparian woodland and thickets. It prefers densely foliated, deciduous trees and shrubs, and requires willows for nesting. The yellow-billed cuckoo has not been observed in the Ophir Road study area and is unlikely to be found there, as habitat is inadequate for this species. The Tailings Creek riparian area has low habitat potential, as the understory is relatively sparse and the overall acreage providing cover and foraging area is small. The riparian vegetation at the pond and seasonal wetlands site is also marginal for cuckoos; however, the yellow-billed cuckoo has been observed nearby at the Oroville Wildlife Area (Atkinson 2002). Because of the proximity of the Oroville Wildlife Area, an incidental occurrence could be expected.

Little Willow Flycatcher (*Empidonax trailii brewsteri*) (State Endangered)

Historically, the little willow flycatcher was a common nesting species in the Sierra Nevada, Central Valley, and the Cascade Range and occasionally in the northern Coast Ranges. Currently, it is a rare to uncommon summer migrant in the Central Valley, primarily at lower elevations. Willow flycatchers have been observed occasionally in the Central Valley (Miller 2002), and a migrant was spotted in the Fall of 2002 in Butte County within 16 km (10 mi) north of the project (Schmoldt 2002). This species inhabits willow thickets, especially in swampy areas, and has the potential to occur in willows near the river in the project vicinity. Surveys for this species would be conducted before construction in late spring of 2004 and 2005.

Two parcels along Pacific Heights Road near the Feather River have willow thickets within 100 m (328 ft) of the project that could provide habitat for little willow flycatcher.

The riparian vegetation located at the pond and seasonal wetlands has habitat potential for little willow flycatcher. The riparian area totals 0.54 ha (1.3 ac) and consists of mixed riparian vegetation, including willows.

Reptiles

Giant Garter Snake (*Thamnopsis gigas*) (Federal and State Threatened)

Giant garter snakes (GGS) have been observed at the Oroville Wildlife Area, across the Feather River from the project study area, according to CDFG biologist Andy Atkinson. In the project study area, habitat occurs at the pond and at the seasonal wetlands. The wetland at Feather River Boulevard and Ophir Road provides suitable habitat for GGS; however, none were observed during day and evening surveys for frogs and other species.

According to Andy Atkinson of CDFG, giant garter snakes have been sighted in the vicinity of the project area at a pond south of Robinson Construction, located on Pacific Heights Road. Near this pond, giant garter snakes could inhabit a dense stand of oaks and wetland vegetation at the west end of the ditch. In rainy winters this ditch carries overflow westward from the intersection of SR 70 and Pacific Heights Road and empties into the forested riparian wetland. Giant garter snakes are unlikely to forage as far as the project area, as the ditch is sparsely vegetated and dry in summer.

Northwestern Pond Turtle (*Clemmys marmorata marmorata*) (Federal Species of Concern)

Northwestern pond turtles prefer permanent ponds, lakes, streams, and irrigation ditches in a wide variety of habitat types. They require basking sites such as partially submerged logs, rocks, and mats of floating vegetation, or open mud banks. According to Dr. Dan Holland, non-nesting northwestern pond turtles will move to upland habitat, possibly as far away as several kilometers (Holland 1994).

In 1986 this species was observed in the permanent pond and seasonal wetlands east of Feather River Boulevard at Ophir Road (Cavanaugh 2001). Five were observed in the ponds by Caltrans biologists on April 9, 2002, and two were observed on August 19, 2002.

3.9.3. Impacts

3.9.3.1. Special Status Plant Species

Hairy Orcutt Grass, (*Orcuttia pilosa*)

Slender Orcutt Grass (*Orcuttia tenuis*)

Greene's Tuctoria (*Tuctoria greenei*)

Little Mousetail (*Myosurus minimus*)

Butte County Meadowfoam (*Limnanthes floccosa* ssp. *californica*)

Ahart's Dwarf Rush (*Juncus leiospermus* var. *ahartii*)

Red Bluff Dwarf Rush (*J. leiospermus* var. *l.*)

Hoover's Spurge (*Chamaesyce hooveri*)

The proposed project would permanently fill 0.20 ha (0.49 ac.) of vernal pool/swale wetlands (USACE jurisdictional). Although the above plant species were not found within the project area, vernal pools provide habitat for these species. Changes in hydrology could indirectly impact vernal pool plant communities by changing water levels or by depriving the habitat of water.

Ahart's Paronychia (*Paronychia ahartii*)

No impacts to this plant are expected.

Adobe Lily (*Fritillaria pluriflora*)

Due to disturbance from grazing and development, adobe lily is not expected to be found within the project area, and no impacts to this plant are expected from highway widening.

Ferris' Milkvetch (*Astragalus tener* var. *ferrisiae*)

No impacts to this plant are expected.

Sanford's Arrowhead (*Sagittaria sanfordii*)

Alternative D (Middle Interchange) would not impact potential habitat for Sanford's arrowhead, but Alternative E (North Interchange) would require fill in potential habitat for this plant.

3.9.3.2. Special Status Animal Species

Crustaceans

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

Vernal Pool Tadpole Shrimp (*Lepidurus packardii*)

California linderiella (*Linderiella occidentalis*)

The SR 70 widening could have potential permanent or temporary effects on vernal pool fairy shrimp and tadpole shrimp species. Filling and grading of vernal pools and swales would directly affect 1.36 ha (3.37 ac) of fairy shrimp habitat. The project would indirectly affect 1.32 ha (3.28 ac) of fairy shrimp habitat by altering hydrologic patterns. If the vernal pool or swale is deprived of its hydrologic connections with other pools and swales, lack of water could cause the demise of a population of listed fairy shrimp or, possibly, of the entire vernal pool community.

Invertebrates

Valley Elderberry Long-Horned Beetle (*Desmocerus californicus dimorphus*)

The potential impact to the longhorn beetle would be the same for either build alternative being considered. The proposed project would require removal of four, possibly five, mature elderberry shrubs. Two mature elderberries (*Sambucus mexicana*) located in the patch of blue oak woodland at the southeast corner of the intersection of SR 70 and Ophir Road would need to be removed in order to construct either alternative. A smaller elderberry shrub located under a cottonwood at the north end of the dredge tailings would also need to be removed. A fourth shrub is located at the north end of the project in the west right-of-way at the fence. One juvenile elderberry on the south bank of Tailings Creek would be impacted by the frontage road bridge construction. Table 3.9 lists location of elderberry shrubs within 30.5 m (100 ft) of the project area.

Table 3.9 Valley Elderberry Longhorn Beetle Impacts and Proposed Mitigation

Elderberry	Stem size (inches)	No. stems	Exit holes	Elderberry seedlings		Associates 1:1 ratio
				ratio	Number required	Number required
1 (riparian)	1-3	1	no	2:1	2	2
	>5	1		4:1	4	4
2 (non- riparian)	1-3	6	no	1:1	6	6
	>3&<5	4		2:1	8	8
	>5	6		3:1	18	18
3 (non-riparian)	1-3	2	no	1:1	2	2
	>3&<5	2		2:1	4	4
4 (non-riparian)	1-3	6	no	1:1	6	6
	>3&<5	3		2:1	6	6
5 (non-riparian)	>3&<5	1	no	2:1	2	2
6 riparian	>3&<5	1	no	No effects	--	--
	>5	6		--	--	--
7	>5	1	no	No effects	--	--
Total stems		40			58	58

Amphibians

California Red-Legged Frog (*Rana aurora draytonii*)

Yellow-Legged Frog (*Rana boylei*)

The proposed project would not impact red-legged and yellow-legged frog aquatic habitat at the pond and seasonal wetlands east of Feather River Boulevard, since realignment of the Feather River Boulevard would avoid the pond.

Mammals

Pallid Bat (*Antrozous pallidus*)

Yuma Myotis (*Myotis yumanensis*)

Townsend’s Big-Eared Bat (*Corynorhinus townsendii ssp. pallescens*)

Sensitive bat species may be temporarily and permanently impacted by the proposed project. If oak woodland and other trees that serve as roosts are removed and buildings are removed, day and night roosts may be lost. Alternative E (North Interchange) would result in the filling of wetlands associated with ponds and in the elimination of several acres of foraging habitat. In addition, a bat roost near the wetland would be directly impacted. Alternative D (Middle Interchange) could result in some temporary, indirect impacts from highway and interchange construction noise

and commotion, but these activities would not be within 30.5 m (100 ft) of the colony.

Birds

Little Willow Flycatcher (*Empidonax trailii brewsteri*)

Alternative E (Northern Alternative) would directly and indirectly impact little willow flycatcher nesting and foraging habitat at the ponds and seasonal wetlands. Alternative D (Middle Interchange) would not impact habitat at this location. The SR 70 widening could temporarily impact willow habitat on the parcels near the Feather River, as this habitat is within 100 m (328 ft) of the proposed project.

Swainson's Hawk (*Buteo swainsoni*)

No Swainson's hawk nests are known within the project area; however an active nest is located near the Feather River within 8 km (5 mi) of the project. The project is not expected to impact the Swainson's hawk, its nest or offspring, but 5.69 ha (14.10 ac) of annual grassland foraging habitat would be lost to the project.

Reptiles

Giant Garter Snake (*Thamnopsis gigas*)

Alternative E (North Interchange) would directly impact potential giant garter snake (GGS) habitat at the ponds and seasonal wetlands east of Feather River Boulevard. The total area of GGS habitat that would be permanently impacted by Alternative E (North Interchange) is 7.40 ha (18.29 ac). This total includes permanent waters, seasonal wetlands, and upland foraging habitat.

Construction of Alternative D (Middle Interchange) would temporarily impact GGS habitat at the ponds and seasonal wetlands, since the proposed interchange is within 61 m (200 ft) of this upland habitat. Alternative D (Middle Interchange) would also directly impact habitat at the west end of the ponds, near Feather River Boulevard, during construction of the highway and the park-and-ride area. Alternative D would permanently remove 0.11 ha (0.28 ac) of upland habitat and temporarily affect 0.64 ha (1.59 ac) of upland habitat.

Northwestern Pond Turtle (*Clemmys marmorata marmorata*)

Alternative E (Northern Alternative) would result in direct impacts to the ponds and seasonal wetland habitat of the pond turtle. Alternative D (Middle Interchange)

would not directly impact the turtle, except possibly at the west end of the wetland. Turtles could be directly impacted if migrating near construction activities.

3.9.4. Avoidance, Minimization and Compensation Measures

3.9.4.1. Special Status Plant Species

Hairy Orcutt Grass, (*Orcuttia pilosa*)

Slender Orcutt Grass (*Orcuttia tenuis*)

Greene's Tuctoria (*Tuctoria greenei*)

Little Mousetail (*Myosurus minimus*)

Butte County Meadowfoam (*Limnanthes floccosa* ssp. *californica*)

Ahart's Dwarf Rush (*Juncus leiospermus* var. *ahartii*)

Red Bluff Dwarf Rush (*J. leiospermus* var. *l.*)

Ahart's Paronychia (*Paronychia ahartii*)

Adobe Lily (*Fritillaria pluriflora*)

Hoover's Spurge (*Chamaesyce hooveri*)

Sanford's Arrowhead (*Sagittaria sanfordii*)

Ferris' Milkvetch (*Astragalus tener* var. *ferrisiae*)

Efforts would be made to avoid or minimize impacts to listed plant species by preserving existing vernal pools and swales and associated hydrology whenever possible. Loss of habitat for sensitive plant species endemic to vernal pools and swales probably would be mitigated by purchase of credits in a mitigation bank in Butte County. Mitigation for impacts to Federally listed species, including Butte County (Shippee) meadowfoam, slender and hairy orcutt grasses, and Greene's tuctoria, would be in accordance with recommendations from USFWS. Mitigation for state listed species would be determined through consultation with CDFG.

3.9.4.2. Special Status Animal Species

Crustaceans

Vernal Pool Fairy Shrimp (*Branchinecta lynchi*)

Vernal Pool Tadpole Shrimp (*Lepidurus packardi*)

California linderiella (*Linderiella occidentalis*)

To avoid impacts to critical habitat for fairy shrimp, Caltrans eliminated Alternative C (South Interchange) from further consideration. Early studies determined that Alternative C would fill approximately 8 ha (20 ac) of wetlands, vernal pools, and swales in the dredge tailings at the south end of the project. In addition, at the south

end of the project, design changes were made to relocate the two northbound lanes to the east, thereby avoiding the filling of swales that are hydrologically connected to the dredge tailings wetlands.

Mitigation measures would be developed in consultation with the USACE, USFWS, and CDFG to compensate for loss of habitat. Impacts to these species might be mitigable with the same mitigation measures that are appropriate for loss of vernal pool/swale habitat. Mitigation could be accomplished through preservation of existing habitat by purchase of a private parcel, or through the purchase of a conservation easement or credits in a bank to preserve an existing population.

To mitigate by preservation outside of an FWS-approved bank, direct impacts to vernal pools are usually mitigated at a ratio of 3-to-1 (three acres for every acre affected). Indirect impacts are typically mitigated at a 2-to-1 ratio. Indirect impacts would be those which affect habitat that is hydrologically connected to directly impacted vernal pools, or that is within 76 m (250 ft) of the proposed development.

If vernal pool creation is an option, for every acre of habitat directly affected, two acres of vernal pool habitat would be created and monitored on the project site or on another non-bank site as approved by the Service.

Invertebrates

Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)

Because the valley elderberry longhorn beetle (VELB) is a threatened species, mitigation would be carried out per the “Conservation Guidelines for the Valley Elderberry Longhorn Beetle” (July 9, 1999), issued by the USFWS. Four elderberry shrubs with stems one inch or greater at ground level would be unavoidable and, therefore, would need to be transplanted, if possible. In accordance with the Guidelines, the shrubs would be transplanted to a conservation area during the dormant period (November through the first two weeks of February).

If the USFWS were to determine that an elderberry shrub would probably not survive transplantation because of poor condition or access problems, new shrubs would be planted according to prescribed ratios to offset the habitat loss. Other options would include plantings at the Oroville Wildlife Area or contributions to a VELB habitat conservation fund.

Each elderberry stem with a diameter of one inch or more at ground level that would be adversely affected would require replacement in a conservation area by means of

elderberry seedlings or cuttings obtained from local sources. Replacement would be at a ratio ranging from 1:1 to 8:1 (new plantings to affected stems). A mix of native overstory and understory plants would be planted at the conservation site at a ratio of 1:1 (elderberries to native associates). According to the Guidelines, monitoring must occur for a period of ten years to ensure success of the conservation site. Success is measured by a survival rate of 60 per cent of the elderberries and 60 per cent of the native plants. Failed plants above this level would be replaced.

Amphibians

California Red-Legged Frog (*Rana aurora draytonii*)

Yellow-Legged Frog (*Rana boylei*)

This project would result in no adverse effects to the red-legged frog, a federally listed species, or the yellow-legged frog, a species of concern.

Mammals

Pallid Bat (*Antrozous pallidus*)

Yuma Myotis (*Myotis yumanensis*)

Townsend's Big-Eared Bat (*Corynorhinus townsendii ssp. pallescens*)

Buildings to be razed would be surveyed before construction. Other sites that could provide roosts would be surveyed by Caltrans biologists familiar with bat ecology. If a bat roost were discovered at a site that would be impacted, biologists would identify the species, estimate the size of the colony, and determine whether the roost is a day, night, or maternal roost. Mitigation measures would consist of exclusion, replacement with a substitute roost, and/or restoration or enhancement of habitat. If a maternal roost is present, a construction window might be necessary to avoid impacts to the colony. The work window would be determined in consultation with FWS and CDFG and based on the identification of the impacted species.

Birds

Little Willow Flycatcher (*Empidonax trailii brewsteri*)

Preconstruction surveys would be conducted within potential habitat within 100 m (328 ft) of proposed construction activities. If nesting birds are observed, CDFG would be consulted, and a work window would be established to avoid the May 1 through June 30 nesting season, in compliance with the Migratory Bird Treaty Act and Fish and Game Code 3503.

Reptiles

Giant Garter Snake (*Thamnopsis gigas*)

A USFWS programmatic consultation (November 13, 1997) is in place to mitigate relatively small impacts to giant garter snake (GGS) in the Sacramento Valley. This programmatic applies to permanent impacts of less than 1.21 ha (3.00 ac) and temporary impacts of less than 8.09 ha (20 ac) of GGS habitat.

Appropriate mitigation measures for impacts to GGS would be determined in consultation with the USFWS.

Northwestern Pond Turtle (*Clemmys marmorata marmorata*)

If the ponds and wetlands are impacted by the construction of Alternative E (North Alternative), mitigation would be in accordance with recommendations of the USACE, USFWS, and CDFG.

3.10. Hydrology and Floodplains

3.10.1. Regulatory Setting

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP) and delineates areas subject to flood hazard onto Flood Insurance Rate Map (FIRM) panels. The FIRM panels illustrate flood risk locations based on local hydrology, topology, precipitation, flood protection measures, and other scientific data. They also indicate areas subject to inundation by a flood that has a 1 percent or greater chance of being equaled or exceeded in any given year. This magnitude of flood is referred to as the 100-year or base flood, and the inundated area is called the 100-year floodplain or base floodplain.

Executive Order 11988 for floodplain management directs Federal agencies to refrain from conducting, supporting, or allowing an action in a floodplain unless it is the only practicable alternative. The FHWA requirements for compliance are outlined in 23 CFR 650 Subpart A. An encroachment into a floodplain is defined as “an action within the limits of the 100-year floodplain.”

3.10.2. Affected Environment

The FEMA Flood Insurance Rate Map (FIRM) panel no. 06007C0980 C indicates a section of the proposed project would encroach upon the 100-year floodplain. Flooding records were reviewed to determine the extent of prior flooding within the

project limits. State records and interviews with personnel representing state and local agencies indicate that numerous instances of flooding adjacent to and within state right-of-way within the project limits have occurred in recent years; however, no flooding of the SR 70 traveled way has occurred since 1964. Photographs and data, along with information from Butte County, indicate inundation occurred on adjacent parallel roads during both the 1986 and 1997 storms.

Former Caltrans Maintenance Supervisor Bob Sansoni recalls that flooding occurred between 1985 and 1990, and corroborates the February 1986 flooding. The only record of flooding of SR70 within the project limits was in 1964 near KP 18.59 (PM 11.5), which is approximately the SR 70/Ophir Road intersection. The records do not elaborate as to the extent of the flooding at that time.

3.10.3. Impacts

The proposed improvements would displace floodplain area within two-thirds of the project limits. This floodplain area is designated on the FIRM panel as Zone A: Areas of 100-year flood with base flood elevations and flood hazard factors not determined.

Flood flows would not be slowed and would continue on the pre-existing course. The water surface elevation would decrease through the first half of the project (from north to south) until flow passed the first major proposed intrusion into the floodplain: the interchange at Georgia Pacific Way. Approximately 400 m (1312 ft) downstream from the interchange, the velocity would slow as the width of flow widened and the water surface elevation increased. Surface elevations would then return to present values with no increase within the last (southernmost) one-fourth of the study area. Biofiltration swales used for water quality treatment would provide a secondary benefit of infiltration and attenuation of increased runoff flow during flood events. Floodplain studies of the final design would determine whether additional detention basins would be needed.

This project would not increase the floodplain area. Any floodplain area lost would be on the fringe of the floodplain. Some of this area appears to be backwater. The maximum increase in water surface would be less than 7.6 cm (3 in) in a limited area within an area already designated as a flood zone.

Structures already exist within the 100-year flood hazard area. FEMA requires a Letter of Map Amendment (LOMA) for individual owners of property located within

a floodplain when these owners make structural improvements that raise the floor of the structure above the surface level of the 100-year floodplain. The finished floor on such a structure must be a minimum of 30.5 cm (1 ft) above the Base Flood Elevation (BFE). The 7.6-cm (3 in) water surface elevation increase would not cause flooding of finished floors of any such structures.

3.11. Land Use

3.11.1. Regulatory Setting

In California, the power to regulate land use is delegated to local governments. It is the county or city general plan that provides a focus and a guide for local land use decisions. Local land use plans consist of goals and policies which aim to direct the physical development of communities and depend on regulatory mechanisms such as zoning to implement those policies and guide growth and development (Caltrans 1977).

Goals for the project area are established in the Butte County General Plan and the Oroville General Plan. In addition, the Butte County 2001 Regional Transportation Plan update, which is essential for the development and operation of transportation facilities and services, was adopted at the Butte County Association of Governments (BCAG) Board of Directors meeting on September 27, 2001.

3.11.2. Affected Environment

The predominant land uses in Butte County are agriculture and open space/grazing in the valley area, and recreation and timber-related activities in the forested lands of the foothills. Oroville, the Butte County seat, is located along the Feather River in the southern portion of the county. State Route 70 is the main artery (corridor) connecting Oroville to Sacramento and other communities to the south.

The project is located south of Oroville within that city's sphere of influence. The project limits are situated in an area zoned primarily for light commercial to heavy industrial use. In addition, the western portion of the project area is zoned with a recreational overlay. The County Planning Department created this special zoning designation, which allows recreational use of this otherwise zoned industrial area, because of the area's proximity and accessibility to the Feather River.

3.11.3. Impacts

The proposed project is in conformance with the Oroville General Plan, the Butte County General Plan, and the Regional Transportation Plan (RTP). The Oroville General Plan designates the area surrounding the proposed interchange for new commercial development. The project would improve access to the freeway via Ophir/Pacific Heights Road, which could stimulate utilization of industrially zoned areas on the east side of the freeway. In addition, the removal of at-grade intersections at Georgia-Pacific Road and Ophir Road would greatly improve safety along this section of SR 70, thus accommodating planned commercial development near the interchange.

The Oroville General Plan has earmarked the area near Ophir Road and SR 70 for commercial development. The Plan indicates that Ophir/Pacific Heights Road is the southern boundary for commercial development. Due to topography, zoning, and the industrial nature of the area, large residential development is unlikely.

The Butte County General Plan calls for minimum LOS “D” for its urban roadways. The project would improve SR 70 within the project limits to achieve a design speed of 65mph (110 kph) and to provide for future widening to maintain the facility to the desired LOS “D”.

This project would play an important part in BCAG’s long-range plan to bring a four-lane facility to the urbanized area of Butte County. Within the RTP, BCAG has identified SR 70 as an important interregional facility. The proposed project would improve the flow of traffic on SR 70.

The project design does not conflict with any applicable land use plans, policies, or regulations. There are no applicable habitat conservation or natural conservation plans in place or planned for the area directly impacted by the project. The proposed interchange would accommodate planned growth for the area.

3.11.3.1. Construction Phase Impacts

While the project would require temporary construction easements on private property, this would not result in long-term impacts to the surrounding community.

3.12. Growth

3.12.1. Regulatory Setting

CEQA and NEPA require that the environmental document examine the potential growth-inducing effects of a proposed project. The discussion should include the ways in which the proposed project “could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment” [CEQA Guidelines 15126.2(d)]. “Indirect effects, which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable...may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate” [NEPA, 40 CFR 1508.8(b)].

3.12.2. Affected Environment

Butte County is expected to have moderate population growth during the next 25-year period (2000 to 2025). Butte County’s population is projected to reach 293,467 by 2020, an increase of approximately 90,000. The projected annual growth rate for Oroville is 2 percent, slightly higher than the 1.9 percent projected for Butte County residents (BCAG 2001).

The Butte County General Plan encourages growth in areas that have existing public facilities and promotes annexation of developed areas to existing cities and districts. Oroville and its environs have experienced a slow economic recovery from the recessionary period of the nineties, as evidenced by the few number of applications for permits to develop in the area (Sanders 2001). While there is an abundance of vacant land zoned for industrial use on the east side of SR 70, no permit applications have been submitted for development of this land. The County Planning Department has issued one permit to build a 96-space recreational vehicle park on the west side of the project area. There are no other planned development projects in the area.

3.12.3. Impacts

The amount and location of population growth and economic development within a specific area are controlled, in part, by local and county governments through zoning, land use plans and policies, and decisions regarding development applications. Local government and other regional, State, and Federal agencies make decisions regarding the provision of infrastructure (such as roads, water facilities, and sewage facilities) that may influence growth rates and location of future development.

The proposed project would facilitate the planned commercial development near the Ophir Road and Pacific Heights Road interchange by improving safety along this section of SR 70.

The city of Oroville anticipates that the proposed interchange will attract new industry to this under-utilized industrial area and result in the creation of jobs. The unemployment rate for South Oroville was 17.9 percent in 2002, which is higher than the Butte County rate of 7.7 percent. The availability of workers locally could make it unnecessary to recruit from outside the area, although this is impossible to predict. The potential realization of planned commercial development would not affect the predicted population growth for the area.

3.13. Farmlands/Agricultural Lands

3.13.1. Regulatory Setting

The Farmland Protection Policy Act (FPPA, 7CFR658) requires Federal agencies to identify and take into account adverse effects of their programs on farmland. The agencies must consider alternative actions to lessen identified adverse effects, and must assure that such programs, to the extent practicable, are compatible with State, local, and private programs and policies to protect farmland.

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is California's principal program for preservation of agricultural and open space land. Under this program, landowners may enter into a contract with the State to restrict specific parcels of land to agricultural or related open space use. In return, these landowners receive reduced property tax assessments on these parcels.

3.13.2. Affected Environment

The project is located in an area that is zoned industrial and highway commercial and is used for heavy to light industrial activities. According to the Natural Resources Conservation Service (NRCS), there are no farmlands (prime or other) located within the project boundary. Agricultural use of the area is, therefore, unlikely (see Appendix G).

Although Butte County participates in the California Land Conservation (Williamson) Act program, no parcels within the project study area are enrolled in the program.

3.13.3. Impacts

The proposed project would not temporarily or permanently impact farmland or agricultural land, nor would it conflict with existing zoning for agricultural use or with a Williamson Act contract.

3.14. Community Impacts (Social and Economic) and Environmental Justice

3.14.1. Regulatory Setting

The following laws and regulations are relevant to community impact assessment:

- Title VI of the Civil Rights Act of 1964 prohibits discrimination in Federally assisted programs on the basis of race, color, national origin, age, sex, or disability.
- Executive Order 12898 requires each Federal agency (or its designee) to take appropriate and necessary steps to identify and address disproportionately high and adverse human health and environmental effects of its programs, policies, and activities on minority populations and low-income populations.
- The Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended in 1987, provides for uniform and equitable treatment of persons displaced from their homes, businesses, non-profit associations, or farms by Federal and Federally-assisted programs, and establishing uniform and equitable land acquisition policies.
- The Americans with Disabilities Act (ADA) of 1990 extends the protection of the Civil Rights Act to the disabled and prohibiting discrimination in public accommodations and transportation and other services.

3.14.2. Affected Environment

The Oroville area is characterized by low-density, scattered development with many vacant parcels. The area did not grow from a single core but became an urban agglomeration by the merging of fairly distinct and separate communities.

The highest density residential development in the Oroville area is located within the Oroville city limits, although this development is primarily single-family in character with a scattering of apartments, mobile homes, and mobile home parks. The city also contains the principal centers of commercial development, located in the downtown area and along Oro Dam Boulevard East between SR 70 and Olive Highway.

Industrial development is mainly limited to a band extending from downtown Oroville to Ophir Road between SR 70 and Lincoln Boulevard.

Land use in Oroville supports diverse economic activities including agriculture, retail sales, light industrial, and high-tech manufacturing. The study area is characterized by commercial buildings, industrial facilities, recreational facilities, recreational vehicle (RV) parks, and a few dispersed residences.

3.14.2.1. Housing

Based upon 2000 U.S. Census data, housing in the study area consists predominantly of two residence types: single family residences and mobile homes or trailers. The housing market in the project area has moderate to high vacancy rates ranging from 8.2 percent for Census Tract 29 to 10.7 percent for Census Tract 30 (Table 3.10).

Table 3.10 Housing Characteristics in Project Area

Data Set: U.S. Census 2000 Summary Tape File 1 (STF 1)					
* Median Value data available only from U.S. Census 1990 Summary Tape File 1 (STF 1)					
U.S. Census Division	Total Housing Units	Vacant Units	Vacancy Rate	Renter Occupied (Percent)	*Median Value
Butte County	85,523	5,957	7.0	39.3	94,000
Oroville City	5,419	538	9.9	57.3	62,600
Census Tract 29	2,552	209	8.2	28.1	58,800
Census Tract 30	2,439	261	10.7	43.7	51,100
Census Tract 33	1,602	152	9.5	21.1	81,700

Source: U.S. Census 2000

3.14.2.2. Business

Business establishments adjacent to the project area include a variety of enterprises: light industrial operations such as ready-mix cement, welding and construction operations; a mobile home park; several R.V. parks; and a retail surplus equipment operation. Parcels along Pacific Heights Road, a frontage road running parallel to SR 70, are zoned light industrial. This area is outside the Oroville city limits but within the city's sphere of influence.

Additionally, recreational business operations exist along Pacific Heights Road, including a golf driving range and a paint ball park. Recreational use of these properties is allowed via a recreational overlay that was approved by Butte County

for the area between SR 70 and the Feather River north of Ophir Road. The recreational overlay was designed to allow flexibility for property owners in the area. This overlay zone may encourage future development of recreation-related businesses in the area.

3.14.2.3. Population

Census tract boundaries overlap the city limits of Oroville. The project limits fall within three census tracts: 29, 30 and 33 (Figure 3-10).

Median Age

U.S. Census 2000 data include the median age of the population in the census tracts potentially affected by the proposed project (Table 3.11).

Table 3.11 Population in the Project Area by Census Tract

U.S. Census 2000 Summary Tape File 1 (STF 1)		
U. S. Census Division	Persons	Median Age
Butte County	203,171	35.8
Oroville City	13,004	32.6
Census Tracts Adjacent to Project		
Census Tract 29	6,610	36.6
Census Tract 30	6,863	29.6
Census Tract 33	3,930	41.9
Total	17,403	

Source: U.S. Census 2000

3.14.2.4. Cultural and Ethnic Diversity

For the purposes of describing cultural and ethnic diversity of the study area, self-selected, race-based categories from the United States Census are used. It should be noted that the category of “white” is not related to any particular ethnic group, and for some groups such as Hispanic, white is not a mutually exclusive category. In other words, a person may identify himself or herself as Hispanic and also “white.”

Figure 3-10 U.S. Census Tract Block Groups Affected by Project

Table 3.12 shows ethnicity characteristics for the demographic study area as recorded in the 2000 Census.

Table 3.12 2000 Census Update for Study Area

Data Set: U.S. Census 2000 Summary Tape File 1 (STF1)							
U.S. Census Division	Ethnicity (Percentage of Total)						
	Hispanic or Latino (of any race)	Black or African American Alone	Asian Alone	American Indian Alone	Native Hawaiian and Other Pacific Islander	White Alone	Two or more races
Oroville City	8.3	4.0	6.3	3.0	.3	77.2	5.4
Census Tract 29	8.0	.5	10.3	2.2	.2	78.0	5.1
Census Tract 29 Block Group 6	7.9	0	6.2	2.3	0	81.0	6.6
Census Tract 30	10.3	6.3	14.7	3.3	.1	65.7	5.6
Census Tract 30 Block Group 1	13.1	1.3	2.5	4.4	1.2	79.4	7.3
Census Tract 33	12.5	1.1	1.2	5.4	.1	80.5	5.1
Census Tract 33 Block Group 4	13.1	1.1	6.4	4.9	.001	82.9	5.5

Source: U.S. Census 2000

Poverty Rate

The FHWA standard for determining poverty is the U.S. Department of Health and Human Services (HHS) Poverty Guidelines published annually in the Federal Register. The HHS guidelines are a simplification of the poverty thresholds issued by the Census Bureau. The Census Bureau thresholds are used to calculate the number of persons in poverty in the United States by region. Although both the poverty thresholds and poverty guidelines are updated annually based on price changes using the Consumer Price Index for All Urbana Consumers (CPI-U), guidelines are issued first for use in determining eligibility for a number of federal programs. Thresholds

for a particular calendar year are not published in final form until late summer of the following calendar year.

Table 3.13 shows the 2003 HHS Poverty Guidelines for the 48 contiguous states and the District of Columbia as they appeared in the *Federal Register*:

Table 3.13 2003 HHS Poverty Guidelines

Size of Family Unit	Poverty Guideline (Dollars)
1	\$ 8,980
2	12,120
3	15,260
4	18,400
5	21,540
6	24,680
7	27,820
8	30,960
For each additional person, add	3,140

Source: *Federal Register*, Vol. 68, No. 26, February 7, 2003, pp. 6456-6458

Table 3.13 shows poverty rates for relevant census tracts in comparison with poverty rates for Butte County, Oroville and four other nearby communities, and California.

Table 3.13 Poverty Rates

Data Set Census 2000 Summary File 3 (SF 3)	
Percent Families Below Poverty Level	
Census Division	1999
Biggs	11.7
Chico	12.7
Gridley	19.5
Oroville	26.2
Census Tract 29	20.3
Census Tract 30	30.6
Census Tract 33	14.3
Butte County	12.2
California	10.6

Source: *US Census 2000*

Table 3.14 lists median family and median household income for the same census divisions:

Table 3.14 Median Family and Household Incomes

Data Set Census 2000 Summary File 3 (SF 3)				
Median Income in 1999				
	Median Family Income	Percent of Butte Co. Median Family Income	Median Household Income	Percent of Butte Co. Median Household Income
Biggs	\$39,063		\$33,250	
Chico	\$43,077		\$29,359	
Gridley	\$29,957		\$24,368	
Oroville	\$27,666		\$21,911	
Census Tract 29	\$29,250		\$26,964	
Census Tract 29 Block Group 6	\$17,757	43%	\$18,517	58%
Census Tract 30	\$24,593		\$20,444	
Census Tract 30 Block Group 1	\$20,769	51%	\$16,308	51%
Census Tract 33	\$39,063		\$32,986	
Census Tract 33 Block Group 4	\$30,000	73%	\$26,905	84%
Butte County	\$41,010		\$31,924	
California	\$53,025		\$47,493	

Source: US Census 2000

3.14.3. Impacts

The Draft Relocation Impact Report (DRIR) has identified the potential displacements by alternative (Table 3.15).

Table 3.15 Residential and Non-residential Displacements by Alternative

Unit Type	Middle Alternative	Northern Alternative
Total People Displaced	12	10
Single Family Residence	2	1
Mobile Home	3	3
Total Residential Units	5	4
Commercial Business	16	16

Industrial/Manufacturing	3	3
Total Non-Residential Units	19	19

3.14.3.1. Housing

Although there would be some displacements related to the project, the effect on neighborhood character or stability would be minimal. The mixed use of the project area does not lend itself to establishment of a true neighborhood or community.

It is not expected that replacement housing would need to be constructed, since adequate resources exist for the relocation of residents who ultimately would be displaced as a result of this project.

3.14.3.2. Business

In terms of business relocation, it is currently unknown whether or not displaced businesses would relocate within the city limits of Oroville or within the city’s sphere of influence; however, the Draft Relocation Impact Report (DRIR) indicates that ample suitably zoned properties exist for relocation of impacted businesses. A number of businesses would require additional approval in the form of a Use Permit from the Oroville Planning Department. These businesses include the following:

- APN 036-500-041 Diesel Fuel Card Lock Business
- APN 036-490-025 Wood Processing Plant
- APN 036-510-039 Rock Processing Plant (if within 100 feet of residential property)
- APN 036-510-006 Paint War Recreation
- APN036-510-022 Military Surplus-Equipment/Sales
- APN036-510-044 Recreation Theme Park
- APN036-510-045 Metal Welding Shop

3.14.3.3. Environmental Justice

No minority population has been identified that would be adversely affected; however, Census Tract 30 also has a higher percentage of families living below the poverty level than Oroville. The median family and household incomes for Census Tract Block Group (CTBG) 30-1 are both lower than the respective incomes for Oroville. CTBG 30-1 could be affected by environmental justice issues.

While there will be some displacement of residences in both alternatives being considered, the DRIR indicates that sufficient housing stock exists for relocation of displacees.

With regard to environmental and public health issues, impacts would be experienced by residents generally in relationship to their proximity to the intersection and would occur regardless of their racial or income characteristics. There is no evidence to suggest that this project would cause disproportionately adverse human health or environmental effects on low-income populations compared to other residents residing in adjacent areas.

3.14.3.4. Temporary Impacts

Assuming that displaced businesses relocate within the project area, the net, long-term employment impacts of the build alternatives would be negated, and employment impacts would be temporary in nature.

3.14.4. Avoidance, Minimization and Compensation

Relocation assistance would be provided to displaced individuals or businesses in accordance with the Federal Uniform Relocation Assistance and Real Properties Acquisition Policies Act of 1970, as amended. Caltrans would provide relocation advisory assistance to any person, business, farm or nonprofit organization displaced as a result of the acquisition of real property for public use. All benefits and services would be provided equitably to all relocatees without regard to race, color, religion, age, national origins and disability as specified under Title VI of the Civil Rights Act of 1964.

The Relocation Payment Program would pay relocation costs and expenses to residents displaced by the proposed project. Benefits and limitations of this program are explained in Appendix F. Displaced residents are guaranteed decent, safe and sanitary housing. Mobile home owner occupants renting space may receive a combination of replacement housing benefits.

The Nonresidential Relocation Assistance Program provides assistance to businesses, farms and nonprofit organizations in locating suitable replacement property, and reimbursement for certain costs involved in relocation. The Relocation Advisory Assistance Program would provide current lists of properties offered for sale or rent, suitable for a particular business's specific relocation needs. The types of payments

available to eligible businesses, farms and nonprofit organizations include searching and moving expenses, and possibly reestablishment expenses or a fixed in-lieu payment.

Additionally, the loss of any sales taxes resulting from the proposed project would be partially mitigated by the short-term flow of construction capital into the local economy.

3.15. Utilities/Emergency Services

3.15.1. Affected Environment

3.15.1.1. Utilities

The following utilities are within or adjacent to the project limits:

- SBC - Telecommunications
- Pacific Gas and Electric - Natural gas and electricity
- Sewerage Commission, Oroville Region - Sewer outfall.
- Oroville Wyandotte Irrigation District – Eight-inch potable water line.

3.15.1.2. Emergency Services

Law enforcement services are provided to the study area by the Butte County Sheriff's Department, which is headquartered in Oroville. The California Highway Patrol (CHP) office with jurisdiction over the study area is located at 2072 Third Street, Oroville.

Fire protection and emergency services are provided by a mutual aid agreement among the Oroville Fire Department, the California Department of Forestry, and the Butte County Fire Department.

Oroville Hospital, an acute care hospital in Oroville, provides major medical services to the study area.

3.15.2. Impacts

3.15.2.1. Utilities

To allow construction of the proposed project, all of the utilities listed above would need to be relocated outside the proposed right-of-way. Relocation would involve the purchase of required easements and the removal of existing vegetation. These additional easements fall within the project study area. Caltrans would coordinate with the utility companies to ensure minimum disruption of service to customers affected by the project. Biological resources affected by utility relocation have been identified in Sections 3.6 Wetlands and Other Waters of the U. S., 3.7 Vegetation and Wildlife, and 3.8 Special Status Species.

3.15.2.2. Emergency Services

The proposed project would have a beneficial impact on fire protection, law enforcement, emergency and other public services by improving vehicle safety and response time within the project limits. Replacement of the two public road intersections, Ophir Road and Georgia Pacific Way, with an interchange and an overcrossing respectively would facilitate the movement of emergency services vehicles across SR 70.

3.15.3. Avoidance, Minimization and Compensation Measures

3.15.3.1. Utilities

Removal of existing vegetation as a result of utility relocation would be addressed under Caltrans Standard BMPs for erosion control and water quality.

3.15.3.2. Emergency Services

No route closures and no significant lane closures are expected except for falsework erection and removal. Stage construction would be designed and included with contract plans. Rehabilitation work on existing lanes would be deferred until new lanes are constructed. Existing lanes, intersection or relocated intersection would serve traffic during construction of interchange. Local streets would require temporary closures; however, traffic would be rerouted to other city and county roads to provide continuous access. Standard clearances would be provided during construction.

3.16. Public Transportation, Pedestrian and Bicycle Facilities

3.16.1. Regulatory Setting

The Transportation Equity Act for the 21st Century (TEA-21) continues and expands provisions to improve facilities and safety for bicycles and pedestrians. Sec. 1202 of TEA-21 addresses bicycle transportation and pedestrian walkways. Specifically, bicyclists and pedestrians are to be given due consideration during development of transportation plans at the local and state level. TEA-21 prohibits the approval of any project that would have a “significant adverse impact on the safety for nonmotorized transportation traffic...unless such project or regulatory action provides for a reasonable alternate route or such a route exists.”

3.16.2. Affected Environment

No pedestrian or bicycle facilities are currently available on roads within the project limits; however, the city of Oroville has adopted general plan provisions for a bike route study. These provisions include bike routes within the study area. The planned shoulder width for city and county roads affected by the project would accommodate bicycle use.

According to the Caltrans Office of Advance and System Planning, the park and ride lot closest to the proposed project is located near the Grand Avenue and SR 70 interchange, two miles north of the project limits. This lot is currently functioning at about two-thirds capacity.

A park and ride lot at the proposed Ophir Road and SR 70 interchange is recommended for this project. After an alternative is selected, the city of Oroville and Butte County would be consulted to determine the size, location, funding and scheduling of the facility. Excess parcels created by the proposed project could be utilized for the park and ride facility.

3.17. Visual/Aesthetics

3.17.1. Regulatory Setting

The National Environmental Policy Act (NEPA) and the CEQ regulations identify aesthetics as one of the elements of the human environment that must be considered in determining the effects of a project. Title 23, U.S.C. 109(h) states that aesthetic effects must be fully considered in developing a project. CEQA also addresses

aesthetics as part of the human environment. PRC § 21001 requires project proponents to “take all action necessary to provide the people of this state with... enjoyment of aesthetic, natural, scenic, and historic environmental qualities.” Aesthetics, as used in these provisions, relates to the visual effects of a project.

The approach for this visual assessment is adapted from the FHWA’s Visual Impact Assessment System (FHWA 1983). An evaluation of existing conditions of aesthetic resources in the project area identified the visual features, or resources, of the landscape; assessed the character and quality of those resources relative to overall regional visual character; and identified the importance to people, or sensitivity, of views of visual resources in the landscape. Once the baseline (existing) conditions were established, the proposed project was systematically evaluated using a numerical rating system for its degree of visual impact, which depends on both the magnitude of change in the visual resource (i.e., visual character and quality) and viewers’ responses to and concern for those changes.

3.17.2. Affected Environment

Butte County is predominantly rural, having an agricultural character throughout most of the western portion of the county and a foothill/mountain natural environment character in the eastern portion of the county. Table Mountain is directly north of the project and serves as both a natural recreational site and a visual landmark for motorists. The Feather River riparian corridor bounds the project to the west. The greater Oroville area has many attractions, including nearby Feather Falls, the sixth highest waterfall in the United States; Lake Oroville; California’s first suspension bridge; a covered bridge; and the Feather River Fish Hatchery.

The proposed project area lies just south of Oroville in an area that transitions from industrial land uses to agricultural flatlands. Adjacent land uses include residential, industrial, and some commercial and farmland. Residential development is limited to a few sparsely spaced farmhouses on large parcels of land. The industrial uses are primarily clustered adjacent to a frontage road running parallel to SR 70.

Existing visual conditions within the project area are not vivid or memorable. Visual intrusions in the form of billboards and commercial and industrial sites compromise the viewshed along SR 70. Motorists traveling through the area near Ophir Road are presented with an unobstructed view of a lumber mill. Pleasant views of agricultural areas and oak groves are compromised by the visual intrusion of billboards, industrial truck yards, and commercial sites.

State Route 70 within the project area is not listed in the state Scenic Highway Program. While Butte County and the City of Oroville have policies for “Entryway Beautification,” and “Viewshed/ Resource Protection,” this portion of SR 70 does not currently carry the formalized “viewshed” designation to which these policies apply.

3.17.3. Impacts

3.17.3.1. Permanent Impacts

The largest group of potentially affected viewers would be motorists traveling along SR 70 since these residents are accustomed to the traffic and exposure to SR 70. The visual intrusion of the proposed improvements would be considerably less than if the highway were not already present in its current form.

Alternatives D and E

Both of the build alternatives would include the following changes that would alter the visual environment:

- Tree removal would detract from the current rural aesthetic nature of the site.
- Grading would scar the visual unity of the area.
- Two vertical structures (overpasses) would be constructed and would conflict visually with the rural, flat, agricultural scenic quality of the region.
- Buildings would be removed including some that may be local, visual landmarks.
- Some businesses along the highway would be removed or relocated.
- The highway would be widened, increasing the amount of paving in relation to adjacent vegetation and reducing the intactness of the site.

Alternative D would require more grading than Alternative E; however, fewer buildings would need to be removed for the construction of Alternative D than for Alternative E.

Alternative D (Middle Interchange)

For motorists traveling north on SR 70, the view of the proposed Ophir Road interchange would be brief as the roadway approaches the crest of the bluff and then drops nearly 30 m (100 ft) in roughly 0.3 km (0.18 mi), requiring an increased level of driver’s attention. The Georgia Pacific overcrossing would come into view from the

top of the bluff. The view of the overcrossing would become obstructed as the motorist approaches the Ophir Road structure, then move into prominence as the motorist passes through that structure (Figure 3-12). The visual impact of the Georgia Pacific overcrossing structure would be moderated by the close proximity of the Oro Dam Blvd./SR 162 interchange and the adjacent industrial and commercial development.

Traveling south on SR 70, motorists' views of the proposed Georgia Pacific overcrossing would be obstructed until they pass the Oro Dam Blvd./SR 162 structure. The location of this overcrossing would detract somewhat from the visual character and quality of the area; however, the impact would be lessened by the interchange's close proximity to the Oro Dam Blvd./Route 162 interchange and the presence of industrial and commercial development. Continuing south, the proposed Ophir Road interchange would be visually prominent. Although the interchange would introduce a manmade element into the natural environment, the structure would be visually set against the hillside and blend with the existing natural environment (Figure 3-14).

Alternative E (North Interchange)

For motorists traveling north on SR 70, views of the Ophir Road interchange would be brief since the roadway approaches the crest of the bluff and then drops nearly 31.48 meters (100 vertical feet) in roughly 0.3 km (0.18 mi). The driver's exposure time to the interchange structure would be longer for Alternative E than for Alternative D. The interchange would introduce a manmade element into the natural environment. Continuing north, the Georgia Pacific Road overcrossing would come into the motorist's view from the top of the bluff. The view of the overcrossing would become obstructed as the motorist approaches the Ophir Road structure, then move into prominence as the motorist passes through that structure (Figure 3-12).



Figure 3-11 Existing SR 70 looking north towards Georgia Pacific Way



Figure 3-12 Simulation of proposed Georgia Pacific Way Overcrossing



Figure 3-13 Existing SR 70 looking south to Ophir Road and bluff



Figure 3-14 Alternative D – Simulation of proposed Ophir Road Interchange



Figure 3-15 Existing SR 70 looking south to Ophir Road and bluff



Figure 3-16 Alternative E - Simulation of proposed north Ophir Road Interchange

For motorists traveling south on SR 70, the Oro Dam Blvd./Route 162 structure would limit the view of the Georgia Pacific Overcrossing. Once the motorist passes through the Oro Dam Blvd./Route 162 structure, the Georgia Pacific overcrossing would become more visually dominant. The location of this overcrossing would detract somewhat from the visual character and quality of the area; however, the impact would be lessened by the interchange's close proximity to the Oro Dam Blvd./Route 162 interchange and the presence of industrial and commercial development. Continuing south, the Ophir Road interchange would be viewed in front of and at the bottom of the distant hillside (Figure 3-16). As motorists approach the interchange, it would be dominant in their view but visually set against the bottom of the hillside, blending in with the natural environment.

3.17.3.2. Temporary Impacts

Construction of the proposed improvements would create temporary changes in views of and from the project area. Construction activities would introduce considerable heavy equipment and associated vehicles, including dozers, graders, scrapers, and trucks, into the viewshed of SR 70, public roadways, and surrounding development. Safety and directional signage would also be a visible element. This impact would exist for the duration of construction operations.

3.17.4. Cumulative Impacts

The incremental effect of this project on the visual character and quality of the project area would not be cumulatively considerable.

3.17.5. Avoidance, Minimization and Compensation Measures

The visual quality of the site after mitigation should be equal to or better than the existing visual quality. The following mitigation measures apply to both Alternative D (Middle Interchange) and Alternative E (North Interchange) and would help accomplish the above goal.

- Ensure that landscape and erosion control planting is consistent with the regional species and the local visual character. Use a mixture of grass and wildflowers to provide a seasonal display of color and to mitigate the visual impacts associated with the additional pavement.
- The proposed interchange and overcrossing would be located in a setting in which highway planting is warranted. A separate mitigation and planting project, funded

by the proposed project, would be programmed to occur within two years after construction is completed.

- Trees and shrubs would be planted near the overpasses to soften the contrast between the horizontal structures and the surrounding surface.
- Trees and shrubs would be planted around the proposed park and ride facility to establish shade relief and visual interest.
- Trees would be planted to replace those that are removed. Oak trees would be replaced at a rate of 1 seedling per 1in of removed tree measured at breast height; i.e., 12-inch oak removed = 12 seedlings planted.
- New cuts and slopes would be rounded at the top and bottom of the slope and laid back to a minimum of 1.5-to-1 to encourage plant growth. Local, clean topsoil would be added to the top layer of exposed soil to replenish lost nutrients and minerals. Large graded areas would be terraced at two-foot intervals, and slope runs longer than 20 ft would require a minimum four-foot ledge. Trees would be planted on new cut and fill areas to resemble the natural surrounding slopes as much as possible.
- Areas within the Ophir Road interchange that serve as seasonal storm water retention ponds would be graded with meandering edges and elevations to replicate naturally occurring ponds.
- In areas where businesses are removed or relocated, screening with berms (hydraulics permitting) or plantings would further improve the visual quality of the site.

3.18. Cultural Resources

3.18.1. Regulatory Setting

The treatment of cultural resources is governed by Federal, State, and local laws and regulations. Federal and State regulations take precedence over local ordinances.

Federal regulations for cultural resources are contained in Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The NHPA establishes the National Register of Historic Places (NRHP), which includes districts, sites, buildings, structures, and objects with local, regional, state or national significance. Section 106 mandates that Federal agencies take into account the effect of an undertaking on a property that is included on or eligible for inclusion on the NRHP.

The NHPA also establishes State Historic Preservation Offices and programs and the Advisory Council on Historic Preservation. The California State Historic Preservation

Office (SHPO) maintains the California Register of Historic Resources (CRHR). Properties listed on the NRHP are automatically listed on the CRHR. The CRHR can also include properties designated under local ordinances or identified through local historical resource surveys.

According to CEQA, a project would have a significant impact on the environment if it has the potential to eliminate important examples of the major periods of California history or prehistory. In addition, the Federal-Aid Highway Act of 1968 (49 USC 303 [c]) mandates that the Secretary of Transportation “ may approve a transportation program or project requiring the use of land of an historic site of national, State, or local significance only if -

- (1) there is no prudent and feasible alternative to using that land; and
- (2) the program or project includes all possible planning to minimize harm to the ... historic site resulting from the use.”

3.18.2. Affected Environment

In the immediate vicinity of the project, archaeological studies have been limited to surface surveys. Many of these surveys were conducted over the last 20 years, including several which investigated portions of the currently proposed project area as part of other highway projects. Other archaeological surveys have studied areas adjacent to the project area. Several archaeological sites have been identified near the proposed project area. These sites include both historic and prehistoric resources.

3.18.2.1. Native American Issues

The Native American Heritage Commission (NAHC) was contacted regarding the presence of any lands considered sacred by local Native American groups. The NAHC responded that no sacred lands were known to exist in the project area. The NAHC also provided a current list of Native Americans to contact regarding any concerns or issues they may have about the project area. Six groups were contacted.

In a phone conversation with Bruce Steidl, Cultural Resource Officer for the Mooretown Rancheria, Mr. Steidl expressed concern that, although he knows of no Native American sites or materials in the project area, it is possible that Native American sites, artifacts and/or human remains may be uncovered during construction. No other responses were received from the Native Americans contacted.

3.18.3. Impacts

The following historic features have been identified within the State and Federally recognized and approved Area of Potential Effects (APE) for the project: a presently occupied ranch dating from the early 1900s; the remains of an old powerhouse; a section of old, abandoned road; an early twentieth century barn; a segment of abandoned ditch; an abandoned portion of the grade for the Western Pacific Railroad; and several types of tailings from previous gold mining efforts. None of these buildings, sites or features were found eligible for the NRHP by SHPO, nor do they constitute historic resources for the purposes of CEQA (see SHPO letter included in Appendix A).

3.18.4. Avoidance, Minimization and Compensation Measures

In the remote event that buried archaeological materials are encountered during construction, the course of action followed will be that stated in Stipulation XV Post Review Discoveries, Section B.1.-3 in the January 2004 *Programmatic Agreement Among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act, as it Pertains to the Administration of the Federal-Aid Highway Program in California (PA)*.

If human remains are discovered or recognized during construction, there shall be no further excavation or disturbance of the site or any nearby areas reasonably suspected to overlie adjacent remains until the appropriate county coroner has determined that the remains are not subject to the provisions of Section 27491 of the Government Code. If the coroner determines the remains to be Native American, he/she shall contact the Native American Heritage Commission (NAHC) within 24 hours. The NAHC will appoint a Most Likely Descendent for disposition of the remains (Health and Safety Code Sect. 7050.5, Public Resources Code Sect. 5097.24).

4. Cumulative Impacts

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of this project. A cumulative effect assessment looks at the collective impacts posed by individual land use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial impacts taking place over a period of time.

Cumulative impacts to resources in the project area may result from residential, commercial, industrial, and highway development, as well as from agricultural development and the conversion to more intensive types of agricultural cultivation. These land use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130 describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts, under NEPA, can be found in 40 CFR, Section 1508.7 of the CEQ Regulations.

The resources that the State Route 70 Ophir Road project may adversely impact that will be discussed in the cumulative impact analysis include the following:

- Water Quality
- Wetlands
- Oak woodlands
- Giant Garter Snake
- Valley Elderberry Longhorn Beetle
- Vernal Pool Fairy Shrimp
- Vernal Pool Tadpole Shrimp

4.1. Cumulative Effects Areas

Table 4.1 explains each of the resources and the area studied for the purpose of the cumulative impact analysis. The cumulative effects area may differ depending on the geographical area, which is appropriate for the resource (Figures 4-1,2,3,4, and 5).

Table 4.1 Resource Areas Considered for Cumulative Impacts Analysis

Resources	Resource Area Studied
Water Quality	Lower Feather River Watershed
Wetlands	Lower Feather River Watershed
Oak Woodlands	Eastern Butte County, northern Yuba Co, western Nevada Co.
Giant Garter Snake	North: SR 149 and SR 70; East : eastern boundary of the Lower Feather River watershed; South: southern boundary of the Lower Feather River watershed and southern boundary of the Butte Basin Watershed; West: SR 99 up to SR 149
Valley Elderberry Longhorned Beetle	Southern Butte County and northern edge of Yuba Co.
Vernal Pool Fairy Shrimp	Northeastern Sacramento valley recovery area
Vernal Pool Tadpole Shrimp	Northeastern Sacramento valley recovery area

4.2. Projects Considered in Cumulative Effects Evaluation

A total of 20 projects in the general vicinity of the proposed project were reviewed for the cumulative effects evaluation. Table 4-2 summarizes proposed development in the resource assessment areas, which may contribute to cumulative impacts for the SR 70 Freeway Extension/Ophir Road Interchange project. The table includes recently built projects and reasonably foreseeable future projects that would potentially affect the same resources as the SR 70 Freeway Extension/Ophir Road Interchange project. This list was compiled from sources including Butte County Planning Department, City of Oroville Planning Department, and Caltrans District 3 Intergovernmental Review Branch.

Table 4.2 Projects Evaluated as part of the Cumulative Impacts Analysis

Development/Project	Location	Resources (s) potentially impacted*
Georgia Pacific Signal	SR 70/Georgia Pacific	Water quality
SR 70 Median Barrier	SR 70 PM 12.8 – 16.7	Water quality, VELB
SR 70 Freeway Extension/Ophir Rd Interchange	SR 70 PM 10.0-13.6	Water quality, wetlands, oak woodlands, giant garter snake, VELB, vernal pool fairy shrimp, vernal pool tadpole shrimp
Butte 70/149/99/191 highway improvement project	SR 70/149/99/191 PM 19.9/22.1;0.0/4.6;20.7/24.6;0.0/0.5	Water quality, wetlands, VELB, vernal pool fairy shrimp, vernal pool tadpole shrimp
Ophir Rd and Lincoln BLVD signal and intersection improvement project	Ophir Road and Lincoln BLVD	Water quality, wetlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
SR 162 Roadway Widening	SR 162 PM 11.8-14.9	Water quality, wetlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
SR 162 Roadway Widening	SR 162 PM 14.9-15.8	Water quality, wetlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
SR 162 Roadway Widening	SR 162 PM 15.5-17.5	Water quality, wetlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Sierra Pacific Package 55,728 sf	SR 162	Water quality, vernal pool fairy shrimp, vernal pool tadpole shrimp
Oro Bay development	Wilbur Road/SR 162	Water quality, vernal pool fairy shrimp, vernal pool tadpole shrimp
Linkside Pl Development	SR 162 PM 12.74	Water quality, vernal pool fairy shrimp, vernal pool tadpole shrimp
Curve Realignment	SR 20 PM 0.0-4.9 (Nevada Co.)	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Passing lane Project	SR 70 PM 3.3-5.8	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Interchange Improvement	SR 32 PM 10.2	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Roadway widening	SR 32 10.2 –12.3	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Roadway widening	SR 99 32.4 – 34.9	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Chico Area		
Oak Valley subdivison	Humboldt Rd. & Bruce Rd.	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Eastgate Ranch	Humboldt Rd. & Bruce Rd.	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Hillview Terrace	Doe Mill Rd	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp
Terra Bella	Doe Mill Rd	Oak woodlands, vernal pool fairy shrimp, vernal pool tadpole shrimp

A resource “potentially impacted” does not imply that this resource indeed exists or would be impacted.

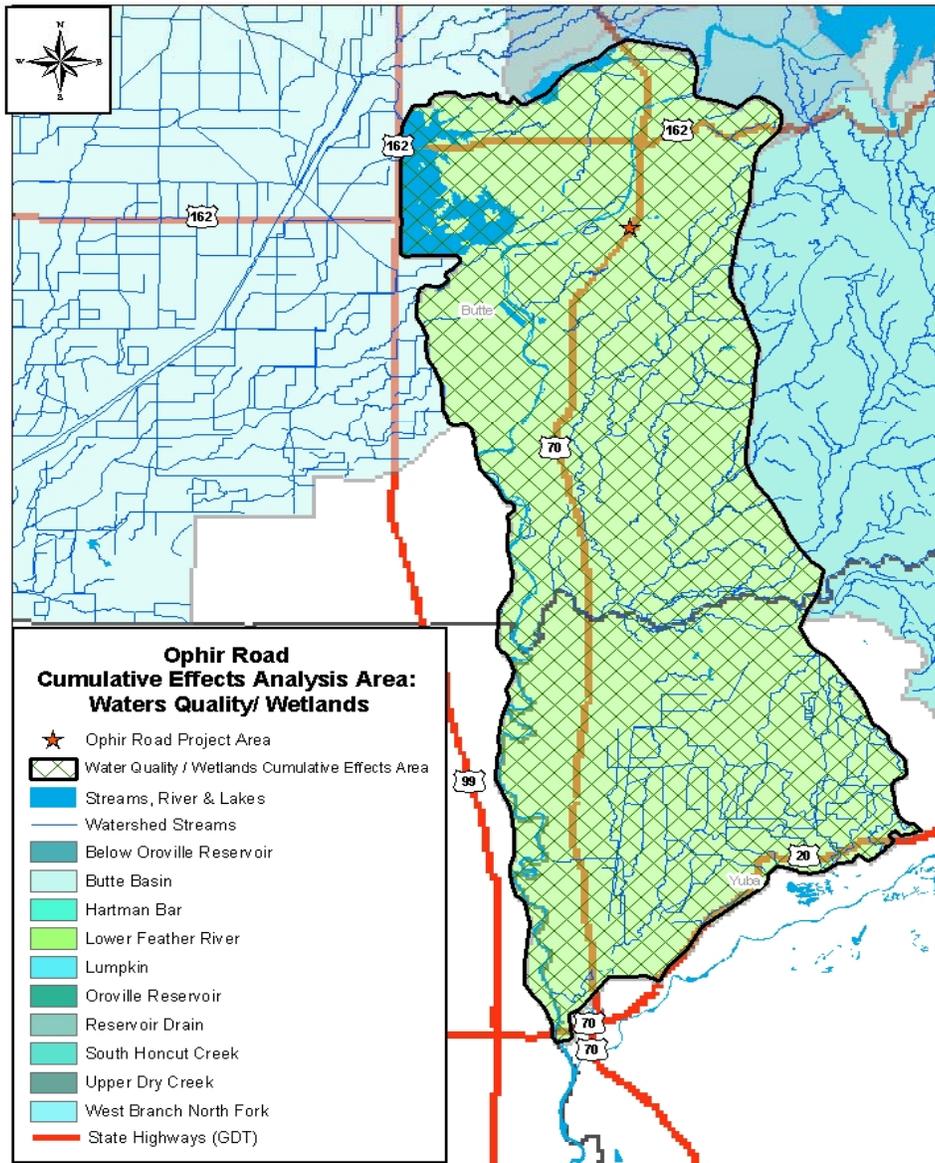
4.3. Cumulative Effects Discussion

4.3.1. Water Quality

The Lower Feather River watershed was used as the study area for the cumulative water quality analysis (Figure 4-1). The water quality impact analysis concluded that the proposed project would not substantially affect water quality. All the projects listed in table 4.2 have the potential to impact water quality both on a temporary basis during construction and on a permanent basis. Sedimentation is arguably the greatest water quality concern for any of the proposed projects. The addition of impervious surfaces, which would occur from a majority of those projects, would increase the amount of storm water runoff as well as introduce new sources of pollutants that, if transported to surface bodies of water, could degrade water quality. The conversion of grassland or oak woodlands to other uses could impact water quality if best management practices are not implemented. Implementing best management practices (BMP) to control and clean storm water runoff would minimize all of these impacts. Water quality could be impacted by the location of new construction if vegetated buffer zones to filter pollutants around creeks and tributaries are not included in the planning of these projects.

Future projects that disturb more than 0.4 ha (1.0 ac) of soil or that require coverage under the General Construction Permit are subject to compliance with the Porter-Cologne Act, Federal Clean Water Act, and possibly CEQA review and compliance. These projects would be reviewed by the Regional Water Quality Control Board (RWQCB) and would be required to implement BMPs to minimize impacts to water quality. If BMPs are not implemented, cumulative impacts to water quality would result. Projects proposed within Caltrans right of way must comply with the Caltrans Statewide National Pollutant Discharge Elimination System (NPDES) permit. The conditions of the NPDES permit require Caltrans to implement BMPs to protect water quality to the maximum extent practicable. Because BMP technology to protect water quality is improving every year, future projects would likely improve the quality of water discharged from the project area as compared to the quality prior to the construction of the project.

Figure 4-1. Water Quality/Wetland Cumulative Effects Area Map



Impacts to water quality could result during the construction of any of the projects listed in Table 4.2. However, these impacts would be temporary and would not result in a CEQA determination of a significant cumulative impact to water quality. Construction related water quality impacts could be minimized by the implementation of BMPs to protect water quality. If these projects were subject to permits or review by the RWQCB, the likelihood that these projects would implement BMPs would increase. However, projects not subject to these reviews and/or required to

implement BMPs to protect water quality could result in a significant impact to water quality alone or cumulatively. Cumulative impacts to water quality are occurring as a result of non-regulated operations and because of the incremental impacts of projects proposing the expansion of impervious surfaces. Because the SR 70 Freeway Extension/Ophir Road Interchange project must comply with Caltrans NPDES permit, this project would not result in a substantial cumulative impact to water quality.

4.3.2. Wetlands

The Lower Feather River watershed was used as the study area for the cumulative wetland analysis (Figure 4-2). Specific discussions of impacts to wetlands or jurisdictional waters of the U.S. were discussed by two of the projects, which are found within the cumulative wetland analysis, listed in Table 4.2. The Ophir Road and Lincoln Boulevard signal and intersection improvement project and the SR 70 Freeway Extension/Ophir Road Interchange Project have extensive quantitative and qualitative discussion on potential impacts to wetlands. The Ophir Road and Lincoln Boulevard signal and intersection improvement project would impact a total of 0.053 ha (0.132 ac) of wetlands and waters of U.S. This is comprised of .0016 ha (0.004 ac) of seasonal swale and 0.128 ac of intermittent other waters of the U.S.. The SR 70 Freeway Extension/Ophir Rd Interchange project would have a total of 0.99 ha (2.46 ac) of impacts to wetlands and Waters of the U.S. (Section 3.7.3 discusses the impact in detail). For the other projects listed in 4.2, information was either unavailable, not yet prepared with regards to wetlands and other waters impacts and/or are not located in the Lower Feather River watershed.

Most of the projects listed in Table 4.2 would have some level of environmental analysis and approval under CEQA. The CEQA review process would allow for the determination of any potential impacts to wetland resources. If impacts to these resources were to occur, permits from the responsible regulatory agencies would be required. These agencies would require mitigation of potential impacts that would reduce the impact to a less than significant level. Since the SR 70 Freeway Extension/Ophir Road Interchange Project would have impacts to wetlands and waters even after avoidance and minimization efforts through project design, any remaining impacts are subject to permits by the regulatory agencies that would require Caltrans to mitigate permanent, direct impact so that “no net loss” of wetland would result. Based upon this analysis and review, under CEQA, no significant contributions to cumulative impacts to wetlands and waters resources would result from the SR 70 Freeway Extension/Ophir Road Interchange project. In addition, this

project would not result in a substantial cumulative impact to the wetlands and waters of the U.S.

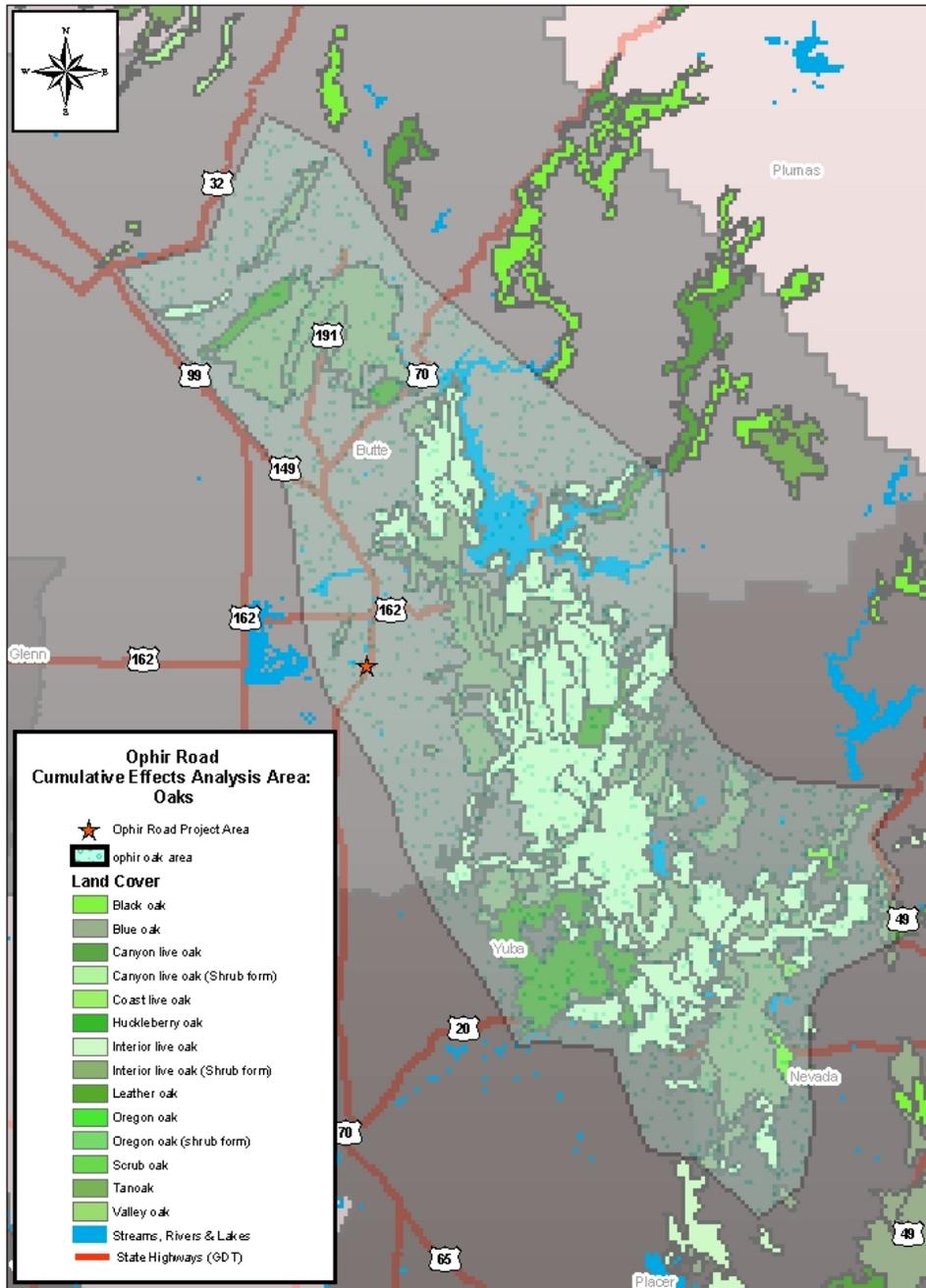
4.3.3. Oak Woodlands

The foothill transition zone between the Sacramento Valley and the foothills (parts of Butte, Nevada, and Yuba counties) was used as the assessment area for cumulative impacts to oak woodlands (Figure 4-2). Many of the smaller projects listed in Table 4.2, had no specific quantification of impacts to oak woodlands.

Subdivision projects in the Chico area south of SR 32 and the Oak Valley, Eastgate Ranch, Hillview Terrace, and Terra Vista Subdivison projects all have qualitative information regarding impacts to oak woodlands. These projects identify loss of oak woodland as a substantial biological impact and they all have proposed mitigation. The Oak Valley project proposes oak replanting at a 2:1 ratio for trees over 6 dbh. The replanting would take place on-site in areas that are designated as open space or preserve areas. The City of Chico has a tree ordinance which specifically identifies mitigation for tree removal, which all project within the city limits would have to comply.

Other projects within the cumulative effect boundary for oak woodlands would also contribute blue oak woodland and/or valley oak woodland habitat loss. Projects such as the curve correction project on SR 20 in Nevada County would impact 13.19 ha (32.59 ac) of oak woodland. The Butte 70/149/99/191 highway improvement project would have 0.56 ha (1.37ac) of oak woodland impacts. These larger projects have compensation measures which address oak impacts both onsite or offsite. If individual oaks are removed, replacement ratio of one sapling per one-inch dbh is utilized. Impacts to a high number of oaks, preservation of large contiguous tracts of oak woodland is instituted. Many of the smaller projects along the state highway system may impact individual trees located near the roadway. Many of these projects would include replacement replanting.

Figure 4-2. Oak Woodlands Cumulative Effects Area.



The proposed SR 70 Freeway Extension/Ophir Interchange project would impact oak woodlands. Approximately 2.14 ha (5.30 ac) of blue oak woodlands would be impacted by the project. Oak woodland for this project would be replaced off site at a Department of Fish and Game approved location. The ratios of compensation would

be 3:1 (three acres for every one removed) preservation or a 1:1 ratio if it is decided to create blue oak woodland.

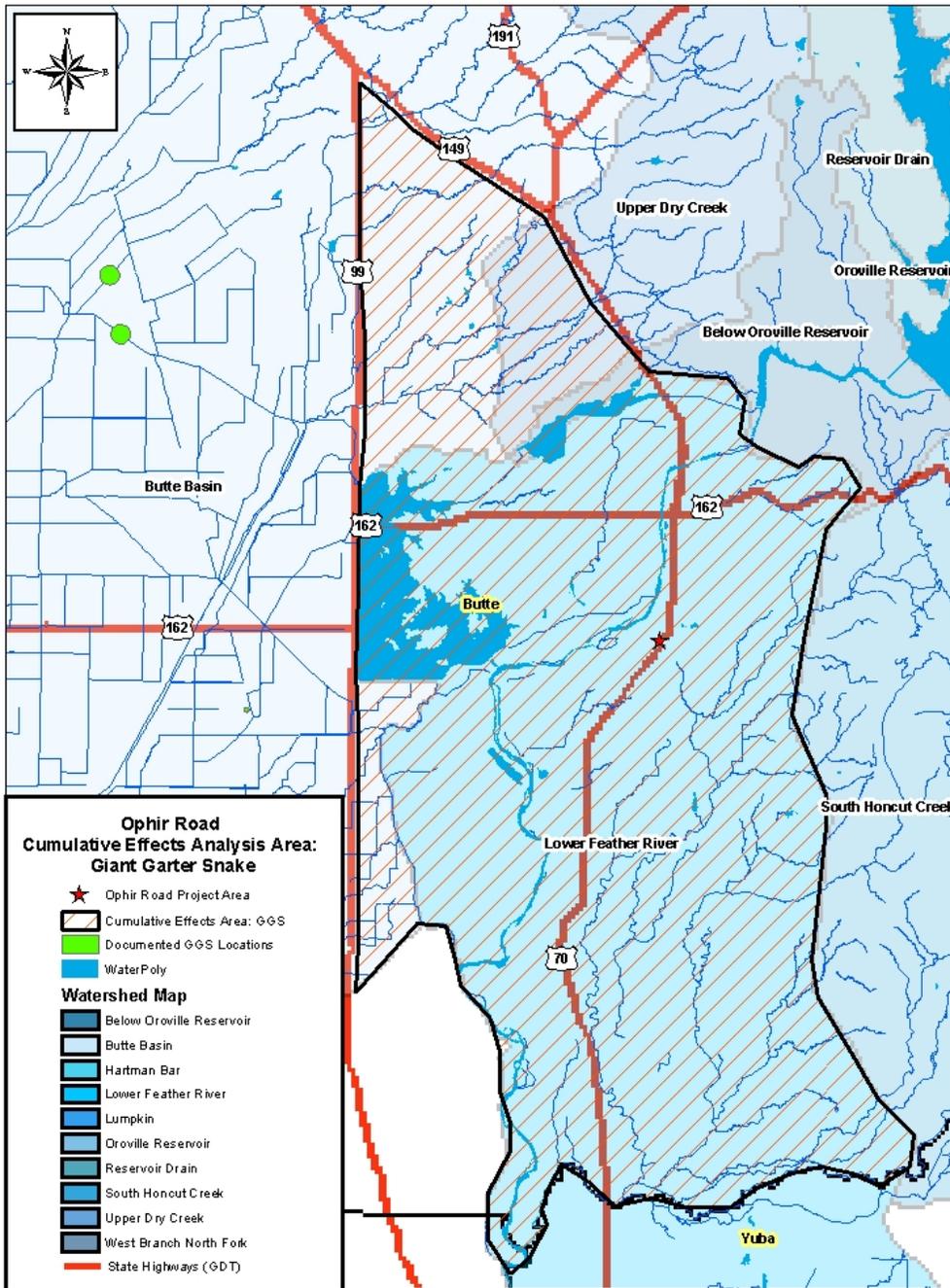
The SR 70 Freeway Extension/Ophir Interchange project would impact blue oak woodlands and individual Valley oak trees within the project area. However, because the project proposes the expansion of an existing highway, only linear strips on the margins of contiguous oak woodland would be impacted. Compensation proposed to recompense for the loss of oak trees and woodland as a result of the project would aim to preserve a large tract of contiguous oak woodlands. In this manner, the compensation proposed for this project would lessen the cumulative impact to oak woodlands which this project is contributing to in the assessment area. The CEQA determination found the SR 70 Freeway Extension/Ophir Interchange project would not contribute to significant cumulative impacts to oak woodlands because it would completely compensate the losses with replacement planting and/or oak woodland preservation.

4.3.4. Giant Garter Snake

The cumulative effect area for the giant garter snake (GGS) is located primarily in the Lower Feather River watershed (Figure 4-3). The proposed project would not substantially impact GGS or their habitat. Specific discussions of impacts to GGS are limited to two Caltrans projects, while the other projects in Table 4.2 have no discussion regarding GGS impacts or have not yet prepared their environmental analysis.

The SR 99 Road Rehabilitation project would have approximately 6.7 ha (16.6 ac) of permanent direct upland impacts and 2.9 ha (7.4 ac) of temporary direct impact. In addition to the direct impacts, there will be indirect impacts of 5.5 ha (13.5 ac) of temporary and permanently impacts of 6.7 ha (16.6 ac). The SR 99 Road Rehabilitation project would also have aquatic impacts to GGS. This project would have approximately 4.2 ha (10.5 ac) of permanent aquatic habitat impacts. The temporary direct impacts are approximately 4.9 ha (12.1 ac) and the temporary indirect impacts are 36 ha (88.9 ac). This project proposes to mitigate impacts to GGS using mitigation ratios established in the “Programmatic Biological Opinion on the Effects of Small Highway projects on the Threatened Giant Garter Snake within Butte, Colusa, Glenn, Sacramento, San Joaquin, Solano, Sutter, Yolo and Yuba counties”.

Figure 4.3. Giant Garter Snake Cumulative Effect Analysis Area



The SR 70 Freeway Extension/Ophir Rd Interchange project would have 0.11 ha (0.28 ac) of permanent upland habitat impacts and temporarily affect 0.64 ha (1.59 ac) of upland habitat.

The loss of habitat that the SR 70 Freeway Extension/Ophir Interchange project would incur would not be a substantial addition to the cumulative effects. The linear loss of habitat would not likely adversely affect the species. Loss of habitat will continue to occur in the future with many of the developments listed in Table 4.2. In addition, the proposed project includes avoidance, minimization, and mitigation measures to reduce impacts to a negligible level.

4.3.5. Valley Elderberry Longhorn Beetle

The Lower Feather River Basin was used for the cumulative impact assessment for the Valley Elderberry Longhorn Beetle (VELB) (Figure 4-4). The proposed project would not substantially impact VELB or their habitat. The habitat for the VELB consists of the blue elderberry (*Sambucus mexicana*), a shrub common to riparian areas and floodplains of the central valley.

Agriculture, urban development and to a lesser degree road construction adversely affect the VELB within the cumulative effect analysis area. The cumulative impact area is predominately agricultural land which has been intensely farmed for many years. Floodplains and riparian areas characteristicly have rich soils which are sought after for agricultural purposes.

Of the projects in Table 4.2, specific discussions regarding VELB impacts were not found in local development projects within the cumulative impact area. The proposed project would affect five elderberry bushes within its boundary. Other projects either have not yet prepared their environmental analysis or no shrubs were found. Mitigation for impacts to VELB vary from a 2:1 ratio for smaller stems to as high as 4:1 for larger stemmed shrubs in riparian areas.

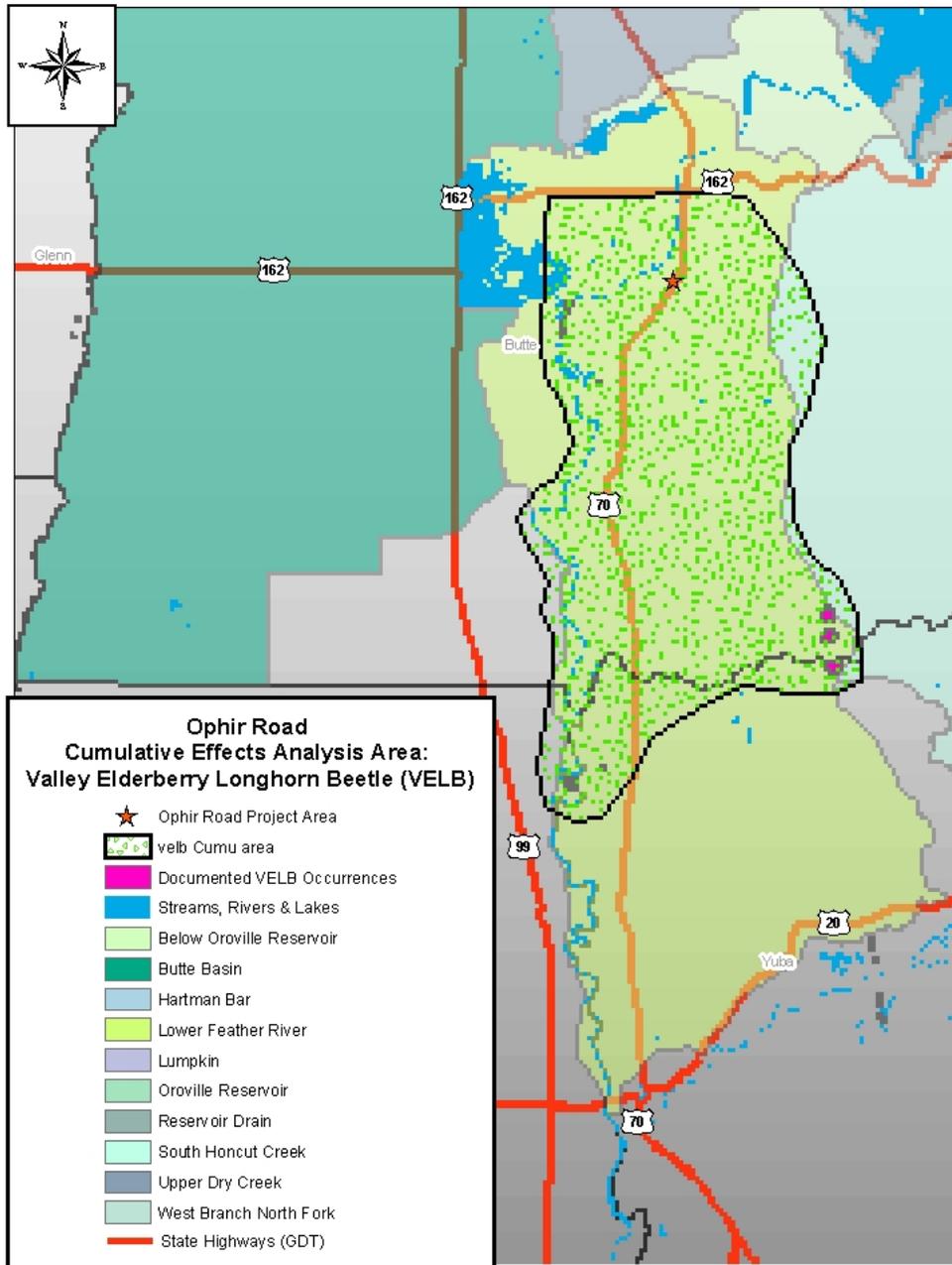
The loss of habitat (elderberry shrubs) will continue due to agricultural practices and development within historic floodplains in the Sacramento valley. Projects which would impact VELB habitat would be required to institute minimization, avoidance, and mitigation measures required by USFWS to compensate for the loss of habitat. The SR 70 Freeway Extension/Ophir Road Interchange project will have minimal impact to the VELB habitat, therefore, would not be a substantial addition to the cumulative impact to this species.

4.3.6. Vernal Pool Fairy Shrimp/Tadpole Shrimp

The cumulative effect resource assessment area for the vernal pool fair shrimp and tadpole shrimp is the southern half of Northeastern Sacramento Valley Vernal Pool

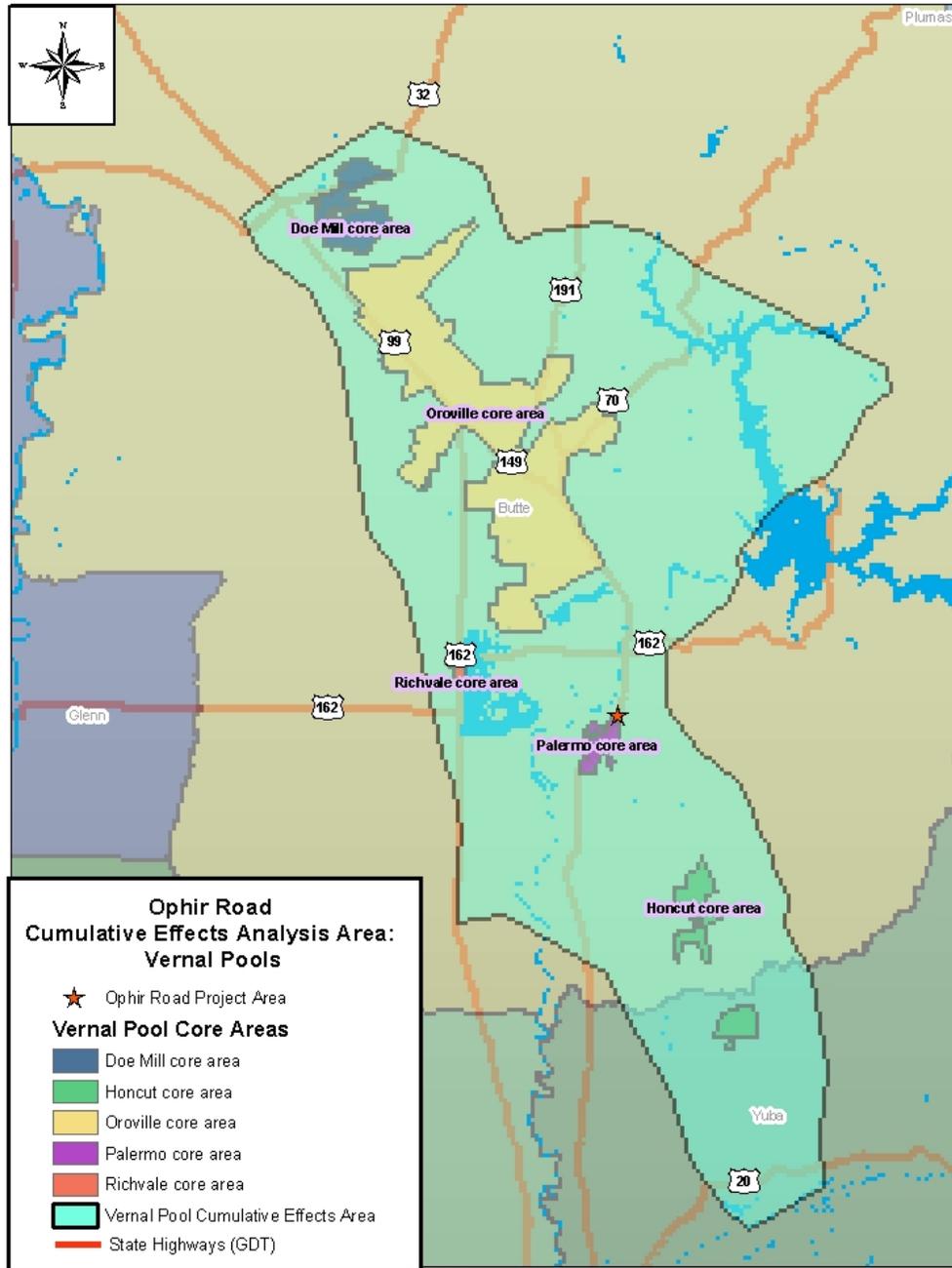
Recovery area (Figure 4-5). There are five core areas within the cumulative effects area. The proposed project is located within Oroville core area. The vernal pool fairy shrimp and vernal pool tadpole shrimp inhabit vernal pools, small swales, earth slumps, and basalt-flow depression basins of unplowed grasslands.

Figure 4-4. Valley Elderberry Longhorn Beetle Cumulative Analysis Area



The smaller subdivision projects in Table 4.2 either do not have impacts to vernal pools or have identified impacts to waters of the U.S. with special mention regarding the possibility of presence of vernal pool fairy/tadpole shrimp and needing to coordinate with the USFWS. A number of the larger subdivisions in the Chico area have submitted Notice Of Preparations (NOP) for Environmental Impact Reports, but

Figure 4-5. Vernal Pool Habitat Cumulative Effects Analysis Area



the studies have not been completed. Environmental documents for other larger subdivision projects in the Chico area have discussions related to wetland impacts, which incorporates vernal pools. The Oak Valley subdivision project environmental document indicates qualitative measures to mitigate for vernal pool species impacts, such as either conducting the two-year survey protocol for federally listed vernal pool crustaceans or assume presence and comply with required mitigation.

The Butte 70/149/99/191 project would permanently impact 2.25 ha (5.56 ac) of vernal pools and swales. Mitigation will be in the form of preservation and creation components to ensure “no net loss” of habitat. The ratios and the forms of mitigation have been negotiated with the USFWS to ensure that all impacts to these species would be covered.

Projects such as the SR 99 Road Rehabilitation project would result in minor impacts to vernal pools. This project would directly effect 0.30 ha (0.74 ac) of vernal pools and indirectly affect 1.51 ha (3.74 ac) of vernal pools habitat.

In the Oroville area, the Ophir Road and Lincoln Boulevard Signal and Intersection project indicates that vernal pools exist within the environmental study limits, but that the resource is located on private land. Avoidance measures would be instituted as a form of mitigation.

The SR 70 Freeway Extension/Ophir Interchange project would directly impact 1.14 ha (2.82 ac) of vernal pool/swale habitat. Construction may interrupt the hydrology of the vernal pools, leading to indirect impact of 1.33 ha (3.29 ha) to vernal pools and swales. These impacts would be mitigated by preservation and creation components. Usually, the preservation component would call for every acre impacted (directly or indirectly) at least two vernal pool credits will be dedicated within a USFWS - approved preservation bank or three acres may be preserved onsite or at a non-bank site. On the creation side, for every acre impacted, at least one vernal pool credit would be dedicated.

Rapid urbanization of the central valley currently poses the most severe threat to the continued existence of the vernal pool crustaceans. The distribution of vernal pools is concentrated in Butte County with more fragmented and isolated pools located further south in Yuba County. Roads have fragmented habitat, while development and agriculture have altered hydrology in the vernal pool and swale complexes.

When projects result in impacts to vernal pool species, permits from the responsible regulatory agencies would be required. These agencies would require mitigation of potential impacts that would reduce the impact to a less than significant level.

While the proposed SR 70/Ophir Road Interchange project would contribute incrementally to the project's cumulative impacts, that contribution would be a very small percentage of the cumulative impacts to sensitive species and wetlands. The minimal contribution of the proposed project to the cumulative impacts in combination with the insignificance of the impacts (see Chapter 5, CEQA Evaluation) leads to the determination that the incremental effect of the project would not be cumulatively considerable and; therefore, not significant.

5. California Environmental Quality Act Evaluation

5.1. Determining Significance Under CEQA

The California Environmental Quality Act (CEQA) requires that a determination of significant impact be stated in the environmental document (EIR). In Section 15382 of the CEQA Guidelines, a “significant effect on the environment” is defined as:

A substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

The CEQA Checklist (Appendix H) was used as a guideline in determining whether or not potential impacts resulting from this project would be significant or cumulatively significant. All potential impacts identified during resource studies were determined to be less than significant. In addition, cumulative impacts resulting from the proposed project in conjunction with other projects within the cumulative effects area were determined to be less than significant.

5.2. Discussion of Potential Impacts to Sensitive Resources

5.2.1. Vernal Pools/Swales and Associated Sensitive Plant and Animal Species

Construction of the proposed project would potentially impact vernal pool/swale wetlands and the special status plant and animal species associated with these wetlands (see Sections 3.7.3, 3.8.3.1 and 3.8.3.2).

The area of impact is relatively small compared to the total area of vernal pools in the region. The cumulative effect resource assessment area for the vernal pool fair shrimp and tadpole shrimp is the southern half of Northeastern Sacramento Valley Vernal Pool Recovery area. There are five core areas within the cumulative effects area. The proposed project is located within Oroville core area. The proposed project

would directly impact 0.20 ha (0.49 ac) of vernal pools/swales and 1.36 ha (3.37 ac) of habitat for sensitive species associated with vernal pools/swales.

With respect to the quality of the vernal pool/swale complex affected by the proposed project, that complex has been bisected by SR 70 for several decades, and potential impacts of the proposed project would be associated with widening of the existing highway. Although this widening would require additional right-of-way and result in direct impacts to vernal pools/swales adjacent to the highway, the proposed project would not further bisect the complex nor isolate vernal pools/swales from the remaining complex.

Identified potential impacts of the proposed project to vernal pools/swales and associated sensitive species are avoidable. Mitigation for impacts to Federally listed species would be in accordance with recommendations from USFWS. Mitigation for State listed species would be determined through consultation with CDFG. Mitigation for Section 404 impacts to vernal pool wetlands would be determined through consultation with USACE. Mitigation measures determined through consultation with these agencies would reduce impacts to vernal pools and associated sensitive species to a less-than-significant level.

5.2.2. Wetlands and Waters of the U.S.

The proposed project would potentially impact 0.75 ha (1.85 ac) of wetlands and waters of the U.S., including the 0.20 ha (0.49 ac) of vernal pools/swales mentioned above.

A study of the functions and values of the wetlands in the study area suggests that only the vernal pool complex ranks high because of its rarity of wetland type and support of vertebrate and sensitive invertebrate populations. The value of the other wetlands and waters of the U.S. within the project area is compromised by their proximity to the highway and the two Superfund sites. Much of the wetland area was created during construction of the existing highway.

Biological and hazardous waste studies conducted in connection with the proposed project help to determine the value of the affected wetlands. The freshwater ponds have been compromised by the dumping of trash, broken concrete, and other debris. Tests revealed the presence of heavy metals in the pond water, and it can be assumed that dioxins, which are present in surface soils surrounding the ponds but which are insoluble in water, may be carried in sediments at the bottom of the ponds. The seasonal riparian wetlands are fed by highway runoff and by drainage from culverts. Tailings Creek has been straightened and channelized to carry winter runoff through

culverts underneath SR 70 to the Feather River. It is maintained relatively free of vegetation near the highway.

Potential impacts of the proposed project to wetlands and waters of the U.S. are less than significant. Mitigation would be determined through consultation with USACE and would demonstrate that impacts would be avoided or minimized to the greatest extent practicable to achieve no net loss of acreage, function, or value of wetland resources.

5.2.3. Valley Elderberry Longhorn Beetle

The proposed project would require removal of five, mature elderberry shrubs. None of these elderberries were found to have elderberry beetle exit holes indicating presence of the beetle; therefore, the impact would be less than significant. Mitigation would be in accordance with USFWS guidelines.

5.2.4. Other Biological Resources

Potential impacts of the proposed project on other sensitive species and communities are less than significant. Appropriate mitigation measures will be determined during consultation with the appropriate resource agencies.

6. Summary of Public Involvement Process/Tribal Coordination

6.1. Public Involvement

A Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) was prepared in September 2001. The NOP announced a public information workshop, which was held in Oroville in October 2001.

This Environmental Impact Report/Environmental Assessment (DEIR/EA) was available for public review and comment from November 13, 2003 to December 31, 2003. Comments received during the review period are included in Appendix B.

6.2. NEPA/404 Integration Process

In 1994, Caltrans, FHWA, and various resource agencies signed a Memorandum of Understanding (MOU) that integrated the environmental approval and permitting processes for projects requiring both approval under NEPA and USACE Section 404 (Clean Water Act) Individual permit. Under this “concurrence process”, USACE, USFWS, USEPA, and NMFS participate in the project development process at a level dependent on the quality and quantity of the resources involved. Agencies may, at their discretion, choose not to participate until the draft document review stage.

In September 2001, Caltrans initiated the NEPA/404 MOU process for this project with a field review of the project site and a discussion of known resources and physical constraints within the project study area. In February 2002, FHWA requested that the signatory agencies concur with the purpose of and need for the project, the selection criteria, and the range of alternatives. All four of the agencies have submitted written concurrence to FHWA. In May 2004, and then again in November 2004, Caltrans requested concurrence on the LEDPA and the Conceptual Mitigation Plan from USACE and USEPA. Both USACE (6/15/2005) and USEPA (12/02/2004) have submitted written concurrence on the LEDPA and the Conceptual Mitigation Plan (Appendix A).

6.3. Tribal Coordination

Consultation letters were sent to the following Native American groups on the dates shown:

- Berry Creek Rancheria of Maidu Indians (6/25/99,04/15/05)
- Chico Band of Mechoopda Indians (6/25/99,04/15/05)
- Enterprise Rancheria of Maidu Indians (6/25/99,04/15/05). Mr. Reynolds called on (07/20/05) in response to phone message left by Caltrans. Caltrans tried to contact Mr. Reynolds on 07/20/05, 07/22/05, and 07/26/05. Messages were left with his secretary and on Mr. Reynolds answer machine.
- Maidu Nation (6/25/99,04/15/05)
- Mooretown Rancheria of Maidu Indians (6/25/99,04/15/05)
- Maidu Cultural and Development Group (04/15/05)
- Butte Tribal Council (4/15/05)
- Konkow Valley Band of Maidu (4/15/05)
- Joe Marine (4/15/05)

All the native groups listed above were also called by phone on 05/05/05.

Request for information letters were sent to the following local historical society/historic preservation groups on the dates shown:

- Butte County Historical Society (04/15/05)

The California Native American Heritage Commission (CalNAHC) was contacted to request a search of the sacred land files for the project area. Although the search failed to yield information on Native American cultural resources located within or adjacent to the project area, the CalNAHC provided an updated list of individuals and organizations in the Native American community.

7. List of Preparers

This Environmental Impact Report /Environmental Assessment (EIR/EA) was prepared by following Caltrans/District 3 staff:

Bajwa, Sukhwinder S., Senior Transportation Engineer. B.S. Civil Engineering, California State University, Sacramento. Eleven years of experience in civil engineering. **Contribution: Former Project Manager.**

Dierksen, Carolyn, Associate Environmental Planner. B.A., Environmental Studies, California State University, Sacramento. Four years of experience preparing environmental documents. **Contribution: Former Environmental study coordinator and document writer.**

Griswell, Kathryn, Associate Materials & Research Engineer. M.S. Geotechnical Engineering, California State University, Sacramento; B.S. Geological Engineering, New Mexico Institute of Mining and Technology. Five years of experience preparing geotechnical reports. **Contribution: Preliminary Geotechnical Report.**

Helm, Frank, Registered Civil Engineer No. C48317. B.S., Surveying and Photogrammetry, California State University, Fresno. Twenty years of experience in project development and design. **Contribution: Project Engineer.**

Hoole, John G., Senior Transportation Engineer. B.S. Civil Engineering, University of Nevada, Reno. Fourteen years of experience in civil and transportation engineering. **Contribution: Project Manager.**

Jones, Douglas, Senior Transportation Engineer. B.S., Civil Engineering, California State University, Chico. Eighteen years of experience in civil engineering. **Contribution: Senior Design Engineer.**

Lambirth, Cara, Former Associate Environmental Planner. M.A., English, California State University, Sacramento; B.S., Business Administration, Arizona State University. One year of experience preparing economic and environmental studies. **Contribution: Community Impact Assessment.**

Loudon, Jeffrey M., Senior Environmental Planner (Retired). B.S., Business Administration, California State University, Chico. Thirty years of experience in Environmental Planning. **Contribution: Former Environmental Branch Chief.**

Melim Suzanne, Associate Environmental Planner, B.S. Natural Resource Management; California Polytechnic State University, San Luis Obispo. Nine years of experience in biology and environmental planning. **Contribution: Biological Study Maps.**

McCullough, Judy, Transportation Engineer. M.S., Civil Engineering, California State University, San Jose. Five years of experience in civil engineering, 2.5 years preparing hydraulics studies. **Contribution: Floodplain Hydraulic Study.**

Noble, Daryl, Associate Environmental Planner (Archaeology). M.A., Anthropology, California State University, Sacramento; B.S., Anthropology, California State University, Sacramento. Twenty-five years of experience in California archaeology. **Contribution: Archaeological surveys and cultural resources studies.**

Pietrzak, Jeffrey L., Landscape Associate, Licensed Landscape Architect, CA License No. 4457. B.S., Landscape Architecture, University of California at Davis. Eight years of experience in landscape architecture, 2.5 years performing visual impact analysis. **Contribution: Visual Impact Assessment.**

Rosas, Sandra, Associate Environmental Planner. M.A., Anthropology (Ethnobotany), Northern Arizona University; B.S./B.A. Biology/Antropology, California State University, Chico. Thirteen years of experience in environmental studies. **Contribution: Community Impact Assessment (Land Use Section), Environmental coordinator and document writer.**

Sannar, Dick, Associate Transportation Engineer (retired). Certificate in Hazardous Materials Management, California State University, Davis. Eight years of experience in hazardous waste studies, 22 years experience in water quality studies. **Contribution: Hazardous Waste Report.**

Sauer, Scott, Transportation Planner. B.A., Government and Environmental Studies, California State University, Sacramento. Two years of experience in transportation planning. **Contribution: Growth Inducement Technical Report.**

Speckert, Lynn, Former Associate Environmental Planner. B.S. Environmental Toxicology, University of California, Davis. Seven years of experience in air quality and environmental studies. **Contribution: Air Quality, Noise and Energy Studies.**

Tiff, Leonard, Right of way Agent. B.S. Business Administration, University of Phoenix. One year of experience in Right of Way. **Contribution: Draft Relocation Impact Report.**

Warren, Caroline, Associate Environmental Planner (Natural Science). M.S., Botany, California State University, Chico; B.S., Biology, Mesa State College, Colorado ; eight years of experience performing biological studies. **Contribution: Natural Environment Study Report, Water Quality Report, Wetlands Assessment, and Biological Assessment.**

Consultants

Aeolus, Inc. Sacramento, California. Wayne D. Berman PhD and Jay Murray.
Contribution: Screening Level Toxicology and Risk Assessment for the State Highway 70, Ophir Road Interchange Project.

Environmental Resources Management. Sacramento, California. Patrick E. Galvin, PE.
Contribution: EPAs' Comment Responses.

Geocon Consultants, Inc., Rancho Cordova, California. John E. Juhrend, PE, CEG, and T. Nathan Manley, Sr. Staff Geologist. **Contribution: Initial Site Assessment (ISA), Marysville Bypass, Yuba and Butte Counties, California and Site Investigation Report.**

IT Corporation, Sacramento, California. Donald P. Bransford, R.G., Project Manager.
Contribution: Site Investigation Reports and Supplemental Soil Investigation.

8. Distribution List

In compliance with NEPA and CEQA, the public and agencies were notified of the availability of the Draft EIR/EA. The Draft EIR/EA availability was published in the Federal Register and in local newspapers. The notification of availability was sent to all parties on the project mailing list.

The Draft EIR/EA was distributed to key interested parties and key elected and appointed officials, as well as to all parties requesting it. The Draft EIR/EA was made available at the Butte County Library and through the District 3 public information office.

The following is a list of all people and agencies provided with a copy of the Draft EIR/EA.

Federal Agencies

U.S. Environmental Protection Agency
Region 9
75 Hawthorne Street
San Francisco, Ca 94105

National Marine Fisheries Service
Central Valley Office
650 Capitol Mall, Room 8-300
Sacramento, CA 95814

U.S. Army Corps of Engineers
Regulatory Branch, Sacramento District
1325 J Street
Sacramento, CA 95814

U.S. Department of Agriculture
Natural Resources Conservation Service
430 G Street, # 4164
Davis, CA 95616-4164

U.S. Fish & Wildlife Service
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

State Agencies

Office of Planning and Research
(State Clearinghouse)
P.O. Box 3044
Sacramento, CA 95812-3044

Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

Calif. Dept. of Fish & Game
Fisheries, Wildlife & Environmental Programs
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670

Calif. Dept. of Fish & Game
Habitat Conservation Planning Branch
1416 9th Street, Suite 1341
Sacramento, CA 95814

Office of Historic Preservation
P.O. Box 942896
Sacramento, CA 94296-0001

Dept. of Parks and Recreation
Resource Management Division
P.O. Box 942896
Sacramento, CA 94296-0001

DWR – Reclamation Board
1416 Ninth Street, Room 1601
Sacramento, CA 95814

Calif. Dept. of Water Resources
Environmental Services Office
3251 S Street, Room 111
Sacramento, CA 95816-7017

California Highway Patrol
Office of Special Projects
2555 1st Ave.
Sacramento, CA 95818

Calif. Dept. of Housing and Community Development
Housing Policy Division
P.O. Box 952053
Sacramento, CA 94252-2053

Department of Boating and Waterways
2000 Evergreen, Suite 100
Sacramento, CA 95815

Calif. Dept. of General Services
Environmental Services Section
1325 J Street, Suite 1910
Sacramento, CA 95814-2928

Calif. Air Resources Board
Transportation Projects
P.O. Box 2815
Sacramento, CA 95812

Integrated Waste Management Board
P.O. Box 4025
Sacramento, CA 95812-4025

State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812

Department of Toxic Substances Control
1000 "I" Street
Sacramento, CA 95812-2828

California Energy Commission
1516 Ninth Street, MS-29
Sacramento, CA 95814-5504

Native American Heritage Commission
915 Capitol Mall, Room 364
Sacramento, CA 95814

Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102

California State Lands Commission
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

County Agencies

Butte County Planning Director
7 County Center Drive
Oroville, CA 95965

Butte County Air Quality Management District
2525 Dominic Drive, Suite J
Chico, CA 95928

Butte County Association of Governments
965 Fir Street
Chico, CA 95928-6301

City Agencies

City of Oroville
Planning Department
1735 Montgomery Street
Oroville, CA 95965

Special Interest Groups

California Native Plant Society
Butte County Chapter
1144 Mount Ida Road
Oroville, CA 95966

Ms. Barbara Vlamis
Butte Environmental Council
116 West 2nd Street, Suite 3
Chico, CA 95928

Mr. Don Chambers
C/o PG&E
460 Rio Lindo
Chico, CA 95926

Mr. Oscar Sample
c/o PG&E
350 Salem Street
Chico, CA 95926

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10. Index

agricultural lands	vii
air quality	viii, 3-17
alternative	3-64
cultural resources.....	vii
economic effects.....	3-17
floodplain	3-64
floodplains.....	viii
growth	ix
hazardous materials	ix
housing	vii
land use.....	3-3
mitigation measures.....	3-25, 3-89, 3-92
noise	viii, vii
permits.....	xvii
relocation.....	vii, xvi
utilities.....	vii
visual assessment.....	ix
water quality.....	viii
wetlands.....	viii