

Appendix A NEPA/404 Checkpoint Requests and Responses

Appendix B Draft Section 404(b)(1)
Analysis

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B.1 Introduction

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to improve State Route (SR) 29 in Lake County between the communities of Lower Lake and Kelseyville. The project limits extend approximately 8.0 miles from just south of the intersection with Diener Drive at Post Mile (PM) 23.6 to north of the junction with SR 175 at PM 31.6. The proposed project is referred to as the Lake 29 Improvement Project.

The project would improve east-west connectivity in this portion of the state and accommodate projected traffic volumes on this highway. This project is included in the 2006 State Transportation Improvement Program (STIP) and is funded from Program 20.10.025.700 (New Programming—Interregional Improvement Program). This project is also included in the Lake County/City Area Planning Council (APC) 2005 *Lake County Regional Transportation Plan* (RTP).

In Lake County, the existing highway system primarily consists of two-lane facilities in rolling to mountainous terrain. This project would widen the existing two-lane highway to a four-lane divided expressway with access control. The project consists of four build alternatives and a No Build Alternative. Each alternative would incorporate a slightly different alignment within the project corridor. For each build alternative, two types of interchanges are under consideration for the SR 29/281/Red Hills Road intersection at this time: a spread diamond or partial (two-quadrant) cloverleaf, with two further frontage road options for each type of interchange.

The proposed project will require federal actions by FHWA under the National Environmental Policy Act (NEPA) and by the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA). Each of the proposed build alternatives would require a USACE Section 404 individual permit under the CWA for discharging or placing fill material into waters of the United States (U.S.).

Both NEPA and Section 404 require a thorough evaluation of project alternatives as part of the review process. United States Environmental Protection Agency (USEPA) regulations, which apply to USACE permitting authority under Section 404, stipulate that only the least environmentally damaging practicable alternative (LEDPA) may be permitted. This appendix provides an analysis of the alternatives and an evaluation to determine the alternative that is least damaging to wetlands and other waters of the U.S., while meeting the project's purpose.

Because selection of any of the proposed build alternatives as the preferred alternative would require a USACE Section 404 Individual Permit, an analysis of impacts to aquatic resources and associated sensitive species for each alternative is required to comply with the Section 404(b)(1) Guidelines. The USEPA (40 Code of Federal Regulations [CFR] Part 230, December 24, 1980) published these Guidelines to ensure that where projects would adversely affect aquatic resources that no other alternative exists that avoids or would have less adverse effects to those resources. Based on these Guidelines, project sponsors must evaluate all practicable alternatives that avoid or would have less adverse impacts to aquatic resources.

The draft alternatives analysis will be circulated concurrently with the Draft Environmental Impact Report/Environmental Assessment (EIR/EA), which is required for compliance with NEPA. Following receipt of comments on the Draft EIR/EA, Caltrans/FHWA, USACE, and USEPA are required to agree on the NEPA preferred/Section 404 LEDPA. This will be documented in the Final EIR/EA.

B.2 Proposed Action

B.2.1 Project Description

Five alternatives were evaluated for the proposed project: Alternative A (the No Build Alternative), and Alternatives C1, C2, C3, and D, which propose to widen the existing two-lane conventional highway to a four-lane divided expressway with access control. Each of the build alternatives represents alternate alignments of the roadway.

Alternative A—No Build Alternative

Alternative A is the No Build Alternative. The roadway would remain as it exists now, and no widening or realignment would occur.

Alternatives C1, C2, C3, and D—Build Alternatives

Alternatives C1, C2, C3, and D all propose to widen SR 29 to a four-lane divided expressway with access control. Each alternative would be 8.0 miles long and would begin at PM 23.6 and end at PM 31.6.

To address the traffic volume issues at the SR 29/281/Red Hills Road intersection, an interchange will be studied as an option under each alternative. For each alternative, two types of interchanges are under consideration at this time: a spread diamond or a partial (two-quadrant) cloverleaf, with two further frontage road options for each type of interchange.

B.2.2 Build Alternative Descriptions

Alternative C1

Alternative C1 would maintain the existing centerline with geometric modifications to upgrade the existing nonstandard geometric features such as horizontal and vertical curves to a 68 mile-per-hour (mph) design speed. Alternative C1 proposes to construct a 3-foot-wide paved ditch along the median to carry runoff to grate inlets that would connect to cross-drains. Cuts of 1:4 or 1:2 (vertical to horizontal [V:H]¹) are proposed under Alternative C1.

Alternative C2

Alternative C2 would shift the proposed C1 alignment 30 feet to the north of the existing centerline with geometric modifications to upgrade the existing nonstandard geometric features such as horizontal and vertical curves to a 68 mph design speed. Alternative C2 proposes to construct a 3-foot-wide paved ditch along the median to carry runoff to grate inlets that would connect to cross-drains. Cuts of 1:4 or 1:2 (V:H) are proposed under Alternative C2.

Alternative C3

Alternative C3 would shift the proposed C1 alignment 30 feet to the south of the existing centerline with geometric modifications to upgrade the existing nonstandard geometric features such as horizontal and vertical curves to a 68 mph design speed. Alternative C3 proposes to construct a 3-foot-wide paved ditch along the median to carry runoff to grate inlets that would connect to cross-drains. Cuts of 1:4 or 1:2 (V:H) are currently being proposed under Alternative C3.

Alternative D

Alternative D (the Avoidance Alternative) would run both north and south of the existing centerline. This alternative was specifically designed to avoid sensitive environmental resources and to reduce project costs by minimizing large cuts, thus decreasing the amount of excess material. Both of these goals would be accomplished by adjusting the horizontal and vertical alignments. As the engineering design progresses, these adjustments would be fine-tuned. The design speed for Alternative D would also be 68 mph. Alternative D would have a storm drain in the median where necessary but with a grass median and ditch line. Near the eastern end of the project limits, there are several

¹ Although this document uses English units of measurement, the metric form has been retained for slope ratios. In the metric form, the first number represents the vertical distance or rise, and the second number represents the horizontal distance or run. For example, a 1:4 slope would rise or fall 1 foot in the vertical direction for every 4 feet in the horizontal direction.

hills that would require large cuts. In these locations, retaining walls may be considered under Alternative D. Cuts of 1:4 or 1:2 (V:H) are proposed under Alternative D.

B.2.3 Features Common to All Build Alternatives

Cross Section

The typical cross section for each alternative would consist of two 12-foot lanes, a 10-foot outside shoulder, and a 5-foot inside shoulder. Each alternative would have a 46-foot median. This median width was chosen to provide adequate room for acceleration/deceleration lanes and maintenance activities and to improve safety. The horizontal radius curve will be 1,969 feet, the minimum radius for a 68 mph facility.

Access

Each alternative would provide access control. Driveway modifications, connector roads, and intersection improvements would be required to provide new single access points to replace the existing multiple road connections. Using a series of frontage roads and at-grade intersections, local and private road connections with SR 29 would be minimized. Frontage roads would be used to collect traffic from multiple roads and driveways and direct it to at-grade intersections. The exact configuration and location of these intersections would depend on the type and volume of vehicles using them, sight distance considerations, and local topography. However, adjacent intersections would be separated by the required 0.5 mile and would make use of the standard left-turn, acceleration, and deceleration lanes.

Right of Way

Right of way would be required for all build alternatives, and utilities would need to be relocated.

Storm Water and Drainage Features

Each expressway alternative would incorporate typical storm water features. Roadside drainage ditches and brow ditches² would be used in conjunction with attenuation basins to control storm runoff and reduce potential water quality impacts. All cut and fill slopes would be revegetated. Drainage improvements would include the extension, replacement, and installation of culverts as needed as well as the replacement and installation of inlet and outlet treatments (such as headwalls) as needed.

Construction Staging

Temporary haul roads, if constructed by the Contractor, would most likely parallel the proposed and existing roadway. Staging and stockpiling areas would most likely be

² A “brow ditch” is typically placed upslope of an excavation to help deflect surface runoff away from the excavation.

located within the Environmental Study Limits (ESL; see Figure 1-2 in the main text) and in areas that have already been heavily disturbed. Locations would be identified in the future. These locations are subject to change, and it is possible that other locations may be found to be more suitable. The locations of the staging and stockpiling areas are also at the discretion of the Contractor. No imported borrow is currently anticipated. As the engineering design develops and cut and fill quantities are refined, imported borrow may be required. There is also the possibility that unsuitable material may be encountered and cannot be reused as fill.

Maintenance turnouts may be provided under each alternative.

B.3 Alternatives Withdrawn From Further Consideration

A number of alternatives for the Lake 29 Improvement Project were considered over the years. These alternatives, including a passing lane and freeway alternatives, were considered but later rejected because they were determined to be infeasible or “not practicable,” they did not meet the purpose and need for the project, or they had potentially greater environmental consequences than the currently proposed build alternatives. The considered but eliminated from further study are detailed in Chapter 1 and summarized in Table B-1.

Table B-1 Alternatives Considered But Withdrawn

Alternatives	Reason for Elimination from Further Study
Four-lane expressway with 14-foot median without upgrades to meet current design standards (from 1988 PSR for Segment 1 and Segment 2)	In May 1999, the PDT determined that all alternatives that did not include upgrading the existing facility to meet current design standards should be eliminated.
Four-lane undivided highway with 4-foot paved median without upgrades to meet current design standards (from 1988 PSR for Segment 1 and Segment 2)	In May 1999, the PDT determined that all alternatives that did not include upgrading the existing facility to meet current design standards should be eliminated.
Four-lane expressway with 22-foot median on varying alignments (from 1999 Supplemental PSR for Segment 1)	In May 2001, the PDT determined that all alternatives with a 22-foot median should be eliminated as the 22-foot median would not provide the benefits of a 36-foot median in terms of consistency with previously improved segments of SR 29, safety, sight distance, drainage, and future planning.
Four-lane expressway with a 36-foot median on Segment 2 alignments 1A and 1B	In September 2001, Segment 2 alignments 1A and 1B were dropped due to cost and funding constraints.
Four-lane freeway with a 36-foot median (presented at November 2001 PDT meeting)	In December 2001, the PDT formally eliminated the freeway alternative due to cost and funding constraints.
Passing Lanes	In late 2006, the passing lane alternative was formally eliminated, with consensus from USACE and USEPA, as this alternative does not meet the purpose and need of the project.

B.4 Project Purpose and Need

B.4.1 Project Purpose

The purpose of this project is to:

- Facilitate the efficient flow of goods and service through Lake County.
- Provide a modern transportation facility that will provide adequate capacity to accommodate anticipated traffic growth.
- Provide a facility with the potential for diverting through-traffic (including through truck traffic) from north shore SR 20.
- Accommodate local planning goals as set forth in the 2005 Lake County RTP.
- Help achieve the goals of the Caltrans 1998 *Interregional Transportation Strategic Plan* (ITSP).
- Improve the safety and operation of SR 29.

B.4.2 Project Need

The need to provide a safe, reliable, and modern transportation facility along SR 29 has been long recognized. SR 29 is a Federal Aid Primary Route that together with SR 20 and SR 53 (around the south shore of Clear Lake) forms the Lake County portion of the SR 20 Principal Arterial Corridor from US 101 to I-5. In 1988 the Lake County/City APC and Caltrans joined in a cooperative effort to determine appropriate Route Concepts for state highway routes in Lake County and to establish highway development priorities. The Route Concept selected for this Principal Arterial Corridor was a four-lane freeway/expressway with a “C” concept level of service (LOS).³

The development of basic industries in Lake County has been impeded by the difficulty of transporting goods in and out of the county. The 2005 Lake County RTP states: “The current condition of the state highway system throughout the region limits economic development activities due to poor, inefficient access to most areas within the county. It is critical to the economic future of Lake County that the Principal Arterial Corridor be improved. Widening to accommodate the ever-increasing through traffic and goods movement between Interstate 5 and US 101 is essential.”

³ Level of service (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and convenience. LOS is measured on a graduated scale of A to F, in which A is unrestricted free-flow travel and F is gridlocked, impeded movement.

The SR 20 corridor is also identified as a Focus Route in the Caltrans 1998 ITSP, a designation having statewide significance, and is one of ten corridors in the state to receive highest priority for completion to minimum four-lane expressway facility standards over the next 20 years.

The proposed project would start at the top of the Glasgow Grade (Diener Drive), about 3.3 miles north of the community of Lower Lake. For northbound traffic, the top of the Glasgow Grade marks the end of two lanes heading in the northbound direction, and congestion increases with this loss of the second lane. For southbound traffic, this terminus is also logical, as the 4-mile transition length between the SR 29/281/Red Hills Road intersection and Diener Drive would provide traffic a sufficient distance to disperse, allowing for an even flow of vehicles from the improved facility to the unimproved facility south of Diener Drive. The proposed project would end just north of the SR 29/SR 175 intersection, which would address the “directional split” encountered at this location with traffic volumes increasing in the southbound direction caused by traffic turning onto southbound SR 29 from SR 175. This end point would also allow for the realignment of the SR 29/SR 175 intersection to meet current standards.

Lake County has experienced rapid growth in both population and vehicular travel in the last 20 years, and traffic forecasts indicate vehicular volumes on this section of SR 29 are expected to nearly double over the next 20 years. Currently, SR 29 within the project limits operates at LOS D. If no capacity-increasing improvements are made, the LOS is expected to deteriorate to E by the year 2035, causing significant delays. For that reason, implementation of the proposed project would dramatically improve the LOS and volume-to-capacity ratio, and decrease traffic queuing and delays over both existing conditions and the projected conditions under the No Build Alternative. Additionally, SR 281 is a major entry and exit point for this area, and the SR 29/281/Red Hills Road intersection experiences significant congestion and delays. The SR 29/281/Red Hills Road intersection currently operates at LOS E and is expected to drop to LOS F in 10 years with the No Build Alternative.

The proposed project is also expected to significantly improve overall safety to motorists, providing a modern four-lane facility that meets current design standards. Improvements to the horizontal and vertical alignment, addition of lanes that would create safer passing opportunities, removal of fixed objects, widening of shoulders, and the addition of a 46-foot median would provide safety benefits to motorists in terms of increased sight distance, enhanced recovery areas, separation of traffic, and minimized exposure to fixed objects. A collision analysis of this segment of highway revealed that between January 1,

2000, and December 31, 2004, there were 162 collisions, 93 of which resulted in injuries and one of which was fatal. The actual collision rate for the mainline section of SR 29 is 1.10 collisions per million vehicle miles (MVM) traveled versus the state average collision rate of 1.24 per MVM. Although this collision rate is typical of a rural two-lane highway, upgrading the facility to a modern four-lane expressway would significantly reduce this rate. The statewide average for a four-lane expressway is only 0.50 collisions for every MVM traveled. As this project would be built to the most current design standards, it is reasonable to assume that the collision rate would be at or below the statewide average, and that the collision rate would be reduced by almost 60 percent.

Finally, upgrading SR 29 to a four-lane expressway would divert traffic (including trucks) from the “Main Street” communities along the north shore (including Nice, Lucerne, Glenhaven, and Clearlake Oaks), where the safety of pedestrians and non-motorized traffic as well as traffic noise have been ongoing concerns. This 23-mile segment of SR 20 was recently designated a Pedestrian Safety Corridor as a result of a collaborative effort between Caltrans, the California Highway Patrol (CHP), and local businesses and residents. Ultimately, it is envisioned that through traffic (including truck traffic) between US 101 and I-5 will use the SR 20 Principal Arterial Corridor around the south shore of Clear Lake.

B.5 Resource Identification

B.5.1 Wetland Resources and Other Waters in the ESL

All potential waters of the U.S. in the project area were delineated in accordance with the USACE Wetland Delineation Manual.⁴ The limit of California Department of Fish and Game (CDFG) jurisdiction was also delineated. The following provides a description of the jurisdictional wetlands within the ESL.

Wetland types identified in the ESL include freshwater marsh, irrigated pasture, riparian scrub, ruderal wetland, vernal marsh, and vernal pool. Vernal marsh occurs in several areas within the ESL including along Thurston Creek at Konocti Conservation Camp Road and in Hesse Flat and Manning Flat. Freshwater marsh was also mapped in the ESL near the intersection of SR 29 and Red Hills Road, and along Thurston Creek at Hesse Flat and at Red Hills Road. Riparian scrub occurs along Thurston Creek at Konocti Conservation Camp Road and at Red Hills Road. Vernal pools are present north of SR 29

⁴ Environmental Laboratory, 1987. Technical Report Y-87-1, USACE Waterways Experiment Station, Vicksburg, MS.

near the intersection with Konocti Conservation Camp Road. Table B-2 summarizes the acreages of wetlands and other waters of the United States in the ESL.

Table B-2 Wetlands and Other Waters in the ESL

Type	Total (Acres)
Freshwater Marsh	16.83
Irrigated Pasture	8.64
Riparian Scrub	1.54
Ruderal Wetland	16.59
Vernal Marsh	14.47
Northern Volcanic Ash Vernal Pool	0.92
Nonwetland Waters	1.94
Total Wetlands and Waters	60.93
CDFG Riparian/Waters	5.15

Note: This table includes all wetlands and waters mapped within the ESL, regardless of the Section 404 jurisdiction. Of the 60.93 acres of wetlands and other waters currently mapped within the ESL, 31.86 acres have been verified as jurisdictional under Section 404, and another 15.82 acres have been verified as non-jurisdictional. The remaining 13.32 acres of wetlands were delineated after the original USACE verification was received. A second jurisdictional determination request will be submitted for these areas. Additionally, the majority of the CDFG riparian/waters have been mapped as other wetland types and will be considered jurisdictional under Section 404.

B.5.2 Endangered, Threatened, and Other Special Concern Species
Special-Status Plant and Animal Species

The special-status species listed in Tables B-3 and B-4 are those known to occur in (or detected very near) the ESL.

Table B-3 Special-Status Plant Species Potentially Occurring in the ESL

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat in ESL?	Species in ESL?	Rationale
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i>	Konocti manzanita	CNPS 1B	Chaparral, cismontane woodland, and lower montane coniferous forest, often on volcanic soils from 1,295 to 5,300 feet.	Yes	Yes	Species observed in several locations throughout the ESL.
<i>Calyptridium quadripetalum</i>	Four-petaled pussypaws	CNPS 4	Chaparral, lower montane coniferous forest, usually on sandy or gravelly serpentine soils (1,030 to 6,690 feet).	Yes	Yes	Two populations of this species were identified in the ESL.
<i>Horkelia bolanderi</i>	Bolander's horkelia	FSC, CNPS 1B	Meadows and edges of vernal wet places in lower montane coniferous forest, chaparral, and valley and foothill grasslands (1,475 to 3,610 feet).	Yes	Yes	One population of this species was identified within the ESL.

Table B-3 Special-Status Plant Species Potentially Occurring in the ESL

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat in ESL?	Species in ESL?	Rationale
<i>Layia septentrionalis</i>	Colusa tidytips	CNPS 1B	This plant is an annual species that occurs in chaparral, cismontane woodland, and valley and foothill grassland on sandy or serpentine soils.	Yes	No	Note: One population of approximately two to three thousand individuals was found approximately 300 feet north of the ESL near Shaul Valley. Due to the close proximity to the ESL, it is possible that this species occurs in potential habitat in the ESL, although none was identified within the ESL.
<i>Limnanthes floccosa</i> ssp.	Woolly meadowfoam	CNPS 4	This species occurs in moist meadows and vernal pools in chaparral, cismontane woodland, and valley and foothill grassland.	Yes	Yes	This species was identified in Manning Flat and in Shaul Valley within the ESL.
<i>Linanthus acicularis</i>	Bristly linanthus	CNPS 4	This species is an annual herb species that grows in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland.	Yes	Yes	This species was found in the project area, west of Manning Flat. None of the alternatives will affect this species.
<i>Antirrhinum virga</i>	Tall snapdragon	CNPS 4	This species is a perennial herb species that grows in lower montane coniferous forest habitats.	Yes	Yes	Two populations of this species were identified in the ESL.
<i>Micropus amphibolous</i>	Mt. Diablo cottonweed	CNPS 3	This species is an annual herb that occurs in rocky soils in broadleaf upland forest, chaparral, cismontane woodland, and valley and foothill grassland.	Yes	Yes	One population of this species was identified in the ESL. None of the alternatives will affect this species.
<i>Viburnum ellipticum</i>	Oval-leaved viburnum	CNPS 2	This species is a deciduous shrub that occurs in chaparral, cismontane woodland, and lower montane coniferous forest habitats.	Yes	Yes	One individual of this species was identified near the eastern edge of the project south of SR 29.
<i>Zigadenus micranthus</i> var. <i>fontanus</i>	Marsh zigadenus	CNPS 4	Chaparral, cismontane woodland, lower montane coniferous forest, meadows, seeps, marshes and swamps, often on serpentine soils (50 to 3,280 feet).	Yes	Yes	One population of this species observed in the ESL.
<i>Piperia Michaelii</i>	Michael's Piperia	CNPS 4	Coastal bluff scrub, Closed-cone coniferous forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest	Yes	Yes	One small population was discovered within the ESL west of Konocti Camp Road on the North side of SR 29.

¹ CNPS 1B = Rare or Endangered in California and elsewhere; CNPS 2 = Rare or Endangered in California, more common elsewhere; CNPS 3 = Plants about which more information is needed; CNPS 4 = Plants of limited distribution; FSC = Federal Species of Concern

Table B-4 Special-Status Animal Species Potentially Occurring in the ESL

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
Mammals						
<i>Antrozous pallidus</i>	Pallid bat	CSC	Day roosts in caves, crevices, mines and occasionally hollow trees and buildings. Night roosts may be more open sites, such as porches and open buildings.	Yes	Yes	Species caught in mist net during bat surveys, and detected at several of the echolocation survey stations within the ESL.
<i>Corynorhinus townsendii townsendii</i>	Townsend's western big-eared bat	FSC; CSC	Roosts in lava tubes, caves, buildings, mines, etc.	Yes	Yes	Townsend's big-eared bat (<i>Corynorhinus townsendii</i>) was identified roosting in three structures within the ESL, and was detected foraging within the ESL.
<i>Myotis evotis</i>	Long-eared myotis bat	FSC	Found in all brush, woodland, and forest habitats from sea level to about 9000 feet. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves primarily used for night roosts.	Yes	Unknown	Note: This species may have been detected at one of the survey stations, but a positive identification could not be reached. Potential habitat occurs in the ESL, and this species could be present.
<i>Myotis thysanodes</i>	Fringed myotis bat	FSC	In a wide variety of habitats. Optimal habitats include pinyon-juniper, valley foothill hardwood, and hardwood-conifer. Uses caves, mines, buildings, or crevices for maternity colonies and roosts.	Yes	Unknown	Note: This species may have been detected at one of the survey stations, but a positive identification could not be reached. Potential habitat occurs in the ESL, and this species could be present.
<i>Myotis yumanensis</i>	Yuma myotis bat	FSC	Optimal habitats are open forests and woodlands with sources of water over which to feed. Distribution is closely tied to bodies of water. Maternity colonies in caves, mines, buildings, or crevices.	Yes	Yes	Species caught in mist net during bat surveys, and detected at several of the echolocation survey stations within the ESL. A pregnant female was observed roosting in a building within the ESL.
Birds						
<i>Accipiter cooperii</i>	Cooper's hawk	CSC	Nesting in chiefly open woodlands, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms or river flood-plains; also live oaks.	Yes	Yes	Species detected within the ESL. Suitable nesting habitat present in the ESL, but no nests were observed.

Table B-4 Special-Status Animal Species Potentially Occurring in the ESL

Scientific Name	Common Name	Status¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
<i>Baeolophus inornatus</i>	Oak titmouse	FSLC	Montane hardwood-conifer, montane hardwood, oak woodland, arborescent chaparral, and montane and valley foothill riparian habitats. Primarily associated with oaks.	Yes	Yes	Species detected within the ESL. Suitable nesting habitat present in the ESL, but no nests were observed.
<i>Carduelis lawrencei</i>	Lawrence's goldfinch	FSC	Nests in open oak woodland, chaparral, riparian woodland, pinyon-juniper association, and weedy areas in arid regions but usually near water. Often nests in dense foliage in conifers, 3 to 40 feet above ground.	Yes	Yes	Species detected within the ESL. Suitable nesting habitat present in the ESL, but no nests were observed.
<i>Contopus cooperi</i>	Olive-sided flycatcher	FSC	Open montane and boreal conifer forests; nest in mixed conifer forests.	Yes	Yes	Species detected within the ESL. Suitable nesting habitat present in the ESL, but no nests were observed.
<i>Dendroica petechia brewsteri</i>	Yellow warbler	CSC	Nesting in riparian habitats and prefers willows, cottonwoods, aspens, sycamores, and alders for both nesting and foraging. Also nests in montane shrubbery in open conifer forests.	Yes	Yes	Species detected within the ESL. Suitable nesting habitat present in the ESL, but no nests were observed.
<i>Elanus leucurus</i>	White-tailed kite	FSC	Nesting on rolling foothills/valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodlands. Found in open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Yes	Yes	Species detected within the ESL. Suitable nesting habitat present in the ESL, but no nests were observed.
<i>Empidonax difficilis</i>	Pacific slope flycatcher	FSC	Widespread, fairly common summer resident in warm moist woodlands, including valley foothill and montane riparian, coastal and blue oak woodlands, and montane hardwood-conifer habitats. Also uses closed-cone pine-cypress, ponderosa pine, Douglas fir, Sierra mixed conifer, and redwood habitats.	Yes	Yes	Species detected within the ESL. Suitable nesting habitat present in the ESL, but no nests were observed.

Table B-4 Special-Status Animal Species Potentially Occurring in the ESL

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
<i>Progne subis</i>	Purple martin	CSC	Uncommon to rare local summer resident. Occurs in valley foothill and montane hardwood, valley foothill and montane hardwood-conifer, conifer forests and riparian habitats.	Yes	Yes	Five purple martin nests were identified within or adjacent to the ESL.
<i>Toxostoma redivivum</i>	California thrasher	FSC	Occupies moderate to dense lowland and coastal chaparral, and riparian thickets. Usually on or near ground. During breeding, nests in bushes or small trees. Nest constructed by both adults.	Yes	Yes	Species detected within the ESL. Suitable nesting habitats present in the ESL, but no nests were observed.
Reptiles						
<i>Clemmys marmorata marmorata</i>	Northwestern pond turtle	FSC; CSC	Associated with permanent or nearly permanent water sources with basking sites, in a wide variety of habitats. Nest sites may be found up to 0.3 mile from water.	Yes	Unknown	Note: Suitable western pond turtle habitat is present in Thurston Creek. Several occurrences have been recorded within close proximity to the ESL, but this species was not observed during focused surveys in the ESL.

¹ CSC = California Species of Concern; FSC = Federal Species of Concern; FSLC = Federal Species of Local Concern; FT = Federal Threatened

B.5.3 Threatened and Endangered Plant and Animal Species

The threatened or endangered plant and animal species listed in Table B-5 are those known to occur in (or detected very near) the ESL or species with a real potential to occur within the ESL based on specific habitat requirements.

Table B-5 Threatened and Endangered Species Potentially Occurring in the ESL

Scientific Name	Common Name	Status ¹	Habitat Requirements	Habitat Present in ESL	Species Present in ESL	Rationale
Reptiles						
<i>Rana aurora draytonii</i>	California red-legged frog	FT	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby, or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to aestivation habitat.	Yes	No	Note: No known existing populations in Lake County. Thurston Creek is an intermittent stream. Most of the potential habitat located along the creek appears to be dry by early to mid-summer.
Invertebrates						
<i>Desmocerus californicus dimorphus</i>	Valley elderberry longhorn beetle	FT	Occurs only in the Central Valley of California, in association with blue elderberry (<i>Sambucus mexicana</i>). Preferable to branches greater than 1 inch in diameter.	Yes	Unknown	Elderberry plants present in project area. No records from project area or elsewhere in Lake County. The USFWS currently considers Lake County to be within the range of this species.
Plants						
<i>Lasthenia burkei</i>	Burke's goldfields	FE, SE	Vernal pools and meadows from 50 to 1,970 feet.	Yes	Yes	Several populations of this species were identified in the ESL.
<i>Navarretia leucocephala</i> ssp. <i>pauciflora</i>	Few-flowered navarretia	FE, ST	Vernal pools within volcanic ash flow from 1,310 to 3,120 feet.	Yes	Yes	Several populations of few-flowered navarretia were identified in the ESL.
<i>Parvisedum leiocarpum</i>	Lake County stonecrop	FE, SE	Cismontane woodland, valley and foothill grassland, and vernal mesic depressions in volcanic outcrops from 1,200 to 2,590 feet.	Yes	Yes	Four populations of Lake County stonecrop were identified in the ESL.

¹ FE = Federal Endangered; FT = Federal Threatened; SE = State Endangered

B.6 Summary of Project Impacts

B.6.1 Wetlands Impacts

Table B-6 summarizes the wetland impacts of each build alternative. Six types of wetlands were identified within the ESL; their names and the ranges of acreage affected (depending on the alternative and configuration) are listed below.

Table B-6 Summary of Biological Impacts (in acres) by Build Alternative

Biological Resource	Signalized Intersection				Diamond Interchange w/ Option 1 Frontage Roads (Access from SR29)				Diamond Interchange w/ Option 2 Frontage Roads (Access from Red Hills Rd.)				Partial Cloverleaf w/ Option 1 Frontage Roads (Access from SR29)				Partial Cloverleaf w/ Option 2 Frontage Roads (Access from Red Hills Rd.)			
	C1	C2	C3	D	C1	C2	C3	D	C1	C2	C3	D	C1	C2	C3	D	C1	C2	C3	D
Wetlands and Other Waters of the U.S.																				
Freshwater Marsh	3.03	3.05	3.08	3.87	4.53	4.77	4.25	5.26	4.54	4.87	4.18	4.47	5.28	5.36	5.28	6.02	5.17	5.70	5.38	5.21
Irrigated Pasture	0.19	0.70	0.00	0.16	0.11	0.46	0.00	0.15	0.11	0.48	0.00	0.15	0.12	0.53	0.00	0.15	0.13	0.61	0.00	0.15
Riparian Scrub	1.21	1.21	1.21	1.22	1.21	1.24	1.18	1.21	1.20	1.23	1.18	1.20	1.38	1.43	1.32	1.38	1.38	1.43	1.31	1.38
Ruderal Wetland	0.03	0.06	0.02	0.06	0.03	0.06	0.02	0.06	0.03	0.06	0.02	0.06	0.03	0.06	0.02	0.06	0.03	0.06	0.02	0.06
Vernal Marsh	2.45	1.92	2.92	1.67	2.45	1.92	2.92	1.67	2.45	1.92	2.92	1.23	2.45	1.92	2.92	1.67	2.50	1.92	2.92	1.23
Northern Ash Volcanic Vernal Pool	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Wetlands	6.90	6.94	7.23	6.97	8.32	8.44	8.37	8.35	8.33	8.56	8.30	7.12	9.26	9.31	9.54	9.28	9.21	9.73	9.63	8.03
Other Waters of the U.S.	0.90	0.66	1.14	0.92	0.99	0.75	1.23	0.96	0.99	0.75	1.24	0.95	0.96	0.71	1.20	0.96	0.94	0.71	1.20	0.95
Total Section 404 Wetlands and Waters	7.80	7.60	8.37	7.89	9.31	9.19	9.60	9.31	9.32	9.31	9.53	8.07	10.22	10.02	10.74	10.23	10.15	10.44	10.83	8.99
Total CDFG Riparian Habitat	1.42	1.51	1.42	1.36	1.55	1.65	1.57	1.55	1.55	1.64	1.57	1.55	1.29	1.23	1.35	1.29	1.29	1.23	1.33	1.29
Plant Community																				
Black Oak Woodland	33.5	29.1	36.1	48.0	32.9	29.1	36.1	48.0	33.5	29.1	36.1	48.0	33.5	29.1	36.1	48.0	33.6	29.1	36.1	48.0
Blue Oak Woodland	18.9	17.0	18.6	13.7	18.9	17.0	18.6	13.7	18.9	17.0	18.6	13.7	18.9	17.0	18.6	13.7	18.9	17.0	18.6	13.7
Blue Oak Woodland/Black Oak Woodland	0.6	0.5	0.5	0.3	0.6	0.5	0.5	0.3	0.6	0.5	0.5	0.3	0.6	0.5	0.5	0.3	0.6	0.5	0.5	0.3
Chamise Chaparral	18.0	32.9	9.2	3.4	18.0	32.9	9.2	3.4	18.0	32.9	9.2	3.4	18.0	32.9	9.2	3.4	18.0	32.9	9.2	3.4
Foothill Pine Woodland	1.2	0.6	3.0	1.2	1.2	0.6	3.0	1.2	1.2	0.6	3.0	1.2	1.2	0.6	3.0	1.2	1.2	0.6	3.0	1.2
Interior Live Oak Chaparral	23.0	22.5	22.9	24.7	24.5	25.0	25.0	28.1	24.5	25.4	24.9	27.2	26.9	28.2	27.2	30.6	27.0	28.3	27.4	29.7
Interior Live Oak Woodland	7.2	6.6	7.5	7.2	9.8	10.1	9.2	9.0	9.8	10.0	9.3	9.0	9.5	9.3	8.9	8.7	9.5	8.9	8.9	8.7
Knobcone Pine Forest	3.9	3.5	6.6	6.7	3.9	3.5	6.6	6.7	3.9	3.5	6.6	6.7	3.9	3.5	6.6	6.7	3.9	3.5	6.6	6.7
Non-Native Grassland	33.0	36.9	31.8	32.9	33.8	37.8	32.8	33.6	34.1	37.8	33.5	33.7	34.4	38.1	33.6	34.0	34.6	38.1	34.0	34.2
Northern Mixed Chaparral	42.8	45.5	40.0	38.9	42.8	45.5	40.0	38.9	42.8	45.5	40.0	38.9	42.8	45.5	40.0	38.9	42.8	45.5	40.0	38.9
Valley Freshwater Marsh	1.6	2.0	1.3	1.6	1.6	2.0	1.3	1.6	1.6	2.0	1.3	1.6	1.6	2.0	1.3	1.6	1.5	2.0	1.3	1.6
Valley Oak Riparian	1.5	1.5	1.5	1.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.0	2.0	1.9	2.0	2.0
Valley Oak Woodland	0.9	1.2	0.5	0.9	0.8	1.0	0.4	1.0	0.8	1.0	0.4	0.9	0.8	0.9	0.4	0.9	0.8	0.9	0.5	0.9
Valley Oak Woodland/Blue Oak Woodland	4.4	4.2	4.0	6.0	4.7	4.6	4.2	6.0	4.7	4.6	4.2	6.0	4.7	4.5	4.2	6.0	4.7	4.3	4.0	6.0
Vernal Marsh	8.0	6.3	9.0	8.5	9.5	8.0	10.2	9.9	9.5	8.1	10.1	8.5	10.2	8.7	11.1	10.6	10.2	9.1	11.2	9.2
Special-Status Plants																				
Bristly linanthus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Four-petaled pussypaws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Konocti manzanita and Bolander's horkeli	0.29	0.49	0.07	0.01	0.29	0.49	0.07	0.01	0.29	0.49	0.07	0.01	0.29	0.49	0.07	0.01	0.29	0.49	0.07	0.01
Konocti manzanita	48.31	63.35	41.17	25.33	48.32	63.35	41.17	25.33	48.31	63.35	41.17	25.33	48.31	63.35	41.17	25.33	48.31	63.35	41.17	25.33
Marsh zigadenus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Michael's piperia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Oval-leaved viburnum	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tall snapdragon	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Woolly meadowfoam	7.60	8.00	6.95	8.21	7.61	8.00	6.95	8.21	7.60	8.00	6.95	8.21	7.60	8.00	6.95	8.21	7.60	8.00	6.95	8.21
Special-Status Plants Total	56.20	71.83	48.19	33.56	56.22	71.83	48.19	33.56	56.20	71.83	48.19	33.56	56.20	71.83	48.19	33.56	56.20	71.83	48.19	33.56
Threatened and Endangered Plants																				
Burke's goldfields	0.10	0.10	0.10	0.00	0.10	0.10	0.10	0.00	0.10	0.10	0.10	0.00	0.10	0.10	0.10	0.00	0.10	0.10	0.10	0.00
Woolly meadowfoam and Burke's goldfields	0.73	0.09	0.88	0.00	0.73	0.09	0.88	0.00	0.73	0.09	0.88	0.00	0.73	0.09	0.88	0.00	0.73	0.09	0.88	0.00
Few-flowered navarretia	0.27	0.05	0.27	0.00	0.27	0.05	0.27	0.00	0.27	0.05	0.27	0.00	0.27	0.05	0.27	0.00	0.27	0.05	0.27	0.00
Lake County stonecrop	0.08	0.09	0.06	0.00	0.08	0.09	0.06	0.00	0.08	0.09	0.06	0.00	0.08	0.09	0.06	0.00	0.08	0.09	0.06	0.00
Threatened and Endangered Plants Total	1.18	0.34	1.32	0.00	1.18	0.33	1.32	0.00	1.18	0.33	1.32	0.00	1.18	0.33	1.32	0.00	1.18	0.33	1.32	0.00
Oak Woodlands																				
Blue Oak Woodland	18.9	17.0	18.6	13.7	18.9	17.0	18.6	13.7	18.9	17.0	18.6	13.7	18.9	17.0	18.6	13.7	18.9	17.0	18.6	13.7
Blue Oak Woodland/Black Oak Woodland	0.6	0.5	0.5	0.3	0.6	0.5	0.5	0.3	0.6	0.5	0.5	0.3	0.6	0.5	0.5	0.3	0.6	0.5	0.5	0.3
Valley Oak Woodland	0.9	1.2	0.5	0.9	0.8	1.0	0.4	1.0	0.8	1.0	0.4	0.9	0.8	0.9	0.4	0.9	0.8	0.9	0.5	0.9
Valley Oak Woodland/Blue Oak Woodland	4.4	4.2	4.0	6.0	4.7	4.6	4.2	6.0	4.7	4.6	4.2	6.0	4.7	4.5	4.2	6.0	4.7	4.3	4.0	6.0
Oak Woodlands Total	24.7	22.8	23.7	20.9	25.0	23.1	23.8	21.0	25.0	23.0	23.8	21.0	24.9	22.8	23.8	21.0	24.9	22.7	23.7	20.9
Threatened & Endangered Animals																				
Blue Elderberry (Sambucus mexicana) plants impacted	94	81	82	62	91	73	82	65	93	73	82	65	88	68	78	60	88	68	78	60

- Freshwater marsh: 3.03–6.02 acres
- Irrigated pasture: 0.00–0.70 acre
- Riparian scrub: 1.18–1.43 acres
- Ruderal wetland: 0.02–0.06 acre
- Vernal marsh: 1.23–2.92 acres
- Northern ash volcanic vernal pool: 0.00 acre

B.6.2 Biological Impacts

As shown in Table B-6, there are nine special-status plant species could be affected by the project. Alternative D, regardless of interchange configuration, would affect the smallest area of special-status plant species at 33.56 acres. Alternative C3 would have the next-smallest area of impact, followed by Alternatives C1 and C2, respectively.

Table B-6 shows that four threatened or endangered plant species could potentially be affected by the project. Alternative D, regardless of interchange configuration, would not affect any of these species. Alternative C2 would have the next-smallest area of impact, followed by Alternatives C1 and C3, respectively.

The only threatened or endangered invertebrate species with potential to be affected by the project is the valley elderberry longhorn beetle. The species spends most of its life in the larval stage, living within the stems of elderberry plants. Elderberry bushes exist throughout the ESL. Depending on the build alternative, between 60 and 94 elderberry plants would be affected (see Table B-6). Of the build alternatives, Alternative D would result in the lowest impact, ranging from 60 to 65 plants affected.

B.6.3 Non-Biological Impacts

Table B-7 summarizes the non-biological impacts that would potentially result from the proposed project. The build alternatives would result in similar impacts for most categories, except for Farmland Conversion Impact Ratings, Business Displacements, and Residential Displacements. In these three categories, Alternative D would have the lowest amount of impact, followed by Alternative C3. Alternatives C1 and C2 would have the same impacts in all non-biological categories.

Table B-7 Summary of Non-Biological Impacts by Alternative

Project Elements/Environmental Resource	Alternative C1	Alternative C2	Alternative C3	Alternative D	No Build
Traffic and Transportation Level of Service	Meets level of service	Meets level of service	Meets level of service	Meets level of service	Does not meet level of service
Potential Growth Inducing	Limited	Limited	Limited	Limited	None
Cultural Resources Sites	Potential impact to portion of prehistoric site found to be eligible for National Register of Historic Places (NRHP)	Potential impact to portion of prehistoric site found to be eligible for NRHP	Potential impact to portion of prehistoric site found to be eligible for NRHP	Potential impact to portion of prehistoric site found to be eligible for NRHP	No impact
Farms/Williamson Act parcels (acres)	0	0	0	0	0
Farmland Conversion Impact Rating Farmland, Prime and Unique (acres) Home/Business Displacements Residential Business	119.3	119.3	119.2	94.3	0
	5.5	5.5	5.5	5.5	0
	6-7	6-7	6-7	5-6	None
	10-12	9-10	11-12	3-10	None
Visual Resources	Topographical feature change, vegetation loss, and loss of scenic resources from highway and residences in project area	Topographical feature change, vegetation loss, and loss of scenic resources from highway and residences in project area	Topographical feature change, vegetation loss, and loss of scenic resources from highway and residences in project area	Topographical feature change, vegetation loss, and loss of scenic resources from highway and residences in project area	None
Geologic Hazards	None	None	None	None	None
Water Quality and Storm Water Runoff	Potential sediment and runoff	No impact			
Hazardous Waste (# of sites)	No active recorded sites	None			
Air Quality	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos	Temporary construction-related emissions and fugitive dust, possible presence of naturally occurring asbestos	None
Noise	None	None	None	None	None
Floodplain Encroachment	None	None	None	None	None
Cut & Fill (cubic yards)	803,082	950,880	710,217	1,203,315	None
Excess Material for Disposal (cubic yards)	1,220,318	1,170,616	1,221,626	376,690	None

B.7 Section 404(b)(1) Alternatives Analysis

B.7.1 Selection Criteria

The preferred alternative would need to achieve the goal of reducing impacts to wetlands, sensitive habitats, and special-status species while balancing construction costs and operational needs for the roadway. The selection criteria considered safety issues; community impacts; conformity with local, regional, and state transportation plans; and future growth in the region, among other things. The route selection criteria used to evaluate the alternative alignments for the roadway are as follows.

- 1) Avoid, minimize or mitigate environmental impacts to:
 - Biological resources
 - Archaeological resources
 - Socioeconomic and/or community resources
 - Agricultural lands.
- 2) Obtain access control for facility expansion.
- 3) Serve the anticipated growth in the population of Lake County and the anticipated demands for access to employment centers.
- 4) Improve roadway safety.
- 5) Minimize construction costs by reducing the amount of cut and fill required.
- 6) Provide an “all weather” route based upon the 100-year flood event.
- 7) Maintain consistency with regional and state planning by providing a facility with the potential for diverting through traffic (including through truck traffic) from north shore SR 20.
- 8) Provide a modern facility designed to current design standards.
- 9) Accommodate local planning goals within the limits of available funding.
- 10) Facilitate the efficient flow of goods and services through the area.
- 11) Conform to state, regional, and local transportation plans.

12) Accommodate anticipated traffic volumes and maintain a Level of Service “C” or better along mainline SR 29 and for intersection movements through the year 2030.

13) Provide guaranteed passing opportunities for both directions of traffic.

All of the build alternatives (C1, C2, C3, and D) would meet criteria 2 through 4 and 6 through 13, as each alignment would be designed to modern standards and would account for future regional growth and traffic projections. Differences in the build alternatives become more apparent in the details of the environmental impacts (e.g., wetland impacts) and construction costs.

Impacts to waters of the U.S. and listed species are summarized by alternative and interchange option in Table B-6. These potential impacts are the basis for the evaluation below.

B.7.2 Alternatives Evaluation

No Build Alternative

As required, the No Build Alternative is included to provide an objective evaluation of all alternatives and to provide a baseline for comparison of impacts of the proposed build alternatives. This alternative would maintain SR 29 within the project limits in its existing state. Although this alternative would have no impact on wetland or other biological resources, traffic is projected to increase in the future based on regional transportation demands, which would result in delays and increased safety concerns in the project area. Currently, SR 29 within the project limits operates at LOS D. By the year 2035, the LOS is expected to deteriorate to E, causing significant delays if no capacity-increasing improvements are made. Additionally, SR 281 is a major entry and exit point for this area, and the SR 29/281/Red Hills Road intersection experiences significant congestion and delays. The SR 29/281/Red Hills Road intersection currently operates at LOS E and would drop to LOS F in 10 years with the No Build Alternative.

The No Build Alternative would not alleviate the projected traffic demand and safety concerns, and therefore would not meet the project’s purpose and need.

Alternative C1

Jurisdictional wetland impacts from Alternative C1 would range from 7.80 acres for the signalized intersection configuration to 10.22 acres for the partial cloverleaf interchange with Option 1 frontage roads. The bulk of the affected wetlands would be vernal marshes, wetland marshes, and riparian scrub.

Alternative C1 would affect 1.183 acres of threatened or endangered plant species under the signalized intersection option and 1.181 acres under the partial cloverleaf and diamond interchange configurations. The threatened or endangered plant species affected are Burke's goldfields (*Lasthenia burkei*), a federal and state listed endangered species; few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*), which is federally listed as endangered and state listed as threatened; and Lake County stonecrop (*Parvisedum leiocarpum*), a federal and state listed endangered species. All configurations of Alternative C1 would affect 56.200 acres of special-status plant species, which primarily consist of woolly meadowfoam (*Limnanthes floccosa* ssp. *floccosa*) and Konocti manzanita (*Zigadenus micranthus* var. *fontanus*). Both plants are California Native Plant Society (CNPS) List 4 species with no federal or state status.

Of all of the build alternatives, Alternative C1 would affect the most blue elderberry (*Sambucus mexicana*) plants, which are the host plant for the endangered valley elderberry longhorn beetle (88 to 94 plants, depending on build configuration).

Alternative C1 would have the second-highest number of non-biological impacts, including the taking of between six and seven residential properties and between 10 and 12 businesses (depending upon the interchange option selected). Along with Alternative C2, this alternative has the highest Farmland Conversion Impact Rating (119.3). Alternative C1 would produce a total of 1,220,318 cubic yards of excess material for disposal. This is the second-highest amount of excess material of all build alternatives.

Alternative C2

Jurisdictional wetland impacts from Alternative C2 would range from 7.60 acres for the signalized intersection configuration to 10.44 acres for the partial cloverleaf interchange with Option 2 frontage roads. The bulk of the affected wetlands would be vernal marshes, wetland marshes, and riparian scrub.

Alternative C2 would affect 0.337 acre of threatened or endangered plant species under the signalized intersection option and 0.334 acre under the partial cloverleaf and diamond interchange configurations. All configurations of Alternative C2 would affect 71.835 acres of special-status plant species, which primarily consist of woolly meadowfoam and Konocti manzanita. Both plants are CNPS List 4 species with no federal or state status.

Depending on the interchange option selected, Alternative C2 would affect between 68 and 81 blue elderberry plants, which provide habitat for the endangered valley elderberry longhorn beetle.

Alternative C2 would have the second-lowest non-biological impacts. This alternative would require the taking of between six and seven residential properties and between nine and 10 businesses (depending upon the interchange option selected). However, along with Alternative C1, it has the highest Farmland Conversion Impact Rating (119.3). Alternative C2 would produce a total of 1,170,616 cubic yards of excess material for disposal. This is the second-lowest amount of excess material that would be created under all of the build alternatives, after Alternatives C1 and C3.

Alternative C3

Jurisdictional wetland impacts from Alternative C3 would range from 8.37 acres for the signalized intersection configuration to 10.83 acres for the partial cloverleaf with Option 2 frontage roads. The bulk of the affected wetlands would be vernal marshes, wetland marshes, and riparian scrub.

Alternative C3 would affect 1.318 acres of threatened or endangered plant species under the signalized intersection configuration and 1.315 acres under the partial cloverleaf and diamond interchange configurations. All configurations of Alternative C3 would affect 48.195 acres of special-status plant species, which primarily consist of woolly meadowfoam and Kofoetia manzanita. Both plants are CNPS List 4 species with no federal or state status.

Depending on the interchange option selected, Alternative C3 would affect between 78 and 82 blue elderberry plants, which provide habitat for the endangered valley elderberry longhorn beetle.

This alternative would have the highest non-biological impacts. Alternative C3 would require the taking of between six and seven residential properties and between 11 and 12 businesses (depending on the interchange option selected). It has a Farmland Conversion Impact Rating of 119.2. Of all of the build alternatives, Alternative C3 would produce the largest amount of excess material for disposal (1,221,626 cubic yards).

Alternative D

Jurisdictional wetland impacts from Alternative D would range from 7.89 acres for the signalized intersection configuration to 10.23 acres for the partial cloverleaf with Option 1 frontage roads. The bulk of the affected wetlands would be vernal marshes, wetland marshes, and riparian scrub.

Alternative D would not affect any threatened or endangered plant species under any of the build configurations. Regardless of configuration, this alternative would affect a

smaller area of special-status plants than any other build alternative: 33.56 acres, which primarily consist of woolly meadowfoam and Konocti manzanita. Both plants are CNPS List 4 species with no federal or state status.

Of all of the build alternatives, Alternative D would affect the fewest blue elderberry plants, which provide habitat for the endangered valley elderberry longhorn beetle (60 to 65 plants, depending on the interchange option selected).

Alternative D would also have the lowest amount of non-biological impacts, including the fewest residential and business relocations (five to six and three to 10, respectively, depending on the interchange option selected), and the lowest Farmland Conversion Impact Rating (94.3). Alternative D would produce 376,690 cubic yards of excess material for disposal, significantly lower than any other build alternative.

B.7.3 Conclusion

In reviewing the impacts of each alternative and build configuration, Alternative D appears to result in the lowest overall impact across all configurations. Tables B-6 and B-7 identify the biological and non-biological impacts that were considered in making a final decision on alternatives. The impacts are summarized below.

Biological Impacts

Wetlands

The wetland impacts resulting from each alternative are quite similar and vary depending upon the interchange option selected. Alternative C3, however, would result in the greatest impacts to wetlands and other waters of the U.S., regardless of the interchange configuration.

Overall, Alternative C2 would have the least impact to wetlands and other waters of the U.S., but these impacts are only slightly lower than Alternative D, and in some instances, Alternative D results in the least impacts. Compared to Alternative C2, Alternative D would affect an additional 0.29 acre of wetlands and other waters of the U.S. with the signalized intersection option, an additional 0.12 acre with the diamond interchange with Option 1 frontage roads, and an additional 0.21 acre with the partial cloverleaf interchange with Option 1 frontage roads. Under the diamond interchange with Option 2 frontage roads and the roundabout interchange with Option 2 frontage roads, however, Alternative C2 would result in an *additional* 0.21 acre and 1.45 acres of impacts, respectively, over Alternative D.

Further, as originally designed, Alternative D resulted in the least impacts to wetlands and waters of the U.S., regardless of the interchange option selected. The revisions that were made to Alternative D to avoid impacts to endangered plant species have resulted in an additional 1.15 acres of direct impacts to wetlands and other waters of the U.S. for this alternative. Alternatives C1, C2, and C3 would all impact these endangered plant species.

Special-Status Plant Species

Alternative D would result in the smallest area of impact to special-status plant species: over 14 acres less than the next-closest alternative (Alternative C3). Alternative D would also result in the smallest area of impact to oak woodlands.

Threatened and Endangered Species

Alternative D would avoid impacts to threatened and endangered plant species under all configurations. Alternatives C1, C2, and C3 would result in between 0.33 and 1.32 acres of impacts to listed plant species, including Burke's goldfields, few-flowered navarretia, Lake County stonecrop, and woolly meadowfoam.

Alternative D would affect fewer blue elderberry plants than Alternatives C1, C2, and C3 (across all build configurations). The blue elderberry plant provides habitat for the endangered valley elderberry longhorn beetle.

Non-Biological Impacts

While most of the non-biological impacts are similar across all alternatives (Table B-7), Alternative D would result in the lowest Farmland Conversion Impact Rating (94.3) and require the fewest residential and business takings (five to six and three to 10, respectively, depending upon the interchange option selected).

In general, Alternatives C1, C2, C3, and D would result in similar visual impacts due to the nature of their vertical alignments. Alternatives C1, C2, and C3 are straighter compared to Alternative D, with long, wide curves that would encroach more on existing sensitive vegetation, wetland, and topographic features. Alternative D does not fully conform to existing topographical features but deviates to a lesser degree than Alternatives C1, C2, and C3 and would encroach less on the natural environment.

Identification of the LEDPA

This analysis of the proposed Lake 29 Improvement Project alternatives identifies Alternative D as the LEDPA. Following the public comment period and input from the resource and regulatory agencies, the final NEPA preferred alternative/Section 404 LEDPA will be identified in the Final EIR/EA. Based on the preferred alternative/

LEDPA, the final design will incorporate measures to minimize impacts to resources within the project limits. In addition, a detailed compensatory mitigation plan(s) will be finalized and approved by the resource agencies for all unavoidable impacts to aquatic resources based on the agreed-upon preferred alternative.



DEPARTMENT OF TRANSPORTATION

NORTH REGION ENVIRONMENTAL BRANCH

2389 GATEWAY OAKS DRIVE

SACRAMENTO, CA 95833

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FAX (916) 274-0648

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June 30, 2006

Mr. Bill Guthrie
Regulatory Branch
United States Army Corps of Engineers
1325 J Street, Room 1480
Sacramento, CA 95814

Ms. Holly Herod
Sacramento Valley Branch
United States Fish and Wildlife Service
2800 Cottage Way, Room W2605
Sacramento, CA 95825

Ms. Nancy Levin
United States Environmental Protection Agency
75 Hawthorne Street (CED-2)
San Francisco, CA 94105

01-Lak-29
Lake 29 Expressway Project
EA 01-2981U
(USACE # 200300156)

Dear colleagues:

The purpose of this letter is to request your formal response to the enclosed *Purpose and Need, Range of Alternatives, and Criteria for the Selection of Project Alternatives* for the Lake 29 Expressway Project in accordance with the April 2006 Memorandum of Understanding (MOU) for the implementation of the NEPA/404 Integration Process. This project is located in Lake County on State Route 29 between the communities of Lower Lake and Kelseyville (PM 23.6 to 31.6/KP 38.3 to 50.9).

The NEPA/404 Integration Process for this project was formally initiated in February of 2003 under the previous MOU. Under the 1994 MOU, integration of the NEPA/404 process was required for all proposed federal aid projects in California that were likely to have impacts greater than 5 acres to special aquatic sites or other waters of the U.S. Under the new MOU, integration is only required for projects that require the preparation of an Environmental Impact Statement (EIS). Although the new MOU does not require integration for projects for which an Environmental Assessment (EA) will be prepared, we value your feedback and have therefore elected to seek your formal response to these "checkpoint proposals" under the new MOU.

Upon initiation of the NEPA/404 process in 2003, there were five alternatives under consideration:

- Alternative A – No Build
- Alternative B – Passing Lanes (this alternative would construct passing lanes in both directions of travel. Northbound passing lanes would be provided from PM 25.7 to 26.7 and 28.6 to 29.8. Southbound passing lanes would be provided from PM 24.4 to 25.4 and 29.2 to 30.2). *Please note that this alternative is no longer under consideration.*
- Alternative C1 – 4 Lane Expressway (this alternative would widen to a four-lane expressway on the existing centerline and upgrade the existing non-standard geometric features).
- Alternative C2 – 4 Lane Expressway (this alternative shifts the proposed C1 centerline 30 ft to the north of the existing centerline).
- Alternative C3 – 4 Lane Expressway (this alternative shifts to proposed C1 centerline 30 ft to the south of the existing centerline).

Following the first NEPA/404 meeting in March of 2003, another expressway alternative was designed. Alternative D (or the “Avoidance Alternative”) was specifically designed to avoid environmental resources and to reduce project costs by reducing the amount of cut and fill required.

There have been three NEPA/404 coordination meetings since the first meeting in 2003 (June 2005, December 2005, and April 2006). The primary purpose of these meetings has been to obtain formal concurrence on the *Purpose and Need, Range of Alternatives, and Criteria for the Selection of Project Alternatives*. At our December 14, 2005 meeting, it was informally agreed by the agencies in attendance that the Passing Lane Alternative (Alternative B) could be dropped from further consideration, as it does not meet the Purpose and Need of the project. The environmental document will include a section on alternatives eliminated from further consideration and a thorough discussion of the reasons for their elimination.

Attached you will find the *Purpose and Need, Range of Alternatives, and Criteria for the Selection of Project Alternatives*. At this time, we are seeking your formal response to these checkpoint proposals pursuant to the April 2006 MOU¹. In accordance with the MOU, we would appreciate your response to these checkpoint proposals within 30 calendar days or by August 4, 2006.

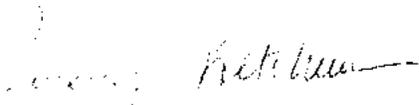
¹ USACE and USEPA will “Agree /Disagree” on the *Purpose and Need, Range of Alternatives, and Criteria for the Selection of Project Alternatives*. USFWS will “Comment” on the *Purpose and Need* and “Agree/Disagree” on the *Range of Alternatives and Criteria for the Selection of Project Alternatives*.

June 30, 2006

Page 3

Thank you again for your assistance and participation. We will be contacting you shortly to arrange a date for our next NEPA/404 meeting. If you have any questions or wish to discuss any of the enclosed documents, please feel free to contact me at (916) 274-0621. You may also contact Jennifer Heichel at (916) 274-0566.

Sincerely,



JEREMY KETCHUM

Chief, Office of Environmental Management, S1

- c: Michael E. Aceituno, National Marine Fisheries Service
- Susan Boring, National Marine Fisheries Service
- Gene Cooley, California Department of Fish and Game
- Liam Davis, California Department of Fish and Game
- Phil Dow, Mendocino Council of Governments
- Michael Monroe, United States Environmental Protection Agency
- Lanh Phan, Federal Highway Administration
- Kenneth Sanchez, United States Fish and Wildlife Service
- Gary Sweeten, Federal Highway Administration
- Laura Whitney, U.S. Army Corps of Engineers

DEPARTMENT OF TRANSPORTATION
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October 24, 2006

Ms. Laura Whitney
Regulatory Branch
United States Army Corps of Engineers
1325 J Street, Room 1480
Sacramento, CA 958 14

*01 -Lak-29
Lake 29 Expressway Project
EA 01 -2981U
(USACE # 200300156)*

Ms. Holly Herod
Sacramento Valley Branch
United States Fish and Wildlife Service
2800 Cottage Way, Room W2605
Sacramento, CA 95825

Ms. Nancy Levin
United States Environmental Protection Agency
75 Hawthorne Street (CED-2)
San Francisco, CA 94105

RE: NEPA 404 Request for Checkpoint Proposal Responses on Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives for the Lake 29 Expressway Project

Dear colleagues:

The intent of this letter is to provide a "clean copy" of the Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives for the Lake 29 Expressway Project that have been provided in previous electronic transmittals.

On June 30th, 2006 copies of the Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives were sent to your respective agencies with the intent to receive responses per the NEPA 404 integration process. Phone conversations subsequent to this request revealed that agreement on the existing Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives could not be provided until outstanding concerns were addressed. A NEPA/404 meeting was held August 16th, 2006 and comments were taken on prospective changes to the NEPA/404 documents. In addition, substantial discussion ensued on potential impacts to special status plants in the Manning Flat area.

On September 14th, 2006 revisions to the Purpose and Need were provided via e-mail to each of your agencies. The Purpose and Need was condensed by removal of the extensive background information that was included in the previous draft. The information removed is still germane to the project and will still appear in the environmental document as necessary.

On September 21st, 2006 revisions to the Range of Alternatives were provided via e-mail pursuant to comments received at the August 16th NEPA/404 meeting. The primary change was to include separate discussions for each alternative (C1-3 and D). In addition, on the same date Caltrans provided a response to a July 3rd, 2006 letter from USFWS. The response to USFWS provided a strategy for the study of potential effects to three federally endangered species: Burke's goldfields (*Lasthenia burkei*), Lake County stonecrop (*Sedella leiocarpa*), and few-flowered navarretia (*Navarretia leucocephala* ssp.

Pauciflora). Further, the letter indicated that in the Manning Flat area Caltrans would realign the highway away from any identified location of the endangered species.

On October 11th, 2006 EPA provided suggested language to be included in the Range of Alternatives allowing for flexibility in the range of alternatives, as more information becomes known about potential impacts.

The suggested edits were incorporated into the Range of Alternatives and sent to each of the NEPA 404 agencies on October 18th, 2006 via e-mail. The section titled "Special Considerations" includes all of the new language. The section states that further modifications to the alternatives may be necessary as a result of the studies to be conducted for the Burke's goldfields, Lake County stonecrop, and few-flowered navarretia. Caltrans is currently working on a modification that is intended to eliminate potential indirect impacts at Manning Flat for Alternative D. The added language should provide enough assurance to allow for agreement on the Alternatives while we work on the details of this modification and any future modifications, if the additional surveys (identified in the September 21 memo to USFWS) determine additional threats to the existence of these species.

Attached is a "clean copy" of the final Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives. This "clean copy" provides all three of the edited documents thereby representing the entire NEPA/404 checkpoint proposal request.

EPA, in an October 20th, 2006 e-mail message, indicated that with this transmission they would be able to provide agreement on the Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives. Please let us know as soon as possible if you have any further questions regarding the Purpose and Need and/or Range of Alternatives, as we are over 30 days since our last submittal of the Purpose and Need and Range of Alternatives.

Sincerely,



JEREMY KETCHUM, Chief
North Region Environmental Management, Branch S1

C : Electronic copy only:

Susan Boring, National Marine Fisheries Service
Gene Cooley, California Department of Fish and Game
Cori Gray, California Department of Fish and Game
Phil Dow, Mendocino Council of Governments
Michael Monroe, United States Environmental Protection Agency
Mary Hammer, United States Fish and Wildlife Service
Lanh Phan, Federal Highway Administration
Gary Sweeten, Federal Highway Administration



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

November 6, 2006

Jeremy Ketchum, Chief
California Department of Transportation
Office of Environmental Management, S1
2389 Gateway Oaks Drive
Sacramento, CA 95833

Subject: Request for Agreement on the Purpose and Need, Selection Criteria, and Range of Alternatives Checkpoints for the Proposed State Route 29 Highway Project in Lake County, California

Dear Mr. Ketchum:

We are writing in response to your October 24 letter requesting EPA's agreement on the purpose and need, criteria for selection of the range of alternatives, and the range of alternatives for the above-referenced project. This request is pursuant to the 2006 National Environmental Policy Act/Clean Water Act (CWA) Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU).

EPA agrees with these three NEPA/404 MOU checkpoints as described in the attachments to your letter. We recognize Caltrans' commitment to respond to EPA's concerns about avoiding direct and indirect impacts to waters of the U.S. and rare and endangered plant species.

We appreciate the opportunity to participate in the NEPA/404 MOU process. Please send two (2) copies of the draft environmental document to the address above (mail code: CED-2). If you have any questions, please contact Michael Monroe of EPA's Wetlands Regulatory Office at 415-972-3453 or monroe.michael@epa.gov, or Nancy Levin of my staff at 415-972-3848 or levin.nancy@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Enrique Manzanilla".

for Enrique Manzanilla, Director
Communities and Ecosystems Division

Enclosure:

Caltrans NEPA/404 request letter (October 24, 2006) with attachments

cc. Lahn Phan, Federal Highway Administration
Holly Herod, U.S. Fish and Wildlife Service
Bill Guthrie, U.S. Army Corps of Engineers
Michael E. Aceituno, National Marine Fisheries Service



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95834-2922

December 21, 2006

Regulatory Branch (200300156)

Jeremy Ketchum
Chief, California Department of Transportation
Office of Environmental Management, S-1
2389 Gateway Oaks Drive, 1st floor
Sacramento, California 95833-4231

Dear Mr. Ketchum:

I am responding to your letter dated October 24, 2006, requesting the Corps agreement on the Purpose and Need, as well as the Alternatives Selection Criteria and the Range of Alternatives for the State Route 29 Highway Project pursuant to the 2006 National Environmental Policy Act/Clean Water Act (CWA Section 404 Integration Process Memorandum of Understanding (NEPA/404 MOU).

After reviewing your letter along with the enclosures the Corps agrees with the revised Purpose and Need statement submitted in the September 14, 2006 email. In addition, the Corps agrees to both the Selection Criteria and Range of Alternatives, which allow for modifications that could be made to the alternatives as results of the plant surveys become available.

Any future modifications made to the alternatives should also ensure that the alternatives avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternative to the filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

The Corps accepts the privilege of becoming a cooperative agency. Once we receive the environmental documentation along with permit application and proposed mitigation plan we will start processing a Department of Army Individual Permit for the proposed project.

Please refer to identification number 200300156 in any correspondence concerning this project. If you have any questions, please write Ms. Laura Whitney at the letterhead address or email *Laura.A.Whitney@usace.army.mil*, or telephone 916-557-7455.

Sincerely,

A handwritten signature in black ink that reads "L. Whitney". The signature is written in a cursive style with a large, looped initial "L" and a stylized "Whitney".

Laura Whitney
Project Manager

Enclosures

Copies furnished without enclosures:

Lahn Phan, Federal Highway Administration, 650 Capitol Mall, Suite 4-100, Sacramento, California 95814

Nancy Levin, U.S. Environmental Protection Agency, Region 9, 75 Hawthorne Street, CED-2, San Francisco, California 94105-3901

Holly Herod, U.S. Fish and Wildlife Service, Sacramento Valley Branch, 2800 Cottage Way, Room W-2605, Sacramento, California 95825

Michael E. Aceituno, National Marine Fisheries Services, 650 Capitol Mall, Suite 8-300, Sacramento, California 95814-4706

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December 29, 2006

Ms. Holly Herod
Sacramento Valley Branch
United States Fish and Wildlife Service
2800 Cottage Way, Room W2605
Sacramento, CA 95825

01 -Lak-29
Lake 29 Expressway Project
EA 01 -2981U
(USACE # 200300156)

RE: NEPA 404 Request for Checkpoint Proposal Responses on Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives for the Lake 29 Expressway Project

Dear Ms. Herod:

The purpose of this letter is to provide revised mapping for the Lake 29 Expressway Project and to request your formal response to the enclosed *Purpose and Need, Range of Alternatives, and Criteria for the Selection of Project Alternatives* in accordance with the April 2006 Memorandum of Understanding (MOU) for the implementation of the NEPA/404 Integration Process. This proposed project is located in Lake County on State Route 29 between the communities of Lower Lake and Kelseyville (PM 23.6 to 31.6/KP 38.3 to 50.9).

On June 30th, 2006 copies of the Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives were sent to your agency with the intent to receive a response per the NEPA/404 MOU integration process. Phone conversations subsequent to this request revealed that agreement on the existing Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives could not be provided until outstanding concerns were addressed. A NEPA/404 meeting was held August 16th, 2006 and comments were taken on prospective changes to the NEPA/404 documents and project features. In addition, substantial discussion ensued on potential impacts to special status plants in the Manning Flat area.

On September 14th, 2006 revisions to the Purpose and Need were provided via e-mail to your agency. The Purpose and Need was condensed by removal of the extensive background information that was included in the previous draft. The information removed is still germane to the project and will still appear in the environmental document as necessary.

On September 21st, 2006 revisions to the Range of Alternatives were provided via e-mail pursuant to comments received at the August 16th NEPA/404 meeting. The primary change was to include separate discussions for each alternative (C1-3 and D). In addition, on the same date Caltrans provided a response to a July 3rd, 2006 letter from USFWS. The response to USFWS provided a strategy for the study of potential effects to three federally endangered species: Burke's goldfields (*Lasthenia burkei*), Lake County stonecrop (*Sedella leiocarpa*), and few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*). Further, the letter indicated that in the Manning Flat area Caltrans would realign the highway away from any identified location of the endangered species.

On October 11th, 2006 EPA provided suggested language to be included in the Range of Alternatives allowing for flexibility in the range of alternatives, as more information becomes known about potential

impacts. The suggested edits were incorporated into the Range of Alternatives and sent to each of the NEPA/404 agencies on October 18th, 2006 via e-mail. The section titled "Special Considerations" includes all of the new language. The section states that further modifications to the alternatives may be necessary as a result of the studies to be conducted for the Burke's goldfields, Lake County stonecrop, and few-flowered navarretia. A hardcopy of all revised NEPA/404 documents was sent on October 24, 2006.

On November 6, 2006 USEPA provided their formal "agreement" to the project Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives. On December 21, 2006, USACE provided their formal agreement on these same items.

For the past few months, Caltrans has worked hard to modify the proposed project design for Alternative D with the intention of eliminating potential direct and indirect impacts to Burke's goldfields, Lake County stonecrop, and few-flowered navarretia. Avoidance modifications to the project design have now been made. Attached you will find revised mapping for the Konocti Camp Road and Manning Flat areas. Please note that impacts due to these changes to Alternative D include an increase in cost by several million dollars, increased disposal needs, removal of housing for park service staff, impacts to Thurston Creek and potential impacts to cultural sites. It is Caltrans understanding that the reduction in potential indirect impacts to the aforementioned species outweighs these other factors and such changes are needed in order to allow the highway improvements.

The scheduled date for circulation of the Draft Environmental Document is approaching. We would appreciate your response no later than January 12, 2006. Please let us know as soon as possible if you have any further questions regarding the Purpose and Need and/or Range of Alternatives, as it has now been over 60 days since our last submittal of the Purpose and Need and Range of Alternatives. I trust that Caltrans' efforts to be responsive to the NEPA/404 agencies concerns will meet the USFWS' approval. We look forward to your agency's agreement.

Sincerely,



JEREMY KETCHUM, Chief
North Region Environmental Management, Branch S1

C:

Hardcopy:

Nancy Levin, United States Environmental Protection Agency
Laura Whitney, United States Army Corps of Engineers

Electronic copy only:

Susan Boring, National Marine Fisheries Service
Gene Cooley, California Department of Fish and Game
Cori Gray, California Department of Fish and Game
Phil Dow, Mendocino Council of Governments
Michael Monroe, United States Environmental Protection Agency
Mary Hammer, United States Fish and Wildlife Service
Lanh Phan, Federal Highway Administration
Gary Sweeten, Federal Highway Administration



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, California 95825-1846

In reply refer to:
1-1-07-I-0519

FEB 12 2007

Mr. Jeremy Ketchum
Chief, North Region Environmental Management
California Department of Transportation, District 3
2389 Gateway Oaks Drive
Sacramento, California 95833

Subject: NEPA 404 Request for Checkpoint Proposal Responses on Purpose and Need, Alternatives Selection Criteria, and Range of Alternatives for the Lake County State Route 29 Expressway Project, Lake County, California.

Dear Mr. Ketchum:

The U. S. Fish and Wildlife Service (Service) is writing in response to your letter, dated December 29, 2006, requesting our National Environmental Policy Act (NEPA) comments on the purpose and need, alternatives selection criteria, and range of alternatives for the Lake County State Route 29 Expressway Project in Lake County, California. We received your letter on January 3, 2007. This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

The California Department of Transportation (Caltrans) is proposing to upgrade 7.8 miles of State Route 29 from Kelseyville to Lower Lake from a two-lane highway to a four-lane expressway. The goal of the project is to provide an east-west connection from the mostly rural northern California corridor from U. S. 101 in Mendocino County, through the Clear Lake area, across the Sacramento Valley, connecting to more urbanized areas surrounding Interstate 5 and Interstate 80.

The Service does not have the NEPA expertise to comment on the proposed projects' purpose and need, alternatives selection criteria, and range of alternatives. Our comments have been and will continue to be based on our evaluation of the potential effects of the proposed project to federally-listed species along the project corridor.

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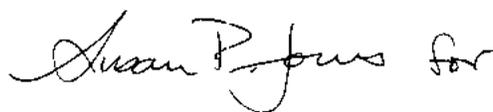
The Service has previously expressed our concerns in writing to Caltrans (Service file number 1-1-06-I-1219) regarding the potential direct and indirect effects of the proposed project to several federally-listed plant species along the project corridor, including the endangered Burke's goldfields (*Lasthenia burkei*), endangered Lake County stonecrop (*Sedella leiocarpa*), and endangered few-flowered navarretia (*Navarretia leucocephala* ssp. *pauciflora*), and other federally-listed species that may be present along the project corridor. In addition, we have discussed our concerns regarding the potential direct and indirect effects of the proposed project to federally-listed species at site visits and meetings with Caltrans over the last several months.

To date, we do not have enough information regarding the proposed project and the various alternatives to adequately evaluate the potential direct and indirect effects of the proposed project to federally-listed species. Caltrans has provided the Service with a map depicting revisions to Alternative D (the "avoidance" alternative) that are intended to reduce the effects of the proposed project to federally-listed plants. The revisions involve the realignment of Alternative D along portions of the project corridor. However, the Service does not have enough information to adequately evaluate the potential direct and indirect effects of the proposed project, including the revisions to Alternative D, to federally-listed species, nor do we believe the necessary information is available at this time. The Service believes that additional plant surveys and hydrological studies need to be conducted before the direct and indirect effects to federally-listed plants from the proposed project can be thoroughly evaluated.

Your letter also stated that the scheduled date for circulation of a draft environmental document is approaching. The Service is concerned that currently there is not enough information regarding the direct and indirect effects of the proposed project on federally-listed plants to evaluate these effects in a draft environmental document. The Service encourages Caltrans to obtain more information regarding the effects of the proposed project to federally-listed species and insure that this information is included in the draft environmental document.

If you have any questions regarding our response to your request, please contact Mary Hammer or Holly Herod, Sacramento Valley Branch Chief, at 916-414-6645.

Sincerely,



Peter A. Cross
Deputy Assistant Field Supervisor

cc:

Laura Whitney, U.S. Army Corps of Engineers,
Nancy Levin, U. S. Environmental Protection Agency
Gary Sweeten, Federal Highway Administration,
Gene Cooley, California Department of Fish and Game, Yountville
Liam H. Davis, California Department of Fish and Game, Yountville