APPENDIX D

ASSESSMENT OF POTENTIAL BIOLOGICAL IMPACTS

MEMORANDUM

To: Rebecca Auld, Lamphier-Gregory **From:** Greg Sproull, WRA, Inc.

Date: February 19, 2021

Subject: Peer Review of the Stanford Wedge Housing Project Biological Resources Report (H.T. Harvey & Associates 2020), Vegetation Management Plan (H.T. Harvey & Associates 2020), and Noise and Vibration Assessment (Illingsworth and Rodkin, Inc. 2020)

Dear Ms. Auld,

At your request, we conducted a peer review of the H.T. Harvey & Associates Biological Resources Report (2020) and Vegetation Management Plan (Panorama Environmental 2020), and supporting biological documents, including a Noise and Vibration Assessment (Illingsworth and Rodkin, Inc. 2020), associated with the Stanford Wedge Housing Project (Project), located on approximately 6.7 acres of land in Portola Valley, San Mateo County, California (Residential Development Area). This peer review is intended to ascertain the adequacy of the documents to inform the California Environmental Quality Act (CEQA) document.

The proposed Project would involve the construction of a residential development on an approximately 6.7-acre site that is currently occupied by the Alpine Rock Ranch Horse Stables. The Project would also construct a permanent access road and a hiking and equestrian trail on the rest of the currently undeveloped 76-ac parcel that is owned by Stanford University (the approximately 69-acre Undeveloped Area). Also, Stanford would implement a Vegetation Management Plan for the purpose of fire suppression vegetation management activities throughout the 76-acre parcel. The permanent access road would provide access for fire engines, and staging for long-term vegetation management activities in the Undeveloped Area.

Initial treatments under the Vegetation Management Plan could occur in certain high-priority areas prior to construction of the permanent access road and other ground-disturbing activities in the Undeveloped Area. Specific Project activities and locations within the residential project site have not been defined, thus it is assumed that the entirety of the 6.7-acre residential site could be impacted. In addition, approximately 3.73 acres would be impacted by construction of the permanent access road, including 0.96 acre that would be permanently impacted and 2.77 acres that would only be impacted during grading activities. The hiking/equestrian trail would permanently impact approximately 0.50 acre. Vegetation Management Plan activities would be performed throughout the 76-acre site, with the entire area undergoing initial treatments, and select areas/habitat types undergoing periodic maintenance treatments.

Prior to the review of the Project's biological resources report, WRA, Inc. (WRA) completed a review of publicly available database resources for the Project. WRA queried the California Natural Diversity Database (CNDDB), the U.S. Fish and Wildlife (USFWS) National Wetlands Inventory Online Mapper, and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants. This evaluation was conducted entirely from desktop and no field site visit was conducted by WRA staff.

After a discussion with H.T. Harvey & Associates on December 17, 2020, we requested that H.T. Harvey & Associates edit their Biological Resources Report. We have now reviewed H.T. Harvey & Associates' updated Biological Resources Report, dated January 8, 2021, as well as their memorandum that details edits made to the original report (also dated January 8, 2021). We agree with all edits made to this report, as discussed during the December 17, 2020 call.

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Stanford Wedge Project
Biological Resources Report

Project #4321-01

Prepared for:

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Prepared by:

H. T. Harvey & Associates

January 8, 2021

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Executive Summary

This biological resources report was prepared to facilitate California Environmental Quality Act (CEQA) review of the Stanford Wedge Project (project). This report provides guidance for the protection of special-status resources occurring on the project site and describes measures that would be implemented to mitigate potential impacts to these resources.

The proposed project would involve the construction of a residential development on an approximately 6.7-acre (ac) site that is currently occupied by the Alpine Rock Ranch Horse Stables, and construction of a permanent access road, and a hiking and equestrian trail on the remainder of the currently undeveloped 76-ac parcel owned by Stanford University (Stanford) (the approximately 69-acre Undeveloped Area). Additionally, at the request of the Woodside Fire Protection District, Stanford would implement a Vegetation Management Plan (VMP) for the purpose of fire suppression vegetation management activities throughout the 76-ac parcel. The permanent access road would provide access for fire engines, and staging for long-term vegetation management activities in the Undeveloped Area. However, initial treatments under the VMP can occur in certain high-priority areas prior to construction of the permanent access road and other ground-disturbing activities in the Undeveloped Area.

Specific project activities and locations have not been defined within the residential project site, and therefore, this impact assessment assumed that development could occur anywhere, and that up to the entirety of the 6.7-ac residential site could be impacted. In addition, approximately 2.77 ac would be impacted by construction of the permanent access road, including 0.81 ac would be permanently impacted and 1.96 ac that would be impacted only during grading by construction of the permanent access road. The hiking/equestrian trail would permanently impact approximately 0.49 acres. VMP activities will be performed throughout the 76-ac project site, with the entire area undergoing initial treatments, and select areas/habitat types undergoing periodic maintenance treatments.

Based on reconnaissance-level surveys of the project site, the site supports suitable habitat for a number of sensitive biological resources. The site supports two sensitive habitats: stream and riparian habitat. Stream habitats occur on the 76-ac portion of the site, and riparian habitats occur along the northern perimeter of the site. Suitable habitat was determined to be present on the project site for 10 special-status plant species: bent-flowered fiddleneck (*Amsinckia lunaris*), western leatherwood (*Dirca occidentalis*), woodland woollythreads (*Monolopia gracilens*), Santa Cruz clover (*Trifolium buckwestiorum*), California androsace (*Androsace elongata ssp. acuta*), Brewer's calandrinia (*Calandrinia breweri*), Oakland star-tulip (*Calochortus umbellatus*), bristly leptosiphon (*Leptosiphon acicularis*), Michael's rein orchid (*Piperia michaelii*), and California bottle-brush grass (*Elymus californicus*). A focused special-status plant survey conducted on the 6.7-ac residential portion of the project site confirmed that no special-status plants are present on this portion of the site, though these species could potentially occur in the remainder of the site. Three special-status animal species, the pallid bat (*Antrozous pallidus*) and San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*), which are California Species of Special Concern, as well as the state fully protected white-tailed kite (*Elanus leucurus*), could potentially breed on

the project site. A number of species of non-special-status birds also breed on the project site. Additionally, two special-status species, the federally-threatened California red-legged frog (*Rana draytonii*) and the western pond turtle (*Actinemys marmorata*), a California Species of Special Concern, have the potential to occur on the project site as nonbreeders.

Based on the absence of special-status plants on the 6.7-ac portion of the site, the residential development would not impact any special-status plants. However, project activities occurring on the Undeveloped Area could result in direct and indirect impacts on 10 potentially-occurring special-status plant species. For special-status and sensitive animals, the project as a whole has the potential to result in direct or indirect impacts on nesting birds, and breeding San Francisco dusky-footed woodrats, white-tailed kites, and pallid bats, and on non-breeding California red-legged frogs and western pond turtles. Additionally, the project would result in the loss of a large number of significant trees that are protected by the Town or Portola Valley's Municipal Code that protects significant trees, as well as large numbers of other (non-significant) trees. None of the project features would result in impacts on stream or riparian habitats, or stream setbacks required by the Town. However, because of their close proximity to riparian habitats, there is some potential for construction of the residential development, access road, and VMP activities to result in direct and indirect impacts (e.g., water quality impacts) on aquatic and riparian habitats and the animals that inhabit those areas. Project disturbance also has the potential to introduce or spread invasive weed species onto the site.

Based on the existing conditions, known or potential sensitive resources that may occur on the project site, and potential impacts on these resources resulting from the project, a number of mitigation measures would be implemented, including focused surveys for special-status species (e.g., special-status plant surveys), preconstruction surveys for nesting birds and special-status animals, avoidance and minimization of impacts (e.g., perform work outside the nesting period), compensatory mitigation for loss of sensitive habitats, creation of replacement habitat (e.g., woodrat nest relocations), and implementation of water quality and invasive weed Best Management Practices. With the implementation of the proposed mitigation, the project would reduce the identified project-related impacts to less-than-significant levels. Significance determinations for impacts on these biological resources are summarized below.

Impacts Determined to be Less Than Significant with Mitigation

- Impacts on special-status plants
- Impacts on special-status animals
- Impacts on riparian habitat
- Impacts due to the spread of nonnative and invasive species
- Impacts on wetlands
- Impacts on nesting birds

Of those special-status species with potential to occur on the project site, project-related impacts to the white-tailed kite would be less-than-significant under CEQA because only one pair is expected to be impacted by the project, due to the relatively sparse nesting habitat on the site. Still, the mitigation that would be implemented for nesting birds would avoid impacts on nesting white-tailed kites. With respect to wildlife movement corridors, because the project would not substantially interfere with wildlife movement, this impact would be less-than-significant. Additionally, because Stanford would comply with the Town of Portola Valley's Municipal Code regarding the protection of significant trees, this impact would also be less-than-significant under CEQA. These findings are summarized below.

Impacts Determined to be Less Than Significant

- Impacts on nesting white-tailed kites
- Impacts on riparian habitat buffers
- Impacts on birds due to building collisions
- Impacts on wildlife movement corridors
- Impacts on local policies

Finally, the project site is not located within an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan; thus the project would have no impacts due to conflicts with an adopted habitat conservation plan.

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List of Preparers

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Section 1. Introduction

1.1 Project Description

The proposed Stanford Wedge project entails the construction of a residential development on an approximately 6.7-acre (ac) site that is currently occupied by the Alpine Rock Ranch Horse Stables, and construction of a permanent access road, construction of hiking and equestrian trails, and implementation of a Vegetation Management Plan (VMP) in the remainder (the approximately 69-acre Undeveloped Area) of the 76-ac parcel (hereafter "project site") owned by Stanford University (Stanford). The project site is located in the Town of Portola Valley and is bounded by rural residential development to the north, west, and south, and Alpine Road to the east (Figures 1 and 2). Los Trancos Creek and Felt Lake are located on Stanford lands just beyond Alpine Road to the east.

Specific project activities and locations have not been defined within the 6.7-ac residential project site, but up to the entirety of the 6.7-ac site may be developed. Additionally, Stanford proposes to construct a hiking and equestrian trail, and at the request of the Woodside Fire Protection District (WFPD), perform fire suppression vegetation management activities, including the construction of a permanent road, in the Undeveloped Area. The permanent access road would provide access for fire engines, and staging for initial and long-term vegetation maintenance in the Undeveloped Area. Aside from the permanent road and trail construction, which will occupy approximately 0.81 ac and 0.49 ac, respectively, Stanford has no plans to develop the Undeveloped Area.

As requested by the WFPD, a VMP was prepared for the project (Panorama Environmental 2020a). A variety of initial and long-term vegetation management treatments are proposed in the VMP, targeting defensible space around structures, and oak woodland and chaparral habitat types on the remainder of the 76-ac parcel. The defensible space treatment would involve the thinning and reduction or removal of combustible vegetation (e.g., dead, diseased or other flammable vegetation) within 100 feet of structures. The oak woodland and chaparral treatments would involve thinning trees and tree canopy and shrub layers, and removing or rearranging (masticating) combustible vegetation. Initial vegetation treatment methods would include (1) steep slope mechanical treatment with manual support, (2) mechanical treatment, and (3) manual treatment. Mechanical treatment methods may include mastication, chipping, and tilling. Manual treatment methods may include the use of hand tools to cut, uproot, crush, compact, or chop vegetation. Long-term maintenance would involve annual goat grazing or browsing, and may involve mastication and or/mowing with manual support every five years if desired outcomes are not met. Additionally, long-term maintenance would also include periodic manual removal of dead or diseased trees or branches every 5 years. See Section 6.2, Table 4, and Appendix B of the VMP (Panorama Environmental 2020a) for detailed descriptions of each treatment activity.

As part of the VMP activities, temporary haul routes that would branch off the permanent access road would be constructed to haul materials to the access road and off the site. The exact locations of the haul routes have

not been identified. Excess materials would either be spread across the site or piled for burning or mastication. With exception of the development area, vegetation management activities would encompass the entire site; thus, the entirety of the 70-ac portion of the site outside the residential development area would undergo some form of vegetation management treatment initially and as part of the long-term vegetation maintenance.

The Implementation Plan describes how the VMP would be implemented, identifying the methods and approaches to the initial treatment of vegetation in high-priority areas (Panorama Environmental 2020b). The Implementation Plan identifies the activities that can be undertaken, and the general prioritization of initial treatments that can occur, prior to construction of the permanent access road and other ground-disturbing activities (e.g., residential development). Locations where such initial VMP activities would occur are (1) oak canopy and oak woodland treatments within 200 feet of Alpine Road, (2) creation of defensible space and chaparral treatments along the western project site boundary, (3) creation of defensible space around the existing horse stables and the area of the proposed housing development, including removal of cut vegetative materials, and (4) treatments throughout the remainder of the site and all priority areas through mastication and/or chipping vegetative materials (Panorama Environmental 2020b). The Implementation Plan includes measures to avoid impacts on special-status plants during initial VMP activities, such as avoidance of ground disturbance and limiting the depth of wood chips to 1 inch or less.

The purpose of this report is to describe the biological resources present throughout the project site, as well as the potential impacts of the proposed residential development, construction of the permanent access road and hiking and equestrian trail, and vegetation management activities on biological resources within the approximately 76-ac project site. Where necessary, this report also describes measures necessary to reduce impacts to less-than-significant levels under the California Environmental Quality Act (CEQA). This report was prepared to facilitate CEQA review of the project by the Town of Portola Valley.

1.2 Town of Portola Valley General Plan Trail

In keeping with the Town of Portola Valley's General Plan Trails and Paths Element goals, the Town of Portola Valley has requested that Stanford include a hiking and equestrian trail as part of the project. The trail that the Town has proposed would traverse the site in two locations extending from an existing trail along Alpine Road, and connecting to a third proposed trail segment that would traverse along the entire northern perimeter of the site. As proposed, one segment of the trail would be constructed along an unnamed stream that occurs just north of, and partially within, the northwest corner of the site. A second trail segment would generally traverse the site, crossing two additional unnamed streams in the central and southern portions of the site. Because the proposed trail routes would likely necessitate encroachment on riparian habitats, stream crossings, and vegetation/tree removal, construction of these trail segments would result in temporary and permanent impacts on the environment that would likely be considered significant under the CEQA (requiring mitigation to reduce impacts to less-than-significant levels) and trigger the need for regulatory permits from the U. S. Army Corps of Engineers (USACE), San Francisco Regional Water Quality Control Board (RWQCB), and/or California Department of Fish and Wildlife (CDFW).

In keeping with the Town of Portola Valley's General Plan, Stanford's proposed hiking and equestrian trail is consistent with the General Plan, in that the project includes a trail and the trail's location is roughly similar to that which was proposed by the Town. However, Stanford's proposed trail does not traverse the northern perimeter of the project site or cross any streams on the site as shown in the Trails and Paths Element of the Portola Valley General Plan[1]. Thus, Stanford's proposed trail would avoid impacts on the project site's sensitive resources (i.e., stream and riparian habitats). If the Town wishes to move forward with a trail segment along the unnamed stream north of the project site, that would be a separate project, and such a segment is not addressed further in this document. For informational purposes, an example of a potential future trail connection, where the Town's trail could connect to Stanford's proposed trail, is shown on Figure 2. That potential trail connection is not part of the currently proposed project and is shown for illustrative purposes only.

[1] Diagram A of the Trails and Paths Element, Town of Portola Valley General Plan, Last amended January 8, 2003.

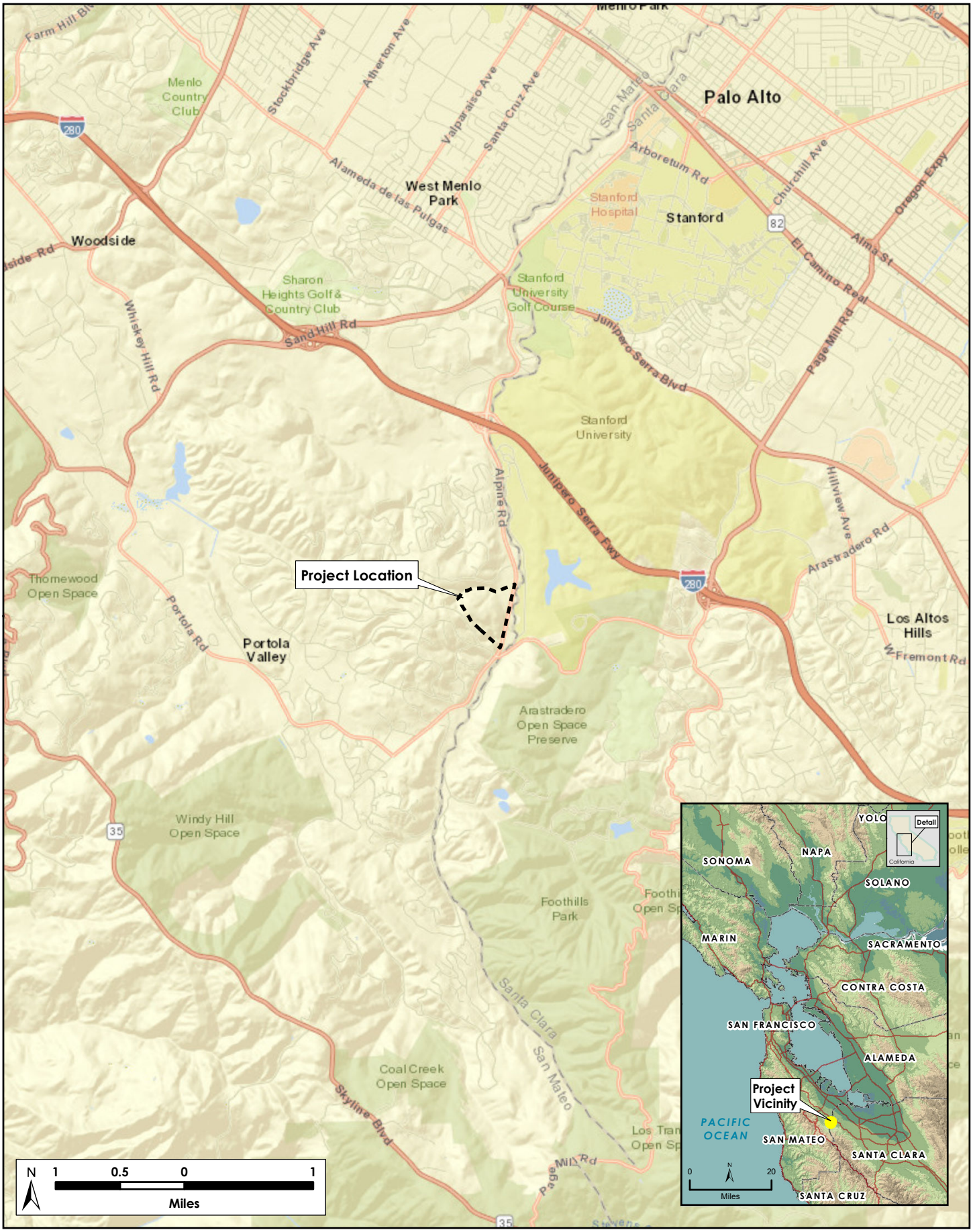

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Figure 1. Vicinity Map

Stanford Wedge Project Biological Resources Report (4321-01)
January 2021

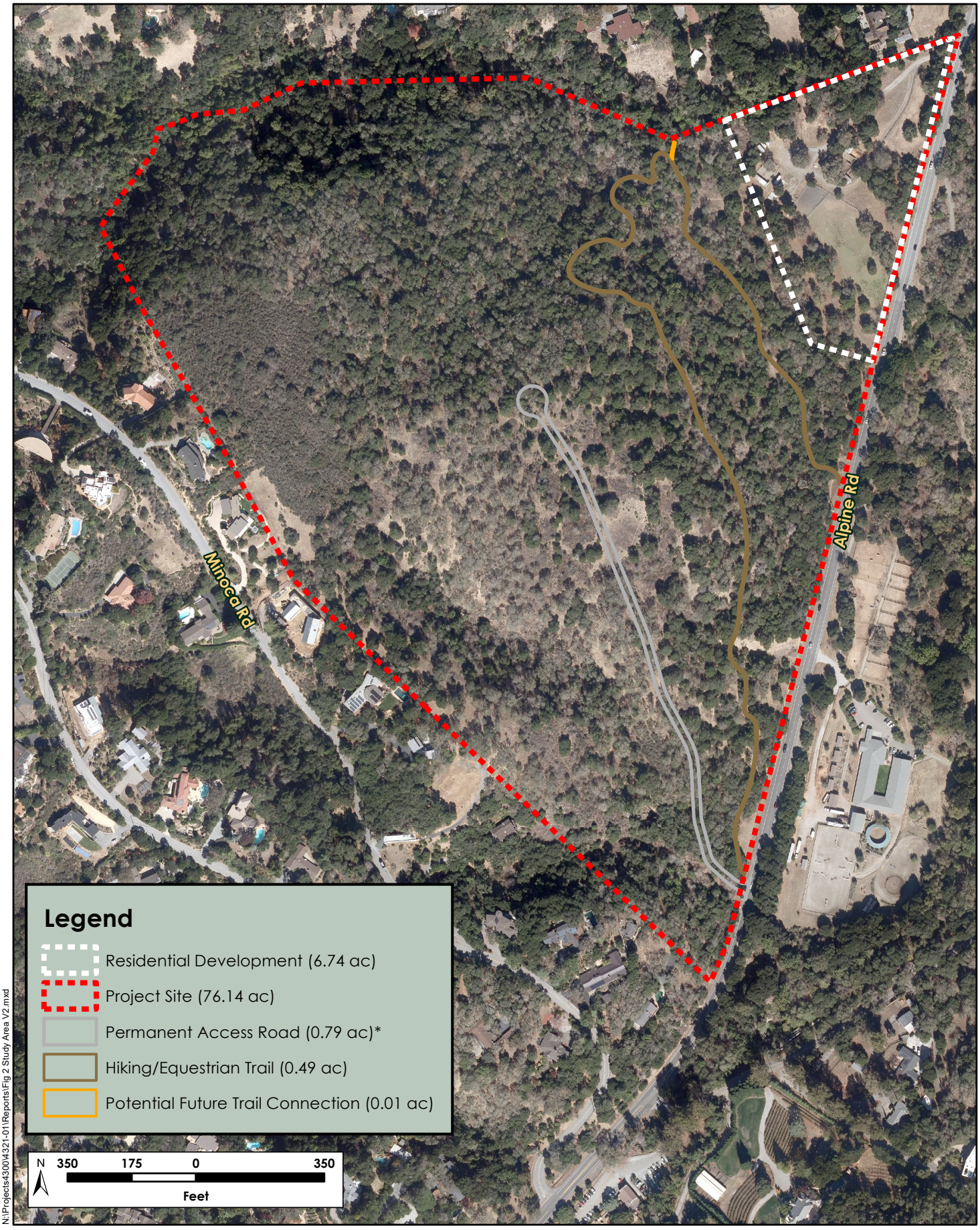

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Figure 2. Study Area
Stanford Wedge Project Biological Resources Report (4321-01)
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Section 2. Methods

2.1 Background Review

Prior to conducting field work, H. T. Harvey & Associates ecologists reviewed maps of the project site and project site provided by Stanford; aerial images (Google Inc. 2020) of the project area; a U.S. Geological Survey (USGS) topographic map; the California Department of Fish and Wildlife's (CDFW's) California Natural Diversity Database (CNDDB 2020); and other relevant scientific literature and technical databases. We also reviewed the Stanford University Habitat Conservation Plan (HCP) (Stanford University 2013). In addition, for plants, we reviewed all species on current California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B lists occurring in the *Palo Alto, California* 7.5-minute USGS quadrangle and surrounding eight quadrangles (*Woodside, San Mateo, Redwood Point, Newark, Mountain View, Cupertino, Mindego Hill,* and *La Honda*). Quadrangle-level results are not maintained for CRPR 3 and 4 species, so we also conducted a search of the CNPS Inventory records for these species occurring in San Mateo County (CNPS 2020). In addition, we queried the CNDDB (2020) for natural communities of special concern that occur in the project region.

2.2 Field Surveys

Reconnaissance-level field surveys of the project site were conducted by H. T. Harvey & Associates senior wildlife ecologist Kim Briones, M.S, and plant ecologist Matthew Mosher, B.S., on April 16 and 17, 2019. The purpose of these surveys was to document existing biological conditions on the entire project site and to provide a project-specific impact assessment for the proposed residential development project on the 6.7-ac residential project site and in the area that would be impacted by the potential fire road. Specifically, surveys were conducted to (1) assess existing biotic habitats and general plant and wildlife communities in the project site, (2) assess the potential for the project to impact special-status species and/or their habitats, and (3) identify potential jurisdictional habitats, such as waters of the U.S./State and riparian habitat. Only the centerlines of streams on and adjacent to the site were mapped in the field; the top of bank and ordinary high water marks of streams were not mapped during the reconnaissance survey because Stanford was committed to avoiding those jurisdictional habitats, and the project's impact footprint was far enough from those jurisdictional habitats that they did not need to be mapped in the field.

Additionally, a focused rare plant survey was conducted by M. Mosher on May 8, 2019 within the 6.7-ac residential project site. The purpose of this survey was to determine whether special-status plant species detectable at this time of year are present within the potential development area. Finally, surveys for nesting birds and for San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*) nests were conducted on June 13, 14, 17, and 18, 2019 by K. Briones and H. T. Harvey & Associates wildlife ecologists Craig Fosdick, M.S., and Will Lawton, B.S. in support of fuel reduction activities; these surveys were conducted to facilitate avoidance of active nests during fuel reduction.

Following our biological resources report submittal in September 2019, the VMP, hiking and equestrian trail, and minor modifications to the permanent access road were added to the project description. To address these project updates, H. T. Harvey & Associates senior wildlife ecologists Kim Briones and Steve Rottenborn, Ph.D., and senior plant ecologist Mark Bibbo, M.S., assessed the additional project components described above for inclusion in this biological resources report. Because our earlier reconnaissance survey covered a representative sample of the site, no additional field surveys were conducted for this update.

Section 3. Regulatory Setting

Biological resources on the project site are regulated by a number of federal, state, and local laws and ordinances, as described below.

3.1 Federal

3.1.1 Clean Water Act

The Clean Water Act (CWA) functions to maintain and restore the physical, chemical, and biological integrity of waters of the U.S., which include, but are not limited to, tributaries to traditionally navigable waters currently or historically used for interstate or foreign commerce, and adjacent wetlands. Historically, in non-tidal waters, U.S. Army Corp of Engineers (USACE) jurisdiction extends to the ordinary high water (OHW) mark, which is defined in Title 33, Code of Federal Regulations (CFR), Part 328.3. If there are wetlands adjacent to channelized features, the limits of USACE jurisdiction extend beyond the OHW mark or high tide line to the outer edges of the wetlands.

On June 22, 2020, the Navigable Waters Protection Rule (NWPR) went into effect. The NWPR is intended to provide clear categories of regulated waters of the U.S., as well as regulating traditional navigable waters and the core tributary systems that provide perennial or intermittent flow into them. Under the NWPR, ephemeral streams or features adjacent to such features are not waters of the U.S.; however this determination will only occur after completing an Approved Jurisdictional Determination process with the USACE.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit will be effective in the absence of Section 401 Water Quality Certification. The State Water Resources Control Board (SWRCB) is the state agency (together with the Regional Water Quality Control Boards [RWQCBs]) charged with implementing water quality certification in California.

Project Applicability: Portions of the project site contain two ephemeral streams that are unlikely to be claimed as waters of the U.S. by the USACE under the NWPR. However, the intermittent stream, which is a tributary to Los Trancos Creek, is likely to be claimed as waters of the U.S by the USACE. No streams occur within the residential project site or in the areas that would be impacted by the permanent access road and trail, and VMP activities are not expected to impact waters of the U.S.. Therefore, a Section 404 permit from the USACE would not be required for proposed project activities.

3.1.2 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects federally listed wildlife species from harm or "take", which is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt

to engage in any such conduct." Take can also include habitat modification or degradation that directly results in death or injury of a listed wildlife species. An activity can be defined as "take" even if it is unintentional or accidental. Listed plant species are provided less protection than listed wildlife species. Listed plant species are legally protected from take under FESA only if they occur on federal lands.

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) have jurisdiction over federally listed, threatened, and endangered species under FESA. The USFWS also maintains lists of proposed and candidate species. Species on these lists are not legally protected under FESA, but may become listed in the near future and are often included in their review of a project.

Project Applicability: No federally-listed plants are present on the project site. One federally listed animal species, the California red-legged frog (*Rana draytonii*), may occasionally disperse onto the project site, though it is expected to do so rarely and in low numbers (if at all). If it occurs on the project site, it would most likely occur in the intermittent stream along the northern edge of the project site.

3.1.3 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act governs all fishery management activities that occur in federal waters within the United States' 200-nautical-mile limit. The Act establishes eight Regional Fishery Management Councils responsible for the preparation of fishery management plans (FMPs) to achieve the optimum yield from U.S. fisheries in their regions. These councils, with assistance from the NMFS, establish Essential Fish Habitat (EFH) in FMPs for all managed species. Federal agencies that fund, permit, or implement activities that may adversely affect EFH are required to consult with the NMFS regarding potential adverse effects of their actions on EFH, and respond in writing to recommendations by the NMFS.

Project Applicability: No EFH is present on the project site.

3.1.4 Federal Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (MBTA), 16 U.S.C. Section 703, prohibits killing, possessing, or trading of migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. The MBTA protects whole birds, parts of birds, and bird eggs and nests, and it prohibits the possession of all nests of protected bird species whether they are active or inactive. An active nest is defined as having eggs or young, as described by the USFWS in its June 14, 2018 memorandum "Destruction and Relocation of Migratory Bird Nest Contents". Nest starts (nests that are under construction and do not yet contain eggs) and inactive nests are not protected from destruction.

In its June 14, 2018 memorandum, the USFWS clarified that the destruction of an active nest "while conducting any activity where the intent of the action is not to kill migratory birds or destroy their nests or contents" is not prohibited by the MBTA. On February 3, 2020, the USFWS published a proposed rule to codify the scope of

the MBTA as it applies to activities resulting in the injury or death of migratory birds (85 FR 5915-5926); the USFWS is currently considering comments on the proposed rule.

Project Applicability: All native bird species that occur on the project site are protected under the MBTA.

3.1.5 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (Eagle Act), 16 U.S.C. Section 668, provides for the protection of the bald eagle and the golden eagle (*Aquila chrysaetos*) (as amended in 1962) by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb (16 U.S.C. 668c; 50 CFR 22.3).

Project Applicability: Bald eagles (*Haliaeetus leucocephalus*) that nest east of the project site, near Felt Lake, are protected under the Bald and Golden Eagle Protection Act. However, no eagle nests are known or expected to occur close enough to project site, for proposed activities to result in take of eagles, and therefore we do not expect that an eagle take permit would be needed for these activities.

3.2 State

3.2.1 Clean Water Act Section 401/Porter-Cologne Water Quality Control Act

The SWRCB works in coordination with the nine RWQCBs to preserve, protect, enhance, and restore water quality. Each RWQCB makes decisions related to water quality for its region, and may approve, with or without conditions, or deny projects that could affect waters of the State. Their authority comes from the CWA and the State's Porter-Cologne Water Quality Control Act (Porter-Cologne). Porter-Cologne broadly defines waters of the State as "any surface water or groundwater, including saline waters, within the boundaries of the state." Because Porter-Cologne applies to any water, whereas the CWA applies only to certain waters, California's jurisdictional reach overlaps and may exceed the boundaries of waters of the U.S. For example, Water Quality Order No. 2004-0004-DWQ states that "shallow" waters of the State include headwaters, wetlands, and riparian areas. Moreover, the San Francisco Bay Region RWQCB's Assistant Executive Director, has stated that, in practice, the RWQCBs claim jurisdiction over riparian areas. Where riparian habitat is not present, such as may be the case at headwaters, jurisdiction is taken to the top of bank.

On April 2, 2019, the SWRCB adopted the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. In these new guidelines, riparian habitats are not specifically described as waters of the state but instead as important buffer habitats to streams that do conform to the State Wetland Definition. The Procedures describe riparian habitat buffers as important resources that may both be included in required mitigation packages for permits for impacts to waters of the state, as well as areas requiring permit authorization from the RWQCBs if impacted.

Pursuant to the CWA, projects that are regulated by the USACE must also obtain a Section 401 Water Quality Certification permit from the RWQCB. This certification ensures that the proposed project will uphold state water quality standards. Because California's jurisdiction to regulate its water resources is much broader than that of the federal government, proposed impacts on waters of the State require Water Quality Certification even if the area occurs outside of USACE jurisdiction. Moreover, the RWQCB may impose mitigation requirements even if the USACE does not. Under the Porter-Cologne, the SWRCB and the nine regional boards also have the responsibility of granting CWA National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for certain point-source and non-point discharges to waters. These regulations limit impacts on aquatic and riparian habitats from a variety of urban sources.

Project Applicability: Portions of the project site contain streams and associated riparian areas that may be claimed as waters of the State by the RWQCB, regardless of the jurisdictional determination by the USACE. Such areas would fall under jurisdiction of the San Francisco RWQCB. A Section 401 Water Quality Certification would be required if any impacts on waters of the U.S. (i.e., the intermittent stream) would occur, whereas Porter-Cologne Waste Discharge Requirements would be required if any impacts on the ephemeral streams or riparian habitats, which are not regulated by the USACE, were to occur. However, as proposed, the project would not impact any waters of the State and therefore is not expected to need a permit from the RWQCB.

3.2.2 California Endangered Species Act

The California Endangered Species Act (CESA; California Fish and Game Code, Chapter 1.5, Sections 2050-2116) prohibits the take of any plant or animal listed or proposed for listing as rare (plants only), threatened, or endangered. In accordance with CESA, the CDFW has jurisdiction over state-listed species (Fish and Game Code 2070). The CDFW regulates activities that may result in "take" of individuals (i.e., "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. The CDFW, however, has interpreted "take" to include the "killing of a member of a species which is the proximate result of habitat modification."

Project Applicability: No suitable habitat for any state listed plant species occurs on the project site. Thus, no state listed plant species are expected to occur on the project site. The state listed bald eagle occurs at nearby Felt Lake and the project vicinity. However, no eagle nests are known or expected to occur close enough to the project site for proposed activities to result in take of eagles. The mountain lion (*Puma concolor*), which is a candidate for state listing, could potentially occur on the site on occasion. However, this species is unlikely to den on the site given the extent of human activity in the adjoining residential areas, and no take of this species, as defined by CESA, is expected to occur as a result of project activities.

3.2.3 California Environmental Quality Act

CEQA is a state law that requires state and local agencies to document and consider the environmental implications of their actions and to refrain from approving projects with significant environmental effects if there are feasible alternatives or mitigation measures that can substantially lessen or avoid those effects. CEQA requires the full disclosure of the environmental effects of agency actions, such as approval of a general plan update or the projects covered by that plan, on resources such as air quality, water quality, cultural resources, and biological resources. The State Resources Agency promulgated guidelines for implementing CEQA are known as the State CEQA Guidelines.

Section 15380(b) of the State CEQA Guidelines provides that a species not listed on the federal or state lists of protected species may be considered rare if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definitions in FESA and CESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals. This section was included in the guidelines primarily to deal with situations in which a public agency is reviewing a project that may have a significant effect on a species that has not yet been listed by either the USFWS or CDFW or species that are locally or regionally rare.

The CDFW has produced three lists (amphibians and reptiles, birds, and mammals) of "species of special concern" that serve as "watch lists". Species on these lists are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Thus, their populations should be monitored. They may receive special attention during environmental review as potential rare species, but do not have specific statutory protection. All potentially rare or sensitive species, or habitats capable of supporting rare species, are considered for environmental review per the CEQA Section 15380(b).

The CNPS, a non-governmental conservation organization, has developed CRPRs for plant species of concern in California in the Inventory of Rare and Endangered Plants (CNPS 2020). The CRPRs include lichens, vascular, and non-vascular plants, and are defined as follows:

- CRPR 1A Plants considered extinct.
- CRPR 1B Plants rare, threatened, or endangered in California and elsewhere.
- CRPR 2A Plants considered extinct in California but more common elsewhere.
- CRPR 2B Plants rare, threatened, or endangered in California but more common elsewhere.
- CRPR 3 Plants about which more information is needed - review list.
- CRPR 4 Plants of limited distribution-watch list.

The CRPRs are further described by the following threat code extensions:

- .1—seriously endangered in California;
- .2—fairly endangered in California;
- .3—not very endangered in California.

Although the CNPS is not a regulatory agency and plants on these lists have no formal regulatory protection, plants appearing as CRPR 1B or 2 are, in general, considered to meet CEQA's Section 15380 criteria, and adverse effects on these species may be considered significant. Impacts on plants that are listed by the CNPS as CRPR 3 or 4 are also considered during CEQA review, although because these species are typically not as rare as those of CRPR 1B or 2, impacts on them are less frequently considered significant.

Compliance with CEQA Guidelines Section 15065(a) requires consideration of natural communities of special concern, in addition to plant and wildlife species. Vegetation types of "special concern" are tracked in Rarefind (CNDDB 2019). Further, the CDFW ranks sensitive vegetation alliances based on their global (G) and state (S) rankings analogous to those provided in the CNDDB. Global rankings (G1–G5) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas S rankings reflect the condition of a habitat within California. If an alliance is marked as a G1–G3, all the associations within it would also be of high priority. The CDFW provides the Vegetation Classification and Mapping Program's currently accepted list of vegetation alliances and associations (CDFW 2009).

Project Applicability: All potential impacts on biological resources will be considered during CEQA review of the project. This Biological Resources Report assesses these impacts to facilitate project planning and CEQA review of the project by the City of Portola Valley. Project impacts are discussed in Section 6 below.

3.2.4 California Fish and Game Code

Ephemeral and intermittent streams, rivers, creeks, dry washes, sloughs, blue line streams on USGS maps, and watercourses with subsurface flows fall under CDFW jurisdiction. Canals, aqueducts, irrigation ditches, and other means of water conveyance may also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. A *stream* is defined in Title 14, California Code of Regulations Section 1.72, as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and that supports fish and other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian vegetation." Using this definition, the CDFW extends its jurisdiction to encompass riparian habitats that function as part of a watercourse. California Fish and Game Code Section 2786 defines *riparian habitat* as "lands which contain habitat which grows close to and which depends upon soil moisture from a nearby freshwater source." The lateral extent of a stream and associated riparian habitat that would fall under the jurisdiction of the CDFW can be measured in several ways, depending on the particular situation and the type of fish or wildlife at risk. At minimum, the CDFW would claim jurisdiction over a stream's bed and bank. In areas that lack a vegetated riparian corridor, CDFW jurisdiction would be the same as USACE jurisdiction. Where riparian habitat is present, the outer edge of riparian vegetation is generally used as the line of demarcation between riparian and upland habitats.

Pursuant to California Fish and Game Code Section 1603, the CDFW regulates any project proposed by any person that will "substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds." California Fish and Game Code Section 1602 requires an entity to notify the CDFW of any proposed activity that may modify a river, stream, or lake. If the CDFW determines that proposed activities may substantially adversely affect fish and wildlife resources, a Lake and Streambed Alteration Agreement (LSAA) must be prepared. The LSAA sets reasonable conditions necessary to protect fish and wildlife, and must comply with CEQA. The applicant may then proceed with the activity in accordance with the final LSAA.

Specific sections of the California Fish and Game Code describe regulations pertaining to protection of certain wildlife species. For example, Code Section 2000 prohibits take of any bird, mammal, fish, reptile, or amphibian except as provided by other sections of the code.

The California Fish and Game Code Sections 3503, 3513, and 3800 (and other sections and subsections) protect native birds, including their nests and eggs, from all forms of take. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Raptors (i.e., eagles, hawks, and owls) and their nests are specifically protected in California under Code Section 3503.5. Section 3503.5 states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto."

Bats and other non-game mammals are protected by California Fish and Game Code Section 4150, which states that all non-game mammals or parts thereof may not be taken or possessed except as provided otherwise in the code or in accordance with regulations adopted by the commission. Activities resulting in mortality of non-game mammals (e.g., destruction of an occupied nonbreeding bat roost, resulting in the death of bats), or disturbance that causes the loss of a maternity colony of bats (resulting in the death of young), may be considered "take" by the CDFW.

Project Applicability: Portions of the project site contain streams and associated riparian areas that may be regulated by the CDFW under California Fish and Game Code Section 1603. A very small area of riparian habitat is located on the residential project site, and two ephemeral streams and their associated riparian areas are located on the remaining portion of the site. Such areas would fall under jurisdiction of the CDFW, and a Lake and Streambed Alteration Agreement (LSAA) would be required if any impacts on these waters or riparian vegetation would occur. No streams would be impacted directly by any project components. Although riparian habitat impacts will be avoided to the extent feasible, there is some potential for riparian habitat to be impacted by VMP activities, which would necessitate an LSAA. Most native bird, mammal, and other wildlife species that occur on the project site and in the immediate vicinity are protected by the California Fish and Game Code.

3.3 Local

Portola Valley Municipal Code

The Town of Portola Valley Municipal Code contains all ordinances for Portola Valley. Title 15, Buildings and Construction, and Title 18, Zoning, includes regulations relevant to biological resources on the project site as discussed below.

Significant Trees. Chapter 15.12, Site Development and Tree Protection, establishes regulations for the preservation of significant trees, defined as:

- Coast live oak (*Quercus agrifolia*), 11.5 inches in diameter or greater
- Black oak (*Quercus kelloggii*), 11.5 inches in diameter or greater
- Valley oak (*Quercus lobata*), 11.5 inches in diameter or greater
- Blue oak (*Quercus douglasii*), 5 inches in diameter or greater.
- Coast redwood (*Sequoia sempervirens*), 17.2 inches in diameter or greater
- Douglas fir (*Pseudostuga menziesii*), 17.2 inches in diameter or greater.
- California bay (*Umbellularia californica*), 11.5 inches in diameter or greater
- Big leaf maple (*Acer macrophyllum*), 7.6 inches in diameter or greater
- Madrone (*Arbutus menziesii*), 7.6 inches in diameter or greater

To protect significant trees, Section 15.12.080 requires a development permit application if significant tree removal is proposed, which includes the site location of trees, proximity to structures, health and general conditions, and necessity for removal or other anticipated action. Following submission, the planning coordinator will refer the application to a member of the conservation committee. The planning coordinator, or the appropriate approving authority, may issue the permit with appropriate conditions upon receipt of requested reports.

Project Applicability: The residential project site and the area that would be impacted by the permanent access road, VMP activities, and hiking and equestrian trail include trees that qualify as significant trees under the Town ordinance. If any trees that qualify as significant trees were to be removed, a permit from the Town would need to be obtained. Vegetation management activities will generally avoid significant trees in the majority of the project site. However, according to the VMP, some trees which qualify as "significant" under the Town ordinance may need to be removed in areas of defensible space within 100 feet of structures. Removal of those trees will require a permit from the Town.

Creek Setbacks. Chapter 18.59, Creek Setbacks, establishes regulations for development adjacent to specific creeks within the Town of Portola Valley. Section 18.59.020 defines the following creeks as subject to creek

setback provisions: Los Trancos Creek, Corte Madera Creek, and Sausal Creek. For these creeks, Section 18.59.030 discusses setback requirements:

For building permits and site development permits, setbacks may be measured from either the top of creek bank or ordinary high water mark (see definitions under Sections 18.59.040 and 18.59.050 below) at the option of the property owner:

1. Parcels less than one acre in size - Thirty feet from top of bank, or thirty-five feet from ordinary high water mark.
2. Parcels of one acre to two and one-half acres—Forty-five feet from top of bank or fifty feet from ordinary high water mark.
3. Parcels of two and one-half acres or more—Fifty-five feet from top of bank or sixty feet from ordinary high water mark.

For planned unit developments, setbacks may be modified by the planning commission to achieve better consistency with the purposes of this chapter as part of the planned unit development process to increase safety as well as protect the natural environment. For new subdivisions, parcels shall have a minimum creek setback of fifty-five feet from the top of creek bank, but this setback may be required to be enlarged as part of the subdivision process to increase safety as well as protect the natural environment. Sensitive habitats, floodplains, and eroding creek banks should be included within the setback area. Persons proposing development along creeks should consult Section 18.32, F-P (Floodplain) Combining District Regulations, contained in the zoning regulations as these provisions affect development in the floodplains along creeks.

Project Applicability: None of the three creeks specified in the ordinance occur within the project site. Although Los Trancos Creek is present east of the residential project site (across Alpine Road from the site), the distance between the project site and Los Trancos Creek exceeds the maximum required creek setback. Therefore, no riparian setback is required by the Town of Portola Valley (though see Impact 6.3.2).

3.3.1 Town of Portola Valley General Plan

The Town of Portola Valley General Plan includes goals and objectives relevant to the environmental factors potentially affected by the proposed project, including the following:

4426 Goal: Water Resources - Protect and conserve water resources in the town including imported water.

Objectives

1. To protect the watershed from pollution, debris, excess sediment and invasive plants.
2. To reduce consumption of water through conservation and more efficient appliances and fixtures.

3. To use drought resistant native plants in developments.
4. To maximize the collection and recycling of natural-sourced and public water.
5. To protect and preserve ground water resources and aquifer recharge areas.

4427 Goal: Living Environment - Protect the natural environments for plants, animals and humans. Objectives

1. To protect the interdependent plants and animals that together comprise a balanced ecosystem in our forests, grasslands, chaparral areas, and creek systems.
2. To protect extensive areas of native vegetation that support wildlife.
3. To protect forests and forms of vegetation that help contribute to air quality by absorbing carbon dioxide.
4. To protect the creek systems in the town.
5. To promote rehabilitation of ecosystems.
6. To control, reduce and eliminate invasive species.

Additionally, the project site is directly addressed as part of the Alpine Scenic Corridor Plan, which contains the following text:

"Steep wooded canyon and hillside (Stanford land); extreme care needed in design and construction if lands are developed in the future; maintain as permanent open space if possible."

Project Applicability: The project is located within the Town of Portola Valley General Plan area and would need to conform to all applicable requirements.

Section 4. Environmental Setting

4.1 General Project Area Description

The approximately 76-ac project site is located in the *Palo Alto*, *California* 7.5-minute USGS quadrangle. The area is generally characterized as forested foothills intermingled with rural residential development. The project site is bounded by rural residential development to the north, west and south, and Alpine Road to the east (Figure 1). Los Trancos Creek and Felt Lake are located on Stanford lands just beyond Alpine Road to the east. The project site is largely undeveloped, but the area proposed for development is currently occupied by the Alpine Rock Ranch, a horse boarding facility with stables. Elevations within the project site range from approximately 323 feet to 678 feet above sea level. The project site is underlain by three soil types: (1) Los Gatos loam, 30 to 75 percent slopes, (2) Maymen gravelly loam, 30 to 50 percent slopes, and (3) Flaskan sandy clay loam, 5 to 9 percent slopes (NRCS 2019).

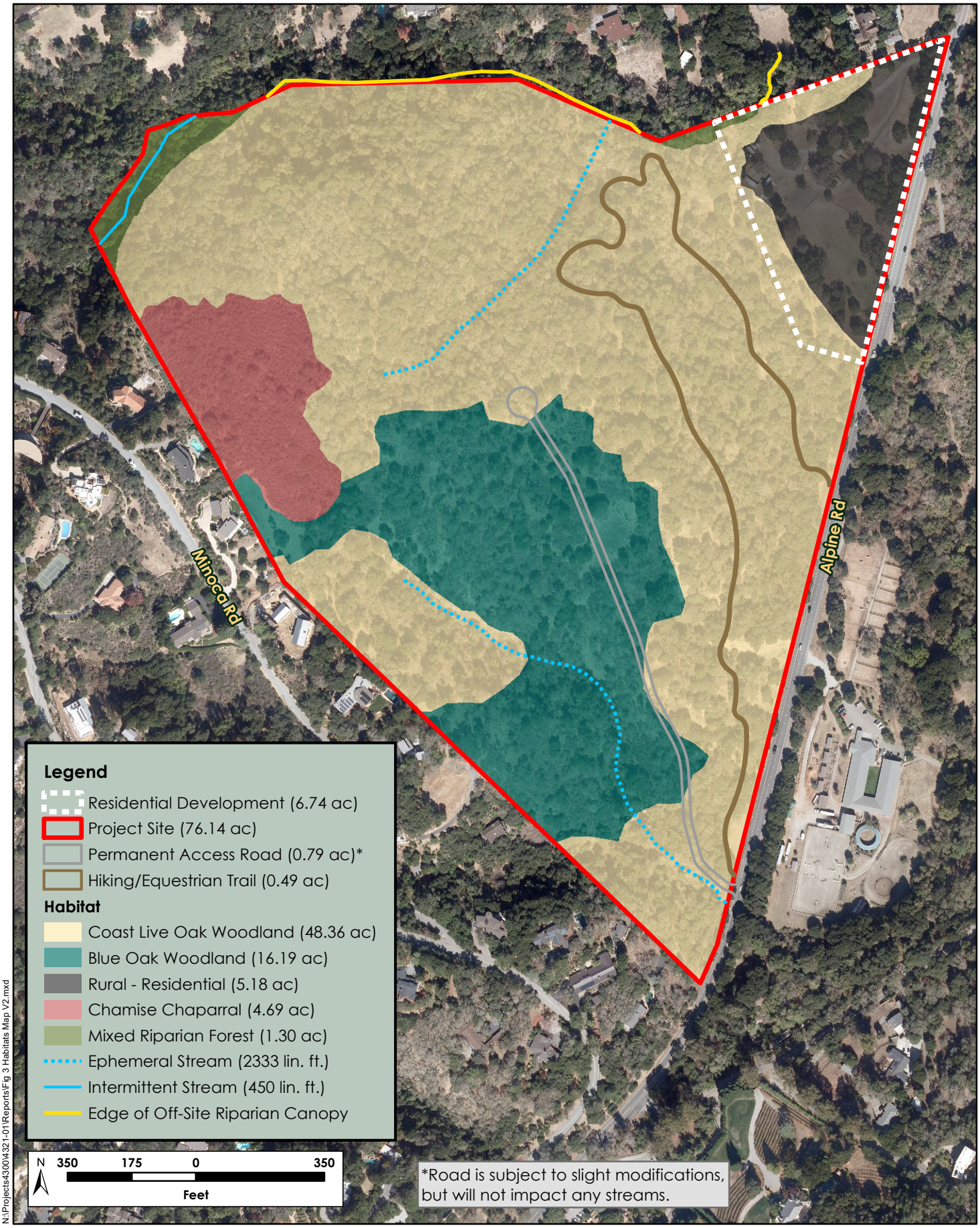
4.2 Biotic Habitats

Reconnaissance-level surveys identified six habitat types/land uses on the project site: coast live oak woodland (48.36 ac), blue oak woodland (16.19 ac), rural residential (5.18 ac), chamise chaparral (4.69 ac), mixed riparian forest (1.72 ac), and streams, including intermittent (450 linear feet) and ephemeral (2,333 linear feet) streams (Figure 3). These habitats are described in detail below. Plant species observed during the reconnaissance survey, and during the focused special-status plant survey on the residential project site, are listed in Appendix A.

4.2.1 Coast Live Oak Woodland

Vegetation. This habitat type occurs throughout the majority of the project site, typically on steeper north and east facing slopes (Photo 1). The vegetation is dominated by mature coast live oak trees. In many areas, the canopy is co-dominated by blue oak; however, the primary constituent tree within this habitat type is always coast live oak. Sparse California buckeye (*Aesculus californica*) and California bay also occur in the canopy layer. The canopy in this habitat type is fairly continuous, however small open areas do occur which are characterized by herbaceous vegetation dominated by ripgut brome (*Bromus diandrus*),

Photo 1. Dense coast live oak woodland occurs throughout the project site.



N:\Projects4300\4321-01\Reports\Fig 3 Habitats Map V2.mxd

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 3. Habitats Map
Stanford Wedge Project Biological Resources Report (4321-01)
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Torrey's melica (*Melica torreyana*), Italian thistle (*Carduus pycnocpehalus*), and Ithuriel's spear (*Triteleia laxa*). Other open areas contained a dense shrub layer consisting primarily of poison oak (*Toxicodendron diversilobum*) and sticky monkeyflower (*Diplacus aurantiacus*). Beneath the tree canopy, the understory layer is generally poorly developed and sparse, with a species composition similar to more open areas of this habitat type. This habitat type is best described as the *Quercus agrifolia – Quercus douglasii* association under the Manual of California Vegetation (Sawyer et al. 2009). This habitat type extends a short distance into the residential project site, along the northern and western edges of the 6.7-ac area where residential development is proposed, and it is present along portions of the proposed access road as well.

Wildlife. Woodlands dominated by oaks typically support diverse animal communities in California. Coast live oaks provide abundant food resources, including acorns and invertebrates, as well as substantial shelter for animals in the form of cavities, crevices in bark, and complex branching growth. The oak woodlands on the project site are extensive and support large numbers of woodland-associated species. Thus, a variety of common wildlife species are expected to occur here. Leaf litter and fallen logs provide cover and foraging habitat for California slender salamanders (*Batrachoseps attenuatus*) and western fence lizards (*Sceloporus occidentalis*), and reptiles such as the northern alligator lizard (*Elgaria multicarinata*) are also expected to occur in this habitat. The trees and shrubs provide habitat for breeding birds such as the Bewick's wren (*Thryomanes bewickii*), chestnut-backed chickadee (*Poecile rufescens*), Anna's hummingbird (*Calypte anna*), dark-eyed junco (*Junco hyemalis*), California scrub-jay (*Aphelocoma californica*), Steller's jay (*Cyanocitta stelleri*), oak titmouse (*Baeolophus inornatus*), Hutton's vireo (*Vireo huttoni*), and western screech-owl (*Megascops kennicottii*), as well as wintering birds including the hermit thrush (*Catharus guttatus*), ruby-crowned kinglet (*Regulus calendula*), and Townsend's warbler (*Setophaga townsendi*). Mammals, including the native raccoon (*Procyon lotor*) and nonnative eastern gray squirrel (*Sciurus carolinensis*) and eastern fox squirrel (*Sciurus niger*), may occur in the coast live oak forest, and mule deer (*Odocoileus hemionus*) were observed in this habitat during the site visit. Additionally, a large number of oak trees on the site support suitable day roost habitat for crevice-roosting bats including pallid bat (*Antrozous pallidus*), Yuma myotis (*Myotis yumanensis*), and California myotis (*Myotis californicus*).

4.2.2 Blue Oak Woodland

Vegetation. Blue oak woodland generally occurs on south facing slopes, near the top of the small hill within the project site. This habitat type is not present on the 6.7-ac residential project site, though it is present along portions of the proposed access road. The canopy here is dominated by blue oaks, although it does contain some component of coast live oaks, which varies from uncommon to somewhat frequent depending on slope, exposure, and water availability. The canopy here is significantly more open that the adjacent coast live oak woodland, containing fairly large expenses of high quality grassland and shrub stands between mature blue oak trees. Herbaceous vegetation within the grassland is characterized by ripgut brome, foxtail barley (*Hordeum murinum*), blue eyed grass (*Sisyrinchium bellum*), blue dicks (*Dichelostemma capitatum*), and sparse Coast Range mule ears (*Wyethia glabra*) (Photo 2). The occasional dense shrub layer primarily consists of California sagebrush (*Artemesia californica*) and sticky monkeyflower. This habitat type is best described as the *Quercus douglasii – Quercus agrifolia* association under the Manual of California Vegetation (Sawyer et al. 2009).

Wildlife. Blue oak woodlands produce acorns used as forage by a variety of species, including acorn woodpeckers (*Melanerpes formicivorus*), Nuttall's woodpeckers (*Dryobates nuttallii*), California scrub-jays, and mule deer. Snags and trees containing cavities provide nesting habitat for birds such as the western bluebird (*Sialia mexicana*), western screech-owl (*Megascops kennicottii*) and northern flicker (*Colaptes auratus*) as well as potential roost sites for bats. Raptors, including the red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and great horned owl (*Bubo virginianus*), may also nest in these woodlands, and coyotes (*Canis latrans*) and bobcats (*Lynx rufus*) may forage here.

Photo 2. Coast range mule ears are scattered within more open areas of blue oak woodland.

4.2.3 Rural Residential

Vegetation. The rural residential land use type within the project site consists of the Alpine Rock Ranch, a horse boarding stable (Photo 3). Numerous horse paddocks and horse pastures are scattered in this area, and include outbuildings to store supplies and hay. A number of trailers are also stored here. The tree canopy is sparse, and dominated by mature coast live oak, blue oak, and valley oak individuals. Understory vegetation consists of non-native herbaceous plants, including significant amounts of Italian thistle, milk thistle (*Silybum marianum*), wild radish (*Raphanus sativus*), ripgut brome, wild oat (*Avena* sp.), and Italian rye grass (*Festuca perennis*). The understory vegetation is mowed on a yearly basis in order to control fuel accumulation, and this constant disturbance precludes the establishment of much native vegetation.

Photo 3. Highly disturbed rural residential land cover type.

Wildlife. The structures within the rural residential habitat provide nesting sites for several bird species including barn swallows (*Hirundo rustica*), black phoebes (*Sayornis nigricans*), Bewick's wrens, and mourning doves (*Zenaida macroura*). No suitable roosting habitat for bat maternity colonies or large bat roosts was observed in the structures, but individual bats such as Yuma myotis and California myotis may occasionally day-roost in

crevices observed on the structures. Scattered oak trees in the rural residential area provide habitat for small numbers of wildlife species described in Sections 4.2.1 and 4.2.2 above.

4.2.4 Chamise Chaparral

Vegetation. This habitat type occurs at the relatively flat top of the small hill in the western portion of the project site (Photo 4). This habitat type is not present on the 6.7-ac portion of the site that would be developed, but it is present at the northwestern end of the proposed access road. The area is characterized by dense, tall chamise (*Adenostoma fasciculatum*) with occasional poison oak. Scattered, isolated mature coast live oak trees also occur. The shrub layer here is 6-10 feet tall and is a near monoculture of chamise in many areas, likely owing to the long history of fire exclusion in this region. This habitat type is best described as the *Adenostoma fasciculatum* association under the Manual of California Vegetation (Sawyer et al. 2009).

Photo 4. Chamise chaparral cover type.

Wildlife. Amphibians are typically scarce in the chamise chaparral habitats because of the very dry conditions, and many other wildlife species that occur in chaparral habitats, such as the California pocket mouse (*Chaetodipus californicus*), either derive moisture directly from their food or synthesize their water metabolically from seeds. Mammals that forage in chaparral habitat and use it for cover include the coyote, bobcat, and brush rabbit (*Sylvilagus bachmani*). Bird species that nest in chaparral habitat include the California thrasher (*Toxostoma redivivum*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), California quail (*Callipepla californica*), wrentit (*Chamaea fasciata*), and Anna's hummingbird. Yellow-rumped warblers (*Setophaga coronata*) and several species of sparrows forage in chaparral habitat during the winter. Reptiles that occur in this habitat include the gopher snake (*Pituophis catenifer*), western rattlesnake (*Crotalus oreganus*), southern alligator lizard (*Elgaria multicarinata*), striped racer (*Masticophis lateralis*), and western fence lizard.

4.2.5 Mixed Riparian Forest

Vegetation. The major riparian zone occurs just to the north of the project site, and is associated with an unnamed intermittent stream that is a tributary of Los Trancos Creek. Two small areas of this riparian zone intersect the project site, one in the northwest corner, and one along the north side of the project site. The vegetation within this habitat primarily consists of a mature overstory of California bay, California buckeye, and coast live oak individuals (Photo 5). Understory vegetation includes California blackberry (*Rubus ursinus*), poison oak, and pacific sanicle (*Sanicula crassicaulis*). This riparian zone is best described as the *Umbellularia californica* alliance under the Manual of California Vegetation (Sawyer et al. 2009).

Mixed riparian forest barely extends into the northwestern corner of the 6.7-ac residential project site, although no stream channels are present on this portion of the site. Mixed riparian forest is present adjacent to the northern end of the proposed hiking/equestrian trail, but not within this project feature's impact areas. Mixed riparian forest is also present in the northwest portion of the project site that would be subjected to VMP activities.

Photo 5. Dense California bay occurs in the mixed riparian habitat type.

Wildlife. Mixed riparian forest and woodland habitats in California generally support rich animal communities and contribute disproportionately to landscape-level species diversity. The presence of water during a large portion of the year and abundant invertebrate fauna provide foraging opportunities for many animal species, and the diverse habitat structure provides cover and breeding opportunities. As a result, the mixed riparian forest and woodland habitat on the project site provides cover and foraging habitat for a wide variety of terrestrial vertebrates (e.g., amphibians, reptiles, and mammals), as well as several guilds of birds, including insectivores (e.g., warblers, flycatchers), seed-eaters (e.g., finches), and raptors. Cavity-nesting birds (e.g., swallows and woodpeckers) may nest in the large sycamores in this habitat type.

Several species of amphibians and reptiles occur in the mixed riparian forest and woodland habitats. Leaf litter, downed tree branches, low-growing forbs, and fallen logs provide cover for the ensatina (*Ensatina eschscholtzii*), California newt (*Taricha torosa*), western toad (*Anaxyrus boreas*), and Pacific chorus frog (*Pseudacris regilla*). Reptile species found in this habitat include the western fence lizard, western skink (*Eumeces skiltonianus*), southern alligator lizard, and ringneck snake (*Diadophis punctatus*) among others. Among the species of birds that use the mixed riparian forest and woodland habitat on the site for breeding are the Pacific-slope flycatcher (*Empidonax difficilis*), California scrub-jay, and bushtit (*Psaltriparus minimus*). Trees in this habitat provide limited nesting opportunities for smaller raptors, such as the Cooper's hawk (*Accipiter cooperii*) and red-shouldered hawk (*Buteo lineatus*), but no existing nests of raptors were observed during the reconnaissance survey.

Small mammals, such as the ornate shrew (*Sorex ornatus*) and broad-footed mole (*Scapanus latimanus*), use the mixed riparian forest and woodland for breeding and foraging. Medium-sized mammals such as the raccoon, striped skunk (*Mephitis mephitis*), bobcat, and nonnative Virginia opossum (*Didelphis virginiana*) are also present in this habitat. Mule deer are common in the surrounding habitats and use mixed riparian forest and woodland areas for access to water and foraging. Several species of bats, including the Yuma myotis and Mexican free-tailed bat (*Tadarida brasiliensis*), forage over mixed riparian forest and woodland habitats.

4.2.6 Intermittent and Ephemeral Streams

Vegetation. One unnamed intermittent stream occurs on the northwest corner of the project site in mixed riparian habitat (Figure 3). This stream generally flows west to east, and is a tributary of Los Trancos Creek, located on the east side of Alpine Road. This stream ranges in width from approximately 3 to 5 feet wide. This stream contained slowly flowing, shallow water during the April 2019 survey, and it likely completely dries during the spring. Bank heights vary along the stream, but in many places the channel is very deep, with a vertical relief of up to 10 feet. The banks of this stream are sparsely vegetated in some areas and more densely vegetated in other areas with a mixture of native and non-native grasses and herbs including ripgut brome, miner's lettuce (*Claytonia perfoliata*), poison oak, and maidenhair fern (*Adiantum jordanii*) (Photo 5).

Two ephemeral streams also occur on the project site. These streams are relatively small and only flow following precipitation events (Photo 6). The centrally-located stream generally flows north to southwest. The southern stream generally flows northwest to south. Both streams range in width from approximately 1 to 2 feet wide. A dense layer of native and non-native grasses and herbs including ripgut brome, miner's lettuce, and cleavers (*Galium aparine*) overhang the channel banks of both ephemeral streams.

Photo 6. Ephemeral Stream on the central portion of the project site.

Wildlife. Because ephemeral streams only flow during or shortly after precipitation events, these habitats do not support populations of fishes. Also, they do not support breeding amphibians due to lack of ponding depth and limited duration of flows. However, amphibians such as Sierran chorus frog (*Hyliola regilla*) and western toad (*Anaxyrus boreas*) may occasionally occur in the ephemeral streams during the wet seasons.

Intermittent streams support water seasonally; thus, they have more value to wildlife and a greater variety of wildlife species may be present in this habitat. Due to the very shallow nature of the intermittent stream on the project site, fish are not expected to occur there. Among the species of birds that use the intermittent stream habitat, green herons (*Butorides virescens*) may occasionally forage in the intermittent stream, and insectivorous birds forage aerially on insects over the stream when water is present. Animals that are present in the surrounding coast live oak woodland habitats, such as dusky-footed woodrat and mule deer, may also use these habitats opportunistically, utilizing the temporarily flowing water for drinking. Several species of bats, including the Yuma myotis (*Myotis yumanensis*) and Mexican free-tailed bat (*Tadarida brasiliensis*), forage over stream habitat for aquatic insects. Amphibians such as the sierra chorus frog and western toad may occasionally disperse through the stream during wet periods.

Section 5. Special-Status Species and Sensitive Habitats

CEQA requires assessment of the effects of a project on species that are protected by state, federal, or local governments as "threatened, rare, or endangered"; such species are typically described as "special-status species". For the purpose of the environmental review of the project, special-status species have been defined as described below. Impacts on these species are regulated by some of the federal, state, and local laws and ordinances described in Section 3.0 above.

For purposes of this analysis, "special-status" plants are considered plant species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, rare, or a candidate species.
- Listed by the CNPS as CRPR 1A, 1B, 2, 3, or 4.

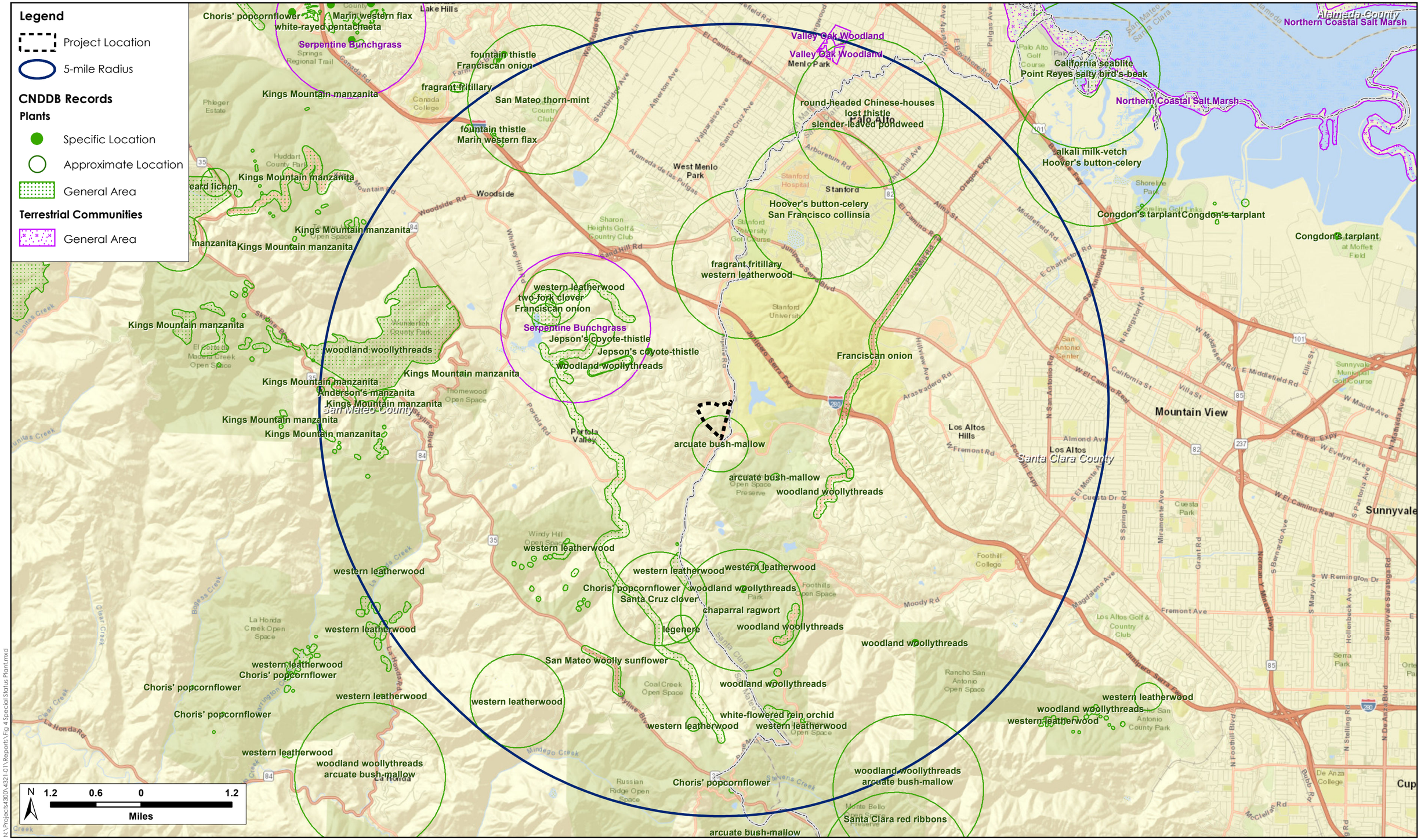
For purposes of this analysis, "special-status" animals are considered animal species that are:

- Listed under FESA as threatened, endangered, proposed threatened, proposed endangered, or a candidate species.
- Listed under CESA as threatened, endangered, or a candidate threatened or endangered species.
- Designated by the CDFW as a California species of special concern.
- Listed in the California Fish and Game Code as fully protected species (fully protected birds are provided in Section 3511, mammals in Section 4700, reptiles and amphibians in Section 5050, and fish in Section 5515).

Information concerning threatened, endangered, and other special-status species that potentially occur on the project site was collected from several sources and reviewed by H. T. Harvey & Associates biologists as described in Section 2.1 above. Figure 4 depicts CNDDB records of special-status plant species in the general vicinity of the project site and Figure 5 depicts CNDDB records of special-status animal species. These generalized maps show areas where special-status species are known to occur or have occurred historically.

5.1 Special-Status Plant Species

The CNPS (2020) and CNDDB (2020) identify 74 special-status plant species as potentially occurring in at least one of the nine USGS quadrangles containing or surrounding the project site for CRPR 1 or 2 species, or in San Mateo County for CRPR 3 and 4 species. Sixty-four of those potentially occurring special-status plant species were determined to be absent from the project site for at least one of the following reasons:



N:\Projects\4300\4321-01\Reports\Fig 4 Special Status Plant.mxd

H. T. HARVEY & ASSOCIATES
Ecological Consultants

Figure 4. Special-Status Plant Species
Stanford Wedge Project Biological Resources Report (4321-01)
January 2021

Legend

- Project Location
- 5-mile Radius
- Critical Habitat
- Critical Habitat

CNDDB Records

Wildlife

- Specific Location
- Approximate Location
- General Area

Note: CTS = California Tiger Salamander, CRLF = California Red-legged Frog

N 1.2 0.6 0 1.2

Miles

N:\Projects\4300\4321-01\Reports\Fig 5 Special Status Animal.mxd

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Ecological Consultants

Figure 5. Special-Status Animal Species

Stanford Wedge Project Biological Resources Report (4321-01)

January 2021

(1) lack of suitable habitat types; (2) absence of specific microhabitat or edaphic requirements, such as serpentine soils; (3) the elevation range of the species is outside of the range on the project site; and/or (4) the species is considered extirpated. For the purposes of this analysis, we excluded plant species which only occur on the western slope of the Santa Cruz Mountains under the "lack of suitable habitat types" rationale. The distribution of these plant species is restricted to areas subject to coastal influence (i.e., moderated temperatures and increased dry season moisture associated with the marine layer). Thus, an ostensibly suitable habitat type such as cismontane woodland, present on the project site, may not be suitable for a given species due to lack of coastal influence within that habitat type. Appendix B lists these plants along with the basis for the determination of absence. Suitable habitat, edaphic requirements, and elevation range were determined to be present on the project site for 10 plant species: bent-flowered fiddleneck (*Amsinckia lunaris*), western leatherwood (*Dirca occidentalis*), woodland woollythreads (*Monolopia gracilens*), Santa Cruz clover (*Trifolium buckwestiorum*), California androsace (*Androsace elongata ssp. acuta*), Brewer's calandrinia (*Calandrinia breweri*), Oakland star-tulip (*Calochortus umbellatus*), bristly leptosiphon (*Leptosiphon acicularis*), and Michael's rein orchid (*Piperia michaelii*), and California bottle-brush grass (*Elymus californicus*). These species are discussed in detail in Appendix C.

On May 8, 2019, H. T. Harvey plant ecologist M. Mosher conducted a focused survey for these potentially occurring species within the 6.7-ac residential project site. He had determined that the residential project site did not provide suitable habitat for Michael's rein orchid or Brewer's calandrinia, and the focused special-status plant survey on May 8 was conducted at an appropriate time of year to detect the other eight species, had they been present. He did not observe any of these species, and therefore, no special-status plant species are present on the 6.7-ac residential project site. Nevertheless, these 10 species have some potential to occur on the remainder of the 76-ac site, including the entirety of the areas that would be impacted by vegetation management activities. In addition, all 10 species could potentially occur within the area where the permanent access road and hiking/equestrian trail would be constructed.

5.2 Special-Status Animal Species

The legal status and likelihood of occurrence on the project site of special-status animal species known to occur, or potentially occurring, in the project region are presented in Table 1. Most of the special-status species listed in Table 1 are not expected to occur on the project site because it lacks suitable habitat, is outside the known range of the species, and/or is isolated from the nearest known extant populations by development or otherwise unsuitable habitat. Animal species not expected to occur on the project site, including the residential project site and the potential fire road area, for these reasons include the Central California coast steelhead, California tiger salamander (*Ambystoma californiense*), San Francisco garter snake (*Thamnophis sirtalis tetrataenia*), bank swallow (*Riparia riparia*), marbled murrelet (*Brachyramphus marmoratus*), Bay checkerspot butterfly (*Euphydryas editha bayensis*), foothill yellow-legged frog (*Rana boylii*), California giant salamander (*Dicamptodon ensatus*), Santa Cruz black salamander (*Aneides flavipunctatus niger*), norther harrier (*Circus hudsonius*), peregrine falcon (*Falco peregrinus*), burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and American badger (*Taxidea taxus*).

Yellow warblers (*Setophaga petechia*) and long-eared owls (*Asio otus*) are considered California species of special concern only when breeding, yet these species would occur on the project site only as migrants or dispersants (or in the case of long-eared owls, potential winter visitors). Bald eagles are known to nest in large eucalyptus near Felt Lake, but suitable nest sites and foraging habitat are absent from the project site and its immediate vicinity. The monarch butterfly (*Danaus plexippus*) and mountain lion may also occur on the project site as visitors. However, milkweeds (*Asclepias* spp.), which serve as the larval hostplant for monarch butterflies, were not observed on the site during surveys, and this species is a scarce breeder on the San Francisco peninsula, so monarchs are expected to occur only as foragers during dispersal and migration. Similarly, mountain lions are not expected to den or breed on the site due to the level of human activity associated with surrounding residential development, so this species is not expected to occur on the site other than as an occasional visitor.

Three special-status animal species, the white-tailed kite (*Elanus leucurus*), pallid bat (*Antrozous pallidus*), and San Francisco dusky-footed woodrat have the potential to breed on the project site, and may therefore be affected by project activities. Two additional special-status animal species, the California red-legged frog and western pond turtle (*Actinemys marmorata*), have the potential to occur on the project site. Although they are not expected to breed or to occur regularly or in large numbers due to a lack of suitable breeding or nesting habitat on the site, they may breed nearby, and they therefore warrant special consideration. Expanded descriptions for each of these species are provided in Appendix C.

Table 1. Special-Status Animal Species, Their Status, and Potential Occurrence on the Project site

Name	*Status	Habitat	Potential for Occurrence on the Project site
Federal or State Endangered, Threatened, or Candidate Species			
Monarch butterfly (*Danaus plexippus*)	FC	Adults forage on a wide variety of flowers for nectar and occur in a variety of habitats, but egg-laying and larval development occurs on milkweeds, which are more limited in distribution. Large winter roosts form in Mexico and, more sparingly, in scattered locations along the central and southern California coast.	**Absent as Breeder.** Milkweeds were not observed on the site during surveys, and this species is a scarce breeder on the San Francisco peninsula, so monarchs are expected to occur only as foragers during dispersal and migration.
Bay checkerspot butterfly (*Euphydryas editha bayensis*)	FT	Restricted to areas with shallow serpentine-derived or similar soils that have substantial populations of dwarf plantain, a primary larval host plant, and purple owl's-clover, a secondary larval and adult host plant.	**Absent.** No suitable serpentine grassland habitat is present on the project site. Thus, the species is determined to be absent.
Central California Coast steelhead (*Oncorhynchus mykiss*)	FT	Cool streams with suitable spawning habitat and conditions allowing migration between spawning and marine habitats.	**Absent.** This species (and USFWS-designated critical habitat) is present in Los Trancos Creek directly east of Alpine Road. However, no suitable aquatic habitat is present on the project site or in any streams immediately adjacent to the project site. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project site
California tiger salamander (*Ambystoma californiense*)	FT, ST	Vernal or temporary pools in annual grasslands or open woodlands.	**Absent.** Although small patches of grassland habitat are present, no vernal or temporary pools are present on or adjacent to the project site. Further, populations have largely been extirpated from the project region due to habitat loss, and the species is now considered absent from most of the project vicinity. The nearest known breeding locations are ponds on the southwest side of Juniper Serra Boulevard, near the main breeding site at Lagunita on the Stanford campus, approximately 1.9 mi northeast of the project site (CNDDB 2020). Determined to be absent.
California red-legged frog (*Rana draytonii*)	FT, CSSC	Streams, freshwater pools, and ponds with emergent or overhanging vegetation. May use the undersides of old boards and other debris to rest or aestivate within riparian areas.	**Absent as Breeder.** No suitable aquatic breeding habitat is present on the project site, and there are no known, extant populations of the species in off-site areas close to the site. A breeding population is present in Matadero Creek approximately 1.75 mi east of the project site and formerly existed in San Francisquito Creek approximately 1.5 miles north of the project site (CNDDB 2020). One individual was also observed in Los Trancos Creek in 2007. If the species is present and breeding in off-site areas, dispersing individuals could occasionally occur on the project site, albeit infrequently and in low numbers. If the species disperses onto the site, it is most likely to occur in the unnamed intermittent stream along the northern edge of the site.

Name	*Status	Habitat	Potential for Occurrence on the Project site
Foothill yellow-legged frog (*Rana boylii*)	CSSC, SC	Occurs in streams with riffles and cobble-sized rocks, with slow water flow. Suitable breeding habitat is composed of stream reaches with consistently slow-moving flows surrounded by upland non-breeding habitat.	**Absent.** Suitable habitat for the foothill yellow-legged frog is present in San Mateo County along coast side streams in the Santa Cruz Mountains. However, there are only two recorded occurrences of the species in San Mateo County in recent history, in 1999 at Pescadero Creek County Park and in Portola Redwoods State Park in 1995 (CNDDB 2020). Thus, the species is likely rare and of very limited distribution, if it still occurs at all, in the County. Furthermore, no suitable habitat is present on the project site, as the streams on the project site and immediately north of the site lack the open canopy and cobbly substrate typical of occupied habitat. Determined to be absent.
San Francisco garter snake (*Thamnophis sirtalis tetrataenia*)	FE, SE, SP	Prefer densely-vegetated ponds with an open water component near open hillsides where they can sun themselves, feed, and find cover in rodent burrows (Larsen 1994 as cited in USFWS 2007a). May also occupy ponds or pools in or next to streams, streams, lakes, and reservoirs. The species prefers a dense cover of vegetation, such as willows (*Salix* spp.), bulrushes (*Schoenoplectus* spp.), and cattails (*Typha* spp).	**Absent.** The project site is in an intergrade zone composed of hybrids between the San Francisco garter snake and the non-special-status red-sided garter snake (*Thamnophis sirtalis sirtalis*) (Barry 1994). No high-quality aquatic or wetland habitat is present on the project site. Although this species will occur along creeks, the two drainages on the project site and the tributary to Los Trancos Creek immediately north of the project site do not support water year round, do not provide dense cover, and lack large populations of frogs that compose this species' primary prey.
Bank swallow (*Riparia riparia*)	ST	Nests colonially and inhabits isolated places where fine-textured or sandy vertical bluffs or riverbanks are available in which to dig burrows 2 to 3 feet deep.	**Absent.** No suitable nesting habitat is present on the project site, and breeding is only known in the region from the Pajaro River in Santa Clara County, Point Ano Nuevo in San Mateo County, and coastal bluffs in San Francisco.

Name	*Status	Habitat	Potential for Occurrence on the Project site
Bald eagle (*Haliaeetus leucocephalus*)	SE, SP	Occurs in forested landscapes with mature trees and easy access to an extensive and diverse prey base. Builds nests in tall, sturdy trees at sites that are in relatively close proximity to aquatic foraging areas and isolated from human activities.	**Absent.** Bald eagles have nested recently in large eucalyptus trees east of the project site at Felt Lake (CNDDB 2020). No trees large enough to provide suitable nesting sites are present on or very close to the project site, lacks suitably open foraging habitat and prey. Determined to be absent.
Marbled murrelet (*Brachyramphus marmoratus*)	FT, ST	Breeding occurs in mature, coastal coniferous forest with nests built in tall trees.	**Absent.** The species was last recorded in 2007 in old growth coniferous forest over 8 miles to the northwest of the project site (CNDDB 2020). However, no suitable old growth habitat is present on the project site or nearby areas. Determined to be absent.
Mountain lion (*Puma concolor*)	SC	Occurs in a variety of natural habitats, but primarily in areas more remote from intensive urban development. Home ranges are large, and the species may occur closer to suburban areas on occasion.	**Absent as Breeder.** Not expected to den or breed on the site due to the level of human activity associated with surrounding residential development. May occur on the site as an occasional visitor.
California Species of Special Concern			
California giant salamander (*Dicamptodon ensatus*)	CSSC	Occurs in moist forests and riparian areas near clear, cold streams, seeps and ponds. Prefers to breed in cold, clear running water but may also breed in lakes and ponds.	**Absent.** This species is found in the Santa Cruz Mountains and foothills, typically in moist forests and riparian zones in or near streams or seeps. There are numerous records, historical and recent, in the project vicinity (CNDDB 2020). Despite the presence of the three streams on the project site and one drainage north/northwest of the project site, these aquatic features do not support year-round water which is necessary for larval and adult forms (Nussbaum et al. 1983, Stebbins 2003). Further, the site lacks the very mesic environs where this species is more regularly found). Determine to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project site
Santa Cruz black salamander (*Aneides flavipunctatus niger*)	CSSC	Occurs along streams in forested habitats in the Santa Cruz Mountains.	**Absent.** This species is found in the Santa Cruz Mountains and foothills, typically in moist forests and riparian zones in or near streams or seeps, such as those present along the northern portion of the residential project site. There are numerous historical records in the project vicinity (CNDDB 2020). Despite the presence of the three drainages on the project site, the site lacks the very mesic environs where this species is more regularly found). Determined to be absent.
Western pond turtle (*Actinemys marmorata*)	CSSC	Permanent or nearly permanent water in a variety of habitats. Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas (Jennings and Hayes 1994).	**Absent as Breeder.** No suitable aquatic habitat is present on the project site, as the on-site streams flow for only a short duration. However, the species is known to occur at Felt Lake (Launer 2016), approximately 0.25 mile east of the site, and elsewhere in the project vicinity in San Francisquito Creek and Lagunita approximately 2.25 miles to the north. This species is likely present in Los Trancos Creek just to the east of the site. Despite the lack of suitable aquatic and upland habitat, dispersing individuals could potentially cross Alpine Road and make their way to the project site, including the residential project site and at least the eastern end of the potential fire road area, on rare occasions.
Northern harrier (*Circus cyaneus*)	CSSC (nesting)	Nests in marshes and moist fields, forages over open areas.	**Absent.** No suitable nesting or foraging is present on the project site. Determined to be absent.
Burrowing owl (*Athene cunicularia*)	CSSC	Nests and roosts in open grasslands and ruderal habitats with suitable burrows, usually those made by California ground squirrels (*Spermophilus beecheyi*).	**Absent.** No suitable nesting, roosting, or foraging habitat (i.e., open grasslands with ground squirrel burrows) is present on the project site, and this species is not known or expected to nest anywhere in the vicinity. Determined to be absent.

Name	*Status	Habitat	Potential for Occurrence on the Project site
Long-eared owl (*Asio otus*)	CSSC	Frequents dense riparian and live oak thickets near meadow edges, and nearby woodland and forest habitats, but also may be found in dense conifer stands at higher elevations. This species forages over open areas, where it hunts for rodents and small birds. The long-eared owl breeds from valley foothill hardwood up to ponderosa pine habitats from early March to late July	**Absent as Breeder.** Riparian habitat on the north portion of the residential project site and oak woodland throughout the project site provides ostensibly suitable breeding habitat. However, this species breeds in such limited numbers and locations in the region that there is no reasonable expectation that it would breed on or near the project site. At most, this species may occur as a very infrequent dispersant or winter visitor, when it may roost or forage on the project site.
Short-eared owl (*Asio flammeus*)	CSSC	Occurs in open habitats such as grasslands, wet meadows, and marshes. It requires tall, herbaceous vegetation for nesting or daytime refuge.	**Absent.** No open grassland habitat is present on the project site. This species is known to occur closer to the bay (Cornell Lab of Ornithology 2020) where larger expanses of grassland/wetland habitat is present. Determined to be absent.
Yellow warbler (*Setophaga petechia*)	CSSC (nesting)	Nests in riparian habitat, especially that dominated by cottonwoods, willows, and sycamores.	**Absent as Breeder.** Riparian habitat on and adjacent to the site lacks the tree species with which this species is typically associated. Occurs only as a migrant.
Pallid bat (*Antrozous pallidus*)	CSSC	Forages over many habitats; roosts in caves, rock outcrops, buildings, and tree crevices or cavities.	**May be Present.** Historically, pallid bats were likely present in a number of locations throughout the project region, but they have been extirpated from lowland bayside lands in the eastern portion of the county. The species is known to occur in the western portion of the county, and they likely forage and roost in suitable habitat in the foothills in the project region. Individuals and maternity colonies may occasionally forage on, and roost in crevices in the trees on the project site.

Name	*Status	Habitat	Potential for Occurrence on the Project site
Townsend's big-eared bat (*Corynorhinus townsendii*)	CSSC	Roosts in caves, mine tunnels, and occasionally in deep crevices in trees such as redwoods or in abandoned buildings, in a variety of habitats.	**Absent.** The species is a rare resident in the coastal region of San Mateo County, potentially roosting in old mines, caves, very large cavities in redwood trees, and barns and abandoned buildings in the Santa Cruz Mountains. It has been extirpated from the flat bayside lands of the eastern portion of the County. Although a number of large trees occur throughout the project site, none are sufficiently large enough to support large cavities or cave-live habitat required by this species. Likewise, no suitable large cavities or cave-like habitat were observed in any of the buildings on the residential portion of the project site.
American badger (*Taxidea taxus*)	CSSC	Burrows in grasslands and occasionally in infrequently disked agricultural areas.	**Absent.** In the County, small numbers of badgers occur in extensive grasslands along the coast and in the Santa Cruz Mountains. There are recent records of the species at Jasper Ridge approximately 2.25 miles to the north and Midpeninsula Regional Open Space lands to the west. There is extensive grassland habitat surrounding Felt Lake approximately 0.25 mi east of the project site; however, no suitable grassland habitat is present on the project site. Determined to be absent.
San Francisco dusky-footed woodrat (*Neotoma fuscipes annectens*)	CSSC	Nests in a variety of habitats including riparian areas, oak woodlands, and scrub	**Present.** Dozens of woodrat stick nests were observed on the project site. Nests were observed in the coast live oak woodland and mixed riparian forest, and associated with oak trees in the rural-residential habitats on the project site, and they may be present in blue oak woodland and chamise chaparral as well. Determined to be present.
California Fully Protected Species			

Name	*Status	Habitat	Potential for Occurrence on the Project site
American peregrine falcon (*Falco peregrinus anatum*)	SP	Nests on ledges and caves on steep cliffs, as well as on human-made structures such as buildings, bridges, and electrical transmission towers.	**Absent.** No suitable nesting or foraging habitat is present on the project site. Determined to be absent.
White-tailed kite (*Elanus leucurus*)	SP	Nests in large trees and forages in extensive grasslands or marshes.	**May be Present.** A small number of large trees found on the project site provide ostensibly suitable nesting habitat for the white-tailed kite. Further, extensive grassland habitat directly east of the project site provides suitable foraging habitat for the species. At most, one nesting pair of this species would be present on the project site (though this species was not observed during field surveys).

SPECIAL-STATUS SPECIES CODE DESIGNATIONS

FE = Federally listed Endangered
FT = Federally listed Threatened
FC = Federal Candidate for listing
SE = State listed Endangered
ST = State listed Threatened
SC = State Candidate for listing
CSSC = California Species of Special Concern
SP = State Fully Protected Species

5.3 Sensitive Natural Communities, Habitats, and Vegetation Alliances

Natural communities have been considered part of the Natural Heritage Conservation triad, along with plants and animals of conservation significance, since the state inception of the Natural Heritage Program in 1979. The CDFW determines the level of rarity and imperilment of vegetation types, and tracks sensitive communities in its Rarefind database (CNDDB 2020). Global rankings (G) of natural communities reflect the overall condition (rarity and endangerment) of a habitat throughout its range, whereas state (S) rankings reflect the condition of a habitat within Natural communities are defined using NatureServe's standard heritage program methodology as follows (Faber-Langendoen et al. 2012):

- G1/S1: Critically imperiled
- G2/S2: Imperiled
- G3/S3: Vulnerable
- G4/S4: Apparently secure
- G5/S4: Secure

In addition to tracking sensitive natural communities, the CDFW also ranks vegetation alliances, defined by repeating patterns of plants across a landscape that reflect climate, soil, water, disturbance, and other environmental factors (Sawyer et al. 2009). If an alliance is marked G1-G3, all of the vegetation associations within it will also be of high priority (CDFW 2020). The CDFW provides the Vegetation Classification and Mapping Program's (VegCAMP) currently accepted list of vegetation alliances and associations (CDFW 2019). Impacts on CDFW sensitive natural communities, vegetation alliances/associations, or any such community identified in local or regional plans, policies, and regulations, must be considered and evaluated under CEQA (Title 14, Division 6, Chapter 3, Appendix G of the California Code of Regulations). Furthermore, aquatic, wetland and riparian habitats are also protected under applicable federal, state, or local regulations, and are generally subject to regulation, protection, or consideration by the USACE, RWQCB, CDFW, and/or the USFWS.

Sensitive Natural Communities. A query of sensitive habitats in Rarefind (CNDDB 2019) identified five sensitive habitats as occurring within the nine USGS quadrangles containing or surrounding the project site: serpentine bunchgrass (G2/S2.2), valley oak woodland (G3/S2.1), northern coastal salt marsh (G3/S3.2), North Central Coast steelhead/sculpin stream (unranked), and North Central Coast California roach/stickleback/steelhead stream (unranked). Serpentine bunchgrass occurs only on serpentine soils, which do not occur on the project site. Valley oak woodland is characterized by an open, savannah like canopy structure consisting of predominately valley oak with few other tree species present (Holland 1986). While valley oak does occur on the project site, generally in the vicinity of the Alpine Rock Ranch, the tree layer is co-dominated by coast live oak. Thus, valley oak woodland is considered absent from the project site. Northern

coastal salt marsh is described by Holland (1986) as occurring along sheltered inland margins of bays, often co-dominated by pickleweed (*Salicornia* spp.), cordgrass (*Spartina* spp.), and sometimes saltgrass (*Distichlis spicata*). The project site does not occur along the margins of the bay, nor does it contain any of the aforementioned species. Therefore, northern coastal salt marsh is considered absent from the project site. The last two sensitive natural communities, North Central Coast steelhead/sculpin stream (unranked), and North Central Coast California roach/stickleback/steelhead stream (unranked), only occur on the western slope of the Santa Cruz Mountains, and are therefore considered absent from the project site.

Sensitive Vegetation Alliances. The following four vegetation alliances occur within the project site: coast live oak woodland alliance (G5/S4), blue oak woodland alliance (G4/S4), *Umbellularia californica* forest alliance (S3/G4), and chamise chaparral shrubland alliance (G5/S5). Of these alliances, only the *Umbellularia californica* forest alliance is considered sensitive by CDFW (2020). This association is represented by the mixed riparian forest mapped along the northern edge the project site, as well as in narrow bands along the ephemeral streams mapped in the center of the project site.

Sensitive Habitats (Waters of the U.S./State). The intermittent stream occurring on the northern portion of the project site may be considered waters of the U.S./state. Any placement of fill into verified waters of the U.S./state within the project site would require a Section 404 permit from the USACE and Section 401 Water Quality Certification from the San Francisco RWQCB. Additionally, the mixed riparian forest associated with the intermittent stream, as well as the two ephemeral streams, are expected to fall under the jurisdiction of the San Francisco RWQCB and CDFW, and any impacts to those habitats would require both Porter-Cologne Waste Discharge Requirements and a Lake and Streambed Alteration Agreement.

Section 6. Impacts and Mitigation Measures

The State CEQA Guidelines provide direction for evaluating the impacts of projects on biological resources and determining which impacts will be significant. CEQA defines a "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Under State CEQA Guidelines Section 15065, a project's impacts on biological resources are deemed significant if the project would:

A. "substantially reduce the habitat of a fish or wildlife species"

B. "cause a fish or wildlife population to drop below self-sustaining levels"

C. "threaten to eliminate a plant or animal community"

D. "reduce the number or restrict the range of a rare or endangered plant or animal"

In addition to the Section 15065 criteria that trigger mandatory findings of significance, Appendix G of State CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological resources, these impacts include whether the project would:

A. "have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

B. "have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service"

C. "have a substantially adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling hydrological interruption, or other means)"

D. "interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites"

E. "conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance"

F. "conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan"

6.1 Approach to the Analysis

As described in Section 1.1, Stanford University is in the planning stages for residential development of the approximately 6.7-ac residential project site. Specific project activities and locations have not been defined within the residential project site, and therefore, our impact assessment assumed that development could occur anywhere, and that up to the entirety of the 6.7-ac residential site could be impacted. In addition, approximately 3.73 ac would be impacted by construction of the permanent access road, including 0.96 ac that would be permanently impacted and 2.77 ac that would be impacted only during grading. VMP activities will be performed on the 76-ac project site, with the entire area undergoing initial treatments, and select areas/habitat types undergoing annual maintenance treatments. Lastly, the hiking/equestrian trail would permanently impact approximately 0.49 acres; however, temporary impacts associated with the construction of the trail have not yet been identified. Therefore, the following impact analysis focuses on development of the 6.7-ac residential project site, construction of a permanent access road, implementation of the VMP, and construction of the hiking/equestrian trail.

6.2 **Impacts on Special-Status Species**: Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS (Less than Significant with Mitigation)

6.2.1 Impacts on Special-Status Plants (Less than Significant with Mitigation)

Residential Development

As discussed in Section 5.1 above, seven special-status plant species were thought to have some potential to occur within the residential project site – bent-flowered fiddleneck, western leatherwood, woodland woollythreads, Santa Cruz cover, California androsace, Oakland star-tulip, and bristly leptosiphon. None of these seven species, nor any other special-status plants, were observed within the residential portion of the project site during either the April 17, 2019 reconnaissance survey, or during the May 8, 2019 focused rare plant survey, which was conducted during the flowering period of the aforementioned species. As no special-status plant species were observed within the project site, no impacts to special-status plants are expected to occur from development of the residential project site.

Access Road, Hiking/Equestrian Trail, and Vegetation Management Plan

There is potential for 10 special-status plant species discussed in Section 5.1 above to occur in the roughly 69-ac Undeveloped Area that would be disturbed by construction of the access road, construction of the hiking/equestrian trail, and implementation of the VMP. These species include bent-flowered fiddleneck, western leatherwood, woodland woollythreads, Santa Cruz clover, California androsace, Brewer's calandrinia, Oakland star-tulip, bristly leptosiphon, Michael's rein orchid, and California bottle-brush grass. If these species

are present, grading for the access road or hiking trail could impact special-status plants through direct removal/destruction of individuals; permanent loss of habitat due to construction of the road and/or trail; temporary disturbance of habitat in areas adjacent to the road and/or trail that will be subject to grading; degradation of suitable habitat due to alteration of hydrology and soil compaction; introduction of non-native species (e.g., seeds introduced to the activity area as a result of contaminated machinery, equipment, or clothing), which can threaten native plant species through competition for resources and the physical or chemical alteration of the habitat; and minor fuel and oil spills that may occur during refueling of equipment. In a similar fashion, proposed vegetation management activities, such as mastication, chipping, and/or tilling of vegetation could impact special-status plants through direct removal or destruction of individuals, alteration of sun/shade microhabitat near the currently suitable habitat due to tree removal, or covering of occupied habitat in a layer of vegetation debris causing the habitat to become unsuitable. Temporary impacts could include dust deposition on the leaves of rare plants, affecting photosynthesis and gas exchange, or trampling that does not kill the plants or prevent seed set. Impacts from vegetation management activities may be permanent if habitat conditions are disturbed to the extent that conditions for special-status plants are no longer suitable, or they may only be temporary, with plants regrowing or recolonizing after initial vegetation management activities.

The VMP Implementation Plan (Panorama Environmental 2020b) indicates how treatment will occur in high-priority areas without ground-disturbing activities, and with implementation of other measures to minimize impacts on special-status plants. For example, if wood-chipping is necessary as part of these initial treatment activities, wood chips would be distributed so that they are no more than 1 inch deep to allow seed germination and growth of special-status plants.

If more than 10% of the population of any CRPR List 1B species, or more than 20% of the population of any CRPR List 4 species ("population" referring to the occurrence on the project site), would be impacted by construction of the access road and hiking/equestrian trail, and/or implementation of vegetation management activities, this impact would be significant under CEQA due to the regional rarity of these species. These percentages were selected because, in our opinion, up to 10% of the population of rarer species, or up to 20% of the population of less rare species, could be impacted without affecting the viability of that population. Implementation of Mitigation Measures 1–3 would reduce project impacts on special-status plants to a less-than-significant level by minimizing the potential for and magnitude of impacts and compensating for substantial unavoidable impacts.

> **Mitigation Measure 1. Special-Status Plant Surveys.** Prior to the initiation of grading for the access road and/or hiking/equestrian trial, or the implementation of initial ground disturbance or vegetation removal activities in areas outside the 6.7-acre development area that has been surveyed for special-status plants, a qualified biologist will conduct, in areas outside the 6.7-acre development area that has been surveyed, a focused survey during the appropriate bloom season for potentially occurring special-status plant species, including:

- California bottle-brush grass (*Elymus californicus*; CRPR 4.3; May through August)
- Western leatherwood (*Dirca occidentalis*; CRPR 1B.2; January through March)
- Bent-flowered fiddleneck (*Amsinckia lunaris*; CRPR 1B2; March through June)
- Woodland woolly threads (*Monolopia gracilens*; CRPR 1B.2; March through July)
- Santa Cruz clover (*Trifolium buckwestiorum*; CRPR 1B.1; April through October)
- California androsace (*Androsace elongata* ssp. *acuta*; CRPR 4.2; March through June)
- Brewer's calandrinia (*Calandrinia breweri;* CRPR 4.2; March through June)
- Oakland star-tulip (*Calochortus umbellatus*; CRPR 4.2; March through May)
- Bristly leptosiphon (*Leptosiphon acicularis*; CRPR 4.2; April through July)
- Michael's rein orchid (*Piperia michaelii*; CRPR 4.2; April through August)

Ground disturbance associated with VMP activities that could potentially impact sensitive plant species if they are present, necessitating focused plant surveys, would include all VMP activities except initial VMP treatments that are implemented prior to construction of the permanent access road (Panorama Environmental 2020b). These initial treatments include (1) removing trees and large shrubs through hand removal methods to avoid ground disturbance, and minimizing dragging out material; (2) minimization of soil disturbance through use of low compacting equipment (e.g., masticator or chipper) that would reduce rutting from machine turns and minimize soil compaction; and (3) limiting the spread of chipped or masticated materials to 1-inch in depth or less (Panorama Environmental 2020b). Therefore, focused surveys shall be conducted prior to all ground disturbance associated with VMP activities including and following construction of the permanent access road, including a surrounding 50-foot buffer area on site and to the extent access to adjacent properties may be permitted. Surveys shall take place no more than 3 years before ground disturbance or vegetation removal for these VMP activities and should be conducted in a year with near-average or above-average precipitation. Alternatively, these surveys may be conducted in a year of below-average precipitation and the surveyor should attempt, if possible, to identify a nearby reference population that is flowering and detectable despite the below-average rainfall. The purpose of the survey shall be to assess the presence or absence of the potentially occurring species. If none of the target species are found in the impact area or surrounding 50-foot buffer, then no further mitigation measures will apply.

Mitigation Measure 2. Special-Status Plant Avoidance and Minimization. If any individual special-status plants are found in the impact area or 50-foot buffer, then in consultation with a qualified botanist or plant ecologist, the project shall be designed to avoid direct and indirect impacts to the species to the extent feasible. If avoidance of special-status plants reduces the impacts so that less than 10% for CRPR List 1B species of either individuals or occupied area within the population will be impacted, or less than 20% for CPRP List 4 species, then the impact will be considered less than significant, and no further mitigation is necessary.

Mitigation Measure 3. Compensatory Mitigation for Special-Status Plants. If, even with project redesign to minimize impacts, more than 10% of the population for CRPR List 1B species, or more than 20% of the population for CRPR List 4 species will be impacted, compensatory mitigation will be provided via the management of currently occupied habitat or the establishment of a new population for the species impacted. The mitigation habitat shall be of equal or greater habitat quality compared to the impacted areas, as determined by a qualified plant ecologist, in terms of soil features, extent of disturbance, vegetation structure, and dominant species composition, and shall contain at least as many individuals of the species as are impacted by project activities.

A Habitat Mitigation and Management Plan (HMMP) shall be developed by a qualified plant or restoration ecologist and implemented for the mitigation lands. The HMMP shall be approved by the Town of Portola Valley prior to the start of ground-disturbing activities. The HMMP shall include, at a minimum, all of the following information:

- Summary of habitat impacts and the proposed mitigation;
- Description of the location and boundaries of the mitigation site and description of existing site conditions;
- Description of measures to be undertaken to enhance (e.g., through focused management that may include removal of invasive species in adjacent suitable but currently unoccupied habitat) the mitigation site for the focal special-status species;
- Description of measures to transplant individual plants or seeds from the impact area to the mitigation site, if appropriate (which will be determined by a qualified plant or restoration ecologist);
- Proposed management activities to maintain high-quality habitat conditions for the focal species;
- Description of habitat and species monitoring measures on the mitigation site, including specific, objective final and performance criteria, monitoring methods, data analysis, reporting requirements, monitoring schedule, etc. At a minimum, performance criteria shall include demonstration that any plant population fluctuations over the monitoring period do not indicate a downward trajectory in terms of reduction in numbers and/or occupied area for the preserved mitigation population that can be attributed to management (e.g., that are not the result of local weather patterns, as determined by monitoring of a nearby reference population, or other factors unrelated to management); and
- Annual monitoring should be conducted for a period of 5 years following transplantation of individuals, if plants are transplanted, or following the initiation of monitoring (e.g., for a mitigation site where the species is already present) to ensure that the population is healthy.
- Description of the management plan's adaptive component, including potential contingency measures for mitigation elements that do not meet performance criteria.

6.2.2 Impacts on the California Red-legged Frog (Less than Significant with Mitigation)

There are two records of the California red-legged frog (federally listed as threatened and a California species of special concern) less than two miles from the residential project site and potential fire road, including one record from San Francisquito Creek, approximately 1.5 mi away, and one record from Matadero Creek, approximately 1.75 mi away (CNDDB 2019). The species has also been observed in Los Trancos Creek on the east side of Alpine Road, but not since 2007 (Stanford University 2013). While no breeding habitat for the California red-legged frog is present on the residential project site or potential fire road, or in the unnamed drainage to the north, occasional individuals may occasionally disperse onto the site. If they do, such individuals are most likely to occur in the riparian corridors associated with the intermittent stream along the northern edge of the project site. However, this is expected to occur very infrequently, if at all on the site.

Residential Development, Access Road, and Hiking/Equestrian Trail

Project activities would not result in the loss of breeding habitat for the California red-legged frog, or any direct impacts on the intermittent tributary to Los Trancos Creek where this species is most likely to occur if it were to disperse onto the site. Thus, due to the infrequency with which California red-legged frogs might occur in the impact areas (owing the lack of any known breeding populations or high-quality breeding habitat in the immediate vicinity of the site), and the relatively limited extent of project impacts, the conversion of the existing horse ranch to residential land uses, construction of the fire road and hiking/equestrian trail would not substantially affect California red-legged frog habitat availability in the region.

However, in the rare chance that an individual frog moved into project impact areas and was present during residential development, access road, and trail construction activities, then grading, excavation, and ground disturbance associated with construction of the residential development and/or fire road could result in injury or mortality of individuals. Seasonal movements may be temporarily affected during construction activities because of disturbance, and substrate vibrations may cause individuals to move out of refugia, exposing them to a greater risk of predation or desiccation. In addition, petrochemicals, hydraulic fluids, and solvents that are spilled or leaked from construction vehicles or equipment may kill individuals. Further, increases in human concentration and activity on the residential project site may result in an increase in native and non-native predators that would be attracted to trash left at the work site and that would prey opportunistically on individuals of this species.

Additionally, once the residential development and hiking and equestrian trail are constructed, increased human presence could introduce litter, which may attract wild predators (as described above), such as raccoons, striped skunks, and common ravens (*Corvus corax*) into the riparian and stream habitats where those predators may harass or prey on frogs. Increased numbers of domestic pets such as dogs and free-roaming cats may also result in an increase in predation risk for frogs that may disperse onto the site. Although the development, access road, and hiking/equestrian trail will avoid impacts to stream and riparian habitats, there is some potential for increased human presence to introduce pathogens that could be detrimental to amphibians.

Vegetation Management Plan

Because California red-legged frogs are expected to occur primarily along the intermittent stream on and adjacent to the site, VMP activities are not likely to result in any impacts on this species, as no VMP activities (initial or long-term activities) would occur in any stream or riparian habitats. However, in the rare chance that an individual frog moved outside the riparian area, there is the potential for VMP activities to impact this species. If California red-legged frogs are present during VMP activities, ground disturbance associated with the creation of temporary haul routes, mechanical and manual removal of vegetation, or burning slash piles could also result in injury or mortality of individuals, especially if these activities occur near riparian corridors on the site. Like disturbance created by construction equipment, noise and substrate vibrations produced from mechanical equipment used to remove vegetation (e.g., masticator) could also cause individuals to move out of refugia becoming exposed to desiccation and predation. Petrochemicals, hydraulic fluids, and solvents could also potentially spill or leak from mechanical vegetation removal equipment, which could kill individuals. Individuals could also be killed by mechanical equipment, hand tools, or hand-operated power tools. Additionally, individuals may be attracted to wood/vegetation piles that are not immediately burned or removed from the site, and could be killed when the piles are removed, masticated, or burned.

Annual vegetation maintenance activities involving goat grazing would have little to no effect on potentially-occurring California red-legged frogs in that this activity would not involve any ground disturbance or operation of large equipment (e.g., masticator) on the site. Likewise, periodic (once every 5 years) manual removal of trees and branches is not expected to impact potentially-occurring California red-legged frogs. However, if mechanical support is necessary for long-term maintenance there is potential for California red-legged frogs to be impacted in the same manner as with initial VMP activities described above.

Additionally, increased human presence during VMP activities in the undeveloped portion of the project site may introduce litter, thereby attracting wild predators that may prey on red-legged frogs, as described above. Loss of individual California red-legged frogs resulting from the proposed project activities would constitute a significant impact due to the species' regional rarity. Implementation of Mitigation Measures 4–9, as well as Mitigation Measure 18 (BMPs for Work within Sensitive Habitats, as described under Impact 6.3.1 below), would reduce project impacts on the California red-legged frog to a less-than-significant level by minimizing the potential for individuals to be impacted by construction of the residential development, access road, trail, and VMP activities.

> **Mitigation Measure 4. Worker Environmental Awareness Program.** Before any construction activities begin, Stanford will hire a qualified biologist who will conduct a training session for all construction personnel. At a minimum, the training will include descriptions of all special-status species potentially occurring on the project site and their habitats, the importance of these species, the general measures that are being implemented to conserve them as they relate to the proposed project, and the boundaries within which project activities may be accomplished.

Mitigation Measure 5. Construction Timing. Because California red-legged frogs are most active at night, nighttime earthmoving and other construction activities will be avoided to the extent practicable within 100 feet of any riparian area. Further, to the extent practicable, ground-disturbing activities will be avoided during the wet season, from mid-October through mid-April, when red-legged frogs are most likely to be moving through upland areas.

Mitigation Measure 6. Pre-activity Survey. A qualified biologist will conduct a preconstruction survey for the California red-legged frog no more than 24 hours prior to initial ground disturbing activities within 100 feet of any riparian area. If a California red-legged frog is encountered in the work area, all activities with the potential to result in the harassment, injury, or death of the individual will be immediately halted and will not resume until the individual leaves the project site of its own accord.

Mitigation Measure 7. Vegetation Stockpiles. Because California red-legged frogs could move into areas under debris piles, where they could then be injured or killed when the debris piles are disposed of, debris intended for burning, mastication, or other disturbance, should not be piled on the ground within 100 feet of any riparian area unless the piles would be treated on the same day that they are created. If vegetation piles cannot be treated or removed daily, they should be dispersed on the site, to the extent feasible.

Mitigation Measure 8. Trash Containment during Construction and VMP Activities. Because human trash associated with construction activities and VMP activities has the potential to attract predators, all trash shall be contained in sealed containers and disposed of on a daily basis.

Mitigation Measure 9. Prohibition of Nighttime Access to Trails. Signage will be installed at trailheads indicating that nighttime access to trails and all access off trails is prohibited.

6.2.3 Impacts on the Western Pond Turtle (Less than Significant with Mitigation)

Suitable habitat for the western pond turtle, a California species of special concern, consists of ponds or instream pools (i.e., slack water environments) with available basking sites, nearby upland areas with clay or silty soils for nesting, and shallow aquatic habitat with emergent vegetation and invertebrate prey for juveniles (Jennings and Hayes 1994). The project site does not provide basking or open water habitat for western pond turtles. However, they are known to occur at Felt Lake (Stanford 2016), approximately 0.25 mile east of the site, and elsewhere in the project vicinity in San Francisquito Creek and Lagunita approximately 2.25 miles to the north. Western pond turtles are expected to occur in Los Trancos Creek, just east of the site, as well. Despite the lack of suitable aquatic and upland habitat, dispersing individuals could potentially cross Alpine Road from Los Trancos Creek and make their way on to the site on rare occasions. Therefore, there is a low probability of this species using the residential project site or the eastern end of the fire road area, especially near the riparian corridors, for dispersal.

Residential Development, Access Road, Vegetation Management Plan, and Hiking/Equestrian Trail

Construction of the residential development, permanent access road, and hiking/equestrian trail would not result in the loss of any aquatic habitat for the western pond turtle or in a substantial loss of upland dispersal habitat. Likewise, VMP activities would not result in any loss of aquatic or upland dispersal habitat. However, if individuals are present during any of these project activities, they would be at risk for injury or mortality due to equipment, vehicle traffic, and foot traffic. As described above for the California red-legged frog, annual vegetation maintenance activities involving goat grazing and periodic (once per 5 years) manual tree removal/maintenance would have little to no effect on potentially-occurring western pond turtles because this activity would not involve any ground disturbance or operation of large equipment on the site. However, if mechanical support is necessary for long-term maintenance there is potential for western pond turtles to be impacted in the same manner as with initial VMP activities described above.

Such impacts would be temporary in nature, occurring only during construction or maintenance activities, but they could result in loss of individuals. Loss of individual western pond turtles would constitute a significant impact due to the species' regional rarity. Including the western pond turtle during implementation of Mitigation Measure 4, as described above for the California red-legged frog; Mitigation Measure 18, as described under Impact 6.3.1 below; and Mitigation Measure 10 would reduce project impacts on the western pond turtle to a less-than-significant level.

> **Mitigation Measure 10. Pre-activity Survey.** A qualified biologist will conduct a preconstruction survey for western pond turtles no more than 24 hours prior to initial ground disturbing activities within 100 feet of any stream. If a western pond turtle is encountered in the work area, all activities with the potential to result in the harassment, injury, or death of the individual will be immediately halted, and the individual will be captured and relocated to a safe location outside of the work area by a qualified biologist, after which work may proceed.

6.2.4 Impacts on the White-tailed Kite (Less than Significant)

The white-tailed kite, a state fully protected species, may nest in trees anywhere from 3 to 50 meters in height and forage in open grassland, ruderal, or agricultural habitats. Kites have been observed in the project vicinity during the nesting season (Cornell Lab of Ornithology 2020), and suitable nesting habitat is present for this species on and adjacent to the residential portion of the project site and limited open areas in VMP area. White-tailed kites are widespread and common in the project region, but due to the relatively sparse nature of open, grassy habitat on the project site, no more than one pair is likely to nest on the residential portion of project site or the VMP area.

Residential Development, Permanent Access Road, and Hiking/Equestrian Trail, and Vegetation Management Plan

Vegetation removal during the breeding season (generally February 1 through August 31) could result in the destruction or disturbance of active nests, possibly leading to the loss of eggs or young. Heavy ground disturbance, noise, and vibrations caused by residential development, and access road and trail construction activities could potentially disturb foraging, roosting, or nesting white-tailed kites and cause them to move away from work areas, possibly leading to abandonment of active nests.

Per the VMP, initial vegetation management treatments are proposed to generally occur outside the nesting bird season, which is defined as February 15 to August 15 in the VMP. In the San Francisco Bay Area, nesting activity can begin as early as February 1 and last through August 31, though nesting does start to taper off in mid-July. If VMP activities are initiated between mid-February and mid-August, there is some potential for these activities to disturb an active white-tailed kite nest through indirect disturbance created by noise or vibrations of equipment used for VMP activities. Long-term annual vegetation maintenance activities involving goat grazing would have no effect on nesting white-tailed kites because this activity would not involve any ground disturbance or operation of large equipment on the site. However, if mechanical support is necessary and periodic (once per 5 years) tree removal and maintenance could disturb nesting white-tailed kites in the same manner as with initial VMP activities described above.

Because no more than one pair of kites could possibly be impacted, and because this species is relatively widespread in the region, the loss of reproductive effort associated with one pair of kites, and the loss of habitat suitable to support one pair, would represent only a very small proportion of this species' regional populations and habitat availability. The impact would not rise to the CEQA standard of having a *substantial* adverse effect and would therefore be less than significant. However, this species is protected by the federal Migratory Bird Treaty Act and the California Fish and Game Code, and it is considered a fully protected species by the state (meaning that kites, and their eggs and young, cannot be physically taken for development purposes).

See Section 6.5.2 for recommendations to avoid impacts on protected nesting birds.

6.2.5 Impacts on the San Francisco Dusky-footed Woodrat (Less than Significant with Mitigation)

At least 13 nests of the San Francisco dusky-footed woodrat, a California species of special concern, are located on the residential project site. These nests are located in the coast live oak woodland, mixed riparian forest, and rural-residential habitats along the perimeter of the residential project site. Numerous additional nests were observed during surveys conducted to facilitate the fuels reduction activities in June 2019, and woodrat nests are expected to be present in the coast live oak woodland, blue oak woodland, mixed riparian forest, and chamise chaparral in areas of the project site.

Proposed construction and VMP activities may result in injury or mortality of dusky-footed woodrats and removal of woodrat nests due to construction, staging, project vehicle traffic, and equipment use. Heavy ground disturbance, noise, and vibrations caused by construction activities could potentially cause woodrats to abandon their nests, possibly leading to abandonment of young as well. Additionally, thinning of trees and vegetation around nests in the surrounding vegetation and canopy layer would increase their internal temperatures through increased sun exposure, which could also lead to nest abandonment. Removal of vegetation around nests would also result in the loss of foraging habitat, which would reduce the carrying capacity of the population on site.

Annual vegetation maintenance activities involving goat grazing would not directly impact nests, but this activity could denude cover and food plants around nests if the goats are allowed to graze for excessive periods, reducing the habitat quality, and possibly leading to nest abandonment. Furthermore, if mechanical support is necessary, periodic (once per 5 years) tree removal and maintenance could result in injury or mortality of dusky-footed woodrats and removal of woodrat nests if nests are located near or within a tree that is to be removed.

San Francisco dusky-footed woodrats are relatively common in suitable habitat regionally and have high reproductive capabilities. As a result, project impacts on dusky-footed woodrats would not have a substantial effect on regional populations. However, woodrats are very important ecologically in that they provide an important prey source for raptors (particularly owls) and for predatory mammals, and their nests provide habitat for a wide variety of small mammals, reptiles, and amphibians. As a result, the loss of multiple woodrat nests would be considered a significant impact due to the ecological impact that the loss of nests would represent both to the woodrat and to the other species that benefit from its present. Implementation of Mitigation Measures 11–15 will reduce such impacts to a less-than-significant level.

> **Mitigation Measure 11. Woodrat Relocation Plan.** Due to the large number of nests that could be impacted directly from construction of the development, access road and trail, and direct and indirect impacts associated with VMP activities, a woodrat relocation plan will be prepared by a qualified biologist prior to initial ground disturbance or vegetation removal. At a minimum, the plan will include woodrat nest relocation methods, relocation site habitat requirements, appropriate relocation sequence with respect to VMP activities, spacing of nests, timing of relocations, and recommended protective buffers around nests proposed to remain in place. The plan will also include a map of all woodrat nests, and proposed relocation areas.
>
> **Mitigation Measure 12. Preconstruction Survey.** No more than 30 days prior to any initial ground disturbance or vegetation removal activities, a preconstruction survey for woodrat nests will be conducted within areas where ground disturbance or vegetation removal will be conducted and within 10 feet of the disturbance and vegetation removal areas by a qualified biologist.

Mitigation Measure 13. Disturbance-Free Buffers. Dusky-footed woodrats are year-round residents. Therefore, avoidance mitigation is limited to designing the project to avoid direct impacts on woodrat nests to the extent feasible. Ideally, a minimum 10-ft buffer should be maintained between project construction activities and each nest to avoid disturbance. In some situations, a smaller buffer may be allowed if in the opinion of a qualified biologist removing the nest would be a greater impact than that anticipated due to project activities. Because large numbers of woodrat nests were observed on the residential development portion of the site and the remaining undeveloped portion of the site (i.e., 13 nests on the residential portion and hundreds of nests on the undeveloped portion), during the reconnaissance survey and during fuels reduction activities in June 2019, it is assumed that a large number of nests could be impacted by project activities. However, once the project footprint has been established in either the residential development, access road, or trail construction areas, environmentally sensitive area (ESA) fencing will be installed around work areas that are located on or within 10 feet of woodrat nests to keep workers, construction equipment, and construction materials out of the area where the nests are located.

Mitigation Measure 14. Relocation of Nest Materials. If it is determined that woodrat nests cannot be avoided or additional active woodrat nests are found within the construction or VMP areas during the preconstruction surveys and avoidance is not feasible, the woodrats will be evicted from their nests prior to the removal of the nests and onset of ground-disturbing activities to avoid injury or mortality of the woodrats. Relocation activities will follow methods outlined in the Woodrat Relocation Plan for the project (Mitigation Measure 11). A qualified biologist will monitor and direct all activities associated with the removal of dusky-footed woodrat nests (structures). Only as necessary and to the minimum extent possible, project site vegetation will be removed to provide access to the woodrat nest(s). Following the removal of vegetation required to access woodrat nests, a fiber-optic camera will be used to observe inside the nest to determine its occupancy prior to beginning the dismantling process. If young are not observed, the nest will be fully dismantled and materials will be relocated, as described below. If dependent young are present, the protocol for active nests below will be followed to dismantle the structure over a two-week period.

Except where dependent young are present, woodrat structures or nests will slowly and progressively be dismantled during a single site visit. Where feasible, nesting material or food caches will be moved to a new location at least 30 feet outside the disturbance area, preferably next to a large tree or similar structure in a riparian or oak woodland habitat, in an area where it can be used by woodrats to construct new nests. If no suitable structure is present, a log pile structure may be constructed to support the nest materials. If young are uncovered within the nest prior to or during the dismantling process, dismantling of the nest will be suspended for a period of two weeks to allow young to develop eyesight and become mobile. Nest materials will be placed back on top of the nest to re-cover the exposed young. After the two-week period, the above removal procedures will be resumed. Within 24 hours of vegetation removal and completion of nest dismantling, an additional survey will be conducted to confirm no new woodrat nests were constructed. Appropriate personal protective equipment (e.g.,

respirator, gloves, and Tyvek suit) shall be used while dismantling and relocating woodrat nest material to protect against disease carried by rodents (e.g., hantavirus).

Mitigation Measure 15. Implement Overgrazing Management Strategy. To ensure that annual grazing activities do not result in excessive disturbance of, or habitat loss around, San Francisco dusky-footed woodrat nests, grazing will be performed so that goats will not graze in any one area too long.

6.2.6 Impacts on the Pallid Bat (Less than Significant with Mitigation)

The pallid bat, a California species of special concern, may forage throughout the more open areas of the project site. In addition, several trees with small to moderate-sized cavities were observed on the project site during the reconnaissance survey. These trees provide suitable roosting and breeding habitat for the pallid bat, and removal of such trees could result in the loss of pallid bat roost sites if they are occupied. Although ostensibly suitable roost sites for pallid bats, such as mature trees with large cavities, are widespread regionally, pallid bat numbers are low and the species' maternity roosts are sparsely dispersed. As a result, the loss of potential habitat or potential (but unoccupied) roost trees for this species would not represent a significant impact. However, the loss of an occupied maternity roost would represent a significant impact because that roost site, coupled with the characteristics of the surrounding area (e.g., foraging habitat, thermal characteristics, lack of human disturbance) that attracted pallid bats to that roost, would be regionally important to this species' populations.

Residential Development, Access Road, Hiking/Equestrian Trail, and Vegetation Management Plan

When trees containing roosting colonies or individual pallid bats are removed or modified during construction of the residential development, access road, hiking/equestrian trail, or initial and long-term VMP activities, individual bats could be physically injured or killed; could be subjected to physiological stress from being disturbed during torpor; or could face increased predation because of exposure during daylight. In addition, nursing young may be subjected to disturbance-related abandonment by their mothers. Even if roost trees are not directly impacted, project-related disturbance near a maternity roost of pallid bats could cause females to abandon their young. Such impacts would be significant because the species' populations are limited locally and regionally and because loss of individuals may have a substantial adverse effect on local and regional populations of the species. Implementation of Mitigation Measures 16 and 17 would reduce project impacts on the pallid bat to a less-than-significant level.

Mitigation Measure 16. Avoidance and Minimization of Impacts to Pallid Bat Colonies. To minimize impacts on pallid bats the following measures will be implemented:

- A pallid bat roost habitat assessment will be conducted for all trees and structures on the project site, and within 150 feet of the site, during the appropriate time of year when bats would be detectable (March 1 – August 31). A qualified bat biologist will conduct the survey to look for evidence of bat use within suitable habitat. If evidence of use is observed, or if high-quality roost sites are present in areas where evidence of bat use might not be detectable

(such as a tree cavity), an evening survey and/or a nocturnal acoustic survey may be necessary to determine if a bat colony is present and to identify the specific location of the bat colony.

- If an active pallid bat maternity colony or non-breeding roost is located, construction work or VMP activities will be redesigned to avoid disturbance of the roost, if feasible.
- If an active pallid bat maternity colony is located and construction work or VMP activities cannot be redesigned to avoid removal or disturbance of the occupied tree, disturbance will be scheduled to take place outside the maternity roost season (March 15–July 31), and a disturbance-free buffer zone (determined by a qualified bat biologist, but generally in the 65-150 foot range) will be implemented during the maternity roost season.
- If an active pallid bat maternity colony or non-breeding bat roost is located and construction work cannot be redesigned to avoid removal or disturbance of the occupied roost, the individuals will be safely evicted by a qualified bat biologist between August 1 and October 15 or between February 15 and March 15, with the timing determined by a qualified bat biologist. If eviction is necessary, Mitigation Measure 15 (Provide Alternative Bat Roost Habitat) shall be implemented prior to eviction.
- Due to the extensive number of trees that may potentially be removed during VMP activities, and the number of potential roost trees needing nighttime surveys, potential roost habitat trees may be removed outside the maternity season, during a two-day tree removal process, to encourage day-roosting bats to leave potential roost trees ahead of tree removal. This process involves removing small branches and small limbs containing no day-roost habitat (e.g., crevices) on habitat trees on Day 1, using chainsaws only. The following day (Day 2), the remainder of the tree is to be removed. The disturbance caused by chainsaw noise and vibration, combined with the physical modification of the tree, is expected to cause day-roosting bat species to abandon the roost tree after nightly emergence for foraging. Trimmed habitat trees must be removed the next day to prevent re-occupation of trimmed trees.
- If potential habitat trees are not proposed for removal but would undergo a specific treatment (e.g., thinning, crown raising), disturbance will be scheduled to take place outside the maternity roost season. If treatment activities cannot occur outside the maternity season, a pre-activity evening survey shall be conducted by a qualified biologist to determine if the tree is occupied by a maternity colony. If no bats are detected, work may proceed without any additional surveys. If a maternity colony is present, work shall be postponed until the end of the maternity season (August 31).

Mitigation Measure 17. Alternative Bat Roost Habitat. If a tree containing a pallid bat maternity roost must be removed by construction activities, alternative roost habitat will be provided at least 30 days prior to eviction of bats from the roost. A qualified bat biologist will determine the appropriate location for the alternative roost structure, based on the location of the original roost and habitat conditions in the vicinity, and oversee installation of a new roost structure. The structure will be placed

as close to the affected roost site as feasible, taking into account potential for disturbance during construction on the site (e.g., the roost might be placed elsewhere on the larger project site). The roost structure either will be built to specifications determined by a qualified bat biologist or will be purchased from an appropriate vendor (though a qualified bat biologist should approve the type of structure purchased). Stanford will monitor the roost for up to three years (or until occupancy is determined, whichever occurs first) to determine use by bats. If, by Year 3, pallid bats are not using the structure, a qualified bat biologist, in consultation with CDFW, will identify alternative roost designs or locations for placement of the roost, place the new roost at the agreed-upon location, and monitor the new roost for an additional three years (or until occupancy has been verified).

6.3 **Impacts on Sensitive Communities**: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

6.3.1 Impacts on Streams and Riparian Habitats (Less than Significant with Mitigation)

Riparian habitats are unique areas that surround river and stream banks and contribute disproportionately high habitat values and functions for their limited surface area. Specially-adapted plants that may tolerate repeated flooding or that rely on a high water table often occur in these areas, but even when it supports primarily upland species, this vegetation is important for stabilizing the banks, reducing soil erosion, and maintaining water quality within the stream channel, and the amount and type of vegetation present can have effects on water temperature and therefore aquatic habitat within the stream. Riparian corridor vegetation also provides specialized habitat for wildlife, including shade, breeding areas, and food sources. Riparian habitats are uncommon within the larger landscape. Riparian areas are considered sensitive habitats by the CDFW and are regulated as such under Section 1600 of the California Fish and Game Code, as well as by the RWQCB.

Residential Development

A limited amount of mixed riparian forest occurs in the northwest corner of the residential project site, associated with the unnamed intermittent tributary of Los Trancos Creek. However, the project design for the residential development would not impact the riparian habitat.

Access Road and Hiking/Equestrian Trail

The locations of the permanent access road and the hiking/equestrian trail do not involve crossing or otherwise impacting the riparian habitat along the intermittent stream on the northern edge of the site and will therefore avoid any direct impacts on riparian habitats. Where the permanent access road is proposed to exit off of Alpine Road, however, it will be within 50 feet of the ephemeral stream. Grading for the access road will create disturbed soil conditions, potentially resulting in erosion and sedimentation of this ephemeral stream. Implementation of Mitigation Measure 18 below would avoid direct and indirect impacts to this ephemeral

stream near the junction of the access road and Alpine Road by requiring Best Management Practices (BMPs) to avoid and minimize impacts to this habitat. With implementation of Mitigation Measure 18, impacts from the construction of the access road on the ephemeral stream are expected to be less than significant.

Vegetation Management Plan

Implementation of the VMP will involve initial vegetation treatments throughout much of the 69-acre open space portion of the project site. Treatment methods will include mechanical methods employing track-mounted excavators to carry out mastication and chipping of woody vegetation, as well as manual treatment methods using of hand tools to cut, uproot, crush, compact, or chop vegetation. While the exact locations of these treatments have not been identified, it is assumed they could occur throughout the project site, and will therefore occur in the vicinity of the riparian habitat that occurs along the intermittent stream occurring along the northern edge of the parcel along the unnamed tributary to Los Trancos Creek. While this corridor is narrow, this habitat is still considered sensitive, and any direct impact to this habitat from vegetation treatment activities would be considered significant. In addition, in the absence of avoidance and minimization measures, indirect impacts such as runoff from the areas of ground disturbance into the riparian habitat could have the potential to degrade this habitat and would be considered a significant impact.

The VMP states that vegetation treatment methods, or "prescriptions", should avoid sensitive resources, including riparian habitat, to the extent feasible. It is anticipated that the fuel reduction prescriptions proposed in the VMP can largely avoid vegetation removal within the riparian corridor associated with the intermittent stream. In such a manner, VMP activities would avoid most, and possibly all, direct impacts on riparian communities from vegetation removal.

However, if vegetation removal within riparian corridors cannot be completely avoided, the loss of riparian vegetation would constitute a significant impact under CEQA owing to the importance of this habitat type to regional biodiversity. Implementation of Mitigation Measures 18 and 19 will reduce these impacts to less-than-significant levels by minimizing and compensating for impacts on riparian habitat.

> **Mitigation Measure 18. BMPs for Work within Sensitive Habitats.** The following measures will be implemented to reduce impacts on mixed riparian forest and streams during construction on the residential project site, during the grading of the access road and hiking/equestrian trails, and during all VMP activities. Additionally, if the project impacts habitat under the jurisdiction of the CDFW and/or RWQCB, Stanford University will acquire permits from CDFW and RWQCB and comply with all permit conditions.
>
> - Personnel will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels.
> - Spill prevention kits will always be in close proximity when using hazardous materials.

- No equipment servicing will be done in the stream channel or immediate floodplain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps, generators).
- Existing native vegetation will be retained by removing only as much vegetation as necessary to accommodate the access road and trail clearing width.
- If riparian vegetation is to be removed with chainsaws, consider using saws currently available that operate with vegetable-based bar oil.
- If goat grazing is to be used as a long-term vegetation management tool in the future, temporary fencing will be erected when goats are introduced to keep them out of riparian habitats.
- Control exposed soil by stabilizing slopes (e.g., with erosion control blankets) and protecting channels (e.g., using silt fences or straw wattles).
- Control sediment runoff using sandbag barriers or straw wattles.
- Stabilize site ingress/egress locations.
- Temporary disturbance or removal of aquatic and riparian vegetation will not exceed the minimum necessary to complete the work.
- Vehicles operated within and adjacent to streams will be checked and maintained daily to prevent leaks of materials that, if introduced to the water, could be deleterious to aquatic life.
- Potential contaminating materials must be stored in covered storage areas or secondary containment that is impervious to leaks and spills
- All disturbed soils will be revegetated with native plants suitable for the altered soil conditions upon completion of construction. Local watershed native plants will be used if available. All disturbed areas that have been compacted shall be de-compacted prior to planting or seeding. Cut-and-fill slopes will be planted with local native or non-invasive plants suitable for the altered soil conditions.

Mitigation Measure 19. Compensatory Mitigation for Permanent Loss of Riparian Habitat. The riparian habitat within the project site consists of a mature overstory composed of California bay, California buckeye, and coast live oak. Riparian vegetation may be removed during vegetation treatment activities. All trees removed within mixed riparian forest habitat will be replaced with the same species which was removed during project implementation, which will be planted within the same reach where impacts occur or along streams on other Stanford University lands. Trees will be replaced at a ratio of at least 1:1 (mitigation stems: impacted stems).

Additionally, a qualified biologist will develop a Riparian Mitigation and Monitoring Plan, which will contain the following components (or as otherwise modified by regulatory agency permitting conditions):

- Summary of habitat impacts and proposed mitigation ratios
- Goal of the restoration to achieve no net loss of habitat functions and values
- Location of mitigation site(s) and description of existing site conditions
- Mitigation design:
  - Soil amendments and other site preparation elements as appropriate
  - Planting plan
  - Irrigation and maintenance plan
  - Remedial measures/adaptive management, etc.
- Monitoring and Success Criteria: the mitigation site will be monitored by an ecologist during a 5-year monitoring period. The interim site performance success criterion is annual replacement of any dead trees and shrubs during Years 1-3. The final success criterion at Year 5 will be defined as 60% average cover of native trees and shrubs combined.
- Reporting requirements

6.3.2 Riparian Buffer Encroachment (Less than Significant)

Setbacks from creeks (also referred to as riparian buffers) are important to protect sensitive aquatic and riparian habitats, and the animals that inhabit them, from adverse effects of lighting, noise, human activity, sediments and contaminants in runoff, and other stressors associated with development. The dimensions of such setbacks vary depending on local regulations, the size of the creek, the quality of riparian habitat, slope, and other factors.

As discussed in Section 3.3, the Town of Portola Valley has established regulations for development adjacent to three specific creeks within the Town: Los Trancos Creek, Corte Madera Creek, and Sausal Creek. The project is not located close to any of these creeks and will therefore not be subject to the Town's riparian setback requirements.

Further, project activities will occur near riparian habitats only along the extreme northern edge of the site. For example, residential development will occur near the riparian habitat associated with the unnamed intermittent stream along the northern edge of the site. However, the project will not impact the riparian habitat directly. Additionally, though the small intermittent stream has some value for plants and wildlife, its ecological functions and values are low compared to a larger and/or perennial stream. Therefore, because the proximity of development to the riparian habitat is limited to a very small portion of the development, and riparian habitat

will not be directly impacted by the residential development, the impact of development in proximity to this riparian habitat is less than significant.

6.3.3 **Impacts due to the Spread of Nonnative and Invasive Species** (Less than Significant with Mitigation)

Nonnative, invasive plant species were observed in limited numbers within the project site, including the following species that are considered by California Invasive Plant Council (Cal-IPPC) to have a "moderate" invasive rating and therefore can cause substantial ecological impacts on physical processes, plant and animal communities, and vegetation structure (California Invasive Plant Council 2020): wild oats (*Avena barbata* and *Avena fatua*), black mustard (*Brassica nigra*), ripgut brome (*Bromus diandrus*), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), and poison-hemlock (*Conium maculatum*). In addition, one species with a "high" Cal-IPPC rating, red brome (*Bromus madritensis* ssp. *rubens*) was also observed within the project site. Additional invasive species with high ratings, such as yellow starthistle (*Centaurea solstitialis*), French broom (*Genista monspessulana*), and Scotch broom (*Cytisus scoparius*), are known to occur in the immediate vicinity of the project site (CalFlora 2020). Invasive species can spread quickly and can be difficult to eradicate, as they produce seeds that germinate readily following disturbance. Further, disturbed areas are highly susceptible to colonization by nonnative, invasive species that occur locally, or whose propagules are transported by personnel, vehicles, and other equipment.

Residential Development

The residential development would result in a large area being subject to soil disturbance, in a location adjacent to open space and near riparian habitat. Activities such as vegetation removal, grading, and equipment staging and are all factors that would contribute to disturbance. Areas of disturbance could serve as the source for promoting the spread of nonnative species, which could degrade the ecological values of the nearby riparian habitat, and adversely affect native plants and wildlife that occur there. The introduction or spread of invasive weeds into sensitive riparian habitats would be a significant impact under CEQA. Implementation of Mitigation Measure 20 below will reduce this impact to a less-than-significant level.

Construction of the Access Road and the Hiking/Equestrian Trail

The construction of the access road and the hiking/equestrian trail would result in the creation of a new area of disturbance in an area that was not previously disturbed. Similar to the manner described above, disturbance would be created by the clearing of vegetation and grading for either the access road or the new trail. In addition, both these project elements would introduce new vectors or avenues along which invasive species could be spread. The spread of invasive species along these corridors could lead to the introduction and spread of invasive species into sensitive riparian habitats within the project site, and adversely affect native plants and wildlife that occur there. The introduction or spread of invasive weeds into sensitive riparian habitats would be a significant impact under CEQA. Implementation of Mitigation Measure 20 below will reduce this impact to a less-than-significant level.

Vegetation Management Plan

Vegetation treatment activities will result in the disturbance of large amounts of vegetation throughout the project site by mastication, mowing, trimming, and removal of vegetation. A goal of these treatments will be to reduce and remove vegetation with as minimal of ground disturbance as possible. To this end, according to the VMP, where mechanical treatments will be carried out with equipment (on slopes up to 30%), the project will utilize low ground pressure, track-mounted equipment with manufacturing specifications of an average ground pressure of 7.5 psi (Panorama Environmental 2020a). This will ensure that there will be minimal ground disturbance and related soil exposure that could allow for the colonization of weeds. Additionally, in most areas of mastication, the ground-up material will be left on the ground surface so that there is no exposed soil. However, with the use of motorized equipment, as well as large crews using manual methods, there is the potential for either the motorized equipment or the equipment used for manual treatments to have propagules of weed species (e.g., seeds, or dirt containing rhizomes) from other sites, and if not properly cleaned prior to coming onto the project site, to introduce novel species. The introduction or spread of invasive weeds onto the site in this manner would be a significant impact under CEQA. Implementation of Mitigation Measure 20 below will reduce this impact to a less-than-significant level.

Mitigation Measure 20. Implement Invasive Weed BMPs. The invasion and/or spread of noxious weeds will be avoided by the use of the following invasive weed BMPs:

- During project construction in the residential development area, all seeds and straw materials used on-site will be weed-free rice straw (or similar material acceptable to the Town), and all gravel and fill material will be certified weed-free to the satisfaction of the Town.
- During project construction, or prior to equipment coming onto the site for either the construction of the residential development, access road, hiking trail, or to implement VMP actions, all construction equipment (e.g., masticators, haul vehicles, excavators, and other heavy equipment) will be washed (including wheels, undercarriages, and bumpers) before and after entering the project site. Vehicles will be cleaned at existing construction yards or legally operating car washes.
- Following construction of the residential development and the access road and hiking trail, a standard erosion control seed mix (acceptable to the Town) from a local source will be planted within the temporary impact zones on any disturbed ground that will not be under hardscape, landscaped, or maintained. This will minimize the potential for the germination of the majority of seeds from non-native, invasive plant species.
- If areas are left bare by vegetation treatments as carried out by the VMP, a standard erosion control seed mix (acceptable to the Town) from a local source and consisting of native species will be planted on any disturbed ground.

6.4 **Impacts on Wetlands**: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling hydrological interruption, or other means) (Less than Significant)

Residential Development, Construction of the Access Road and Hiking/Equestrian Trail, and Vegetation Management Plan

No wetlands occur within the project site. The ephemeral streams on the project site are outside of the residential development area as well as the footprints of the access road and hiking/equestrian trail. Vegetation treatment activities will not occur directly in the ephemeral streams. However, development of the residential project site, construction of the access road, and implementation of the vegetation treatments, have the potential to affect water quality within the on-site streams, which have hydrologic connectivity to Los Trancos Creek downstream, through indirect impacts caused by soil disturbance adjacent or near these aquatic features.

Construction projects in California causing land disturbances that are equal to 1 ac or greater must comply with State requirements to control the discharge of stormwater pollutants under the NPDES *General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit; Water Board Order No. 2009-0009-DWQ). Prior to the start of construction/demolition, a Notice of Intent must be filed with the State Water Board describing the project. A Storm Water Pollution Prevention Plan (SWPPP) must be developed and maintained during the project and it must include the use of BMPs to protect water quality until the site is stabilized. Standard permit conditions under the Construction General Permit require that the applicant utilize various measures including: on-site sediment control best management practices, damp street sweeping, temporary cover of disturbed land surfaces to control erosion during construction, and utilization of stabilized construction entrances and/or wash racks, among other factors.

In many Bay Area counties, including San Mateo County, projects must also comply with the *California Regional Water Quality Control Board, San Francisco Bay Region, Municipal Regional Stormwater NPDES Permit* (MRP) (Water Board Order No. R2-2015-0049). This MRP requires that all projects implement BMPs and incorporate Low Impact Development practices into the design to prevent stormwater runoff pollution, promote infiltration, and hold/slow down the volume of water coming from a site after construction has been completed. To meet these permit and policy requirements, projects must incorporate the use of green roofs, impervious surfaces, tree planters, grassy swales, bioretention and/or detention basins, among other factors. Thus, impacts on water quality and indirect impacts on downstream wetlands and other aquatic habitats would be reduced to less-than-significant levels.

6.5 **Impacts on Wildlife Movement and Nursery Sites**: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife

corridors, or impede the use of native wildlife nursery sites (Less than Significant with Mitigation)

6.5.1 Impacts on Wildlife Movement (Less than Significant)

For many species, the landscape is a mosaic of suitable and unsuitable habitat types. Environmental corridors are segments of land that provide a link between these different habitats while also providing cover. Development that fragments natural habitats (i.e., breaks them into smaller, disjunct pieces) can have a twofold impact on wildlife: first, as habitat patches become smaller they are unable to support as many individuals (patch size); and second, the area between habitat patches may be unsuitable for wildlife species to traverse (connectivity).

Residential Development, Construction of the Access Road and Hiking/Equestrian Trail, and Vegetation Management Plan

Much of the habitat on the residential portion of the project site has been subjected to moderate levels of disturbance including horse boarding and grazing, storage, and general grounds-keeping activities. Native trees are scattered across the site, but the understory is mostly dominated by non-native vegetation. Still, native resident wildlife do occupy the site, and migratory wildlife occasionally visit the site. The more natural, less disturbed habitat within the remainder of the 76-ac parcel where the access road, hiking/equestrian trail, would be constructed, and VMP activities would occur, provides even higher-quality wildlife habitat. Depending on how much habitat is removed from the residential portion of the site, these species would likely not be able to occupy the site after it is constructed. However, the more natural portion of the site would remain largely undeveloped. After they are constructed, the access road and trail would not create a barrier to movement. Furthermore, although initial and long-term VMP activities would alter this more natural area from its current condition, the areas would continue to provide habitat for native resident and migratory wildlife. Additionally, high quality habitat is also present on the adjacent lands, including lands surrounding Felt Lake to the east. With exception of Alpine Road along the eastern border of the site, the site is contiguous with these lands and the project would not interfere with the movement of wildlife between these areas. Alpine Road does likely slow movement of wildlife between these areas, but it is not a barrier to movement. Thus, while development of the site would reduce the ability for wildlife to use and move across the project site, wildlife would still be able to move between these surrounding higher quality habitat patches. Further, because no aquatic habitat is present within the residential portion of the site, and work associated with the access road, trail, and VMP activities would avoid stream habitats, the project would not interfere with the movement of any resident or migratory fish. Because project implementation would not substantially interfere with wildlife movement, this impact would be less than significant.

6.5.2 Impacts on Nesting Birds (Less than Significant with Mitigation)

Residential Development, Construction of the Access Road and Hiking/Equestrian Trail, and Vegetation Management Plan

Disturbance related to construction of the residential development, access road, and hiking/equestrian trail, and VMP activities during the avian breeding season (February 1 through August 31, for most species) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests located on or near the construction or VMP areas. Additionally, as described in Section 6.2.3 for the white-tailed kite, initial vegetation management treatments associated with the VMP are proposed to generally occur outside the nesting bird season, which is defined as February 15 to August 15 in the VMP. However, there is some potential for such activities to disturb active nests of early or late-nesting species through indirect disturbance created by noise or vibrations of equipment used for VMP activities, or directly through removal of vegetation supporting an active nest, if such activities were to occur in early February or late August.

While the habitats in and adjacent to the development area represent a very small proportion of the habitats that support these species regionally and they are relatively degraded, the habitats in the larger portion of the site are more natural and represent a larger proportion of habitats that are used by local breeding species. Still, all species of birds currently using the residential portion of the project site are expected to nest and forage or continue these activities on the larger portion of the project site after the project is completed because this habitat will still be available, even if modified by VMP activities. Furthermore, some species may continue to nest on the residential portion of the site depending on how much habitat is left intact or what landscaping vegetation is provided. Nevertheless, in the absence of mitigation measures, the number of active nests of birds that could be impacted would constitute a significant impact under CEQA. Furthermore, all native bird species are protected from direct take by federal and state statutes (see Sections 3.1.4 and 3.2.4). Therefore, the project will implement Mitigation Measures 21–25 to ensure that project activities avoid and minimize impacts on foraging and nesting habitat, and comply with the MBTA and California Fish and Game Code.

> **Mitigation Measure 21.** To the extent feasible, construction and VMP activities should be scheduled to avoid the nesting season (February 1 to August 31). If these activities are scheduled to take place outside the nesting season, all impacts on nesting birds protected under the MBTA and California Fish and Game Code will be avoided.

> **Mitigation Measure 22.** If it is not possible to schedule construction or VMP activities between September 1 and January 31 then preconstruction surveys for nesting birds should be conducted by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. We recommend that these surveys be conducted no more than seven days prior to the initiation of all project activities. During this survey, the ornithologist will inspect all trees and other potential nesting habitats (e.g., shrubs, ruderal grasslands, trees, horse paddocks) in and immediately adjacent to the impact areas for nests.

Mitigation Measure 23. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist will determine the extent of a construction- or disturbance-free buffer zone to be established around the nest (typically 300 feet for raptors and 100 feet for other species), to ensure that no nests of species protected by the MBTA and California Fish and Game Code will be disturbed during Project implementation.

Mitigation Measure 24. If construction of the residential development, access road, or trail will not be initiated until after the start of the nesting season, all potential nesting substrates (e.g., bushes, trees, grasses, and other vegetation) that are scheduled to be removed by these project features may be removed prior to the start of the nesting season (e.g., prior to February 1). This will preclude the initiation of nests in this vegetation, and prevent the potential delay of the project construction due to the presence of active nests in these substrates.

Mitigation Measure 25. To the extent feasible, maintain a variety of tree, shrub, and herbaceous nesting substrates during VMP activities. This would involve maintaining (1) plant species diversity, and structural and age class diversity to accommodate a variety of tree-nesting species, (2) islands or scattered locations of live and dead or dying trees that support nest cavity habitat, and (3) islands or scattered locations supporting moderately dense pockets of shrubs, and other low-lying vegetation for shrub and ground-nesting species.

6.5.3 Impacts on Wildlife from Artificial Lighting (Less than Significant)

Many animals are sensitive to light cues, which influence their physiology and shape their behaviors, particularly during the breeding season (Ringer 1972, de Molenaar et al. 2006). Artificial light has been used as a means of manipulating breeding behavior and productivity in captive birds for decades (de Molenaar et al. 2006), and has been shown to influence the territorial singing behavior of wild birds (Longcore and Rich 2004, Miller 2006, de Molenaar et al. 2006). While it is difficult to extrapolate results of experiments on captive birds to wild populations, it is known that photoperiod (the relative amount of light and dark in a 24-hour period) is an essential cue triggering physiological processes as diverse as growth, metabolism, development, breeding behavior, and molting (de Molenaar et al. 2006). This holds true for birds, mammals (Beier 2006), and other taxa as well, suggesting that increases in ambient light may interfere with these processes across a wide range of species, resulting in impacts on wildlife populations.

Artificial lighting may indirectly impact mammals and birds by increasing the nocturnal activity of predators such as owls, hawks, and mammalian predators (Negro et al 2000, Longcore and Rich 2004, DeCandido and Allen 2006, Beier 2006). The presence of artificial light may also influence habitat use by rodents (Beier 2006) and by breeding birds (Rogers et al. 2006, de Molenaar et al. 2006) by causing avoidance of well-lit areas, resulting in a net loss of habitat availability and quality.

Currently, there is no artificial lighting (e.g., light posts, string lights, and spot lights) on the project site due to its undeveloped and rural nature. As described previously, the project site may support sensitive species that

might be significantly impacted by on-site illuminance. If lighting in the project site were so bright that it increased illumination of the surrounding habitat such as the intermittent tributary or coast live oak woodland, such an increase in lighting could potentially have adverse effects on special-status and sensitive species in the area. However, the project includes several dark sky-compliant measures to minimize the degree to which natural habitats on and surrounding the project site are illuminated by project lighting. For example, exterior lights will be composed of a variety of shielded light fixtures that would be mounted on the sides of the buildings, and primarily situated on the interior side of the development, such that the lights would not illuminate the coast live oak woodland to the west, or mixed riparian habitat to the north. Additionally, many of the light fixtures, especially in common public areas, would have automatic timing switches to reduce nighttime illumination when not in use. Although the project would increase lighting compared with baseline conditions, the dark-sky measures incorporated into the project plans would minimize this potential impact on wildlife due to artificial lighting, and the impact would thus be less than significant.

6.5.4 Impacts due to Bird Collisions (Less than Significant)

Development of the proposed project would result in the construction of 30 two-story buildings. Glass windows and building facades can result in injury or mortality of birds due to collisions with these surfaces. Because birds do not perceive glass as an obstruction the way humans do, they may collide with glass when the sky or vegetation is reflected in glass (e.g., they see the glass as sky or vegetated areas); when transparent windows allow birds to perceive an unobstructed flight route through the glass (such as at corners); and when the combination of transparent glass and interior vegetation (such as in planted atria) results in attempts by birds to fly through glass to reach that vegetation. These risks are highest for buildings in or near areas of high avian activity or movement, such as migratory corridors, large open spaces, large water bodies, and riparian habitats.

Currently, terrestrial land uses and habitat conditions within and adjacent to the 6.7-ac residential portion of the project site is relatively degraded, but the scattered trees and shrubs provide foraging, nesting, and roosting habitat for a variety of locally-common breeding birds and wintering birds, and the undeveloped natural habitat on the larger 69-ac portion of the site supports a variety of locally-common breeding and wintering species that use oak woodland and rural habitats in the area. Some resident and migratory species are expected to move between the 6.7-ac residential portion of the project site and surrounding upland habitats. Based on our review of the November 10, 2020 site plans and building renderings, the proposed buildings would primarily support non-glass exterior walls, with a small number of windows, in a variety of sizes, incorporated on both levels and on each side of the structures. In general, the majority of the buildings are designed to keep with the wooded nature of the site and do not include extensive glass that could cause bird collisions. Although birds may occasionally collide with windows on the proposed residential structures, the frequency and overall number of such collisions would be low due to the very limited extent of glazing. The birds that would be impacted are expected to consist primarily of locally resident species that are regionally abundant. Therefore, the project will not result in a significant impact on birds due to collisions with the new residential buildings.

6.6 Impacts due to Conflicts with Local Policies: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (Less than Significant)

6.6.1 Town of Portola Valley Municipal Code 15.12.275 Protection of Significant Trees (Less than Significant)

Per the Town of Portola Valley Municipal Code 15.12.275, Protection of Significant Trees, permits from the Town's planning department and payment of a fee are required for the removal of any trees which meets the definition of significant tree, as defined in Section 3.3 above. The removal or pruning of trees protected by the Town of Portola Valley Municipal Code, in the absence of compliance with the Town's Municipal Code, would be considered potentially significant under CEQA.

The total number of trees that will be removed or pruned, as well as the total number of "significant trees" that will be impacted, has not yet been determined, and cannot be known with certainty until the VMP is implemented and Stanford is able to determine precisely where vegetation management involving trees (e.g., removal or pruning) is necessary. It is estimated that the density of trees on the project site is approximately 70-80 per acre. Only a subset of these trees meet the Town's definition of a "significant tree", and only a subset of all trees, and significant trees, will be removed or pruned.

As such, the project would comply with the Town's significant trees ordinance, including obtaining a permit from the Town to remove protected trees, paying any applicable fee, and complying with permit conditions (which may include planting appropriate native replacement trees). Because Stanford University will comply with the Town's tree ordinance, potential impacts related to conflict with local policies or ordinances protecting heritage trees would be less than significant.

6.7 Impacts due to Conflicts with an Adopted Habitat Conservation Plan: Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan (No Impact)

The project site is not located within an area covered by an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Although Stanford University has a Habitat Conservation Plan for activities on portions of its lands, the Stanford Wedge project site is located outside the Habitat Conservation Plan boundary. Therefore, the project would not conflict with any such plans.

Section 7. References

Baldwin, B. G., D. H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, Editors. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley, California.

Barbour, R.W. and W.H. Davis. 1969. Bats of America. University of Kentucky Press, Lexington, Kentucky.

Barry, S. 1994. The distribution, habitat, and evolution of the San Francisco garter snake, *Thamnophis sirtalis tetrataenia*. Unpublished Masters Dissertation, UC Davis, 143 pages.

Beier, P. 2006. Effects of artificial night lighting on mammals in Rich, C., and T. Longcore, eds. Ecological Consequences of Artificial Night Lighting. Covelo, CA: Island Press. Pp 19-42.

Buehler, D.A. 2000. Bald eagle (*Haliaeetus leucocephalus*) in A. Poole and F. Gill, editors. The Birds of North America. The Birds of North America, Inc., Philadelphia.

Bulger, J.B., N.J. Scott, Jr., and R.B. Seymour. 2003. Terrestrial activity and conservation of adult California red-legged frogs *Rana aurora draytonii* in coastal forests and grasslands. Biological Conservation 110: 85-95.

Bury, R.B. and D.J. Germano. 2008. Actinemys marmorata (Baird and Girard 1852) - western pond turtle, Pacific pond turtle in G.J. Rhodin, C.H. Pritchard, P.P. van Dijk, R.A. Saumure, K.A. Buhlmann, and J.B. Iverson, editors. Conservation biology of freshwater turtles and tortoises: A compilation project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs.

Carraway L.N. and B.J. Verts. 1991. *Neotoma fuscipes*. Mammalian Species No. 386, The American Society of Mammalogists. 10 pp.

[CDFW] California Department of Fish and Wildlife. 2020. VegCAMP Natural Communities Lists. <https://www.wildlife.ca.gov/data/vegcamp/natural-communities>. Accessed March 2019.

[CNDDB] California Natural Diversity Database. 2020. Rarefind 5.0. California Department of Fish and Wildlife. Accessed June 2019 from http://www.dfg.ca.gov/biogeodata/cnddb/mapsanddata.asp.

[CNPS] California Native Plant Society. 2020. Inventory of Rare and Endangered Plants. Accessed June 2019 from http://www.cnps.org/inventory.

CaliforniaHerps.com. 2020. Non-native reptiles and amphibians introduced into California. Available http://www.californiaherps.com/frogs/pages/r.boylii.html. Accessed June 2020.

Cornell Lab of Ornithology 2020. eBird: An online database of bird distribution and abundance [web application]. eBird, Cornell Lab of Ornithology, Ithaca, New York. Available: http://www.ebird.org. (Accessed: June 2020]).

DeCandido R., and D. Allen. 2006. Nocturnal hunting by peregrine falcons at the Empire State Building, New York City. Wilson J. Ornithol. 118(1): 53-58.

de Molenaar, J. G., M. E. Sanders, and D. A. Jonkers. 2006. Road lighting and grassland birds: local influence of road lighting on a black-tailed godwit population in Rich, C., and T. Longcore, eds. Ecological Consequences of Artificial Night Lighting. Covelo, CA: Island Press. Pp 114-136.

Dunk, J. R., and R. J. Cooper. 1994. Territory-size regulation in black-shouldered kites. Auk 111:588-595.

Dunk, J. R. 1995. White-tailed Kite (*Elanus leucurus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: http://bna.birds.cornell.edu/bna/species/178

Erichsen, E. L., K S. Smallwood, A. M. Commandatore, B. W. Wilson, and M. D. Fry. 1996. White-tailed kite movement and nesting patterns in an agricultural landscape in D. Bird, D. Varland, and J. Negro, editors. Raptors in Human Landscapes. Academic Press, San Diego, California.

Faber-Langendoen, D., J. Nichols, L. Master, K. Snow, A. Tomaino, R. Bittman, G. Hammerson, B. Heidel, L. Ramsay, A. Teucher, and B. Young. 2012. NatureServe Conservation Status Assessments: Methodology for Assigning Ranks. NatureServe, Arlington, VA.

Fellers, G.M. 2005. *Rana draytonii* California red-legged frog. In M. Lannoo, ed. Amphibian Declines: The Conservation Status of United States Species. University of California Press. CA: Berkeley. Pp 552-554.

Fellers, G.M. and P.M. Kleeman. 2007. California red-legged frog (*Rana draytonii*) movement and habitat use: implications for conservation. Journal of Herpetology 41(2): 276-286.

Ferguson, H., and J. M. Azerrad. 2004. Pallid bat *Antrozous pallidus*. In *Management recommendations for Washington's priority species - Volume V: Mammals*: Washington Department of Fish and Wildlife.

Google Inc. 2019. Google Earth (Version 7.3.0.3832) [Software]. Available from earth.google.com.

Hall, E.R. 1981. The mammals of North America. 2nd edition. Volume II. John Wiley and Sons, New York, New York.

Haynie, M.L., C.F. Fulhorst, M. Rood, S.G. Bennett, B.D. Hess, and R.D. Bradley. 2007. Genetic variation in multilocus microsatellite genotypes in two species of woodrats (*Neotoma macrotis* and *N. fuscipes*). California Journal of Mammalogy 88:745-758.

Holland, R. F. 1986. Preliminary descriptions of the terrestrial natural communities of California. California Department of Fish and Game.

Jennings, M.R. and M.P. Hayes. 1994. Amphibian and reptile species of special concern in California. California Department of Fish and Game, Inland Fisheries Division.

Johnston, D.S., B. Hepburn, J. Krauel, T. Stewart, and D. Rambaldini. 2006. Winter roosting and foraging ecology of pallid bats in Central Coastal California. Bat Research News 47:115.

Kucera, T. 1997. California Giant Salamander (*Dicamptodon ensatus*). California Department of Fish and Game. http://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=1510 Accessed August 2016.

Larsen, S. S. 1994. Life History Aspects of the San Francisco Garter Snake at the Millbrae Habitat Site. M.S. Thesis. California State University, Hayward, California. 105 pp.

Launer, A. E. 2016. Biological Assessment for the proposed low flow crossing modification project Stanford University. Prepared for Stanford University. May 13.

Launer, Alan. Associate Director, Conservation Planning. 2018. Stanford University. Stanford. February 27—email correspondence with Kim Briones of H. T. Harvey & Associates regarding special-status amphibians at Jasper Ridge.

Lee, D.E. and W.D. Tietje. 2005. Dusky-footed woodrat demography and prescribed fire in a California oak woodland. Journal of Wildlife Management 69(3):1211-1220.

Longcore, T., and C. Rich. 2004. Ecological light pollution. Front. Ecol. Environ. 2(4): 191-198.

Miller, M. W. 2006. Apparent effects of light pollution on singing behavior of American robins. Condor 108(1): 130-139.

Negro, J. J., J. Bustamante, C. Melguizo, J. L. Ruiz, and J. M. Grande. 2000. Nocturnal activity of lesser kestrels under artificial lighting conditions in Seville, Spain. J. Raptor Res. 34(4): 327-329.

[NRCS] Natural Resources Conservation Service. 2019. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed March 2017.

Noble, P.L. 2007. Long-eared owl *Asio otus*. Pages 238-239 in W.G. Bousman, editor. Breeding Bird Atlas of Santa Clara County, California. Santa Clara Valley Audubon Society.

Nussbaum, R. A., E. D. Brodie, Jr., and R. M. Storm. 1983. Amphibians and reptiles of the Pacific northwest. University of Idaho Press, Moscow, ID.

Panorama Environmental, Inc. 2020a. Stanford University Stanford Wedge Property Development Vegetation Management Plan. Prepared for Stanford University. May 2020.

Panorama Environmental, Inc. 2020b. Implementation Plan for the Stanford Wedge Property Development Vegetation Management Plan. Prepared for Stanford University. August 2020.

Polite, C. 1990. Black-shouldered Kite *Elanus caeruleus*. In California's Wildlife, Vol II: Birds. D. C. Zeiner, W. F. Laudenslayer Jr., K. E. Mayer, and M. White, Eds. California Department of Fish and Game, California Statewide Wildlife Habitat Relationships System. Pp 120-121.

Ringer, R. K. 1972. Effect of light and behavior on nutrition. J. Anim. Sci. 35: 642-647.

Rogers, D. I., T. Piersma, and C. J. Hassell. 2006. Roost availability may constrain shorebird distribution: Exploring the energetic costs of roosting and disturbance around a tropical bay. Biol. Conserv. 33(4): 225-235.

[SAS] Sequoia Audubon Society. 2001. San Mateo County Breeding Bird Atlas. 224 p.

Safford, H. D., Viers, J. H. and Harrison, S. P. 2005. Serpentine Endemism in the California Flora: A Database of Serpentine Affinity Madrono, California Botanical Society, Northridge, Calif 52(4):222-257.

Sawyer, J. O., T. Keeler-Wolf and J. M. Evens. 2009. A Manual of California Vegetation [online]. Second Edition. California Native Plant Society.

Skonieczny, M. F., and J. R. Dunk. 1997. Hunting synchrony in white-tailed kites. Journal of Raptor Research 31:79-81.

Stanford University. 2013. Stanford University Habitat Conservation Plan. Accessible online http://hcp.stanford.edu/

Stebbins, Robert C. *A Field Guide to Western Reptiles and Amphibians*. 3rd Edition. Houghton Mifflin Company, 2003.

Thomson, R. C., A. N. Wright, and H. B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. University of California Press.

[USFWS] U.S. Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for the California Red-legged Frog. Federal Register 61:25813-26833.

[USFWS] U.S. Fish and Wildlife Service. 2010. Endangered and Threatened Wildlife and Plants; Revised Designation of Critical Habitat for California Red-legged Frog; Final Rule. Federal Register 75:12815-12959.

[USFWS] U.S. Fish and Wildlife Service. 2002. Recovery plan for the California red-legged frog (*Rana aurora draytonii*). U.S. Fish and Wildlife Service, Region 1.

Wilson, D.E. and S. Ruff. 1999. The Smithsonian book of North American mammals. Smithsonian Institution Press, Washington, D. C.

Zeiner, D. C., W. F. Laudenslayer Jr., K. E. Mayer, and M. White, editors. 1990. California's Wildlife. Volume II: Birds. California Department of Fish and Game, Sacramento, California.

Zeiner, D.C., W.F. Laudenslayer Jr., K.E. Mayer, and M. White, editors. 1990. California's wildlife. Volume III: Mammals. California Department of Fish and Game, Sacramento, California.

Appendix A. Plants Observed on the Project site

Family	Scientific Name	Common Name
Agavaceae	*Chlorogalum pomeridianum*	soap plant
Anacardiaceae	*Toxicodendron diversilobum*	poison oak
Apiaceae	*Anthriscus caucalis*	bur chervil
Apiaceae	*Conium maculatum*	poison hemlock
Apiaceae	*Sanicula bipinnatifida*	purple sanicle
Apiaceae	*Sanicula crassicaulis*	pacific sanicle
Asteraceae	*Achillea millefolium*	yarrow
Asteraceae	*Artemisia californica*	coastal sage brush
Asteraceae	*Baccharis pilularis*	coyote brush
Asteraceae	*Carduus pycnocephalus*	Italian thistle
Asteraceae	*Cirsium vulgare*	bull thistle
Asteraceae	*Dittrichia graveolens*	stinkwort
Asteraceae	*Matricaria discoidea*	pineapple weed
Asteraceae	*Silybum marianum*	milk thistle
Asteraceae	*Sonchus oleraceus*	sow thistle
Asteraceae	*Taraxacum officinale*	red-seeded dandelion
Asteraceae	*Wyethia glabra*	smooth mule ears
Boraginaceae	*Cynoglossum grande*	houndstongue
Boraginaceae	*Pholistoma auritum*	fiesta flower
Brassicaceae	*Brassica nigra*	black mustard
Brassicaceae	*Cardamine californica*	bitter cress
Brassicaceae	*Raphanus sativus*	wild radish
Brassicaceae	*Sisymbrium officinale*	hedge mustard
Brassicaceae	*Thlaspi arvense*	field pennycress
Caprifoliaceae	*Lonicera hispidula*	pink honeysuckle
Caprifoliaceae	*Symphoricarpos mollis*	snowberry
Caryophyllaceae	*Stellaria media*	chickweed
Cucurbitaceae	*Marah fabacea*	California man-root
Dryopteridaceae	*Dryopteris arguta*	wood fern
Ericaceae	*Arbutus menziesii*	madrone
Ericaceae	*Erodium cicutarium*	big berry manzanita
Euphorbiaceae	*Euphorbia crenulata*	Chinese caps
Fabaceae	*Acacia melanoxylon*	blackwood acacia
Fabaceae	*Lathyrus vestitus*	common pacific pea
Fabaceae	*Medicago polymorpha*	California burclover
Fabaceae	*Trifolium campestre*	hop clover

Family	Scientific Name	Common Name
Fabaceae	*Vicia sativa*	common vetch
Fagaceae	*Quercus agrifolia*	coast live oak
Fagaceae	*Quercus douglasii*	blue oak
Fagaceae	*Quercus lobata*	valley oak
Geraniaceae	*Geranium dissectum*	wild geranium
Geraniaceae	*Geranium molle*	crane's bill geranium
Geraniaceae	*Erodium cicutarium*	coastal heron's bill
Grossulariaceae	*Ribes californicum*	California gooseberry
Iridaceae	*Sisyrinchium bellum*	blue eyed grass
Juncaceae	*Juncus* sp.	rush
Lamiaceae	*Clinopodium douglasii*	yerba buena
Lamiaceae	*Lepechinia calycina*	pitcher sage
Lamiaceae	*Scutellaria tuberosa*	Danny's skullcap
Lamiaceae	*Stachys bullata*	southern hedge nettle
Lauraceae	*Umbellularia californica*	California bay
Liliaceae	*Calochortus albus*	white fairy lantern
Melanthiaceae	*Trillium chloropetalum*	giant wakerobin
Melanthiaceae	*Toxicoscordion fremontii*	Fremont's star lily
Montiaceae	*Claytonia perfoliata*	miner's lettuce
Myrsinaceae	*Lysimachia arvensis*	scarlet pimpernel
Orobanchaceae	*Castilleja attenuata*	narrow leaved owl's clover
Orobanchaceae	*Pedicularis densiflora*	Indian warrior
Papaveraceae	*Fumaria capreolata*	white ramping fumitory
Phrymaceae	*Diplacus aurantiacus*	sticky monkeyflower
Poaceae	*Avena* sp.	wild oat
Poaceae	*Briza maxima*	rattlesnake grass
Poaceae	*Briza minor*	little rattlesnake grass
Poaceae	*Bromus diandrus*	ripgut brome
Poaceae	*Bromus hordeaceus*	soft chess
Poaceae	*Bromus madritensis*	red brome
Poaceae	*Ehrharta erecta*	upright veldt grass
Poaceae	*Festuca microstachys*	small fescue
Poaceae	*Festuca perennis*	Italian rye grass
Poaceae	*Hordeum murinum*	foxtail barley
Poaceae	*Poa annua*	annual blue grass
Pteridaceae	*Adiantum jordanii*	maidenhair fern
Ranunculaceae	*Clematis lasiantha*	pipestem
Ranunculaceae	*Ranunculus muricatus*	buttercup
Rosaceae	*Adenostoma fasciculatum*	chamise
Rosaceae	*Cercocarpus betuloides* var. *betuloides*	birch leaf mountain mahogany

Family	Scientific Name	Common Name
Rosaceae	*Heteromeles arbutifolia*	toyon
Rosaceae	*Rosa gymnocarpa* var. *gymnocarpa*	wood rose
Rosaceae	*Rubus ursinus*	California blackberry
Rubiaceae	*Galium aparine*	cleavers
Rubiaceae	*Sherardia arvensis*	field madder
Ruscaceae	*Maianthemum racemosum*	feathery false lilly of the valley
Sapindaceae	*Aesculus californica*	California buckeye
Saxifragaceae	*Lithophragma affine*	common woodland star
Solanaceae	*Solanum douglasii*	Douglas' nightshade
Themidaceae	*Dichelostemma capitatum*	blue dicks
Themidaceae	*Triteleia laxa*	Ithuriel's spear

Appendix B. Special-Status Plants Considered for Potential Occurrence on the Project site

Scientific Name	Common Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
Acanthomintha duttonii	San Mateo thorn-mint		X		
Allium peninsulare var. franciscanum	Franciscan onion		X		
Amsinckia lunaris	bent-flowered fiddleneck				
Androsace elongata ssp. acuta	California androsace				
Arabis blepharophylla	coast rockcress	X			
Arctostaphylos andersonii	Anderson's manzanita			X	
Arctostaphylos regismontana	Kings Mountain manzanita			X	
Astragalus nuttallii var. nuttallii	ocean bluff milk-vetch	X		X	
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	X			
Astragalus tener var. tener	alkali milk-vetch	X			
Calandrinia breweri	Brewer's calandrinia				
Calochortus umbellatus	Oakland star-tulip				
Calochortus uniflorus	pink star-tulip	X			
Castilleja ambigua var. ambigua	Johnny-nip	X			
Centromadia parryi ssp. congdonii	Congdon's tarplant	X			
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	X		X	
Cirsium fontinale var. fontinale	Crystal Springs fountain thistle	X	X		
Clarkia concinna ssp. automixa	Santa Clara red ribbons			X	
Collinsia corymbosa	round-headed Chinese-houses	X		X	
Collinsia multicolor	San Francisco collinsia	X			
Corethrogyne leucophylla	branching beach aster	X		X	
Cypripedium fasciculatum	clustered lady's-slipper	X			
Cypripedium montanum	mountain lady's-slipper	X			
Dirca occidentalis	western leatherwood				
Elymus californicus	California bottle-brush grass				
Equisetum palustre	marsh horsetail	X			
Eriophyllum latilobum	San Mateo woolly sunflower		X		
Eryngium aristulatum var. hooveri	Hoover's button-celery	X		X	

Scientific Name	Common Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
Eryngium jepsonii	Jepson's coyote-thistle	X			
Erysimum franciscanum	San Francisco wallflower		X		
Extriplex joaquinana	San Joaquin spearscale	X			
Fissidens pauperculus	minute pocket moss	X			
Fritillaria agrestis	stinkbells		X		
Fritillaria biflora var. ineziana	Hillsborough chocolate lily		X		
Fritillaria liliacea	fragrant fritillary		X		
Grindelia hirsutula var. maritima	San Francisco gumplant	X			
Hesperevax sparsiflora var. brevifolia	short-leaved evax	X			
Hesperolinon congestum	Marin western flax		X		
Hoita strobilina	Loma Prieta hoita	X			
Hordeum intercedens	vernal barley	X			
Hosackia gracilis	harlequin lotus	X			
Iris longipetala	coast iris	X			
Lasthenia conjugens	Contra Costa goldfields		X		
Legenere limosa	legenere	X			
Leptosiphon acicularis	bristly leptosiphon				
Leptosiphon ambiguus	serpentine leptosiphon		X		
Leptosiphon grandiflorus	large-flowered leptosiphon		X		
Lessingia arachnoidea	Crystal Springs lessingia		X		
Lessingia hololeuca	woolly-headed lessingia	X			
Lupinus arboreus var. eximius	San Mateo tree lupine	X			
Malacothamnus arcuatus	arcuate bush-mallow		X		
Mielichhoferia elongata	elongate copper moss	X			
Monolopia gracilens	woodland woollythreads				
Pedicularis dudleyi	Dudley's lousewort	X			
Pentachaeta bellidiflora	white-rayed pentachaeta	X			
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	X			
Piperia candida	white-flowered rein orchid	X			
Piperia michaelii	Michael's rein orchid				
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	X			
Plagiobothrys chorisianus var. hickmanii	Hickman's popcornflower			X	
Plagiobothrys glaber	hairless popcornflower	X			

Scientific Name	Common Name	Suitable Habitat Absent	Edaphic Conditions Absent	Outside Elevation Range	Extirpated from Project Vicinity
Ranunculus lobbii	Lobb's aquatic buttercup	X			
Sanicula hoffmannii	Hoffmann's sanicle	X			
Senecio aphanactis	chaparral ragwort	X			
Silene verecunda ssp. verecunda	San Francisco campion	X			
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	X			
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	X			
Suaeda californica	California seablite	X		X	
Toxicoscordion fontanum	marsh zigadenus	X			
Trifolium amoenum	two-fork clover	X			
Trifolium buckwestiorum	Santa Cruz clover				
Trifolium hydrophilum	saline clover	X			
Triphysaria floribunda	San Francisco owl's-clover	X		X	
Usnea longissima	Methuselah's beard lichen	X			

Appendix C. Detailed Descriptions of Special-Status Plant and Animal Species Potentially Occurring on or near the Project Site

Following are discussions of the potential occurrence of plant and animal species that are known to occur or could potentially occur on the project site; that are known to occur nearby; or that warrant expanded discussion due to potential resource agency interest.

Plants

Michael's Rein Orchid (*Piperia michaelii*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.2. Michael's rein orchid is a perennial herb belonging to the orchid family (Orchidaceae) that blooms from April to August. This species occurs in dry sites within cismontane woodland, coastal scrub, closed bluff scrub, closed-cone coniferous forest, chaparral, and lower montane coniferous forest at elevations ranging from 3 to 3,000 ft. This California endemic species is found in Alameda, Amador, Butte, Contra Costa, Fresno, Humboldt, Los Angeles, Monterey, Marin, Santa Barbara, San Benito, Santa Clara, Santa Cruz, Santa Cruz Island, San Francisco, San Luis Obispo, San Mateo, Stanislaus, Tulare, Tuolumne, Ventura, and Yuba counties. (CNPS 2020). This species may occur on the project site within dry areas of coast live oak woodland, blue oak woodland, and in openings and along margins of chamise chaparral. This species does not have the potential to occur within the 6.7-ac residential project site, as this flat area receives runoff from the surrounding hillside and is relatively mesic, but it could potentially occur within the larger 70-ac area where VMP treatments would occur, as well as where the access road and proposed trail may be constructed.

Bristly Leptosiphon (*Leptosiphon acicularis*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.2. Bristly leptosiphon is an annual herb in the phlox family (Polemoniaceae) that blooms from April to July. This species occurs in chaparral, cismontane woodland, coastal prairie, and valley and foothill grassland habitats at elevations from 180 to 4,921 ft. It is a California endemic documented in Alameda, Butte, Fresno, Humboldt, Lake, Mendocino, Marin, Napa, Santa Clara, San Mateo, and Sonoma counties. Occurrences in Contra Costa County are unconfirmed (CNPS 2019). Within the project site, this species has potential to occur in coast live oak woodland, blue oak woodland, mixed riparian forest, and in openings and along margins of chamise chaparral. This species was not observed during either the reconnaissance survey or the focused rare plant survey on the 6.7-ac residential portion of the project site, but it could occur within the 70-ac area where VMP treatments would occur, as well as where the access road and proposed trail may be constructed.

Oakland Star-tulip (*Calochortus umbellatus*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.2. Oakland star-tulip inhabits a small endemic range including populations in Alameda, Contra Costa, Lake, Marin, Santa Clara, San Mateo, and Stanislaus counties (CNPS 2019). It is

believed extirpated from the southernmost extent of its historic range in Santa Cruz County. This bulbiferous herb in the lily family (Liliaceae) often, but does not always occur on, serpentine substrates. It is found in a variety of habitats including broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland at elevations of approximately 330 - 2310 ft. Oakland star-tulip can bloom from March to May. Within the project site, this species has potential to occur in coast live oak woodland, blue oak woodland, mixed riparian forest, and in openings and along margins of chamise chaparral. This species was not observed during either the reconnaissance survey or the focused rare plant survey of the 6.7-ac residential portion of the project site but it could occur within the 70-ac area where VMP treatments would occur, as well as where the access road and proposed trail may be constructed.

Bent-flowered Fiddleneck (*Amsinckia lunaris*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Bent-flowered fiddleneck is an annual herb in the borage family (Boraginaceae) that blooms from March to June. It inhabits cismontane woodland, coastal bluff scrub, and valley and foothill grassland habitat at elevations from 10 to 1,640 ft. Bent-flowered fiddleneck occurs or has been known to occur in Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, Sonoma, and Yolo Counties. It is known from 86 occurrences in the North and Central Coast Ranges (CNPS 2019). Within the project site, this species has potential to occur in coast live oak woodland, blue oak woodland, mixed riparian forest, and in openings and along margins of chamise chaparral. This species was not observed during either the reconnaissance survey or the focused rare plant survey of the 6.7-ac residential portion of the project site but it could occur within the 70-ac area where VMP treatments would occur, as well as where the access road and proposed trail may be constructed.

Woodland Woolythreads (*Monolopia gracilens*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Woodland woollythreads is an annual herb in the composite family (Asteraceae) and blooms from March through July, although in some scenarios the bloom may begin in February (CNPS 2019). The species occurs in broadleaved upland forest openings, chaparral openings, cismontane woodland, North Coast coniferous forest openings, and valley and foothill grassland at elevations from 328 through 3,936 ft. Woodland woollythreads is a serpentine indicator (Safford 2005) and is often, though not always, found on serpentine soils. The range of the species includes Alameda, Contra Costa, Monterey, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, and San Mateo Counties. Within the project site, this species has potential to occur in coast live oak woodland, blue oak woodland, mixed riparian forest, and in openings and along margins of chamise chaparral. This species was not observed during either the reconnaissance survey or the focused rare plant survey of the 6.7-ac residential portion of the project site, but it could occur within the 70-ac area where VMP treatments would occur, as well as where the access road and proposed trail may be constructed.

Western Leatherwood (*Dirca occidentalis*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.2. Western leatherwood is a deciduous shrub in the mezereum family (Thymelaeaceae) that blooms from January to April, and sometimes as late as May. It is endemic to California, and is the only species in its family found in the state. This shrub occurs in mesic broadleaved upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland

habitats from 164 to 1,296 feet in elevation. The species has been documented from 71 occurrences in Alameda, Contra Costa, Marin, Santa Clara, San Mateo, and Sonoma counties. Populations of this species are generally declining, as they are not reproducing well (CNPS 2020). Within the project site, this species has the potential to occur within mixed riparian forest. This species was not observed during either the reconnaissance survey or the focused rare plant survey of the 6.7-ac residential portion of the project site. Suitable habitat is absent from the location of the potential access road and VMP activities will likely avoid most mixed riparian forest where this species is likely to occur. There is some potential, however, for individuals to be located in the vicinity of vegetation management activities.

Santa Cruz Clover (*Trifolium buckwestiorum*). Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.1. Santa Cruz clover is an annual herb in the legume family (Fabaceae) that blooms from April to October. This species generally occurs in gravelly margins of broadleaved upland forest, cismontane woodland, and coastal prairie habitats from 344 to 2,001 feet in elevation. It is a California endemic known from 50 occurrences, and documented in Mendocino, Monterey, Santa Clara, Santa Cruz, San Mateo, and Sonoma counties (CNPS 2020). Within the project site, this species has potential to occur in coast live oak woodland, blue oak woodland, and mixed riparian forest. This species was not observed during either the reconnaissance survey or the focused rare plant survey of the 6.7-ac residential portion of the project site, but it could occur within the 70-ac area where VMP treatments would occur, as well as where the access road and proposed trail may be constructed.

California Androsace (*Androsace elongata* ssp. *acuta*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.2. California androsace is an annual herb in the primrose family (Primulaceae) blooms from March through June. It occurs on dry, grassy slopes (Baldwin et al 2012) in chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland habitats at elevations from 492 to 3937 ft. CNPS also suggests the species may be found in meadows and seeps (CNPS 2020), but this is not corroborated by other sources. California androsace is a widespread species found in several counties including Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Los Angeles, Merced, Riverside, San Bernardino, San Benito, Santa Clara, San Diego, Siskiyou, San Joaquin, San Luis Obispo, San Mateo, Stanislaus, and Tehema counties (CNPS 2020). This species is very diminutive, and may be often overlooked. Within the project site, this species has potential to occur in coast live oak woodland, blue oak woodland, mixed riparian forest, and in openings and along margins of chamise chaparral. This species was not observed during either the reconnaissance survey or the focused rare plant survey of the 6.7-ac residential portion of the project site, but it could occur within the 70-ac area where VMP treatments would occur, as well as where the access road and proposed trail may be constructed.

Brewer's Calandrinia (*Calandrinia breweri*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.2. Brewer's calandrinia is an annual herb in the purslane (Portulacaceae) family that blooms from March to June. It is widely distributed across California in chaparral and coastal scrub habitats at elevations of approximately 33 to 4025 ft. Population records show this species occurring in Contra Costa, Los Angeles, Mendocino, Monterey, Mariposa, Marin, Napa, Orange, Riverside, Santa Barbara, San Bernardino, Santa Clara,

Santa Cruz, San Diego, Shasta, San Luis Obispo, San Mateo, Sonoma, and Ventura counties, as well as in Baja California and Santa Cruz and Santa Rosa Islands. This species is uncommon in all regions over its range, however it is scattered throughout the state. (CNPS 2020). Within the project site, this species has the potential to occur only in openings and along margins of chamise chaparral. Therefore, this species is considered absent from the 6.7-ac residential portion of the project site, which lacks such habitat, but it could potentially occur within the area where VMP treatments would occur, as well as where the access road and proposed trail may be constructed.

California bottle-brush grass (*Elymus californicus*). Federal Listing Status: None; State Listing Status: None; CNPS List: 4.3. California bottle-brush grass is a perennial species in the grass (Poaceae) family. It grows at elevations of 50 to 1540 ft in broadleafed upland forest, cismontane woodland, north coast coniferous forest, and riparian woodland (CNPS 2015). It occurs in four counties (Marin, Santa Cruz, San Mateo, and Sonoma) and blooms from May to November. On the approximately 69-acre Undeveloped Area of the project site, the California bottle-brush has limited potential to occur in the coast live oak and blue oak woodland habitat and mixed riparian forest. However, this species was ruled out as having potential to occur in the residential portion of the project site because this portion of the site is too open and dry to support this species, and this species was not observed during focused, floristic special-status plant surveys conducted at a time when this species should have been detectable.

Animals

California Red-legged Frog (*Rana draytonii*). Federal Listing Status: Threatened; State Listing Status: Species of Special Concern. The California red-legged frog was federally listed as threatened in June 1996 (USFWS 1996) based largely on a significant range reduction and continued threats to surviving populations. Critical habitat was most recently designated in March 2010 (USFWS 2010). Designated critical habitat is not present on the project site. The historical distribution of the California red-legged frog extended from the city of Redding in the Central Valley and Point Reyes National Seashore along the coast, south to Baja California, Mexico. The species' current distribution includes isolated locations in the Sierra Nevada and the San Francisco Bay area, and along the central coast (USFWS 2002).

The California red-legged frog inhabits perennial freshwater pools, streams, and ponds throughout the Central California Coast Range and isolated portions of the western slope of the Sierra Nevada (Fellers 2005). Its preferred breeding habitat consists of deep perennial pools with emergent vegetation for attaching egg clusters (Fellers 2005), as well as shallow benches to act as nurseries for juveniles (Jennings and Hayes 1994). Non-breeding frogs may be found adjacent to streams and ponds in grasslands and woodlands, and may travel over 2 mi from their breeding locations across a variety of upland habitats to suitable nonbreeding habitats (Bulger et al. 2003, Fellers and Kleeman 2007). However, the distance moved is highly site-dependent, as influenced by the local landscape (Fellers and Kleeman 2007).

The project site, including the three on-site streams, and the drainage immediately to the north, lacks suitable aquatic breeding habitat (i.e., long-lived pools or slow-moving streams with emergent vegetation or other egg mass attachment sites) for the California red-legged frog. Thus, for California red-legged frogs to be present on the project site, potential breeding locations must be close enough for individuals to disperse between those breeding sites and the project site (i.e., within 1-2 mi). The nearest known breeding populations of red-legged frog in the project vicinity are located along San Francisquito Creek more than one mile from the project site, and Matadero Creek east of Highway 280, more than two miles from the project site (CNDDB 2020). In addition, an individual red-legged frog was detected in Los Trancos Creek near the Los Trancos Creek Diversion Facility, less than 0.5 mi from the project site. Individuals from San Francisquito Creek and Los Trancos Creek could be a source of dispersing red-legged frogs. However, red-legged frogs are considered to be extirpated from San Francisquito Creek, as they have not been detected since 2007. Furthermore, red-legged frogs have not been observed in Los Trancos Creek since the installation of a fish ladder at the facility in 1995 (Stanford University 2013). The distance between the Matadero Creek population and the project site is greater than the known dispersal capability of the species, and the Matadero Creek population is therefore unlikely to be a source of dispersing individuals. While there are no recent observations of red-legged frogs in Los Trancos Creek, their presence cannot be entirely ruled out. Thus, based on the lack of suitable breeding habitat on the project site, the distance to the nearest known breeding habitat, and the potential presence in Los Trancos Creek, the likelihood of occurrence of California red-legged frogs on the project site is low. If this species is present at all, it is most likely to occur as a very infrequent, wet-season dispersant, most likely to the intermittent stream along the northern edge of the site.

Foothill Yellow-legged Frog (*Rana boylii*). Federal Listing Status: None; State Listing Status: Endangered. The foothill yellow-legged frog is a stream-breeding frog that was historically found in most Pacific drainages from the Coast Ranges to the western Sierra Nevada and San Gabriel Mountain foothills (Jennings and Hayes 1994, CaliforniaHerps.com 2020). Currently, the foothill yellow-legged frog may occupy only 55% of its historical range (CaliforniaHerps.com 2020). Ideal habitat for this frog consists of streams with riffles and cobble-sized rocks, with slow water flow (Jennings and Hayes 1994). Suitable breeding habitat is composed of stream reaches with consistently slow-moving flows surrounded by upland non-breeding habitat. Adults often bask on exposed rock surfaces near streams. During periods of inactivity, especially during cold weather, individuals seek cover under rocks in the streams or on shore within a few yards of water.

Suitable habitat for the foothill yellow-legged frog is present in several stream systems in the Santa Cruz Mountains. However, there are only two recorded occurrence of the species in San Mateo County in recent history, in 1999 at Pescadero Creek County Park and in Portola Redwoods State Park in 1995 (CNDDB 2020). Thus, the species is likely rare and of very limited distribution, if it still occurs at all, in the County. Furthermore, no suitable habitat is present on the project site, as the streams on the project site and immediately north of the site lack the open canopy and cobbly substrate typical of occupied habitat. Therefore, this species is not expected to occur on the project site.

Bald Eagle (*Haliaeetus leucocephalus*). Federal Listing Status: None; State Listing Status: Endangered, Fully Protected. Bald eagle populations exhibited precipitous declines in the early part of the 20th century primarily as a result of pesticide poisoning, which severely impacted reproductive rates (Buehler 2000). DDT was the most debilitating of these chemicals, and since its use was banned in the United States in 1972, eagle populations have recovered rapidly (Buehler 2000). The bald eagle was removed from the federal endangered species list in 2008 but remains listed as both endangered and fully protected by the State of California.

Ideal habitat for bald eagles is composed of remote, forested landscape with old-growth or mature trees and easy access to an extensive and diverse prey base. Bald eagles forage in fresh and salt water where fish are abundant and diverse. They build nests in tall, sturdy trees at sites that are in relatively close proximity to aquatic foraging areas and isolated from human activities. The eagle breeding season extends from January through August (Buehler 2000).

Bald eagles build nests in tall, sturdy trees at sites that are in relatively close proximity to aquatic foraging areas and often isolated from human activities. They are a fairly scarce, but increasingly widespread, breeder in the Bay Area (CNDDB 2020). They have nested on the south side of Felt Lake approximately 0.25 mile east of the project site, and they have been observed in the project area along San Francisquito Creek and at Searsville Lake during the breeding season (CNDDB 2020, Cornell Lab of Ornithology 2020). No existing bald eagle nests or suitably large trees for nesting are present on or immediately adjacent to the project site, and the project site lacks extensive open foraging habitat or aquatic/open water foraging habitat. Therefore, this species is not expected to occur on the project site.

Western Pond Turtle (*Emys marmorata*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The western pond turtle occurs in ponds, streams, and other wetland habitats in the Pacific slope drainages of California (Bury and Germano 2008). Ponds or slack-water pools with suitable basking sites (such as logs) are an important habitat component for this species, and western pond turtles do not occur commonly along high-gradient streams. Females lay eggs in upland habitats, in clay or silty soils in unshaded (often south-facing) areas (Jennings and Hayes 1994). Juveniles occur in shallow aquatic habitats (often creeks) with emergent vegetation and ample invertebrate prey. Nesting habitat is typically found within 600 feet of aquatic habitat (Jennings and Hayes 1994), but if no suitable nesting habitat can be found close by, adults may travel overland considerable distances to nest.

No suitable aquatic habitat is present on the project site, as the on-site streams flow for only a short duration. However, the species is known to occur at Felt Lake, approximately 0.25 mile east of the site, and elsewhere in the project vicinity in San Francisquito Creek and Lagunita approximately 2.25 miles to the north (CNDDB 2020). This species is likely present in Los Trancos Creek just to the east of the site. Despite the lack of suitable aquatic and upland habitat, dispersing individuals could potentially cross Alpine Road and make their way to the project site, where construction and VMP treatments would occur, on rare occasions. However, if pond turtles do occur on the project site, the number of turtles is expected to be very low.

White-tailed Kite (*Elanus leucurus*). Federal Listing Status: None; State Listing Status: Fully Protected. In California, white-tailed kites can be found in the Central Valley and along the coast, in grasslands, agricultural fields, cismontane woodlands, and other open habitats (Zeiner et al. 1990, Dunk 1995, Erichsen et al. 1996). White-tailed kites are year-round residents of the state, establishing nesting territories that encompass open areas with healthy prey populations, and snags, shrubs, trees, or other nesting substrates (Dunk 1995). Nest sites may be in open areas or edges of forested areas (Dunk 1995). Nonbreeding birds typically remain in the same area over the winter, although some movements do occur (Polite 1990). The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles, and prey base may be the most important factor in determining habitat quality for white-tailed kites (Dunk and Cooper 1994, Skonieczny and Dunk 1997). Although the species recovered after population declines during the early 20th century, its populations may be exhibiting new declines because of recent increases in habitat loss and disturbance (Dunk 1995, Erichsen et al. 1996).

Marshes and grasslands throughout San Mateo County provide suitable breeding and/or foraging habitat for the white-tailed kite, with breeding occurring primarily in the southwestern-most portion of the County and along the Bay (SAS 2001). White-tailed kites have been observed during the breeding season near the project site, suitable foraging habitat is present east of the site surrounding Felt Lake, and ostensibly suitable breeding habitat is present in limited open areas of the site where residential development and access road construction, and VMP activities would occur. No raptor nests were found in these trees during the reconnaissance survey. Nonetheless, white-tailed kites could potentially nest on the project site in the future, and may forage in the California annual grasslands on and near the project site. At most, one nesting pair of this species would be present on the project site.

Pallid Bat (*Antrozous pallidus*). Federal Listing Status: None; State Listing Status: Species of Special Concern. Pallid bats are most commonly found in oak savannah and in open dry habitats with rocky areas, trees, buildings, or bridge structures that are used for roosting (Zeiner et al. 1990; Ferguson and Azerrad 2004). Coastal colonies commonly roost in deep crevices in rocky outcroppings, in buildings, under bridges, and in the crevices, hollows, and exfoliating bark of trees. Night roosts often occur in open buildings, porches, garages, highway bridges, and mines. Colonies can range in size from a few individuals to over a hundred (Barbour and Davis 1969), and they usually consist of at least 20 individuals (Wilson and Ruff 1999). Pallid bats typically winter in canyon bottoms and riparian areas. After mating during the late fall and winter, females leave to form maternity colonies, often on ridge tops or other warmer locales (Johnston et al. 2006). Pallid bat roosts are very susceptible to human disturbance. The pallid bat occurs sporadically throughout open areas and along roads of the Pacific coastal regions, including the Santa Cruz Mountains. This species has been extirpated as a breeder from urban areas close to the Bay, but may still breed in the Santa Cruz Mountains. Existing buildings on the site do not provide day-roost habitat for individual pallid bats, but crevice-roosting habitat and potentially suitable habitat for maternity colonies is present in several crevices and cavities on several large trees where the residential development, access road, and trail construction, and VMP activities would occur.

San Francisco Dusky-footed Woodrat (*Neotoma fuscipes annectens*). Federal Listing Status: None; State Listing Status: Species of Special Concern. The San Francisco dusky-footed woodrat occurs in a variety of woodland and scrub habitats throughout the San Mateo County and the adjacent Central Coast Range, south to the Pajaro River in Monterey County (Hall 1981, Zeiner et al. 1990). These woodrats prefer riparian and oak woodland forests with dense understory cover, or thick chaparral habitat (Lee and Tietje 2005). Dusky-footed woodrats build large, complex nests of sticks and other woody debris, which may be maintained by a series of occupants for several years (Carraway and Verts 1991). Woodrats also are very adept at making use of human-made structures, and can nest in electrical boxes, pipes, wooden pallets, and even portable storage containers. Woodrat nest densities increase with canopy density and with the presence of poison oak (Carraway and Verts 1991). Although the San Francisco dusky-footed woodrat is described as a generalist omnivore, individuals may specialize on local plants that are available for forage (Haynie et al. 2007). The breeding season for dusky-footed woodrat begins in February and sometimes continues through September, with females bearing a single brood of one to four young per year (Carraway and Verts 1991).

Oak trees and understory vegetation in portions of the project site provide suitable habitat for the dusky-footed woodrat, and the species was confirmed to be present during the reconnaissance survey. At least 13 nests of the San Francisco dusky-footed woodrat are located on the residential portion of the project site. These nests are located in the coast live oak woodland, mixed riparian forest, and rural-residential habitats of the project site. Numerous additional nests were observed during surveys conducted to facilitate the fuels reduction activities in the oak woodland habitat along Alpine Road and the western perimeter of the 6.7-ac portion of the site in June 2019. Thus, woodrat nests are expected to be present in the coast live oak woodland, blue oak woodland, and chaparral habitats where the residential development, access road, and trail construction, and VMP activities would occur.