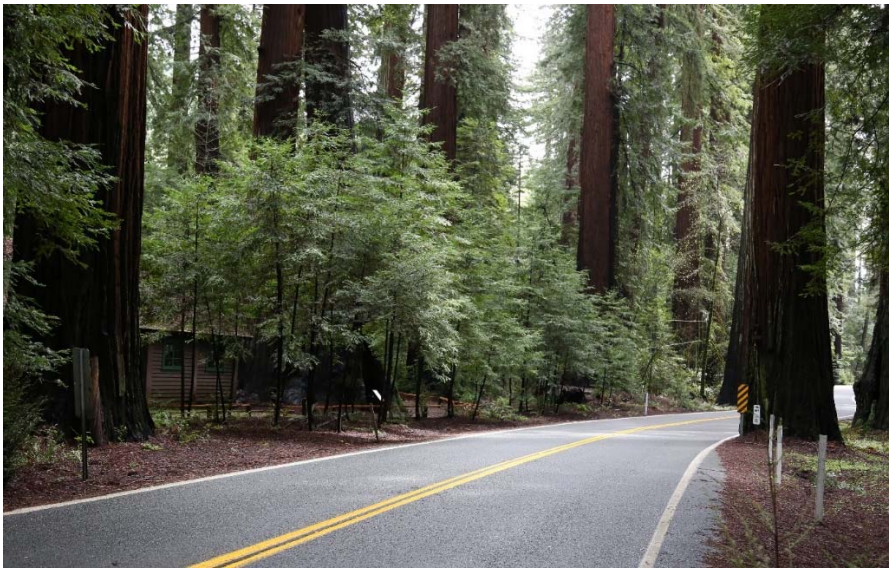
RICHARDSON GROVE OPERATIONAL IMPROVEMENT PROJECT

Humboldt County, California
District 1 – HUM – 101 – PM 1.1/2.2
46480

Addendum to the
Final Environmental Impact Report



Prepared by the State of California Department of Transportation

May 2017

RICHARDSON GROVE OPERATIONAL IMPROVEMENT PROJECT

US Route 101, in Humboldt County near Garberville, from 0.5 mile south to 0.5 mile north (Post Mile 1.1 to Post Mile 2.2) of Richardson Grove Undercrossing

ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT

Submitted Pursuant to: (State) Division 13, California Public Resources Code

THE STATE OF CALIFORNIA
Department of Transportation

May 1, 2017
Date of Approval

Matthew K. Brady
District 1 Director
California Department of Transportation

Summary

The Richardson Grove Operational Improvement Project was proposed by the California Department of Transportation (Caltrans), as assigned by the Federal Highway Administration (FHWA) and with the support of the County of Humboldt, other agencies, and local businesses and groups, to improve goods movement. This project would slightly realign US Route 101 (US 101) in and near Richardson Grove State Park to accommodate industry standard-sized trucks, which are currently prohibited from traveling on US 101 between Leggett in northern Mendocino County and Benbow in southern Humboldt County. No old growth redwood trees would be removed or impaired by this project.

Since the Environmental Impact Report (EIR) was completed in May 2010, there have been minor changes to the project which include the following:

- The overall project footprint and culvert work have been reduced (e.g., steepened cut slopes and reductions in shoulder widening).
- In order to meet current safety standards, minor changes are proposed to the existing barrier rail at each of the four corners of the Richardson Grove Undercrossing that would replace the metal beam guardrail with a shorter transition barrier and crash cushion.
- Two minor changes at the north end of the project outside of the park would extend the barrier at the northerly end of the proposed retaining wall by ten feet, angle it away from traffic, and place a crash cushion at the southerly end of the retaining wall.

Old growth redwood trees, with proposed ground disturbance within the root health zone (a distance of five times its diameter), have been reassessed to determine potential impacts based on the current project footprint. Potential impacts were first evaluated as if the project would be constructed using conventional construction methods (e.g., all work done with heavy equipment). Potential impacts were then assessed incorporating the proposed minimization measures (e.g., use of hand tools and/or a pneumatic excavator).

This addendum summarizes the revised impacts analyses for old growth redwoods. Based on the analyses documented in this addendum, the significance determinations reported in the CEQA Checklist section of the 2010 Final EIR have not changed. Complete results of the analyses were documented in the consulting arborist's Final Report (Yniguez 2015).

The 2010 Final EIR concluded that the project would not substantially adversely affect old growth redwood trees. The reassessment of potential impacts to old growth redwood trees indicates that the redwood forest, a Natural Community of Special Concern that the redwoods comprise, would be minimally affected by the project if conventional construction methods were used without any special protection measures. Incorporation of the proposed protection measures would further reduce these minimal impacts.

The 2010 Final EIR also concluded that the project would not affect listed fish species. In 2015, Caltrans requested technical assistance from the National Marine Fisheries Service (NMFS) to update the evaluation of the potential effects of the culvert work, roadway work, and proposed barrier rail modifications on listed fish species. As a result of the technical assistance, it was determined that there was potential for the project to affect listed fish and their critical habitat, as well as Essential Fish Habitat (EFH). Consequently, Caltrans conducted further analysis and initiated informal consultation with NMFS. A Letter of Concurrence was received from NMFS on January 23, 2017.

This addendum summarizes the revised impacts analyses for listed fish, their critical habitat, and Essential Fish Habitat (EFH). Based on the analyses documented in this addendum, the significance determinations reported in the CEQA Checklist section of the 2010 Final EIR have not changed. Complete results of the analyses were documented in the Biological Assessment (Caltrans 2016b).

All minimization measures described in the 2010 Final EIR would be implemented for this project. According to the Federal Highway Administration (FHWA) and the National Environmental Protection Act (NEPA), to the extent feasible, mitigations for project impacts are considered whether the impacts are significant or not.

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Introduction

The California Department of Transportation (Caltrans) proposes to make minor adjustments to the roadway alignment on U.S. Highway (US) 101 between post miles (PM) 1.1 and 2.2 in Humboldt County. The Richardson Grove Operational Improvement Project (project) would allow access by industry standard-sized trucks that conform to the Surface Transportation Assistance Act (STAA). Depending on truck cab/trailer configuration, STAA trucks can be longer than the currently allowed California Legal trucks. The limits on width and weight of trucks would not change.

Detailed information about this project was provided in the Draft Environmental Impact Report/Environmental Assessment, which was circulated to the public from December 4, 2008, to March 12, 2009. A Final Environmental Impact Report (EIR)/Environmental Assessment (EA) and Programmatic Section 4(f) Evaluation was signed on May 18, 2010. The EIR was prepared to comply with the California Environmental Quality Act (CEQA). The EA, its Finding of No Significant Impact (FONSI), and the Section 4(f) Evaluation were prepared pursuant to the National Environmental Policy Act (NEPA) and the US Department of Transportation Act of 1966.

This addendum to the Final EIR has been prepared by Caltrans in compliance with the decision of the California Court of Appeals for the First Appellate District [*Lotus v. California Department of Transportation* (2014) 223 Cal.App.4th 645], and the trial court's Peremptory Writ of Mandate issued on October 21, 2014. In its decision, the appellate court ruled that Caltrans should have separately identified and analyzed the significance of project impacts to the root zones of old growth redwood trees before proposing mitigation measures. In its decision, the court specifically ruled: "Caltrans is not required to start the EIR process anew. Caltrans need only correct the deficiencies we have identified before considering recertification of the EIR." This document provides an updated analysis of project impacts to old growth redwood trees, including their root zones, consistent with the appellate court ruling. Revised impacts analyses for listed fish, their critical habitat, and Essential Fish Habitat (EFH) are also presented in this addendum.

This addendum has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) (California Public Resources Code §§21000 et seq.) and the State CEQA Guidelines (Title 14, California Code of Regulations §§15000 et seq.).

Rather than a supplemental or subsequent EIR, this addendum has been prepared because project changes are minor with no change in scope, and no new or substantially more severe significant effects would result from the project. The addendum includes minor updates to project information as well as updated analyses.

CEQA allows Lead Agencies to prepare an addendum to an Environmental Impact Report when it can be demonstrated that changes to a project, and the environmental impacts from such changes, are minor when compared to the original scope of the project and the original environmental impacts. As stated in Section 15164 of the CEQA Guidelines:

> *"(a) The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred . . .*
>
> *. . . (c) An addendum need not be circulated for public review but can be included in or attached to the final EIR or adopted negative declaration.*
>
> *(d) The decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project."*

As set forth in the *Lotus v. California Department of Transportation* decision, this addendum analyzes potential impacts to individual old growth redwood trees prior to any special protection methods or measures, as if conventional construction methods and equipment were to be used. Even without protective measures, the project would not result in significant impacts to old growth redwood trees. Based on the analyses documented in this addendum, the significance determinations reported in the CEQA Checklist section of the 2010 Final EIR have not changed.

All minimization measures described in the 2010 Final EIR would be implemented for this project. According to the Federal Highway Administration (FHWA) and the National Environmental Protection Act (NEPA), where feasible, mitigations for project impacts are considered whether the impacts are significant or not. Because Caltrans has determined that mitigation measures for this project are feasible, it would mitigate impacts that are not significant under CEQA. In addition, Caltrans developed and committed to measures to protect State Park resources in the federal Section 4(f) evaluation required under the Transportation Act of 1966.

Potential project impacts to old growth redwood trees were subsequently reanalyzed taking into account the proposed minimization measures from the 2010 Final EIR. The minimal impacts to the old growth coast redwoods along US 101 in the project area would be further reduced by the use of these measures.

This Addendum to the Final EIR revises portions of the 2010 Final EIR with minor updates to the project description as well as additional information and analyses.

1. Project Purpose and Need

The Project Purpose and Need has not changed since the 2010 Final EA, which is to construct minor adjustments to the roadway alignment in order to allow access by industry standard-sized trucks that conform to the Surface Transportation Assistance Act (STAA). By making minor alignment improvements to accommodate STAA trucks, the project would result in removal of the prohibition for STAA vehicles and improvement of safety and operation of US Route 101, while also improving goods movement. The primary need for the project is the result of the non-standard curves, absence of shoulders, and fixed objects in close proximity of the traveled way.

2. Updates to the Project Description

Minor design changes were made in 2015 to reduce the project footprint; this reduced the estimated amounts of cut (excavation) and fill, impervious surface, and tree removals.

- The total number of trees that would need to be removed for the project has decreased to 38 from 54, none of which are old growth redwoods.
- The total amount of disturbed soil area is now estimated at 0.67 acre, rather than 0.73.
- The amount of new impervious surface (new pavement) would be 0.23 acre, rather than 0.30 acre. Approximately 0.06 acre of existing pavement would also be removed for the project. The net increase in impervious surface for the project would be 0.17 acre.

The estimated volume of excavated material is now 570 cubic yards, rather than 2,530 cubic yards; the estimated volume of fill is 395 cubic yards, rather than 1,045 cubic yards. Revised volumes are as follows:

- PM 1.35 to PM 1.36 - Approximately 60 cubic yards cut on western shoulder (*reduced from 300 cubic yards*)
- PM 1.37 to PM 1.39 - Approximately 200 cubic yards of fill on eastern shoulder (*no change*)
- PM 1.56 to PM 1.61 - Approximately 30 cubic yards of fill on western shoulder (*reduced from 200 cubic yards)*

- PM 1.65 to PM 1.75 - Approximately 10 cubic yards cut (*reduced from 30 cubic yards)* and and 15 cubic yards of fill (*reduced from 40 cubic yards*) on the eastern shoulder
- PM 2.05 to PM 2.10 - Approximately 500 cubic yards of cut on the western shoulder (*reduced from 2,200 cubic yards)*
- PM 2.10 to PM 2.15- Approximately 150 cubic yards fill on the eastern shoulder (*reduced from 600 cubic yards)*

Project design changes include a reduction in the depth of excavation for new road sections from 18 to 24 inches throughout the project limits to a maximum depth of 12 inches within Richardson Grove State Park. This reduction was made by project engineers through a reevaluation of soils within the project limits as part of an effort to further reduce impacts. This evaluation also allowed for steeper slopes, resulting in the reduction of disturbed soil area. Cut banks were steepened from a slope of 1.5:1 to 1:1 or steeper, where possible. Amounts of disturbed soil and fill required for the realignment were reduced by eliminating proposed 2-foot shoulders where not essential to achieve the Project Purpose and Need.

Reduction of the project footprint is also a result of changes to the proposed culvert work. Three culverts (PM 1.28, PM 1.34 and PM 1.35) previously proposed to be replaced are now proposed only to be extended, where needed, and fitted with new drainage inlets. The culvert work at PM 1.18 (extend culvert and replace headwall), PM 1.78 (install a new downdrain to connect to an existing culvert and extend berm), and PM 2.10 (replace culvert, install slotted drain, and replace failed downdrain) would remain as proposed in the 2010 Final EIR.

To comply with current safety standards, minor barrier rail modifications are proposed for the four ends of the Richardson Grove Undercrossing. These improvements would replace the existing metal beam guardrail with a shorter metal beam guardrail crash cushion and include concrete transition barriers between the old bridge barriers and the new crash cushions.

End treatments to the proposed retaining wall at the north end of the project have been revised. The barrier at the north end of the proposed retaining wall would be extended by ten feet and angled away from traffic. A crash cushion would be placed at the south end of the retaining wall.

The 2010 Final EIR identified a number of avoidance and minimization measures. Several of these measures are typically considered standard measures implemented during every Caltrans construction project, where applicable, and thus included as a part of the project description. For this project, updates to the project description include, but are not limited to, the following standard measures and Best Management Practices (BMPs):

- Structural stormwater controls (rock slope protection, dikes)
- Soil stabilization practices (vegetation, erosion control blankets)
- Silt fences/fiber rolls to control sediment discharge during construction
- Measures to prevent construction equipment effluents from contaminating soil or waters in the construction site, such as absorbent pads
- Excavated spoils controlled to prevent sedimentation to watercourses
- Weed-free straw mulch and fiber rolls applied to exposed soil areas for over-wintering
- Contractor-developed and implemented site-specific BMPs and emergency spill controls
- Concrete debris or contact water not allowed to flow into waterways
- Concrete not poured within flowing water in the waterways
- Water that has come into contact with setting concrete pumped into a tank truck for disposal at an approved disposal site or settling basin
- Concrete truck washouts located at upland staging areas a minimum of 50 feet away from watercourses
- Removal of invasive plants

3. Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures

This section corresponds to Chapter 2 in the Final EIR, Section 2.3 - Biological Environment, Subsection 2.3.1 - Natural Communities. Please refer to Chapter 2 of the Final EIR for a description of the regulatory settings. Updated information for this section was derived from the NES Addendum (Caltrans 2016a), the consulting arborist's Final Report (Yniguez 2015), and the Biological Assessment (Caltrans 2016b).

3.1 Natural Communities

Affected Environment

Vegetation is classified by the dominant over-story species. The predominant natural plant community in the project area, described in the 2010 Final EIR as the Redwood series vegetation community, is now called the *Sequoia sempervirens* (Redwood forest) Alliance (Sawyer et al. 2009). Described as the tan oak series in previous documents, the vegetation at the northerly portion of the park and extending north outside of the park is included herein as part of the *Sequoia sempervirens* (Redwood forest) Alliance, or Redwood Alliance. CDFW lists the Redwood Alliance natural community as vulnerable to elimination from the state and at moderate risk of elimination globally.

Root Disturbance and Adaptations of Coast Redwoods

A literature review was conducted for the project as part of the arborist evaluation (Yniguez 2015). One of the main considerations when evaluating the impacts of construction on redwood trees is the ability of the species to tolerate disturbance. Roots are frequently injured or die from many agents throughout the life of a healthy tree, and new roots often form rapidly after injuries (Perry 1992). Root pruning stimulates roots to regenerate near the cut (Wilson 1970). When a tree's root, trunk, or branch tissue is disrupted by pruning cuts or other wounds, microorganisms begin to infect the site. The tree responds by forming chemical and physical "walls" (barriers) around the wound to slow or prevent the spread of disease or decay. This process is called

compartmentalization (Shigo 1977, 1986). In a study of the effects of severing roots of four species of deciduous hardwoods (Watson 2008), different size roots cut at successive distances from each tree showed only minimal decay five years later. The author concluded that, unlike in branches where leaving a stub can lead to more extensive decay, severing the roots did not cause substantial deterioration from root decay. The minimal decay after 5 years posed no threat to the long-term health and stability of these four species (Watson 2008).

Coast redwoods are surprisingly capable of compensating for disruptions to their root systems. Among the characteristics reported in the literature that have enabled the coast redwood to exploit its habitat so successfully are:

- **An extraordinarily resilient root system**

Stone and Vasey (1962b:2–3) examined four old growth redwoods whose roots had been removed from the top two feet of soil. The crowns of the trees remained healthy and within four years, 90% of the feeder root system was replaced by a comparable one (Stone 1965). They comment, “What continues to surprise us is that so much of the root system can be removed without any noticeable reduction in vigor." Sturgeon (1964) described the trees along roads in Humboldt County, some of which had portions of their bases removed for road development. He noted, “Judging from the absence of significant loss of vigor in trees bordering the highways, coast redwood is evidently not seriously affected by paving where it does not cover more than half the trees' root zone.” Standish (1972) and McBride and Jacobs (1978) found no decline in tree growth in areas where the trees were subjected to soil compaction by visitors.

Research has consistently demonstrated that soil compaction over a small percentage of a vigorous old growth redwood's root structure would not, in itself, have any substantial detrimental or life-threatening effects (Gothier 1980; Hartesveldt et al. 1975; McBride and Jacobs 1978; Standish 1972; Stone 1965; Stone and Vasey 1962a, 1962b; Sturgeon 1964).

- **A strong and widespread root structure**

Coast redwoods have strong and widespread lateral roots that disperse aboveground forces to the soil and resist uprooting (Coutts 1983; Ennos 1993; Fritz 1929; Mattheck 1994; Olson et al., 1990; Stokes and Mattheck 1996; U.S. Forest Service 1908). The roots of individual trees graft onto other redwood roots to provide stability and anchorage, "together creating therefore a matrix like steel reinforcing bars in concrete" (Becking 1979).

- **Buttress flares containing specialized swellings called lignotubers**

Buttress flares are massive swellings at or below the ground level that can release shoots and regenerate new roots to increase vigor and stability in response to injury (Del Tredici 1998, 1999). They also store carbohydrates and mineral nutrients and help anchor trees growing on steep slopes (Del Tredici 1998, 1999).

- **Ability to tolerate heavy siltation from flooding**

Fritz (1934) examined the roots of a 1200-year-old coast redwood that fell in Richardson Grove State Park. It adapted to periodic siltation that partially buried its base and raised the ground level more than 11 feet by creating new sets of roots that grew upward into the sediment and formed to fit each new soil level.

- **Ability to withstand low light conditions, fire, and damage from fire, as well as resist decay and attack by insects**

The basal bark of a coast redwood trunk is thick and fire resistant, although periodic fires can kill the living tissue beneath the bark (Fritz 1931; Isenberg 1943). Coast redwoods have no important tree-killing insect or disease enemies (Fritz 1931) and are valued for their decay resistance.

- **Ability to obtain water from fog drip and through its needles**

Fog, dew, and rain can supplement water that is obtained from roots (Limm et al. 2009; Simonin et al. 2009). In one study in northern California, Dawson (1996) reported that between 8% and 34% of the water used by the coast redwoods was obtained by fog dripping from the foliage into the soil.

- **Ability to move water and minerals in a zig-zag pattern up the tree, supplying the entire crown**

Coast redwood tree roots lift water and dissolved minerals (sap) in zigzag patterns, which supplies water to all of the branches and leaves (Perry 1992). Because moisture is distributed completely over the upper crown, death or injury to individual roots of a coast redwood does not lead to corresponding one-sided trunk or branch death in the crown of the tree (Perry 1992). This water distribution pattern gives coast redwoods great adaptability to environmental changes (Rudinsky and Vité 1959).

Condition of Old Growth Redwoods in the Project Area

Despite more than 90 years of highway traffic, including the passage of more than 15 million cars and trucks over the redwoods' root zones during the past decade alone, the old growth redwoods alongside US 101 appear to be in vigorous health (Yniguez 2015). Only three old growth trees along the highway in Richardson Grove, at PM 1.37 and PM 1.69, show evidence of substantial prior detrimental impacts attributable to root destruction. During construction work on US 101 decades ago, crews cut several large-diameter buttress roots of these three trees. Although spikes (uppermost dead treetops) reflect the severe moisture stress from decades ago, the canopies below appear to be vigorous and healthy today. The vigorous condition of the old growth redwoods in Richardson Grove alongside US Route 101 is an external manifestation of their successful resiliency (Yniguez 2015).

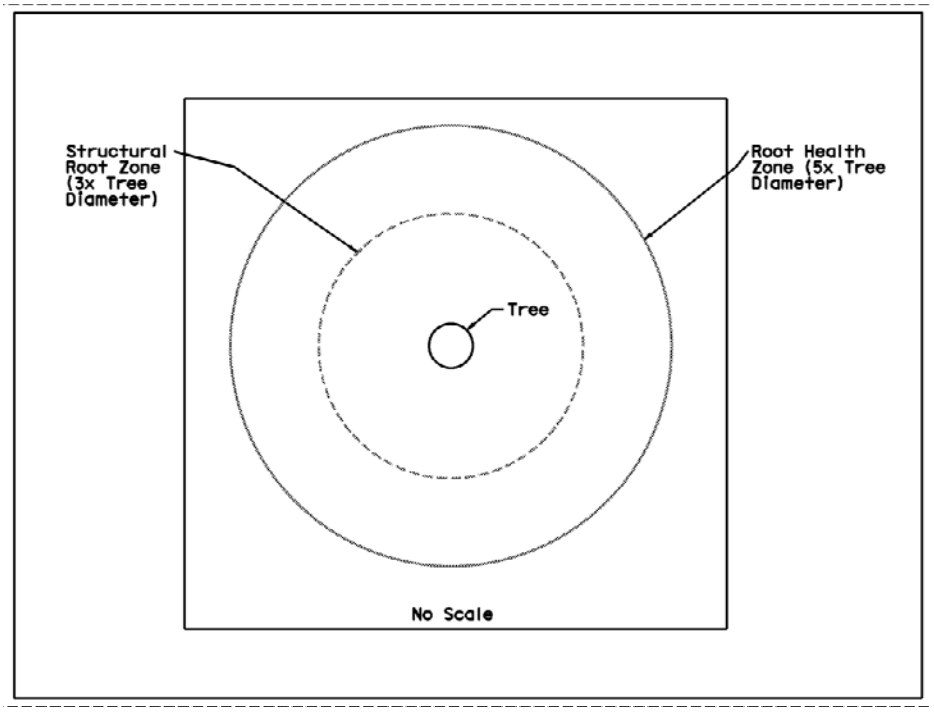
Design Features

Design features that minimize impacts to trees include reduced shoulder widths and steepened embankment slopes, allowing for a narrower project footprint, and use of cement-treated permeable base (CTPB) for new pavement in the roadway, which allows approximately 6 inches less in application depth than other common road aggregates, is permeable, and requires only consolidation (a lesser degree of compaction) adjacent to roots within the structural root zone. Lastly, excavating no deeper than 12 inches below the roadway for nearly every location in the project would affect fewer roots. Exceptions would be in the areas planned for culvert extension, two cut slopes, new barrier rail foundations, culvert replacement, new drainage, and installation of the retaining wall.

Environmental Consequences

Old growth redwood trees along US 101 in the project area were reassessed in 2015 to determine potential impacts based on the current project footprint. Using the root health zone criterion of five times the tree's diameter (Figure 1), Caltrans determined that a total of 109 old growth redwood trees would have root health zones that intersect the proposed ground disturbance areas of the project. Ground disturbing activities would occur within the structural root zone (three times the tree's diameter, Figure 1) of 78 of the 109 old growth redwood trees analyzed, 72 of which occur within the boundaries of Richardson Grove State Park. Each tree was rated according to the predicted effects of root disturbance on tree health that would be indicated by a change in the appearance of needles (leaves) (Yniguez 2015).

Figure 1. Tree Root Zones



The review team for this assessment consisted of the project engineer, project biologist, environmental coordinator, and a consulting arborist certified by the International Society of Arboriculture. The team used maps based on updated tree information and referred to site-specific, quantitative information available from the current project plans and cross-sections. They systematically examined each old growth redwood tree that might be affected by the project to determine the types and limits of the work that would take place around it.

Potential impacts were first evaluated as if the project would be constructed using conventional construction methods (e.g., all work done with heavy equipment and no special consideration of old growth redwood roots) as set forth by the appellate court in *Lotus v. California Department of Transportation*. Potential impacts were then assessed with consideration of the proposed minimization measures that would be incorporated into the project (e.g., use of a pneumatic excavator and post-construction irrigation). The evaluation of impacts reflects the scientific

literature on coast redwood trees, professional experience of the arborist with redwood trees and the effects of construction on trees, and the extent of work within the root health zone.

The consulting arborist developed rating categories, shown in Table 1 below, to illustrate potential impacts of the project on individual trees. Each tree was rated according to predicted effects of root disturbance on tree health. Ratings reflect predicted root disturbance based on proximity, type, and extent of work to each tree.

Table 1. Effect of Root Zone Disturbance on Tree Health

Rating	Effect
0	Root zone disturbance would have no effect on tree health.
1	Effect of root zone disturbance is extremely minor and there would be no decline in foliage density or tree health.
2	Effect of root zone disturbance is very slight and there would be no decline in foliage density or tree health.
3[1]	Effect of root zone disturbance is slight and there would be no decline in foliage density or tree health.
4	Effect of root zone disturbance may be a short-term visible reduction in foliage density that is still well within the adaptive capabilities of the tree.
5	Effect of root zone disturbance may be a reduction in root health sufficient to cause lasting visible dieback of wood in the uppermost crown; tree survival is not threatened.
6	Effect of root zone disturbance may be severe enough to threaten survival of the tree.

Primary activities that would require ground disturbance are minor widening and realignment of the roadway. The average alignment shift from the existing centerline would be approximately 2 to 6 feet. Other activities that would require ground disturbance throughout the project limits include extending or replacing culverts, constructing a retaining wall, installing barrier rails and cutting back roadside slopes. The locations of these features are shown in relation to the surrounding trees in Appendix C of the arborist's report and shown for each individual tree's root health zone in Appendix D (Yniguez 2015).

[1] Ratings of 1 through 3 are relative to each other and for the purposes of this addendum reflect minor and inconsequential changes to tree health.

Revised Assessment of Root Impacts to Old Growth Redwoods – Conventional Construction Methods

Potential impacts were first evaluated as if the project would be constructed using conventional construction methods (e.g., all work done with heavy equipment and no special consideration of roots). Excavation for roadway construction by conventional methods would include the use of heavy equipment such as excavators, backhoes, grinders, loaders, and concrete saws. Conventional road alteration procedures would not make any provision for protection of roots encountered during construction. With conventional methods, roots in the excavation area could be damaged, and damage could extend beyond the limits of excavation because pulling and tugging by equipment could tear roots. Results of this assessment are shown below in Table 2.

Table 2: Summary of Project Effects without Minimization Measures

Rating	Total Number of Trees
0	5
1	29
2	25
3	31
4	18
5	1
6	0

Without the use of minimization measures, 1 old growth redwood tree could potentially develop a lasting visible dieback in the uppermost crown, but tree survival would not be threatened (5 rating); 18 old growth redwoods could potentially have a short-term visible reduction in foliage density (4 rating); 85 old growth redwoods would experience minor and inconsequential changes to tree health (1 through 3 ratings); and the remaining 5 trees would have no decline in foliage density or tree health (0 rating, Yniguez 2015). These individual tree impacts would have a temporary, minor impact on the Redwood Alliance in the project area. Construction of the project using conventional methods would not affect the capacity of the forest canopy to provide shading, habitat, and other ecosystem functions.

Revised Assessment of Root Impacts to Old Growth Redwoods – Incorporating Minimization Measures

A second assessment of potential impacts was performed incorporating the proposed minimization measures (e.g., use of a pneumatic excavator and post-construction irrigation). Results are shown below in Table 3.

Table 3: Summary of Project Effects with Minimization Measures

Rating	Total Number of Trees
0	7
1	35
2	53
3	11
4	3
5	0
6	0

With minimization measures, 3 old growth redwoods could potentially have a short-term visible reduction in foliage density (4 rating); 99 old growth redwoods would experience minor and inconsequential changes to tree health (1 through 3 ratings); and the remaining 7 trees would have no decline in foliage density or tree health (0 rating, Yniguez 2015).

Conclusion of Revised Assessment

The proposed highway modifications are not of a sufficient magnitude to threaten the soundness or stability of any of the old growth redwood trees in the project area. Disturbances would be confined to a small percentage of the root zones and would be well within the adaptive capabilities of the trees. Even in the absence of minimization measures, this project would not jeopardize the health or survival of any of the old growth redwoods. Nevertheless, all minimization measures that are described in the 2010 Final EIR would be implemented. Use of these measures would reduce further the minimal impacts of the project (Yniguez 2015).

Avoidance, Minimization, and/or Mitigation Measures

The analysis indicates that, prior to applying any special protective measures, no significant impacts would occur to old growth redwood trees as a result of the project; however, measures have been incorporated into the project to mitigate impacts to the Redwood Alliance and its components.

All minimization measures described in the 2010 Final EIR would be implemented for this project. According to the Federal Highway Administration (FHWA) and the National Environmental Protection Act (NEPA), where feasible, mitigations for project impacts are considered whether the impacts are significant or not. Because Caltrans has determined that the mitigation measures for this project are feasible, it would mitigate project impacts that are not significant under CEQA. In addition, Caltrans developed and committed to measures to protect State Park resources in the federal Section 4(f) evaluation required under the Transportation Act of 1966.

3.2 Threatened and Endangered Species

Affected Environment

The following listed species and their designated critical habitat are known to occur in the South Fork Eel River and/or Durphy Creek:

- Southern Oregon/Northern California Coast coho salmon (*Oncorhynchus kisutch*) (Threatened Federally and, in California, Critical Habitat Designated, Essential Fish Habitat Designated)
- Northern California steelhead (*Oncorhynchus mykiss*) (Threatened Federally, Critical Habitat Designated)
- California Coastal Chinook salmon (*Oncorhynchus tshawytscha*) (Threatened Federally, Essential Fish Habitat Designated)

The 2010 EIR determined that the project would not affect listed fish species. After a reassessment of potential project impacts, additional data was gathered and analyzed for the project. In 2015, Caltrans requested technical assistance from NMFS in order to reevaluate the potential effects of the culvert work, highway realignment and repaving, increased impervious surface, and proposed barrier rail modifications on listed fish species. As a result of the technical assistance, it was determined that there was a potential for the project to affect listed fish and their critical habitat, and/or Essential Fish Habitat (EFH). Caltrans conducted further analysis and concluded Endangered Species Act Section 7 Informal Consultation with NMFS. A Letter of Concurrence was received on January 23, 2017, and is available at dot.ca.gov/dist1/d1projects/richardson_grove/.

Environmental Consequences

Anadromous Fish

The project would require approximately 925 square feet of disturbed soil area for culvert work. Approximately 134 square feet would be permanently disturbed while approximately 791 square feet temporarily disturbed. Within and near the project area, Durphy Creek and South Fork Eel River are designated critical habitat and/or Essential Fish Habitat for listed salmonids. No work is proposed within the bed, bank, or channel of Durphy Creek or South Fork Eel River.

Approximately 616 square feet of riparian vegetation, consisting of herbaceous species, shrubs, and small understory trees (two bigleaf maples 5 and 9 inches DBH) would be removed for installation of transition barriers and crash cushions near Durphy Creek. Because the area of understory riparian vegetation that would be removed is small, vegetation removal for the barrier rail modifications is located a distance of at least 25 feet from Durphy Creek, and the mature redwood canopy would remain undisturbed, it is anticipated this project would have a negligible effect on fish and their habitat.

There is a remote possibility of small amounts of turbidity reaching the South Fork Eel River from culvert and barrier rail work. However, there would be no work in fish-bearing waters, the area of disturbance is small, and culvert work would take place during the dry season when flows are lowest or absent. As a result, the effect to listed fish and their habitat would be negligible.

In addition, standard water quality Best Management Practices (BMPs) implemented for all Caltrans projects would further reduce the negligible impacts to water quality and minimize the movement of soils and sediment both into and within receiving waters.

Because of the negligible effects to riparian communities and water quality, the project would not be expected to result in any direct, indirect, or cumulative adverse impacts to listed fish species or their available spawning or rearing habitat, and would not adversely modify their designated critical habitat. Given the above, the project may have a minimal effect on EFH. Endangered Species Act Section 7 Informal Consultation with NMFS has been concluded.

Avoidance, Minimization, and/or Mitigation Measures

The analysis indicates that no significant impacts would occur to listed fish species, their critical habitat, and/or EFH because of the project; therefore, no Mitigation Measures are proposed.

4. LIST OF PREPARERS

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5. TECHNICAL STUDIES

The following studies have been completed since the 2010 FEIR and are available at http://www.dot.ca.gov/dist1/d1projects/richardson_grove/.

California Department of Transportation. March 2016 *Natural Environment Study Addendum* (Caltrans 2016a)

California Department of Transportation. October 2016 *Biological Assessment* (Caltrans 2016b)

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