Appendix C. Title VI Policy Statement

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Making Conservation a California Way of Life.

April 2018

NON-DISCRIMINATION POLICY STATEMENT

The California Department of Transportation, under Title VI of the Civil Rights Act of 1964, ensures *"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance."*

Related federal statutes and state law further those protections to include sex, disability, religion, sexual orientation, and age.

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To obtain this information in an alternate format such as Braille or in a language other than English, please contact the California Department of Transportation, Office of Business and Economic Opportunity, 1823 14th Street, MS-79, Sacramento, CA 95811. Telephone (916) 324-8379, TTY 711, email Title.VI@dot.ca.gov, or visit the website www.dot.ca.gov.

LAURIE BERMAN
Director

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

Appendix D. Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966, codified in federal law at 49 United States Code (USC) 303, declares that "it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites."

Section 4(f) specifies that the Secretary of Transportation may approve a transportation program or project . . . "requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance (as determined by the federal, state, or local officials having jurisdiction over the park, area, refuge, or site) only if:

- There is no prudent and feasible alternative to using that land; and
- The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use."

Section 4(f) further requires coordination with the Department of the Interior and, as appropriate, the involved offices of the Department of Agriculture and the Department of Housing and Urban Development in developing transportation projects and programs that use lands protected by Section 4(f). If historic sites are involved, then coordination with the State Historic Preservation Officer is also needed.

Section 6009(a) of SAFETEA-LU amended Section 4(f) legislation at 23 United States Code (USC) 138 and 49 USC 303 to simplify the processing and approval of projects that have only *de minimis* impacts on lands protected by Section 4(f). This amendment provides that once the U.S. Department of Transportation (USDOT) determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a de minimis impact on that property, an analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete. FHWA's final rule on Section 4(f) *de minimis* findings is codified in 23 Code of Federal Regulations (CFR) 774.3 and CFR 774.17.

Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 USC 326 and 327 and a Memorandum of Understanding executed between FHWA and Caltrans (dated December 23, 2016), including *de minimis* impact determinations, as well as coordination with those agencies that have jurisdiction over a Section 4(f) resource that may be affected by a project action.

The activities associated with the geotechnical investigation would occur within Redwood National and State Parks. Consultation with State Parks and the National Park Service is ongoing, and the draft Section 4(f) analyses are on the following pages.

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Making Conservation a California Way of Life.

January 25, 2020

Mr. Steve Mietz
Superintendent, Redwood National Park
1111 Second Street
Crescent City, CA 95531

Re: Section 4(f) *de minimis* concurrence for the Phase 2B Geotechnical Study for the Last Change Grade Project

Dear Mr. Mietz:

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to conduct geotechnical studies to obtain information needed to develop a long-term solution to the instability and potential roadway failure of a portion of U.S. Highway 101 (Highway 101) between Post Miles (PM) 12.0 and 15.5 at "Last Chance Grade" (LCG) in Del Norte County. The geotechnical study (also known as Phase 2B) would include investigations within portions of Redwood National Park (RNP) and Del Norte Coast Redwoods State Park (DNCRSP) (see attached Figures 1 and 2, and Phase 2B Detailed Layouts). Under Section 4(f) of the Department of Transportation Act of 1996, both Parks are considered Section 4(f) resources. Therefore, a Section 4(f) analysis, a determination, and Park concurrence are needed.

The purpose of the Phase 2B study is to characterize the geology within the project area. The characterization would occur through the analysis of soil and rock samples, groundwater data, and measurements of slope movement. The information is needed to be able to evaluate and identify geotechnically critical sites, such as bridge abutments and tunnel portals.

To conduct the studies, minor vegetation clearing, material staging, drilling of boreholes, installation of standpipe piezometers or slope indicators (SI), minor grading of existing trails and roads, and seismic refraction line activities would be required. All activities would be temporary in nature; no Permanent Incorporation of Park land is proposed, and no Constructive Use is anticipated.

This letter is to inform you of Caltrans' intent to make a *de minimis* finding for the impacts to RNP. The following pages provide detailed information related to Section 4(f) and Section 4(f) resources, and geotechnical investigation activities. Through this letter Caltrans is seeking concurrence from the National Park Service (NPS) for activities on federal land within RNP; Caltrans is seeking concurrence from California State Parks for the activities within DNCRSP separately.

DESCRIPTION OF SECTION 4(f)

Section 4(f) refers to the original section within the U.S. Department of Transportation Act of 1966 that established the requirement for consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development. The law, now codified in 49 U.S.C. Section 303 and 23 U.S.C. Section 138, applies only to the U.S. Department of Transportation (U.S. DOT) and is implemented by the Federal Highway Administration (FHWA) through the regulation 23 Code of Federal Regulations (CFR) 774. Section 4(f) applies to projects

that receive funding from or require approval by an agency of the U.S. DOT. Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 USC 326 and 327, including *de minimis* impact determinations.

There are three types of "use" under Section 4(f):

1) Permanent Incorporation – when a Section 4(f) resource is acquired outright for a transportation project.

2) Temporary Occupancy – when there is temporary use of resource that is adverse in terms of Section 4(f)'s preservationist purpose. Temporary occupancy is not a Section 4(f) use if all of the following conditions exist:

    a. The land use is of short duration (defined as less than the time needed for the construction of the project)
    b. There is no change in ownership of the land
    c. The scope of the work must be minor
    d. There are no temporary or permanent adverse changes to the activities, features, or attributes of the resource
    e. The land must be fully restored to a condition at least as good as prior to the project
    f. There must be documented agreement from the official(s) with jurisdiction over the resource with the above conditions

3) Constructive Use – when the proximity impacts of a transportation project on a Section 4(f) resource, even without acquisition of the resource, are so great that the activities, features and attributes of the resource are substantially impaired.

Before approving a project that uses a Section 4(f) resource, a determination must be made that either:

1) There is no feasible and prudent alternative that avoids the resource, and that the project includes all possible planning to minimize harm to the resource, or

2) The project would have a *de minimis* impact on the resource.

A *de minimis* impact is one that would not adversely affect the activities, features, or attributes of the Section 4(f) resource, and, subsequently, would not require an analysis of feasible and prudent avoidance alternatives.

A determination of *de minimis* impact may be made when all three of the following criteria are satisfied:

1) The transportation use of the Section 4(f) resource, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f);

2) The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource; and

3) The official(s) with jurisdiction over the resource are informed of Caltrans' intent to make the *de minimis* impact determination based on their written concurrence that the project

would not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f).

PROJECT DESCRIPTION

The Phase 2B geotechnical investigation will support the Last Chance Grade Permanent Restoration Project, which proposes to develop a permanent solution to the instability and potential roadway failure at LCG. The purpose of the investigation is to characterize the geology within the project area and along potential roadway alignments. The characterization would occur through the analysis of soil and rock samples, groundwater data, and measurements of slope movement. The information is needed to evaluate and identify geotechnically critical sites, including locations of potential bridge abutments and tunnel portals.

The proposed Phase 2B geotechnical investigation would include 15 boring locations (with two alternative sites [B-30B and B-34B] under consideration) and 14 seismic refraction line survey locations. Of these, only 7 boring and 4 seismic refraction line locations would be located within RNP. The remainder would be within DNCRSP or on Green Diamond Resource Company land. Of the 15 boring locations, 6 would be accessed by helicopter; however, none of these helicopter sites are located within National Park Service land. Please see Figures 1 and 2 and the Phase 2B Detailed Layouts for the boring and seismic survey line locations.

Drilling Sites within Redwood National Park

Drilling locations B-23 and B-24 would be accessed and drilled on existing roads east of Highway 101. No vegetation removal or grading is proposed at these sites.

Sites B-19, B-20, B-25, and B-26 would be accessed from an existing National Park Service road and the DeMartin section of the Coastal Trail. A large existing clearing adjacent to the access road would be used for staging. Brushing, tree removal and grading on sections of the access road and trail is anticipated (see attached Phase 2B Detailed Layouts). A rubber track rig (less than 6 feet wide) would be used to minimize disturbance within the park. It is anticipated that this section of the Coastal Trail and the DeMartin Campground would need to be closed for approximately 6-8 weeks to complete the initial access work, drilling, and site restoration. Select large ferns within disturbance areas would be removed and transplanted. Erosion control measures would be implemented to treat disturbed areas.

Site B-22 is located upslope from Highway 101. To create access, grading and filling of an existing erosional scar (up to 15 feet deep) is proposed. Post operation, an approximate 12 by 400-foot rock dissipation structure would be constructed to prevent future erosion. Once constructed the structure would be self-sustaining and not need any short- or long-term maintenance.

Drilling Equipment

The following equipment would be required for the investigation: a platform, track- or truck-mounted drill rig equipped with a Standard Penetration Test (SPT) hammer, water truck, crew cab, and a geologist/engineer's vehicle. Portable ground protection mats may be used to aid vehicular access and protect soft ground surfaces. As a construction best management practice (BMP), plastic sheeting and straw wattle would be used to contain any drilling fluid.

The SPT is an in situ dynamic penetration test designed to provide geotechnical engineering properties of the soil. The SPT hammer uses a thick-walled spilt-spoon sample tube approximately 25.6 inches long with an outside diameter of 2 inches and inside diameter of 1.4 inches. This tube

would be driven into the ground by a 140-pound slide hammer freefalling 30 inches. The tube would be driven 18 inches into the ground, or until hammer refusal. Table 1 summarizes noise levels typically produced by a Mobile B-47 drill rig equipped with an SPT hammer during both drilling and SPT operations.

Given their location, boreholes B-19, B-20, B-25, and B-26 are assumed to have ambient noise levels that are "natural" (up to 50 dB) to "very low" (51–60 dB). Given being adjacent to the highway, boreholes B-22, B-23, and B-24 are assumed to have higher ambient noise levels then the other locations but the levels are still anticipated to be very low. Drilling would not be expected to exceed 79 dB in areas where "natural ambient" noise levels are < 50 dB (U.S. Fish and Wildlife Service 2006)[1].

Table 1: Summary of Drilling Noise Study Results

Distance from Rig (ft)	Duration (minutes)	Drilling Noise Levels (dBA)	Duration (minutes)	SPT Hammer (dBA)
5	2:28	82.1	1:00	93.4
25	2:30	73.3	1:00	79.9
50	2:53	69.0	1:00	72.8
75	2:38	65.5	1:00	69.3
100	3:00	64.2	1:00	No Data

Each boring is anticipated to take approximately one week to complete. The drill rig would typically be stored at the drill site at the end of each workday. The geologist/engineer's vehicle would be moved offsite at the end of each workday.

Drilling Procedure

To obtain quality soil and rock samples at the depths needed, a mud rotary drilling system would be required for the borings. Borings would be 4.75 inches in diameter and would extend approximately 100 feet below ground surface (bgs). The system requires drilling fluid to keep the borehole open, bring cuttings to the surface, and lubricate and cool the drill bit. Drilling fluid is made up of water or water mixed with a thickening agent such as bentonite clay and/or a liquid polymer. The drilling fluid is fully contained and recirculated through a closed system using an 8-inch outer steel casing, 94-millimeter drill rod, and mud tank. The mud tank would be positioned on the ground surface adjacent to the drill rig and would serve as a settling tank for soil cuttings. The cuttings would be removed periodically and placed in 55-gallon steel drums, which would be transferred to a fenced staging area.

Standpipe monitoring wells or slope indicators may be installed in the boring excavations; these would be monitored periodically for up to 2 years before being destroyed in accordance with the Del Norte County Environmental Health Division's requirements. Holes receiving a monitoring well would be flushed with clean water before a slotted PVC standpipe is installed and the annular space filled with clean #8 sand. The hole would be sealed with bentonite plugs to prevent infiltration of surface water or migration of water between aquifers. During drilling, the drill crew and

[1] U.S Fish and Wildlife Service. 2006. Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California. U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office. Arcata, California.

geologist/engineer onsite would monitor for any leaks or spills of drilling fluid. If drilling fluid were to leak, the drill crew would immediately contain the escaping fluid and clean the impacted area.

Seismic Surveys

Seismic refraction line surveys are conducted to help characterize the subsurface conditions, estimate the depth to rock, and evaluate rip-ability of proposed excavations. The surveys would be performed on foot. Vegetation removal would consist of limited trimming of ground-level undergrowth in an up to 4-foot-wide strip (enough to lay out the equipment).

The survey lines would be between 200 and 600 feet long and would take approximately 2 days to complete. The surveys involve placing 24 small geophones (seismic sensors) on the ground in a straight line at equal spacing. The geophones have a 1-inch long prong that is pressed into the ground (usually by foot) to hold the geophone firmly so that shock waves are transmitted to the potentiometers inside the geophone. The geophones transmit a signal to a seismograph unit by a specialized cable. Shock waves would be created by slamming a 12- to 16-pound human-powered sledgehammer against a striker plate placed on at least seven different locations along the refraction line. The striker plate consists of an 8-inch square and a 0.75-inch thick steel plate or high-density polyethylene (HDPE) plate. The noise from the hammer striking the metal plate is estimated at 108 dB at 9.8 feet (3 meters) and is approximately 85 dB at 50 feet (15 meters).

A small triggering device attached to the side of the hammer head registers the moment of impact with the plate and transmits a signal that is sent along a small shot wire to the seismograph unit, which begins recording. If the hammer and plate provide insufficient energy to cover the entire survey line, a shock-producing device involving a down-hole shotgun would be used. The down-hole shotgun uses an industrial shell fired in a minimum 1.5-foot deep water-filled hole created by a hand auger. The industrial shell is an 8-gauge 350- to 500-grain blank shotgun cartridge. Shells are triggered approximately 20 minutes apart. Shotgun detonations may leave an area of disturbed earth up to 2 feet in diameter. Disturbed soil would be tamped down to return it to its original condition. Detonation of the shells occurs below ground and usually does not pose a fire hazard, but fire suppression equipment would be kept on hand when working during wildfire season. With well-prepared shot holes, the highest anticipated noise generated consists of a muffled "thump" of approximately 80 dB.

Anticipated Schedule

Phase 2B drilling and seismic survey activities are anticipated to occur between September 15, 2020 and January 31, 2021. Because it poses minimal potential disruption to highway traffic, work would be conducted during the day. If needed, drilling time restrictions would be observed at certain locations to minimize potential disturbance to nearby resources.

Post Exploration Clean-Up Operations

After the completion of each boring, soil cuttings and drilling fluid generated by the operation would be pumped and/or shoveled into 55-gallon drums for hazardous waste characterization and disposal. Any cuttings and/or drilling fluid inadvertently spilled onto the ground would be shoveled or sponged up and disposed of in 55-gallon drums. If additional water is needed to clean surfaces to prevent contamination of future storm-water or impacts to public safety, a minimal amount would be used and as much of the dirty water captured as practical. Any areas of ground disturbance created during off-road drilling activities would be treated with appropriate BMPs to prevent erosion and stormwater pollution. Borings that do not receive a monitoring pipe would be backfilled using neat cement grout.

DESCRIPTION OF THE SECTION 4(F) RESOURCE

The National Park Service and California State Parks jointly manage Redwood National and State Parks, which totals 133,000 acres of land and includes Redwood National Park (RNP), Del Norte Coast Redwoods State Park (DNCRSP), Jedediah Smith Redwoods State Park, and Prairie Creek Redwoods State Park. Redwood National and State Parks are recognized by the United Nations as a World Heritage Site. The parks in the project vicinity are accessed from Highway 101. Redwood National and State Parks is open every day and year-round.

Redwood National and State Parks offer various recreational activities such as fishing, hiking, and camping and beach access. Various trails provide bike, equestrian, and pedestrian access. There are various picnic areas, scenic drives and overlooks, wildlife watching locations, and tide pools. The Parks also hosts a section of the California Coastal Trail, a network of trails that, once completed, will span California from Oregon to Mexico. In the project vicinity, the Parks are accessed from Highway 101.

Redwood National and State Parks have multiple developed and undeveloped backcountry campgrounds. In the project vicinity, the closest developed campground is the Mill Creek Campground which is located north of the project limits and is within DNCRSP. The campground offers 143 sites (without hookups) and is open from May through September each year. The closest undeveloped backcountry campground is the DeMartin Campground, which is located within RNP and is within the project limits. The campground has 10 campsites and can be accessed by foot along the Coastal Trail.

One Section 4(f) historic property, a portion of the Crescent City to Trinidad Wagon Road, has been identified within the Area of Potential Effects (APE) for portions of this project on NPS land. The agency with jurisdiction for this historic property is the California State Historic Preservation Officer (SHPO). Caltrans has consulted with NPS on a Section 4(f) de minimus determination for the wagon road through the National Historic Preservation Act (NHPA) consultation process. Caltrans will be seeking SHPO concurrence on this determination through a separate process. Section 4(f) concurrence on historic properties is not part of this correspondence.

USE OF SECTION 4(F) RESOURCE

There would be no Permanent Incorporation or Constructive Use impacts associated with the geotechnical activities; Temporary Occupancy which would be limited to staging, geotechnical drilling, and seismic surveys.

The Phase 2B activities are anticipated to affect existing roads, an existing erosion feature, the California Coastal Trail, and the DeMartin Campground.

Temporary impacts from the project include:

- Vegetation clearing and road grading: Vegetation clearing is required on access roads, boring locations, and along seismic refraction survey lines. In addition, grading is required at spot locations on access roads and trails.
- Trail/campground closure: Geotechnical investigations and restoration activities are anticipated to take 6-8 weeks between September 15, 2020 and January 31, 2021, and would require temporary closure of the DeMartin Campground, a portion of the Coastal Trail, and boring hole access roads.

- Visual: A failing erosional scar would require the installation of a rock dissipation structure, which may change the visual nature of this spot location.
- Noise: Though helicopters are not required to reach sites within RNP, they are required to access the adjacent State Park land, and have the potential to disrupt the peace and quiet of the Park for short periods of time

Details on these temporary impacts are included below and in the sections that follow.

Seven boring and four seismic refraction survey line locations are within lands owned by the National Park Service. The locations would be accessed via existing trails and access roads. Minor vegetation clearing and trail/road grading would be required at spot locations; however, to minimize the temporary impacts, a rubber track rig (less than 6 feet wide) would be used. Given this, road and trail widths would only need to be 6 feet wide. As a result, except for one trail segment that would require grading up to 36 inches, all other segments needing grading would be limited to 24 inches (see attached Phase 2B Detailed Layouts). For the boring locations, a conservative estimate of area needed is 50 feet by 50 feet; however, depending on site logistics, the actual area needed is anticipated to be smaller.

National Park Service Access

To access NPS land, Caltrans would use three existing roads and create one new access point that is located within an erosional feature adjacent to Caltrans right of way. All four access points connect directly to Highway 101.

Boring locations B-23 and B-24 would be accessed from two of the existing roads. These boring locations are near Highway 101. No vegetation removal or grading is proposed along these roads or at the two boring locations.

The third existing road acts as an access road to the DeMartin Campground. There is one boring location on the road (B-26), and a short segment of the road would need to be graded.

These roads would be unavailable for public use during all geotechnical investigation activities in this area. However, it is unknown how many park visitors use the existing roads. Given they are not identified as official Park access points or trail heads and that access is limited by highway logistics (narrow, winding, high speed, limited site distance), it is anticipated that there will be minimal to no use of these roads by the public, especially in the fall and winter months when geotechnical activities would occur.

Boring location B-22 is located upslope from Highway 101. To create access, grading and filling of an existing erosional scar (up to 15 feet deep) is proposed. Given ongoing slope failure and instability issues, this location has been identified as needing slope protection; therefore, after the boring activities have been completed a rock dissipation structure would be constructed to prevent future erosion. Because it is a failing erosional scar, there would be no anticipated use of this location by Park visitors. The rock dissipation structure would add a different visual element to this location; however, the structure would be designed to be in character with the surrounding environment and take similar features along the highway into consideration. In addition, due to its location, views by park visitors would be limited.

Of the four seismic refraction surveys, three of the lines, seismic lines 9, 10, and 11, are near Highway 101, and would be accessed by hiking in from the highway. The remaining line, Seismic line 23, is partly located within the DeMartin Campground, starting at the boring B-19 location then

traveling east into Green Diamond land. Seismic line surveys would take 2 days each to complete, and may require vegetation removal, which would consist of limited trimming of ground-level undergrowth in an up to 4-foot-wide strip (enough to lay out the equipment). No seismic line surveys are planned on the Coastal Trail. Except for Seismic line 23, the seismic lines are in areas where RNP visitors do not use.

Coastal Trail and DeMartin Campground

The Coastal Trail would be accessed via an existing NPS road. Seven segments would need to be graded along the Trail. Two boring locations (B-20 and B-25) are within the footprint of the trail and are located south of the DeMartin Campground. Along the Trail there is one location needing grading that would require the removal of up to three alder trees that are 16-inch diameter at breast height (dbh). The Trail would be unavailable for public use during all geotechnical investigation activities in this area.

The DeMartin Campground would be accessed via the Coastal Trail. Boring location B-19 and seismic line 23 would be located within the campground but not within individual camp sites. The campground would be unavailable for public use during all geotechnical investigation in this area.

Given the Trail and campground would be closed, Park visitors would not have views of the work areas until after construction activities are completed. Noticeable changes to the visual environment would include bare areas from vegetation clearing or removal that would stand out when compared with the rest of the trail and the campground. The standpipe monitors and/or slope indicators would be ground level and have low visibility, and therefore would not detract from views of the area. Visual impacts would be temporary because disturbed areas would be restored, and vegetation is anticipated to grow back within 6 months to 12 months.

As previously mentioned, helicopters would not be used within National Park Service land; however, helicopters would be used to access sites within the adjacent the State Park. Depending on the flight path, helicopter noise has the potential to disrupt the peace and quiet of the Park for short periods of time. All flights would be during daytime hours; however, given the few numbers of trips and the short duration of the flights, the noise is anticipated to result in only minor short-term disruptions to the quiet surroundings to which Park users are accustomed. The helicopters are expected to be in use in late September and October. Park users would be notified of the geotechnical investigation activities, including helicopter use.

There would be no long-term noise or visual impacts because of the geotechnical investigations.

Avoidance and Minimization Measures

The following measures would be included as part of the Phase 2B investigation:

1) Signage would be posted at trailheads and campgrounds, and information would be posted on websites at the beginning of the year to notify hikers and campers of the construction activities (including helicopter use) and potential closure of the trail and campground.

2) Selected large ferns in disturbance areas would be removed and transplanted.

3) Any cut/fill areas and access roads would be restored to a natural contour. Once completed, all restoration work would be inspected and approved by NPS.

4) Materials that blend in the with the surrounding environment would be used for restoring disturbed soil areas. This may include duff, wood mulch, etc.

5) Plants of unique character would be salvaged from work areas and transplanted.

6) If soils become compacted in previously undisturbed areas, measures would be taken to uncompact soils to encourage the regeneration of vegetation.

7) A rubber track rig (less than 6 feet wide) would be used to minimize disturbance within the park. At the direction of NPS, gravel and/or rubber mats would be used to ensure the track rig does not negatively impact the road, coastal trail, or bore locations.

8) Work windows would avoid the nesting season for protected birds, including the marbled murrelet.

9) Prior to installation, NPS would review and comment on the proposed rock dissipation structure located at Bore Location B-22.

De Minimis Finding

There would be no Permanent Incorporation of Park land and no Constructive Use associated with the proposed Phase 2B geotechnical investigation activities.

The geotechnical investigations would require the temporary use of Redwood National Park. The temporary impacts would be limited to approximately 0.50 acre of the total 71,715 acres of the Park. Closure of the Coastal Trail and DeMartin Campground for up to 6-8 weeks would temporarily affect the recreational activities in this part of the park. The closure would occur after the peak backcountry camping months of July and August but would still affect visitors seeking backcountry camping experiences in September and October. Besides the temporary closure of the trail and campground, impacts would be limited to vegetation removal, road/trail surface disturbance, and helicopter noise on the adjacent State Park land. Disturbed sites would be restored, with regrowth anticipated to take between 6 to 12 months. Roads would be graded and restored to conditions prior to implementation of the project. If necessary, Caltrans would undertake all measures necessary to ensure that access roads damaged by the project would be protected from winter surface erosion. In addition, the standpipe monitor and/or slope indicator would remain in place for up to 2 years to allow for subsurface condition monitoring but would have low visibility.

Considering the scope of the work proposed, and after considering avoidance, minimization, and enhancement/restoration measures, there would be no adverse effect to the activities, features, or attributes that qualify the park for protection under Section 4(f). Therefore, the Temporary Occupancy during construction would constitute *de minimis* impacts under Section 4(f).

Public Input and Concurrence

As part of the Section 4(f) process, the public was afforded the opportunity to comment on this evaluation and Caltrans' intent to make a *de minimis* finding for the proposed geotechnical investigation activities within Redwood National Park. This letter served as the Section 4(f) evaluation and was circulated to the public as an attachment to the California Environmental Quality Act (CEQA) Initial Study with proposed Negative Declaration (IS/ND) from December 3, 2019 through January 3, 2020.

Thank you for your cooperation in this matter. If you have any questions, please feel free to contact me at (707) 441-5615 or by email at steven.croteau@dot.ca.gov

Please sign below to indicate Redwood National Park's concurrence with Caltrans' *de minimis* finding for the LCG Phase 2B Geotechnical Study.

_____ _____

Steve Mietz, Superintendent, Redwood National Park Date

Sincerely,

Steve Croteau
Senior Environmental Planner
North Region Environmental

Attachment: Figure 1.
Figure 2.
Phase 2B Layouts

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"

DEPARTMENT OF TRANSPORTATION
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Making Conservation a California Way of Life.

January 25, 2020

Mr. Victor Bjelajac
North Coast Redwoods District Superintendent
P.O. Box 2006
Eureka, CA 95502-2006

Re: Section 4(f) *de minimis* concurrence for Phase 2B Geotechnical Study for the Last Change Grade Project

Dear Mr. Bjelajac:

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to conduct geotechnical studies to obtain information needed to develop a long-term solution to the instability and potential roadway failure of a portion of U.S. Highway 101 (Highway 101) between Post Miles (PM) 12.0 and 15.5 at "Last Chance Grade" (LCG) in Del Norte County. The geotechnical study (also known as Phase 2B) would include investigations within portions of Redwood National Park (RNP) and Del Norte Coast Redwoods State Park (DNCRSP) (see attached Figures 1 and 2, and Phase 2B Detailed Layouts). Under Section 4(f) of the Department of Transportation Act of 1996, both Parks are considered Section 4(f) resources. Therefore, a Section 4(f) analysis must be conducted, a determination made, and Park concurrence obtained.

The purpose of the study is to characterize the geology within the project area. The characterization would occur through the analysis of soil and rock samples, groundwater data, and measurements of slope movement. The information is needed to be able to evaluate and identify geotechnically critical sites, such as bridge abutments and tunnel portals.

To conduct the studies, minor vegetation clearing, material staging, drilling of boreholes, installation of standpipe piezometers or slope indicators (SI), and seismic refraction line activities would be required. All activities would be temporary in nature; no Permanent Incorporation of Park land is proposed, and no Constructive Use is anticipated.

This letter is to inform you of Caltrans' intent to make a *de minimis* finding for the impacts to DNCRSP. The following pages provide detailed information related to Section 4(f) and Section 4(f) resources, and geotechnical investigation activities. Through this letter Caltrans is seeking concurrence from State Parks for activities within DNCRSP; Caltrans is seeking concurrence separately from the National Park Service (NPS) for the activities that would occur within RNP.

DESCRIPTION OF SECTION 4(f)

Section 4(f) refers to the original section within the U.S. Department of Transportation Act of 1966 that established the requirement for consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development. The law, now codified in 49 U.S.C. Section 303 and 23 U.S.C. Section 138, applies only to the U.S. Department of Transportation (U.S. DOT) and is implemented by the Federal Highway Administration (FHWA)

through the regulation 23 Code of Federal Regulations (CFR) 774. Section 4(f) applies to projects that receive funding from or require approval by an agency of the U.S. DOT. Responsibility for compliance with Section 4(f) has been assigned to Caltrans pursuant to 23 USC 326 and 327, including *de minimis* impact determinations.

There are three types of "use" under Section 4(f):

1) Permanent Incorporation – when a Section 4(f) resource is acquired outright for a transportation project.

2) Temporary Occupancy – when there is temporary use of resource that is adverse in terms of Section 4(f)'s preservationist purpose. Temporary occupancy is not a Section 4(f) use if all of the following conditions exist:

    a. The land use is of short duration (defined as less than the time needed for the construction of the project)
    b. There is no change in ownership of the land
    c. The scope of the work must be minor
    d. There are no temporary or permanent adverse changes to the activities, features, or attributes of the resource
    e. The land must be fully restored to a condition at least as good as prior to the project
    f. There must be documented agreement from the official(s) with jurisdiction over the resource with the above conditions

3) Constructive Use – when the proximity impacts of a transportation project on a Section 4(f) resource, even without acquisition of the resource, are so great that the activities, features and attributes of the resource are substantially impaired.

Before approving a project that uses a Section 4(f) resource, a determination must be made that either:

1) There is no feasible and prudent alternative that avoids the resource, and that the project includes all possible planning to minimize harm to the resource, or

2) The project would have a *de minimis* impact on the resource.

A *de minimis* impact is one that would not adversely affect the activities, features, or attributes of the Section 4(f) resource, and, subsequently, would not require an analysis of feasible and prudent avoidance alternatives.

A determination of *de minimis* impact may be made when all three of the following criteria are satisfied:

1) The transportation use of the Section 4(f) resource, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f);

2) The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource; and

3) The official(s) with jurisdiction over the resource are informed of Caltrans' intent to make the *de minimis* impact determination based on their written concurrence that the project

would not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f).

PROJECT DESCRIPTION

The Phase 2B geotechnical investigation will support the Last Chance Grade Permanent Restoration Project, which proposes to develop a permanent solution to the instability and potential roadway failure at LCG. The purpose of the investigation is to characterize the geology within the project area and along potential roadway alignments. The characterization would occur through the analysis of soil and rock samples, groundwater data, and measurements of slope movement. The information is needed to evaluate and identify geotechnically critical sites, including locations of potential bridge abutments and tunnel portals.

The proposed Phase 2B geotechnical investigation would include 15 boring locations (with two alternative sites [B-30B and B-34B] under consideration) and 14 seismic refraction line surveys. Of these, only 4 boring (with two alternative sites) and 9 seismic refraction line locations would be located within DNCRSP. The remaining locations would be within RNP or on Green Diamond Resource Company land. All boring locations (including the two alternative sites) within State Parks would be accessed by helicopter, and the seismic refraction line survey locations would be accessed by foot (no road access, road development, or road creation would occur within State Park land). Please see Figures 1 and 2, and the Phase 2B Detailed Layouts for the boring and seismic survey line locations.

Boring Locations within Del Norte Coast Redwoods State Park

Due to thick vegetation, topography, and other access limitations, equipment would be delivered to boring locations B-28, B-29, B-30A, and B-34A by helicopter. The locations were chosen based on the amount of naturally open canopy. Locations B-30B and B-34B are alternative sites for locations B-30A and B-34A. The alternative sites are near the proposed B-30A and B-34A boring locations and would only be used if they were determined to be safer and easier to access. This determination would be made by the helicopter pilot once geotechnical staging activities begin. Once the equipment is delivered, the drilling team would access the locations by foot from Highway 101. Light vegetation trimming may be required to create a pathway to the sites.

Helicopter and Drilling Equipment

A helicopter would be used to deliver the equipment. The helicopter is anticipated to be an AS350 Airbus, which has a maximum load capacity of 1,400 pounds and is considered to have low noise and down-draft compared to other helicopters. The equipment would be attached to a 100- to 200-foot-long cable and be delivered by being lowered to each bore location. Staging of equipment would occur outside of State Park land, and at no time would the helicopter land on State Park property.

The equipment needed for the investigation includes a drilling platform, drill rig equipped with a Standard Penetration Test (SPT) hammer, and steel drums. Portable ground protection mats may be used to protect soft ground surfaces. As a construction best management practice (BMP), plastic sheeting and straw wattle would be used to contain any drilling fluid.

The drilling platform would be a prefabricated modular steel platform, approximately 20 by 20 feet wide, and would be supported by up to eight legs, each requiring approximately 2 feet by 2 feet of cleared vegetation to ensure flat contact with the ground. Besides the leg locations, the vegetation trimming for the platform location would only require the trimming of vegetation to 6 inches above

ground level. It is anticipated that each bore location would require approximately 12 helicopter trips, taking approximately 1.5 hours, to deliver all the equipment. Additional helicopter flights would likely be required to resupply the sites.

The SPT is an in situ dynamic penetration test designed to provide geotechnical engineering properties of the soil. The test uses a thick-walled spilt-spoon sample tube approximately 25.6 inches long with an outside diameter of 2 inches and inside diameter of 1.4 inches. This tube would be driven into the ground by a 140-pound slide hammer freefalling 30 inches. The tube would be driven 18-inches into the ground or until hammer refusal. Table 1 summarizes noise levels typically produced by a Mobile B-47 drill rig equipped with an SPT hammer during both drilling and SPT operations.

Given their location, the borehole locations are assumed to have ambient noise levels that are "natural" (up to 50 dB) to "very low" (51–60 dB). Drilling would not be expected to exceed 79 dB in areas where "natural ambient" noise levels are < 50. Helicopter noise levels are considered "very high" (91–100 dB) to "extreme" (101–110 dB) (U.S. Fish and Wildlife Service 2006)[i].

Table 1: Summary of Drilling Noise Study Results

Distance from Rig (ft)	Duration (minutes)	Drilling Noise Levels (dBA)	Duration (minutes)	SPT Hammer (dBA)
5	2:28	82.1	1:00	93.4
25	2:30	73.3	1:00	79.9
50	2:53	69.0	1:00	72.8
75	2:38	65.5	1:00	69.3
100	3:00	64.2	1:00	No Data

A helicopter flight plan would be developed by the contractor and associated authorities to minimize wildlife harassment and safety risks as the helicopter travels to the drill sites. Due to weather conditions and anticipated environmental work windows, the ideal timing of the helicopter operation would occur between September and October.

Caltrans anticipates that each boring would take approximately 1 week to complete.

Drilling Procedure

To obtain quality soil and rock samples at the depths needed, a mud rotary drilling system would be required for the borings. Borings would be 4.75 inches in diameter and would extend approximately 100 feet below ground surface (bgs). The system requires drilling fluid to keep the borehole open, bring cuttings to the surface, and lubricate and cool the drill bit. Drilling fluid is made up of water or water mixed with a thickening agent such as bentonite clay and/or a liquid polymer. The drilling fluid is fully contained and recirculated through a closed system using an 8-inch outer steel casing, 94-millimeter drill rod, and mud tank. The mud tank would be positioned on the ground surface adjacent to the drill rig and would serve as a settling tank for soil cuttings. The cuttings would be removed periodically and placed in 55-gallon steel drums, which would be transferred to a fenced staging area.

[i] U.S Fish and Wildlife Service. 2006. *Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California.* U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office. Arcata, California.

Standpipe monitoring wells or slope indicators may be installed in the boring excavations; these would be monitored periodically for up to 2 years before being destroyed in accordance with the Del Norte County Environmental Health Division's requirements. Holes receiving a monitoring well would be flushed with clean water before a slotted PVC standpipe is installed and the annular space filled with clean #8 sand. The hole would be sealed with bentonite plugs to prevent infiltration of surface water or migration of water between aquifers. During drilling, the drill crew and geologist/engineer onsite would monitor for any leaks or spills of drilling fluid. If drilling fluid were to leak, the drill crew would immediately contain the escaping fluid and clean the impacted area.

Seismic Surveys

Seismic refraction line surveys are conducted to help characterize the subsurface conditions, estimate the depth to rock, and evaluate rip-ability of proposed excavations. The surveys would be performed on foot. Vegetation removal would consist of limited trimming of ground-level undergrowth in up to a 4-foot-wide strip (enough to lay out the equipment).

The survey lines would be between 200 and 600 feet long and would take approximately 2 days to complete. The surveys involve placing 24 small geophones (seismic sensors) on the ground in a straight line at equal spacing. The geophones have a 1-inch long prong that is pressed into the ground (usually by foot) to hold the geophone firmly so that shock waves are transmitted to the potentiometers inside the geophone. The geophones transmit a signal to a seismograph unit by a specialized cable. Shock waves would be created by slamming a 12- to 16-pound human-powered sledgehammer against a striker plate placed on at least seven different locations along the refraction line. The striker plate consists of an 8-inch square and a 0.75-inch thick steel plate or high-density polyethylene (HDPE). The noise from the hammer striking the metal plate is estimated at 108 dB at 9.8 feet (3 meters) and is approximately 85 dB at 50 feet (15 meters).

A small triggering device attached to the side of the hammer head registers the moment of impact with the plate and transmits a signal that is sent along a small shot wire to the seismograph unit, which begins recording. If the hammer and plate provide insufficient energy to cover the entire survey line, a shock-producing device involving a down-hole shotgun would be used. The down-hole shotgun uses an industrial shell fired in a minimum 1.5-foot deep water-filled hole created by a hand auger. The industrial shell is an 8-gauge 350- to 500-grain blank shotgun cartridge. Shells are triggered approximately 20 minutes apart. Shotgun detonations may leave an area of disturbed earth up to 2 feet in diameter. Disturbed soil would be tamped down to return it to its original condition. Detonation of the shells occurs below ground and usually does not pose a fire hazard, but fire suppression equipment would be kept on hand when working during wildfire season. With well-prepared shot holes, the highest anticipated noise generated consists of a muffled "thump" of approximately 80 dB.

Anticipated Schedule

Phase 2B drilling and seismic survey activities are anticipated to occur between September 15, 2020 and January 31, 2021. Because it poses minimal potential disruption to highway traffic, work would be conducted during the day. If needed, drilling time restrictions would be observed at certain locations to minimize potential disturbance to nearby resources.

Post Exploration Clean-Up Operations

After the completion of each boring, soil cuttings and drilling fluid generated by the operation would be pumped and/or shoveled into 55-gallon drums for hazardous waste characterization and disposal. Any cuttings and/or drilling fluid inadvertently spilled onto the ground would be shoveled or sponged up and disposed of in 55-gallon drums. If additional water is needed to clean surfaces to prevent contamination of future storm-water or impacts to public safety, a minimal amount would be used and as much of the dirty water captured as practical. Any areas of ground disturbance created during drilling activities would be treated with appropriate BMPs to prevent erosion and stormwater pollution. Borings that do not receive a monitoring pipe would be backfilled using neat cement grout placed at the base of the excavation by tremmy.

DESCRIPTION OF THE SECTION 4(F) RESOURCE

The National Park Service and California State Parks jointly manage Redwood National and State Parks, which totals 133,000 acres of land and includes Redwood National Park (RNP), Del Norte Coast Redwoods State Park (DNCRSP), Jedediah Smith Redwoods State Park, and Prairie Creek Redwoods State Park. These four parks are recognized by the United Nations as a World Heritage Site and an International Biosphere Reserve.

Redwood National and State Parks offer various recreational activities such as fishing, hiking, and camping and beach access. Various trails provide bike, equestrian, and pedestrian access. There are various picnic areas, scenic drives and overlooks, wildlife watching locations, and tide pools. The Parks also host a section of the California Coastal Trail, a network of trails that, once completed, will span California, from Oregon to Mexico. In the project vicinity, the Parks are accessed from Highway 101 and is open every day and year-round.

DNCRSP was established in 1927. By 2002, the park had an area of 31,000 acres, making it California's fifth largest state park. The park extends from the Pacific Ocean to the west, through old-growth redwood forests and into Mill Creek Basin and the west fork of Mill Creek.

Redwood National and State Parks have multiple developed and undeveloped backcountry campgrounds. In the project vicinity, the closest developed campground is the Mill Creek Campground which is located approximately 4.5 miles north of the project limits and is within DNCRSP. The campground offers 143 sites (without hookups) and is open from May through September each year. The closest undeveloped backcountry campground is the DeMartin Campground, which is located within RNP and is within the project limits. The campground has 10 campsites and can accessed from DNCRSP by foot along the Coastal Trail.

USE OF SECTION 4(F) RESOURCE

There would be no Permanent Incorporation or Constructive Use impacts associated with the geotechnical activities; Temporary Occupancy would be limited to staging, geotechnical drilling, and seismic surveys.

Four boring (including two alternative sites) and nine seismic refraction survey line locations are within lands owned by the State Park. The boring locations would be accessed by helicopter and by foot, and the seismic survey line locations would be accessed by foot. The boring locations are conservatively estimated to need 50 feet by 50 feet for operations; however, depending on site logistics, the actual area needed is anticipated to be smaller.

Details on the temporary impacts are included below and in the sections that follow.

Helicopter Access

For the initial set-up, the boring locations would be accessed by helicopter. The locations were chosen based on the amount of naturally open canopy. Tree removal and limbing would be avoided to the extent feasible, and approved by CDPR before removal. At location B-30B, clearing of some small (less than 6-inch diameter at breast height [dbh]) redwoods would be necessary. It is anticipated that one 30-inch dbh alder tree would be removed at both B-34A and B-34B, and that limbs would need to be cut from one side of an approximately 18-inch dbh redwood tree at B-34A. The helicopter boring sites are not located in areas Park visitors use.

Once the equipment is delivered, the drilling team would access the locations by foot from Highway 101 using access routes approved by CDPR. Light vegetation trimming may be required to create a pathway to the sites. Vegetation at boring sites (up to 50'x50') may be cleared initially.

Seismic Refraction Survey Line Access

Nine seismic refraction lines surveys would occur within State Park land. Seismic lines 11, 12 13, 14, 15, 16, and 17 are near Highway 101 and would be accessed by foot from the highway. Lines 18 and 21 straddle the State Park/Green Diamond property line and would be accessed by foot from existing Green Diamond roads. All access routes would be approved by CDPR prior to use. Seismic line surveys would take 2 days each to complete. Vegetation removal may be needed to complete the seismic line surveys and would consist of limited vegetation trimming of ground-level undergrowth in an up to 4-foot-wide strip (enough to lay out the equipment). No seismic line surveys are planned on the Coastal Trail. The seismic lines are not located in areas Park visitors use.

Coastal Trail and DeMartin Campground

The activities associated with the Coastal Trail and the DeMartin campground are located entirely within NPS land; however, the Trail portion within NPS and the campground can be accessed by the State Park's section of the Trail. As a result, the temporary closure of the Trail and Campground may temporarily alter public use of the trail within DNCRSP.

Though the tree and vegetation removal for helicopter access and seismic refraction survey lines would not be visible by the public on State Park land. Visitors may note changes in the visual environment in RNP along the Coastal Trail and within the DeMartin Campground, including bare areas and potential erosion from vegetation clearing or removal and installation of standpipe monitors and/or slope indicators. However, visual impacts would be temporary because disturbed areas would be restored, and vegetation is anticipated to grow back within 6 to 12 months. In addition, standpipe monitors and/or slope indicators would have low visibility as they would be at the ground level.

Depending on the flight path, helicopter noise has the potential to disrupt the peace and quiet of the both DNCRSP and RNP for short periods of time. All flights would be during daytime hours; however, given the short duration of the flights, the noise is anticipated to result in only minor short-term disruptions to the quiet surroundings to which Park users are accustomed. The helicopters are expected to be in use in late September and October, which is after the high-use peak periods of the summer months. Additionally, park users would be notified of the geotechnical investigation activities, including helicopter use.

There would be no long-term noise or visual impacts because of the geotechnical investigations.

Avoidance and Minimization Measures

The following measures would be included as part of the Phase 2B investigation:

1) Signage would be posted at trailheads and campground, and information would be posted on websites at the beginning of the year to notify hikers and campers of the construction activities (including helicopter use).
2) Materials that blend in with the surrounding environment would be used for restoration measures of disturbed soil areas. This may include duff, wood mulch, etc.
3) Plants of unique character would be salvaged where removal is expected to occur and transplanted.
4) If soils become compacted in previously undisturbed areas, measures would be taken to uncompact soils to encourage the regeneration of vegetation.
5) Work windows would avoid the nesting season for protected birds, including the marbled murrelet.
6) Caltrans would document all disturbed areas, including boring locations, seismic survey lines and foot trails, and coordinate with State Parks to ensure that Parks lands are fully restored to a condition at least as good as prior to the project, and in accordance with Park requirements and restoration guidelines.

De Minimis Finding

There would be no Permanent Incorporation of Park land and no Constructive Use associated with the proposed Phase 2B geotechnical investigation activities.

The geotechnical investigations would require the temporary use of Del Norte Coast Redwoods State Park. The impacts would be limited to approximately 0.44 acre of the total 31,261 acres of the park, and would include vegetation removal, helicopter noise, and the temporary closure of the Coastal Trail and DeMartin Campground within adjacent NPS land. All sites would be restored, with regrowth anticipated to take between 6 to 12 months. In addition, the standpipe monitor and/or slope indicator would remain in place for up to 2 years to allow for subsurface condition monitoring.

Considering the scope of the work proposed, and after considering avoidance, minimization, and enhancement/restoration measures, there would be no adverse effect to the activities, features, or attributes that qualify the park for protection under Section 4(f). Therefore, the Temporary Occupancy during geotechnical investigations would constitute *de minimis* impacts under Section 4(f).

Public Input and Concurrence

As part of the Section 4(f) process, the public was afforded the opportunity to comment on this evaluation and Caltrans' intent to make a *de minimis* finding for the proposed geotechnical investigation activities within Del Norte Coast Redwoods State Park. This letter served as the Section 4(f) evaluation and was circulated to the public as an attachment to the California Environmental Quality Act (CEQA) Initial Study with proposed Negative Declaration (IS/ND) from December 3, 2019 through January 3, 2020.

Thank you for your cooperation in this matter. If you have any questions, please feel free to contact me at (707) 441-5615 or by email at steven.croteau@dot.ca.gov

Please sign below to indicate State Park's concurrence with Caltrans' *de minimis* finding for the LCG Phase 2B Geotechnical Study.

_____ _____

Victor Bjelajac, Superintendent, North Coast Redwoods District Date

Sincerely,

Steve Croteau
Senior Environmental Planner
North Region Environmental

Attachment: Figure 1.
Figure 2.
Phase 2B layouts

"Provide a safe, sustainable, integrated and efficient transportation system to enhance California's economy and livability"