# BIOLOGICAL SITE ASSESSMENT
# ALTA WAY (APN 049-041-50) PROJECT
# MARIN COUNTY, CALIFORNIA

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# 1.0 INTRODUCTION

## 1.1 Purpose of this Biological Site Assessment Report

At the request of Eric Nuttall (the Applicant), Huffman-Broadway Group, Inc. (HBG) prepared a Biological Site Assessment related to a proposal by Equity Smart Investments to construct a single-family home and ancillary facilities on the property located at a vacant lot off Alta Way within Marin County, California. The 0.8-acre Project Site consists of one separate Assessor's Parcel Number (APN): APN 049-041-50 in an unincorporated area of Mill Valley in Marin County.

This Biological Site Assessment has been prepared to comply with the requirements of Item #36, Biological Site Assessment, in Marin County's list of project application materials and County guidelines as spelled out in the document "Preparation of Biological Site Assessments." As stated in these guidelines, the objective of this study was to: (1) determine whether there are any sensitive biological resources such as wetlands, streams, or habitats for special status species in proximity to a proposed project; (2) accurately map any biological constraints on a site plan for the project; and (3) to determine whether the proposed project would result in potentially significant adverse biological impacts pursuant to the California Environmental Quality Act (CEQA).

HBG's analysis herein included: (1) a review of the habitat characteristics of the site and species of plants and animals expected to utilize the site; (2) review of federal and state databases to determine if any populations of endangered, threatened, rare, candidate, or proposed to be listed Special Status Species have occurred historically or are currently known to exist in the project vicinity; (3) a field survey of the site by an HBG biologist to determine presence and/or location of any Sensitive Natural Communities, including wetlands, Streams, riparian corridors, or habitats for Special Status Species; and (4) an evaluation of whether the proposed project has the potential to result in impacts on Special Status Species or a Sensitive Natural Community or Communities. This Biological Site Assessment recognizes that if significant biological impacts of the project are identified, the Marin County Planning Division could require that a full Biological Resources Report be prepared that identifies detailed measures to mitigate impacts of the project. The evaluation herein identifies biological concerns that will need to be addressed and recommends the types of procedures that could be committed to by the applicant at this time and incorporated into the project description.

Based on the evaluation herein, we find that the proposed development at the site could be accomplished without causing significant biological impacts as long as certain conservation elements are included within the project description including: (1) a preconstruction bird nesting survey during the bird nesting season to ensure compliance with the federal Migratory Bird Treaty Act and California Fish and Game Code, (2) a preconstruction bat habitat assessment with follow-up activities as necessary to protect roosting bats that may be present and to ensure compliance with the state Fish and Game Code, (3) implementation of the Tree Replacement Plan (payment of in-lieu fees) and Tree Protection Plan as detailed by the project arborist, and (4) implementation of Best Management Practices as part of an Erosion Control Plan to prevent sedimentation within downstream aquatic habitats.

## 1.2 Project Location

The subject property consists of a single parcel totaling approximately 0.8 acres in size off of Alta Way in an unincorporated area of Mill Valley, Marin County, California. The lot is a partially wooded, vacant lot within the Tamalpais-Homestead Valley area of Marin County. The location of the Project Site is shown in Appendix A, Figure 1. Appendix A, Figure 2 shows the location of the site on the San Rafael 7.5-minute USGS quadrangle map. Figure 3 shows an aerial image of the Project Site.

## 1.3 Project Description

Equity Smart Investments plans to construct a single-family home and Accessory Dwelling Unit (ADU) on a partially wooded, 0.8-acre property located at a vacant lot off of Alta Way near Mill Valley within Marin County, California (APN 049-041-50). The project includes the construction of an approximately 3,400-square-foot single-family home and an Accessory Dwelling Unit (ADU) of just under 1,000 square feet. Access to the property will be through the construction of a driveway extending up the land slope to the residence off the end of Alta Way. Due to the sloped topography within the site, it will be necessary to construct a retaining wall to the west and south of the residence. A preliminary site plan for the proposed single-family home project showing building envelopes, hardscape, the retaining wall, storm drains, and the driveway access is shown in Appendix A, Figure 4. After project completion, hardscape will cover 11.64% of the lot; however, grading will be required over much of the parcel within the constructed retaining wall. The property is zoned for residential use and is served by public water and sewer.

# 2.0 METHODS

Both desktop and field surveys were conducted. The following describes how special status species and sensitive natural communities are defined, and describes methods used to assess their potential to be present in the Project Site.

## 2.1 Definitions

### 2.1.1 Special Status Species

CEQA requires that impacts on special status species be considered and evaluated under CEQA. Special status species include plants or animals that:

1. are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act.
2. are listed or are candidates for future listing as threatened or endangered under the California Endangered Species Act.
3. meet the definitions of endangered or rare under § 15380 of the CEQA Guidelines.
4. are plants listed as rare under the California Native Plant Protection Act (NPPA) (California Fish and Game Code, § 1900 et seq.).
5. are considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California", “plants about which more information is needed,” or “plants of limited distribution – a watch list” (i.e., species with a California Rare Plant Rank [CRPR] of 1B, 2, 3, or 4).
6. are fully protected in California in accordance with the California Fish and Game Code, §§ 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes).
7. are identified as a species of special concern (SSC) by the California Department of Fish and Wildlife (CDFW).
8. are birds identified as birds of conservation concern (BCC) by the U.S. Fish and Wildlife Service (USFWS).

### 2.1.2 Sensitive Natural Communities

CEQA requires that impacts on Sensitive Natural Communities be considered and evaluated. Sensitive Natural Communities are plant communities that CDFW designates as sensitive, which are either considered rare in the region, rank as threatened or very threatened, support special status species, or otherwise receive some form of regulatory protection. Sensitive plant communities also include those plant communities identified in local or regional plans, policies, ordinances, regulations, or by CDFW as those communities that provide special functions or values. CDFW identifies sensitive plant communities on their *List of California Natural Communities* and records their mapped presence as part of the information documented within the CNDDB. The mapped information in the CNDDB provides a general location of sensitive plant communities and sensitive natural community types.

## 2.2 Regulatory Framework

Background information regarding the federal, state, and local regulations and policies related to protection of special status species and sensitive biological habitats is included in Appendix B.

## 2.3 Desktop Review

The following information sources were reviewed to develop relevant environmental and biological information for determining if special status species, critical habitat, and sensitive natural communities have been previously documented on or within a 10-mile vicinity of the Project Site:

- Aerial imagery (including historical imagery) available online from Google Earth Pro
- Watershed mapping National Hydrography Dataset (NHD) HUC 10 available online from the US Geological Survey (USGS)
- National Wetlands Inventory mapping available online from the US Fish and Wildlife Service (USFWS)
- Custom Soil Resources Report available online from Natural Resources Conservation Service (NRCS)
- Flood Insurance Rate Map available online from the Federal Emergency Management Agency (FEMA)
- Topographic mapping available online from the USGS
- LIDAR data-based topographic mapping for the Project Site available online
- Vegetation Mapping available online
- California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationship System (CHWR)
- California Natural Diversity Database (CNDDB) search for special status species and sensitive natural communities for the Project Site 7.5-minute quadrangles within a 10-mile radius available online from CDFW
- USFWS Information for Planning and Consultation (IPaC) database available online
- National Marine Fisheries Service (NMFS) list of species and other resources under NMFS jurisdiction that are known or expected to be on or near the Project Site
- Electronic Inventory of Rare and Endangered Plants of California for the Project Site 7.5-minute quadrangle and the eight surrounding USGS quadrangles available online from the CNPS

## 2.4 Field Surveys

The Project Site was visited by an HBG professional biologist to develop information regarding general ecological conditions and potential presence/absence of Special Status Species (plants and animals) and Sensitive Natural Communities, to include aquatic resources. Plant and wildlife species and habitat surveys were conducted on the Project Site by HBG wildlife biologist Gary Deghi on February 26, 2026. These surveys included observations of the composition and distribution of plant communities, wildlife observations, identification of sensitive habitats, and a comparison of site characteristics for similarity to sites known to support Special Status Species within the area. Wildlife observations at the Project Site were based on visual sightings and observations of tracks, dens, and scat. Gary Deghi also investigated the site to assess the potential presence of Sensitive Natural Communities such as a Stream Conservation Area or Wetland Conservation Area as defined by the Marin Countywide Plan and/or the presence of wetlands potentially subject to federal jurisdiction under the Clean Water Act, state jurisdiction under the Porter-Cologne Act or Section 1602 Fish and Game Code jurisdiction, or

local jurisdiction under the Marin Countywide Plan. This investigation reviewed existing landforms, vegetation, hydrology, and soil conditions within the Project Site.

## 2.5 Potential Special Status Species Presence Assessment

Based on species occurrence information provided by the CNDDB, plant and animal Special Status Species and Sensitive Natural Communities found within a 10-mile radius were summarized in table format (Appendix C), including listing status information and descriptions of plant and animal macro- and micro-habitat requirements. Additional information was obtained from the IPaC database for Marin County, available online from the USFWS, and included herein as Appendix D. Using the criteria listed below, each plant and animal species or community listed in the sources referenced above was then evaluated as to its potential for being present on the Project Site (Section 4.2). The evaluation was based on an assessment of information obtained relevant to the Project Site and vicinity which included: (1) general ecological information regarding land use, climate, topographic, soils, hydrology, and vegetation type and animal species typically associated with the existing Project Site; and (2) specific technical information regarding listed plant and animal species distribution range, habitat, and known threats together with onsite general level plant, wildlife, and Sensitive Natural Community surveys (Section 4.2 and 4.3).

- **No Potential**: Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

- **Unlikely**: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

- **Moderate Potential**: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

- **High Potential**: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

- **Present**: Species is observed on the site or has been recorded (i.e., CNDDB, other reports) on the site recently.

If determined potentially present, the plant and/or animal Special Status Species and/or Sensitive Natural Community was evaluated to determine if the Project would have a substantial adverse effect, either directly or through habitat modifications and, if necessary, recommend action(s) either before or after proposed project approval, but prior to ground-disturbing activities.

# 3.0 RESULTS

## 3.1 Baseline Conditions

### 3.1.1 Land Use

The subject parcel is zoned for residential use by Marin County. As shown in the USGS topographic map in Figure 2, the Project Site is a partially wooded, currently vacant parcel surrounded by residential uses, though the adjacent area to the north is forested.

### 3.1.2 Topography and Soils

The site consists of sloped topography as elevation increases from an elevation of approximately 163 feet msl at the terminus of Alta Way to 218 feet msl along the western border of the site. The site generally slopes downward from southwest to northeast. Site topography is shown in the San Rafael USGS 7.5-minute quadrangle topographic map in Appendix A, Figure 2.

Soil survey information for the Project Site was obtained from the National Resources Conservation Service (NRCS) Web Soil Survey (NRCS 2025). The Soil Survey maps for Marin County show two soil types present on the Project Site. The soil type throughout much of the site is the Tocoloma-Saurin association, very steep, while the soil type at the upper elevation of the southern portion of the parcel is the Los Osos-Urban Land-Bonnydoon complex, 15 to 30 percent slopes. A map of soil types within the Project Site is shown in Appendix A, Figure 5.

### 3.1.3 Hydrology

**Watersheds.** A review of the US Geological Survey (USGS) National Hydrography Dataset (NHD) Hydrologic Unit Code (HUC) data indicates that the Project Site is situated within the 10-digit HUC (1805000209) Corte Madera Creek-Frontal San Francisco Bay Estuaries watershed (Appendix A, Figure 6).

**Direction of Surface Water Flow.** The Project Site slopes downhill from southwest to northeast, generally in the direction of Alta Way and an unnamed watercourse located 255 feet east of the Project Site boundary at its closest point. This unnamed creek flows south to Coyote Creek, which eventually flows into San Francisco Bay at its mouth within the Bothin Marsh Open Space Preserve. A separate unnamed creek, also flowing to Coyote Creek, is located to the west of the Project Site, approximately 660 feet from the Project Site boundary at its closest point.

### 3.1.4 Plant Communities

Vegetation communities are assemblages of plant species growing in an area of similar biological and environmental factors. Vegetation communities and habitats at the Project Site were identified based on the currently accepted List of Natural Communities (CDFW 2010). The list is based on A Manual of California Vegetation, Second Edition (Sawyer et al. 2009), which is the vegetation classification applied to California. Vegetation communities and habitats at the Project Site were also identified using the California Wildlife Habitat Relationships (CWHR) classification (Mayer and Laudenslayer 1988), which defines aquatic as well as terrestrial habitats, and also includes Urban habitats. The CWHR habitat classification scheme was developed to provide a systematic method for describing how habitats and

structures support California's regularly occurring birds, mammals, reptiles, fish, invertebrates, and amphibians.

Based on Marin County vegetation mapping (Appendix A, Figure 7), three plant communities are found on the parcel: Urban/Developed, Eucalyptus, and Non-native Ornamental Conifer/Hardwood. Field reconnaissance conducted by HBG on February 26, 2026, confirmed the presence of these three communities that would be more generally classified as Eucalyptus Forest and a remnant Mixed Evergreen Forest by the CDFW classification and as an Urban Habitat by the CWHR criteria.

A report on the property prepared by an arborist (California Tree and Landscape Consulting 2026) noted a total of 75 trees on the property consisting of 38 eucalyptus (*Eucalyptus* sp.), 18 Coast live oaks (*Quercus agrifolia*), and 14 California bay (*Unbellularia californica*), along with 2 toyon (*Heteromeles arbutifolia*), 2 planted fruit trees (*Prunus* sp.), and a single Pacific madrone *(Arbutus menzeisii*). The arborist report identifies 23 native trees within the Project Site that would be considered Protected or Heritage trees according to Marin County criteria (13 Coast live oaks and 10 California bay laurel). The arborist report indicates that 11 of the protected trees are in poor condition and will be removed (Appendix E, Table 1, and Appendix 2 Tree Data).

**Remnant Mixed Evergreen Forest.** The upper elevation western portion of the subject parcel is vegetated with a remnant, mostly non-native Mixed Evergreen Forest. The tree canopy in this portion of the site primarily consists of California bay laurel and Coast live oak trees, both native species, along with small numbers of toyon, a single Pacific madrone, and a planted cherry plum. Understory vegetation is a mix of native and non-native shrubs and herbaceous plants that include shrubs such as French broom (*Genista monspessulana*), poison oak (*Toxicodendron diversiloba*), and creeping snowberry (*Symphoricarpos mollis*), with coyote brush (*Baccharis pilularis*) and blackberry (*Rubus ursinus*) along the edges of this habitat. Groundcover vegetation includes herbaceous plants such as native western nettle *(Hesperocnide tenella*), coastal woodfern (*Dryopteris arguta*), and catchweed bedstraw (*Gallium aparine*), and non-native bull thistle (*Cirsium vulgare*) and Cape ivy (*Delairea odorata*).

**Eucalyptus Forest.** Upper elevation areas within the eastern portion of the site contain a forest of planted, non-native eucalyptus trees. The only other trees noted in this area were a single toyon and the sapling of a California bay-laurel. Understory vegetation and ground cover included native species such as poison oak, trailing blackberry, catchweed bedstraw, Pacific hound's tongue (*Cynoglossum grande*), Miner's lettuce (*Claytonia perfoliata*), and a single Osoberry (*Oemleria cersiformis*), but was decidedly non-native with dominant growth of species such as French broom, Cape ivy, Italian thistle (*Carduus pycnocephalus*), bur parsley (*Anthriscus caucalis),* pale pink sorrel (*Oxalis incarnata*), sourgrass (*Oxalis pes-caprae*), and panic veldt grass (*Ehrharta erecta*), in addition to scattered calla lily (*Zantedeschia aethiopica*) and soap aloe (*Aloe maculata*).

**Urban Habitat.** The portion of the site designated as Urban/Developed is a previously disturbed and graded portion of the site adjacent to Alta Way that is vegetated with ruderal, non-native vegetation. Aside from some native poison oak, catchweed bedstraw, and miner's lettuce, vegetation documented in this portion of the site during the field review included non-native species found elsewhere on the

site such as French broom, Italian thistle, bull thistle, Cape ivy, and panic veldt grass, but also other non-native species such as cut-leaf geranium (*Geranium dissectum*), musk storksbill (*Erodium moschatum*), prickly sowthistle (*Sonchus asper*), milk thistle (*Silybum marianum*), and wild daffodil (*Narcissus pseudonarcissus*). .

### 3.1.5 Animal Populations

**General Characteristics of Onsite Habitats.** The habitats on the site consist of a non-native eucalyptus forest, a previously disturbed area with ruderal, non-native plant species, and a remnant of Mixed Evergreen Forest, vegetated with native trees but mostly non-native understory and groundcover. The site is an isolated area of limited habitat value surrounded by residential development in all directions and not contiguous to habitat areas of substantial value to wildlife. However, the habitats on the parcel and in some portions of the surrounding area support many wildlife species, mostly those typically found in disturbed woodland habitats in this part of Marin County. Trees and shrubs like those found on the Project Site generally provide shelter and cover for a variety of amphibians, reptiles, birds, and mammals, and provide foraging and breeding habitat for a variety of terrestrial wildlife species. Coast live oak woodlands provide food and cover for many species of wildlife, and the oaks have long been considered important to some birds and mammals as a food resource (i.e., acorns and brows). Some trees on the property, both in the remnant Mixed Evergreen Forest and within the Eucalyptus Forest, are mature trees that may have cavities and exfoliating bark that could support either winter or maternity roost sites for any of a number of species of bats or that may be suitable as nest sites for cavity-nesting species of birds. Woodland trees and other vegetation may provide nesting substrates for many bird species and foraging areas for both migratory and resident species.

**Animal Populations at the Project Site.** HBG's wildlife biologist, Gary Deghi, observed avian and other wildlife species at the Project Site during a relatively short (approximately two-hour) visit on the morning of February 26, 2026. Observed bird species included common raven (*Corvus corax*), Bewick's wren (*Thryomanes bewickii*), dark-eyed junco (*Junco hyemalis*), California towhee (*Melozone crissalis*), spotted towhee (*Pipilo maculatus*), and a red-shouldered hawk (*Buteo lineatus*) calling nearby. Given the time of year, many of the species observed, or others, could be nesting on the site or in the immediate vicinity.

The Project Site provides suitable habitat for various amphibian species, including the California slender salamander (Batrachoseps attenuatus), which was readily found under rotting logs at the site. Other expected amphibian species include Pacific chorus frog *(Pseudacris regilla)*, arboreal salamander (*Aneides lugubris*), and western toad (*Anaxyrus boreas*), among others. Reptiles that would be expected include western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinatus*), Pacific gopher snake (*Pituophis catenifer),* and common garter snake (*Thamnophis sirtalis elegans*). Nest houses of dusky-footed woodrat (*Neotoma fuscipes*) were prevalent within the evergreen forest portion of the site. Other mammals expected to use the site include those adapted to urban environments, such as Virginia opossum (*Didelphis virginiana*), California vole (*Microtus californicus*), Botta's pocket gopher (*Thomomys bottae*), house mouse (*Mus musculus*), deer mouse (*Peromyscus maniculatus*), striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*).

## 3.2 Special Status Species and Sensitive Natural Communities

### 3.2.1 Special Status Species

Based on species occurrence information from the literature review and field observations, a list of Special Status Species identified by searching the CNDDB database, considered to have the potential of occurring within a 10-mile vicinity of the Project Site, was generated and is summarized in Tables 1 and 2 of Appendix C. Each species identified was then evaluated based on the occurrence criteria provided in Section 2.5, above, and the results of this analysis are also shown in Tables 1 and 2 of Appendix C.

Based on a CNDDB search, there are no Special Status Species documented within the Project Site boundaries; however, 74 Special Status Species of plants, 65 Special Status Species of animals, and 5 Sensitive Natural Communities are known to occur within 10 miles of the Project Site. Appendix C, Tables 1 and 2 provide lists of the plant and animal Special Status Species identified in the CNDDB. Appendix C, Tables 1 and 2 also provide a listing status, general and micro-habitat descriptions, an evaluation of the species' potential to occur within the Project Site based on the criteria listed in Section 2.5 above, and recommended further actions, if necessary. The five sensitive natural communities noted to have occurred near the Project Site are discussed in Section 3.2.2.

**Special Status Plants.** Based on the database search, literature review, and habitat types found on the Project Site, a total of 74 plant Special Status Species are documented in the CNDDB as occurring within 10 miles of the Project Site. These species are listed in Appendix C, Table 1. The plant Special Status Species noted in Table 1 are species that occur in habitats and soil types that do not occur on the subject property. These habitats include alkali flats and alkali wetlands, salt and brackish marshes, claypan vernal pools, riparian forest, stream banks, coniferous and broadleaf forests, valley and foothill grassland, rock outcrops, coastal dunes, coastal terrace prairie, coastal bluff scrub, and chaparral, all of which are not found on the property. A number of additional plant Special Status Species are found on serpentine soils or sandy soils, which also do not occur on the subject property. Although some native vegetation occurs within and near the potential development site, the previously disturbed project area, which is vegetated primarily with non-native species, does not provide habitat suitable for the growth of plant Special Status Species. All species mentioned in Appendix C, Table 1 require habitat conditions not found at the site of the proposed construction. Special Status Species (plants) are considered to have no potential to occur at the Project Site.

**Special Status Animals.** Animal species noted in the CNDDB as occurring within a 10-mile radius of the Project Site are discussed in Appendix C, Table 2. A total of 65 animal Special Status Species were determined to be present within 10 miles of the Project Site as documented by the CNDDB. None of the 65 animal Special Status Species discussed in the table has the potential to occur on the site. This finding is based on the habitat requirements of species listed in the table and is based on field review of habitats present at the site and the immediate vicinity and an evaluation of the suitability of on-site habitats to support these species. However, as the main prey item for Northern Spotted Owl (*Strix occidentalis caurina*) was found to be present on the Project Site, an assessment regarding the potential presence of this species was conducted and is discussed in detail below. It should be noted that the USFWS IPaC data (Appendix D) also included several federally listed animal species for Marin County that were not noted within the CNDDB as occurring within 10 miles of the Project Site and, therefore, not included in Appendix C, Table 2: tidewater goby (*Eucyclogobius newberryi*), green sea

turtle (*Chelonia mydas*), murrelet (*Brachyramphus marmoratus)*, and California least tern (*Sterna antillarum browni*). As a pelagic species, the green sea turtle was readily determined to be absent from or near the Project Site. The Project Site also does not contain the tidal lagoons that would support tidewater goby, the mature forests necessary for nesting by Northern spotted owl or marbled murrelet, nor the sparsely vegetated beaches, alkali flats, etc., necessary for California least tern nesting.

Two bird species not noted from the project area in the CNDDB but listed in the IPac report from USFWS as Bird Species of Conservation Concern (Appendix D) are considered as species with a possible occurrence at the Project Site (though not observed during the February 26, 2026 site survey): Nuttall's woodpecker (*Dryobates nuttallii*), and oak titmouse (*Baeolophus inornatus*). Nuttall's woodpecker and oak titmouse are common oak woodland specialists in Marin County, and either species could occur as a nesting species within the remnant Mixed Evergreen/Coast live oak woodland at the Project Site. Preconstruction bird nesting surveys as required in Section 4.4 would ensure that any nests of these species that may be present are protected from construction operations.

***Northern Spotted Owl.*** The Northern spotted owl is listed as a threatened species pursuant to both the federal Endangered Species Act and the California Endangered Species Act. Northern spotted owls reach the southern limit of their range in Marin County. In the northern portion of their range, Northern spotted owls are typically found in mature coniferous forests usually from 150 to 200 years old. In Marin County, they reside in second-growth Douglas-fir, Coast redwood, Bishop pine, mixed conifer-hardwood, and evergreen hardwood forests with a nearly closed canopy, moderate to heavy undergrowth, and much woody debris. Nesting Northern spotted owls have been found throughout forested habitats in Marin County and use a variety of tree species for nesting. The Bishop pine and Douglas fir forests in this part of Marin County support a healthy population of Northern spotted owls (Shuford 1993). Most of these owl territories are in canyon bottoms or mid-slope locations on the more mesic north-facing slopes or the leeward slope of the ridge, where there is higher precipitation, protection from onshore wind and weather, and fairly dense vegetative cover (Evens 2008). The nesting season for the Northern spotted owl is considered to include the period between February 1 and July 15. Dusky-footed woodrat is the preferred prey for Northern spotted owl in Marin and Sonoma Counties (Shuford 1993, Evens 2008).

According to CDFW, disturbances in the vicinity of nest sites may reach the level of "take" when at least one of the following conditions occur: (i) project-generated sound exceeds ambient nesting conditions by 20 to 25 decibels (dB), (ii) project-generated sound, when added to ambient sounds, exceeds 90 dB, or (iii) human activities occur within a visual line-of-sight distance of 40 meters (approximately 130 feet) from a nest. If nesting Northern spotted owl is known to occur within 0.25 miles of construction, a project applicant can either conduct construction operations during the non-nesting season or conduct nesting-season protocol surveys that definitively demonstrate that owls are not nesting in the vicinity of the construction operations. If construction work must be completed during the nesting season and Northern spotted owls are nesting within 0.25 miles of the site, CDFW may require that the applicant obtain an Incidental Take Permit (ITP) pursuant to CESA. In addition, Marin County Code Section 22.20.040(G) requires that special conditions to protect Northern spotted owl be implemented if a Biological Site Assessment identifies a Northern spotted owl nest within 500

feet of proposed outdoor construction activity involving tree removal, grading, or other site disturbances.

HBG conducted a review of National Park Service data regarding known spotted owl nesting territories in the vicinity of the project and data available from the CNDDB. The data indicates the location of known activity centers for nesting pairs of the species and locations in the vicinity of the nest sites where occurrences of Northern spotted owl individuals have been documented. This information revealed that no known territories of Northern spotted owl occur in close proximity (within 0.25 miles) of the project site. The nearest known nesting activity center is approximately 2,325 feet (0.44 miles) to the northwest of the property. Although the property contains a prevalence of dusky-footed woodrats (as evidenced by the presence of many nest houses for the species), which is the main prey item for Northern spotted owl in this area, the property is a landlocked habitat area surrounded by residential development and not contiguous with known nesting or foraging habitats for the species. Therefore, foraging by Northen spotted owl at the Project Site is considered to be unlikely.

### 3.2.2 Sensitive Natural Communities

**CDFW Sensitive Natural Communities.** Five sensitive natural communities were identified as occurring within the 10-mile CNDDB database search radius from the Project Site. These include: Coastal Brackish Marsh, Coastal Terrace Prairie, Northern Coastal Salt Marsh, Serpentine Bunchgrass, and Valley Needlegrass Grassland. These communities were found upon field inspection not to occur within the Project Site.

**State/Federal Regulatory Jurisdiction.** On February 26, 2026, Gary Deghi of HBG conducted a preliminary investigation of the Project Site for the presence of wetlands and other "Waters of the U.S or State," potentially subject to federal jurisdiction under the Clean Water Act or state jurisdiction under the Porter-Cologne Act, and the Section 1602 Fish and Game Code jurisdiction of CDFW. The review included an investigation of existing landforms, vegetation, hydrology, and soil conditions. HBG determined that there are no areas within the parcel that would be subject to regulatory jurisdiction of the U.S. Army Corps of Engineers under the federal Clean Water Act, the San Francisco Bay Regional Water Quality Control Board under the state Porter-Cologne Act, or by the California Department of Fish and Wildlife under Section 1602 of the California Fish and Game Code (stream and riparian vegetation).

**County Regulatory Jurisdiction**. The 0.8-acre Project site is within the Marin Countywide Plan's City-Centered Corridor. There are no streams present that would constitute a Stream Conservation Area or wetland area that would qualify as a Wetland Conservation Area under habitat protection guidelines included in the Marin Countywide Plan. The nearest stream or water feature to the Project Site is an unnamed tributary to Coyote Creek that is located no closer than 255 feet from the boundary of the Project Site, a distance that is well in excess of buffer zone requirements for sensitive habitats as detailed in the Marin Countywide Plan. A separate, unnamed creek that also flows to Coyote Creek is located to the west of the Project Site, approximately 660 feet away from the Project Site boundary at its closest point. Both of these unnamed streams are shown in the National Wetlands Inventory mapping in Appendix A, Figure 8.

### 3.2.3 Wildlife Movement/Corridors

The site is an isolated area of limited habitat value, surrounded by residential development in all directions, and not contiguous with habitat areas of substantial value to wildlife. Although the forested and other habitats on the site have the potential to harbor populations of flora and fauna, there are no portions of the Project Site that specifically serve a function as a wildlife corridor.

### 3.2.4 Critical Habitat

No Critical Habitat for species listed as threatened or endangered under the federal Endangered Species Act has been designated within the Project Site.

# 4.0 BIOLOGICAL EVALUATION

## 4.1 Standards of Significance

Appendix G to the CEQA Guidelines is a sample Initial Study Checklist that includes questions for determining whether impacts to biological resources are significant. These questions reflect the input of planning and environmental professionals at the Governor's Office of Planning and Research and the California Natural Resources Agency, based on input from stakeholder groups and experts in various other governmental agencies, nonprofits, and leading environmental consulting firms. They also reflect the requirements of laws other than CEQA that protect biological resources (e.g., the federal Clean Water Act, the Porter-Cologne Water Quality Control Act, the federal and state endangered species acts, and the Natural Community Conservation Planning Act). As a result, many lead agencies derive their CEQA significance criteria from the questions posed in Appendix G.

Considering the foregoing, the proposed project would have a significant effect related to biological resources if the project would:

1. 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 Wildlife or U.S. Fish and Wildlife Service;
2. 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 Wildlife or US Fish and Wildlife Service;
3. 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;
4. 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;
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan;

Additional guidance on the significance of biological resource impacts is found in CEQA Guidelines section 15065, subdivision (a)(1), which provides that a lead agency shall find that a project may have a significant effect on the environment if "[t]he project has the potential to: … substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; [or]substantially reduce the number or restrict the range of an endangered, rare or threatened species[.]" The "mandatory findings of significance" are also found in the Appendix G sample Initial Study checklist, though near the end.

Therefore, the proposed project would have a significant effect related to biological resources if the project would:

- Substantially reduce the habitat of a fish or wildlife species;
- Cause a fish or wildlife population to drop below self-sustaining levels;
- Threaten to eliminate a plant or animal community; or
- Substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

## 4.2 Special Status Species

**1) Would the project 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 Wildlife or U.S. Fish and Wildlife Service?**

### 4.2.1 Special Status Plant Species

Although some native vegetation occurs within the Project Site, most of the vegetation at the development site consists of non-native species and does not provide habitat suitable for the growth of plant Special Status Species. All of the 75 plant Special Status Species mentioned in Appendix C, Table 1 require habitat conditions that are not found at the site of the proposed construction. No impacts to Special Status Species of plant would result from the proposed construction of the single-family residential project.

### 4.2.2 Special Status Animal Species

None of the 65 animal Special Status Species discussed in Appendix C, Table 2 have the potential to occur on the Project Site. This finding is based on the habitat requirements of species listed in the table and is based on field review of habitats present at the site and the immediate vicinity, and an evaluation of the suitability of on-site habitats to support these species. The habitats on the site consist of a non-native eucalyptus forest, a previously disturbed area consisting of ruderal, non-native species of plants, and a remnant of Mixed Evergreen Forest vegetated with native trees but mostly non-native understory and groundcover. The site is an isolated area of limited habitat value surrounded by residential development in all directions with no established linkage to contiguous habitat areas of such value that animal Special Status Species could be supported. No impact to animal Special Status Species would result from the construction of the single-family residential project. Additional information regarding the Northern spotted owl is presented below.

**Northern Spotted Owl**. Data from the USFWS and NPS in the CNDDB indicates that Northern spotted owl does not nest or occur in close proximity to the project site. The nearest activity center of known territories of the Northern spotted owl occurs approximately 0.44 miles from the project site. Based on the location of known Northern spotted owl activity centers, the construction would take place beyond the distances predicted by the USFWS models within which harassment of nesting owls could occur. Construction would also not exceed the decibel limits or line-of-sight distance limits specified in the

CDFW guidelines to prevent disturbance to nesting Northern spotted owls. No construction work would take place within 0.25 miles of a known activity center, so no adjustments of the timing of construction would be necessary to protect nesting owls, and an ITP from CDFW would not be required. No Northern spotted owl nests are known from within 500 feet of proposed improvements, so construction would also be in compliance with Marin County Code Section 22.20.040(G). Although the property contains a prevalence of dusky-footed woodrats (as evidenced by the presence of many nest houses for the species), which are the main prey item for Northern spotted owl in this area, the property is a landlocked habitat surrounded by residential development and not contiguous with known nesting or foraging habitats for the species. There are no records of sightings of the species in the immediate vicinity of the Project Site. Therefore, foraging by Northen spotted owl at the Project Site is considered to be unlikely. No impacts to the Northern spotted owl would result from the proposed work.

## 4.3 Sensitive Natural Communities and Wetlands

**2) Would the project 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 US Fish and Wildlife Service?**

**3) Would the project 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?**

**CDFW Sensitive Natural Communities.** Five Sensitive Natural Communities occur within the 10-mile CNDDB database search radius from the Project Site (Coastal Brackish Marsh, Coastal Terrace Prairie, Northern Coastal Salt Marsh, Serpentine Bunchgrass, and Valley Needlegrass Grassland). These communities do not occur within the Project Site.

**State/Federal Regulatory Jurisdiction.** HBG determined that there were no areas within the parcel that would be potentially subject to regulatory jurisdiction of the U.S. Army Corps of Engineers under the federal Clean Water Act, the San Francisco Bay Regional Water Quality Control Board under the state Porter-Cologne Act, or by the California Department of Fish and Wildlife under Section 1602 of the California Fish and Game Code (stream and riparian vegetation).

**Marin Countywide Plan Sensitive Habitats.** HBG determined that there were no areas within or adjacent to the parcel that would be subject to constraints defined in the Marin Countywide Plan associated with a Stream Conservation Area or Wetland Conservation Area. The nearest stream or water feature to the Project Site is an unnamed tributary to Coyote Creek located 255 feet to the east of Project Site boundary at its closest point, a distance that is well in excess of buffer zone requirements for sensitive riparian habitats as detailed in the Marin Countywide Plan.

## 4.4 Animal Populations

**4) Would the project 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?**

Although some wildlife use of the property is expected (as demonstrated by the documentation of some wildlife species during a site reconnaissance on February 26, 2026), the habitats on the site consist of a non-native eucalyptus forest, a previously-disturbed area consisting of ruderal, non-native species of plants, and a remnant of Mixed Evergreen Forest vegetated with native trees but mostly non-native understory and groundcover. The site is an isolated area of limited habitat value surrounded by residential development in all directions and not contiguous to habitat areas of substantial value to wildlife. However, some forested areas will remain on the site and in areas immediately adjacent after project construction that could accommodate wildlife dispersed from the site during construction activities.

No significant wildlife impacts would result from the implementation of the proposed residential construction as long as certain conservation elements are included within the project description as described below including (1) a preconstruction bird nesting survey during the bird nesting season to ensure compliance with the federal Migratory Bird Treaty Act and state California Fish and Game Code, and (2) a preconstruction bat habitat assessment with follow-up activities as necessary to protect roosting bats that may be present and to ensure compliance with the state Fish and Game Code.

During all activities involving land disturbance, the applicant will require the contractor to follow all applicable Best Management Practices from the California Stormwater Quality Best Management Practices Handbook for Construction Activities. With the implementation of Best Management Practices, including the use of straw wattles, covering of stockpile areas, and other practices, there would be little possibility of siltation within stormwater runoff that could adversely affect the water quality of nearby streams or aquatic species occupying those habitats.

**Wildlife Movement Corridors.** Although the forested and other habitats on the Project Site have the potential to harbor populations of flora and fauna, there are no portions of the Project Site that specifically serve a function as a wildlife corridor. No impacts to wildlife movement corridors will result from the construction of the proposed single-family residential development.

**Birds Protected by the MBTA and California Fish and Game Code.** Habitats within the project area were found to support a number of bird species during field surveys conducted by HBG. Many of the species noted may use the vegetation within the Project Site as a nesting substrate during the breeding season, especially within the Mixed Evergreen Forest area. If active nests were present in vegetation or other areas within the development portion of the site during construction operations, direct or indirect impacts could occur to nesting bird species protected by the Migratory Bird Treaty Act or the California Fish and Game Code.

CDFW generally considers the nesting season to be from February 1 to August 31 for most bird species. Work related to construction, especially involving the removal of vegetation during the February 1 to August 31 breeding season of birds, could result in the mortality of nesting avian species if they are

present. Many raptor species (birds of prey) are sensitive to human incursion and construction activities, and it is necessary to ensure that nesting raptor species are not present near construction sites. To ensure compliance with the MBTA and the California Fish and Game Code, bird nesting surveys are generally required if construction work requires vegetation removal during the bird nesting season. Required setbacks to protect active nests from construction activity are usually about 500 feet for large raptors such as buteos, 250 feet for small raptors such as accipiters, and 50 to 100 feet for passerines (songbirds) and other bird species.

If grading or vegetation removal were to occur during the bird nesting season (February 1-August 31), the applicant will ensure that a preconstruction nesting bird survey is conducted by a qualified biologist. If the survey indicates the presence of nesting birds, a buffer will be placed around the nest and marked with orange construction fencing defining an area within which no work will be allowed until the young have successfully fledged or the nest has otherwise become inactive. No construction or earth-moving activity will occur within the established buffer zone until it is determined by the biologist that the young have fledged or that the nesting cycle is otherwise determined to be complete based on monitoring of the active nest.

**Bats Protected by the California Fish and Game Code.** Bats in this region use a wide variety of roosts, including human-caused roosts such as buildings, bridges, and culverts; they also use trees that contain suitable roost habitat. Bats are nocturnal, and select day roosts for rest, protection, pup-rearing and overwintering, and night roosts during seasonal periods of activity during foraging flights. Bats are particularly vulnerable to loss or disturbance of their day roosts, even more so during pup-rearing when bats are not volant (flying) and during winter months when bats are in torpor or hibernation. During the maternity season, non-volant young (those unable to fly) of colonial bats remain in the roost until late summer (end of August), after which they may either disperse from the natal roost or remain into or throughout the winter. During winter months, bats typically enter torpor, the onset of which is dependent upon environmental conditions, primarily temperature and rainfall.

To prevent direct mortality of either non-volant young or torpid bats during winter months, roosts must not be disturbed or destroyed until bats are seasonally active, and only after they have been provided a means of escape from the roost. Therefore, bats may be safely evicted in this region between March 1 (or when evening temperatures are above 45°F and rainfall is less than ½" in 24 hours) and April 15 (prior to parturition of pups). The next acceptable period for eviction is September 1 through October 15 (after pups become self-sufficiently volant or prior to evening temperatures dropping below 45°F and onset of rainfall greater than ½" in 24 hours).

Under California Fish and Game Code Section 4150, 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), is prohibited. The proposed Project could affect special status and common roosting bat species during removal of trees. Bats may have potential roosts in trees with sufficient cavities or exfoliating bark. A bat habitat assessment conducted by a bat biologist prior to construction could determine if suitable habitat for bats is

found within trees slated for removal and allow development of strategies to achieve humane removal of bat populations if present.

The applicant has committed to procedures to ensure that bats are not harmed during tree removal activities. Prior to removal of trees, a bat habitat assessment will be conducted to identify trees with habitat that could support roosting bats. Trees with no bat habitat can be removed, but trees with sufficient cavities to support bats will be subject to a detailed investigation of every cavity in an effort to show that no bats are present, including those in a state of torpor (winter) or raising non-volant young (summer). Not all trees can be surveyed in detail prior to removal as some have very deep or inaccessible cavities or crevices. If a bat roost is present or the tree cannot be fully investigated and uncertainty remains regarding the potential presence of roosting bats, the tree will be removed during periods of bat activity (March 1 to April 15 and September 1 to October 15) using a two-step removal process implemented over consecutive days.

If necessary, the two-step process will be conducted over two consecutive days during the prescribed periods in spring and fall. With this method, small branches and small limbs not containing cavities, crevices or exfoliating bark on habitat trees as identified by a qualified biologist (who must be present on the site during the first day of tree trimming or cutting) are removed on the first day using only chainsaws. The following day, the remainder of the tree is removed. The disturbance caused by chainsaw noise and vibration, coupled with the physical alteration, has the effect of causing bats to abandon the roost tree after nightly emergence for foraging. Removing the tree the next day prevents re-habituation and re-occupation of the altered tree. No impacts to roosting bats would occur using this method.

**Summary.** Given the above, the proposed project will not result in substantial change to animal populations at the site, will not substantially reduce the habitat of a fish or wildlife species, will not cause a fish or wildlife population to drop below self-sustaining levels, and will not threaten to eliminate any animal community. The project also will not 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.

## 4.5 Compliance with Local Policies

**5) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**Marin Countywide Plan.** HBG determined that there were no areas within or adjacent to the parcel that would be subject to constraints defined in the Marin Countywide Plan associated with a Stream Conservation Area or Wetland Conservation Area. The proposed project would be consistent with requirements for protection of sensitive habitats as included in the Marin Countywide Plan.

**Marin County Code.** The project is in compliance with Marin County Code Section 22.20.040 as the following items are included in the project description and will be implemented prior to construction: (1) a preconstruction bird nesting survey if work is conducted during the February 1 to August 31 bird nesting season coupled with establishment of buffer zones from any nesting birds (see response to Item #4); and (2) a preconstruction bat habitat assessment coupled with sensitive removal of trees

possibly containing roosting bats (also response to Item #4). In addition, suitable habitat for Northern spotted owl does not occur anywhere near the Project Site.

The report by the arborist (California Tree and Landscape Consulting 2026) documents that the project will require the removal of 62 trees. Of the trees requiring removal, 21 would be classified as Protected by County of Marin Tree Preservation ordinance, 11 of which require compensation in the form of replacement or payment of an in-lieu fee. The arborist report commits the application to the payment of the in-lieu fee of $500 per protected tree, a fee payment for 21 trees totaling $5,500. The arborist report also proposes a Tree Protection Plan to protect trees remaining on the site during construction operations (these recommendations will be submitted to the County under separate cover). The implementation of the arborist recommendations related to Tree Replacement (payment of an in-lieu fee) and Tree Protection will ensure compliance with Marin County Code Section 22.26.040.

## 4.6 Compliance with Conservation Plans

**6) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**
The Project Site is not within an area where the provisions of a Habitat Conservation Plan or Natural Community Conservation Plan would apply.

## 5.0 REFERENCES


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33 U.S.C. 403*. Rivers and Harbors Appropriation Act of 1899.*

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33 CFR, Title 33, Part 328. *Definition of Waters of the United States*.

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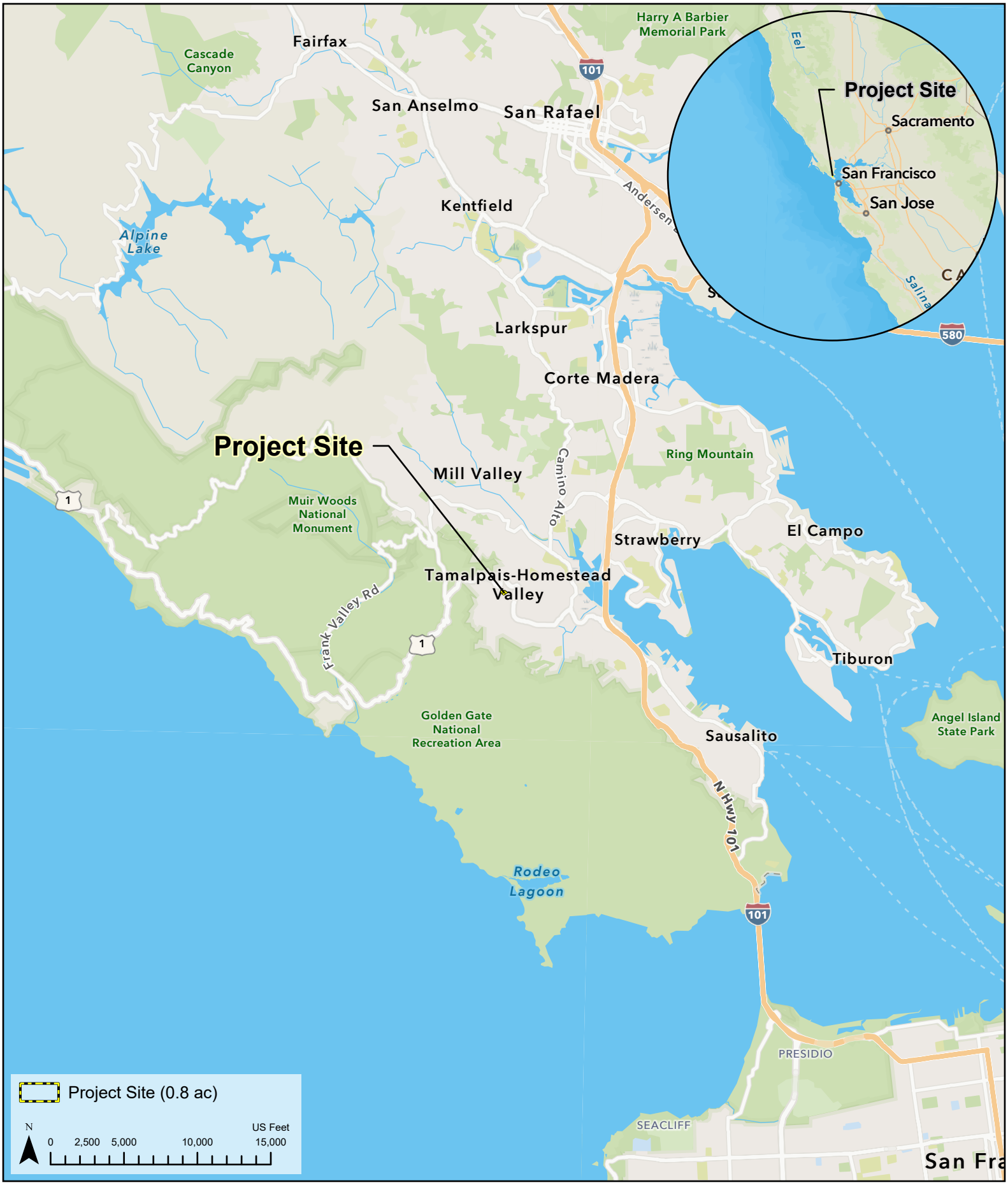
# APPENDIX A

# FIGURES

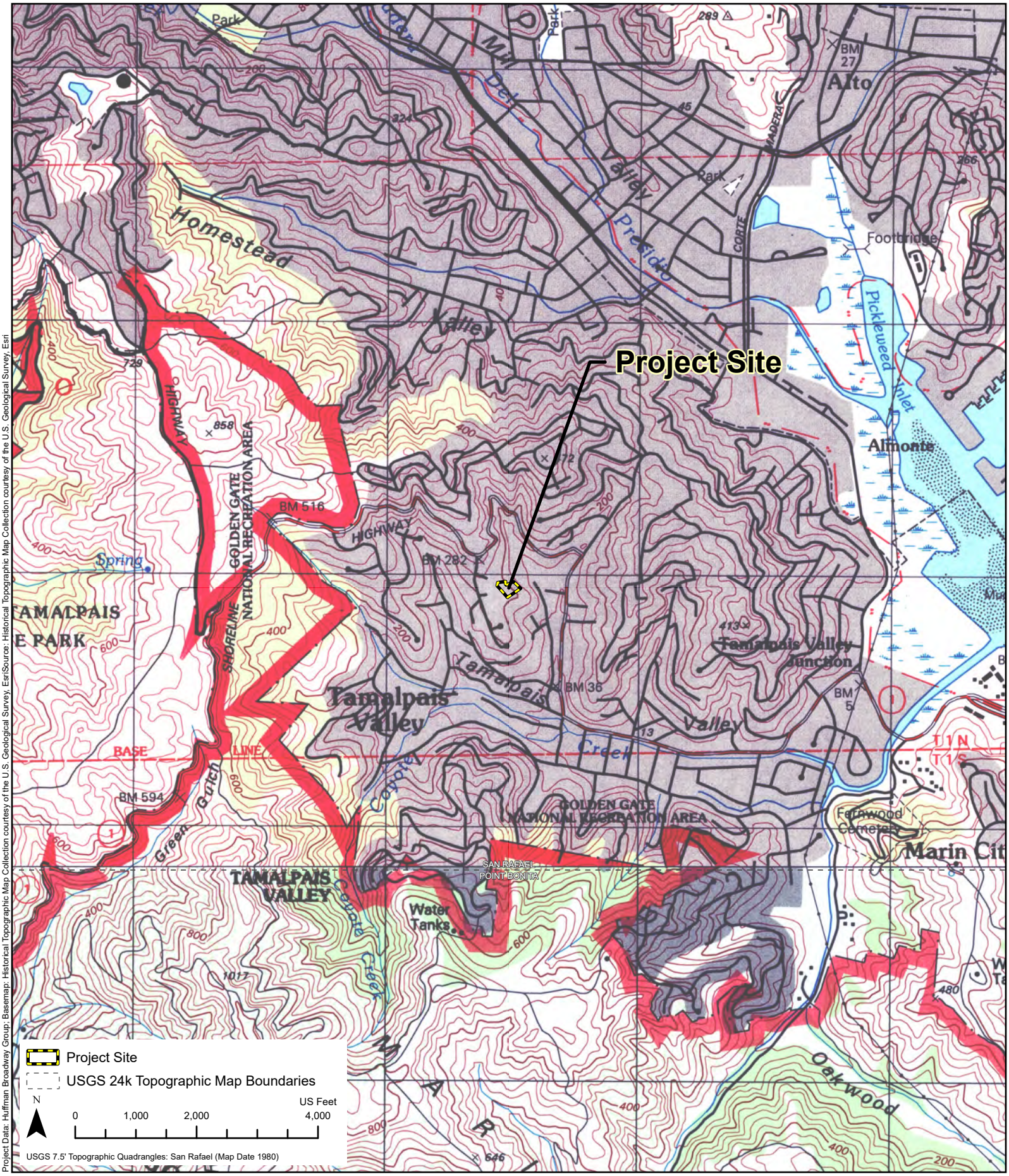



# Figure 1. Project Site Location

Alta Way (APN 049-041-50) Project
Mill Valley, Marin County, California

Huffman-Broadway Group, Inc.
ENVIRONMENTAL REGULATORY CONSULTANTS

Spatial Reference:
Name: NAD 1983 2011 StatePlane California III FIPS 0403 Ft US
Scale: 1:100,000
Date Map Created: 3/5/2026
HBG GIS Analyst: Agie Gilmore & Deland Wing
HBG PM: Terry Huffman, PhD; Greg Huffman; Robert F. Perrera




# Figure 2. USGS Topographic Map of the Project Site

Alta Way (APN 049-041-50) Project
Mill Valley, Marin County, California

Huffman-Broadway Group, Inc.
ENVIRONMENTAL REGULATORY CONSULTANTS

Spatial Reference:
Name: WGS 1984 Web Mercator Auxiliary Sphere
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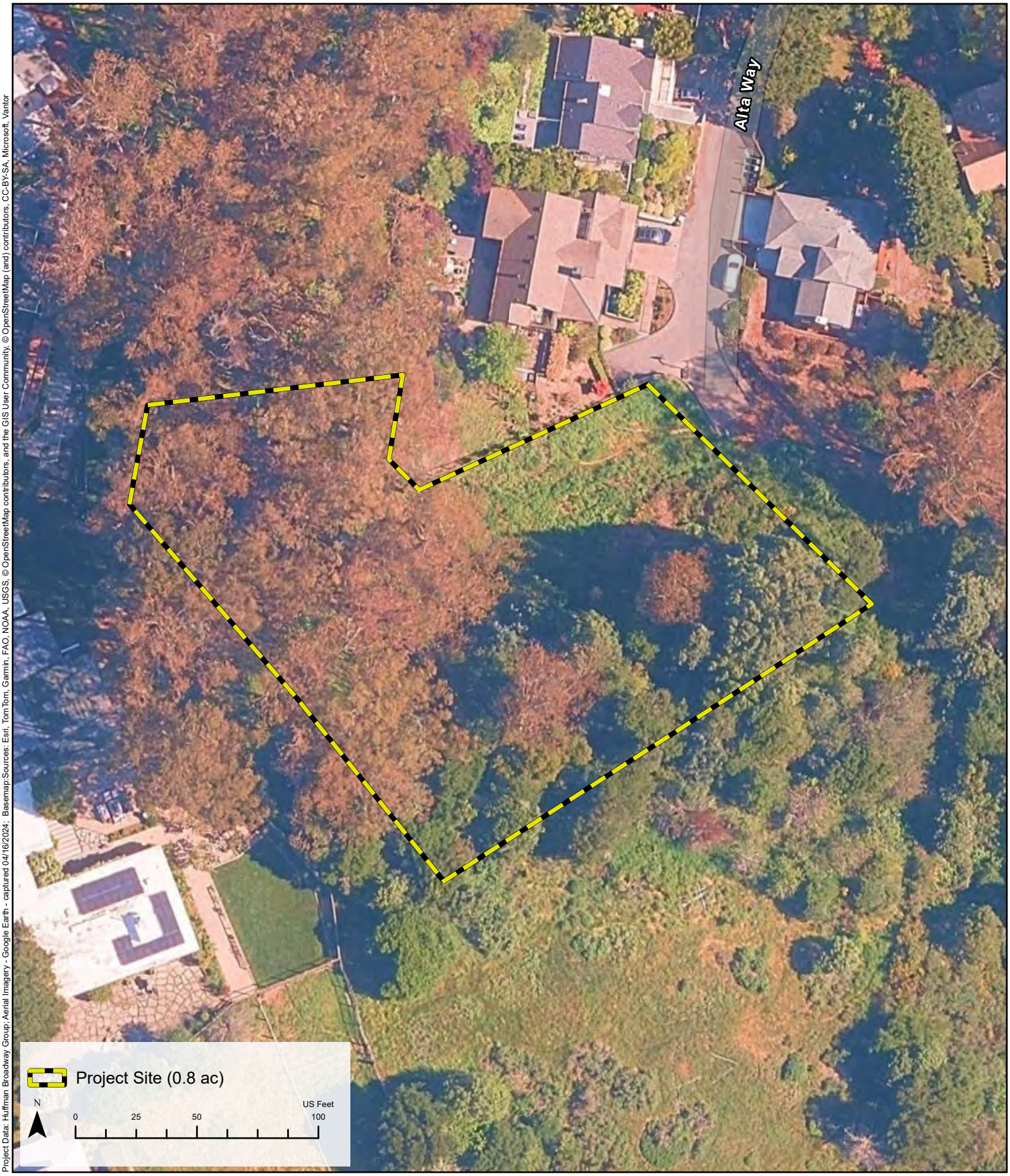
Date Map Created: 3/5/2026
HBG GIS Analyst: Agie Gilmore & Deland Wing
HBG PM: Terry Huffman, PhD; Greg Huffman; Robert F. Perrera




# Figure 3. Aerial Image of the Project Site

Alta Way (APN 049-041-50) Project
Mill Valley, Marin County, California

Huffman-Broadway Group, Inc.
ENVIRONMENTAL REGULATORY CONSULTANTS

Spatial Reference:
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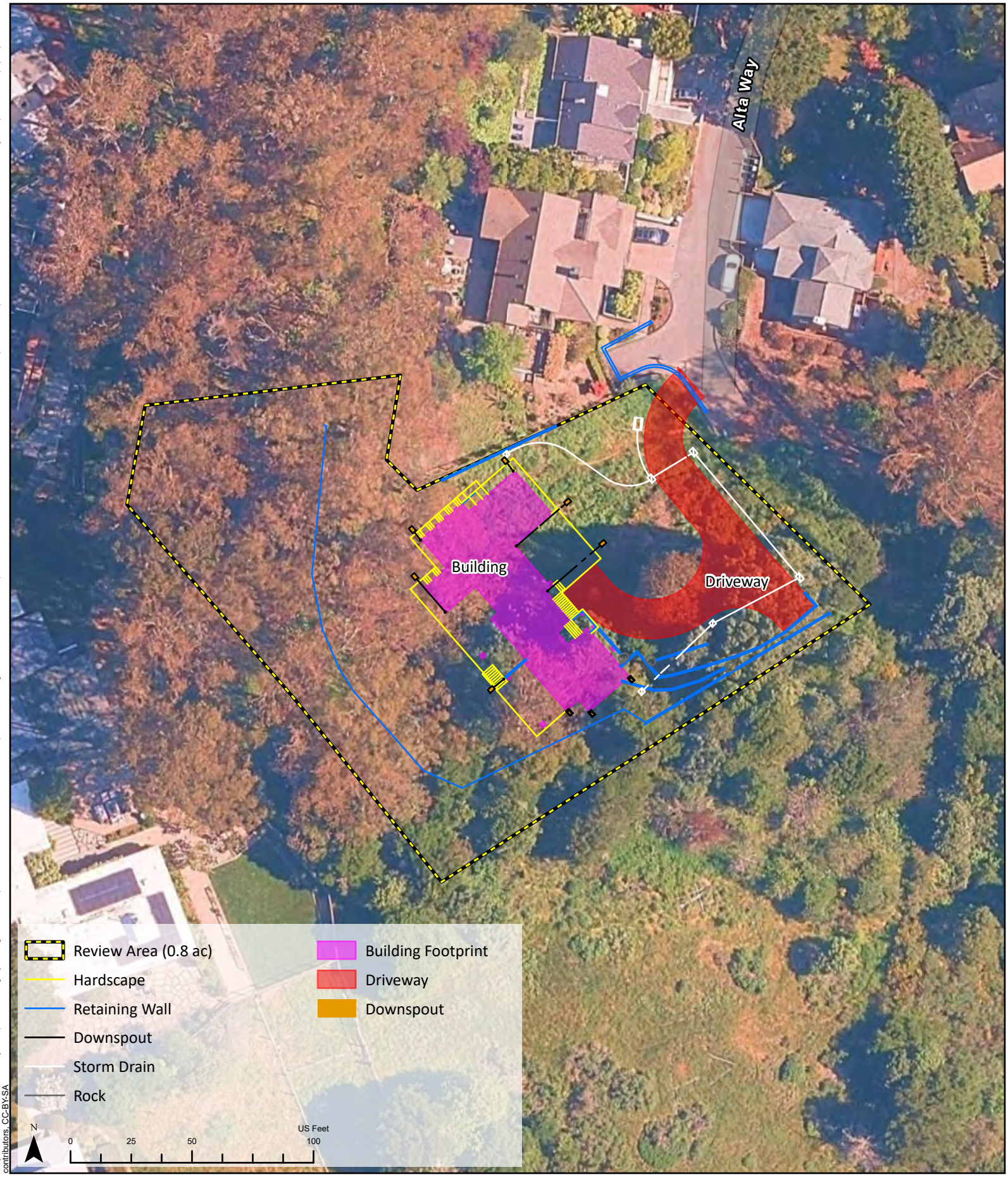
HBG GIS Analyst: Agie Gilmore & Deland Wing
HBG PM: Terry Huffman, PhD; Greg Huffman; Robert F. Perrera






# Figure 4. Project Site Plan

Alta Way Project in APN 049-041-50
Mill Valley, Marin County, California

Huffman-Broadway Group, Inc.
ENVIRONMENTAL REGULATORY CONSULTANTS

Spatial Reference:
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Date Map Created: 3/9/2026
HBG GIS Analyst: Agie Gilmore & Deland Wing
HBG PM: Terry Huffman, PhD; Greg Huffman; Robert F. Perrera




# Figure 5. NRCS Soils Map

Alta Way (APN 049-041-50) Project
Mill Valley, Marin County, California

Huffman-Broadway Group, Inc.
ENVIRONMENTAL REGULATORY CONSULTANTS

Spatial Reference:
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Date Map Created: 3/5/2026
HBG GIS Analyst: Agie Gilmore & Deland Wing
HBG PM: Terry Huffman, PhD; Greg Huffman; Robert F. Perrera


# Figure 6. USGS NHD HUC 10 Watershed Boundaries

Alta Way (APN 049-041-50) Project
Mill Valley, Marin County, California

Huffman-Broadway Group, Inc.
ENVIRONMENTAL REGULATORY CONSULTANTS

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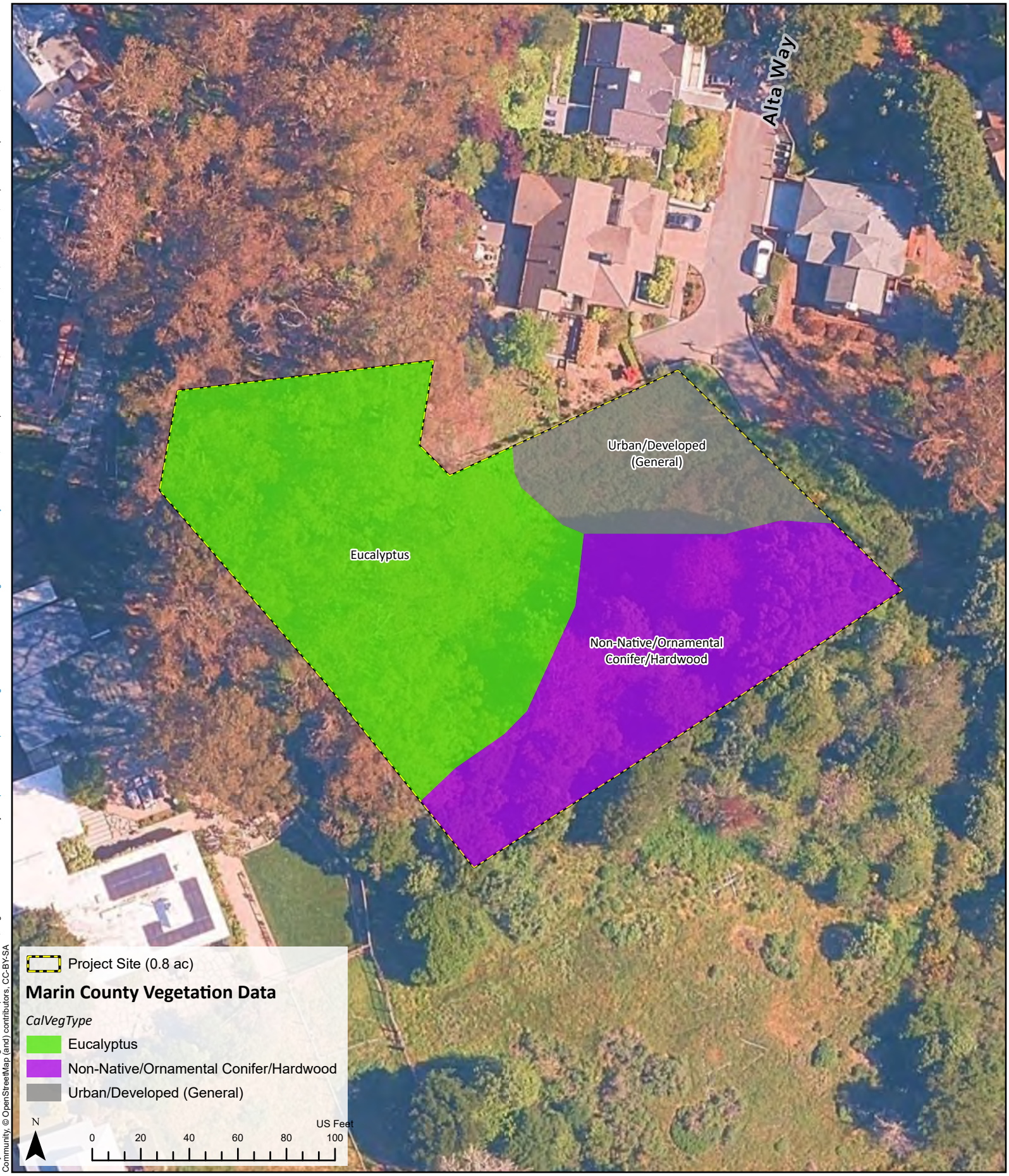




# Figure 7. Existing Vegetation Community Types

Alta Way Project in APN 049-041-50
Mill Valley, Marin County, California

Huffman-Broadway Group, Inc.
ENVIRONMENTAL REGULATORY CONSULTANTS

Spatial Reference:
Name: NAD 1983 2011 StatePlane California III FIPS 0403 Ft US
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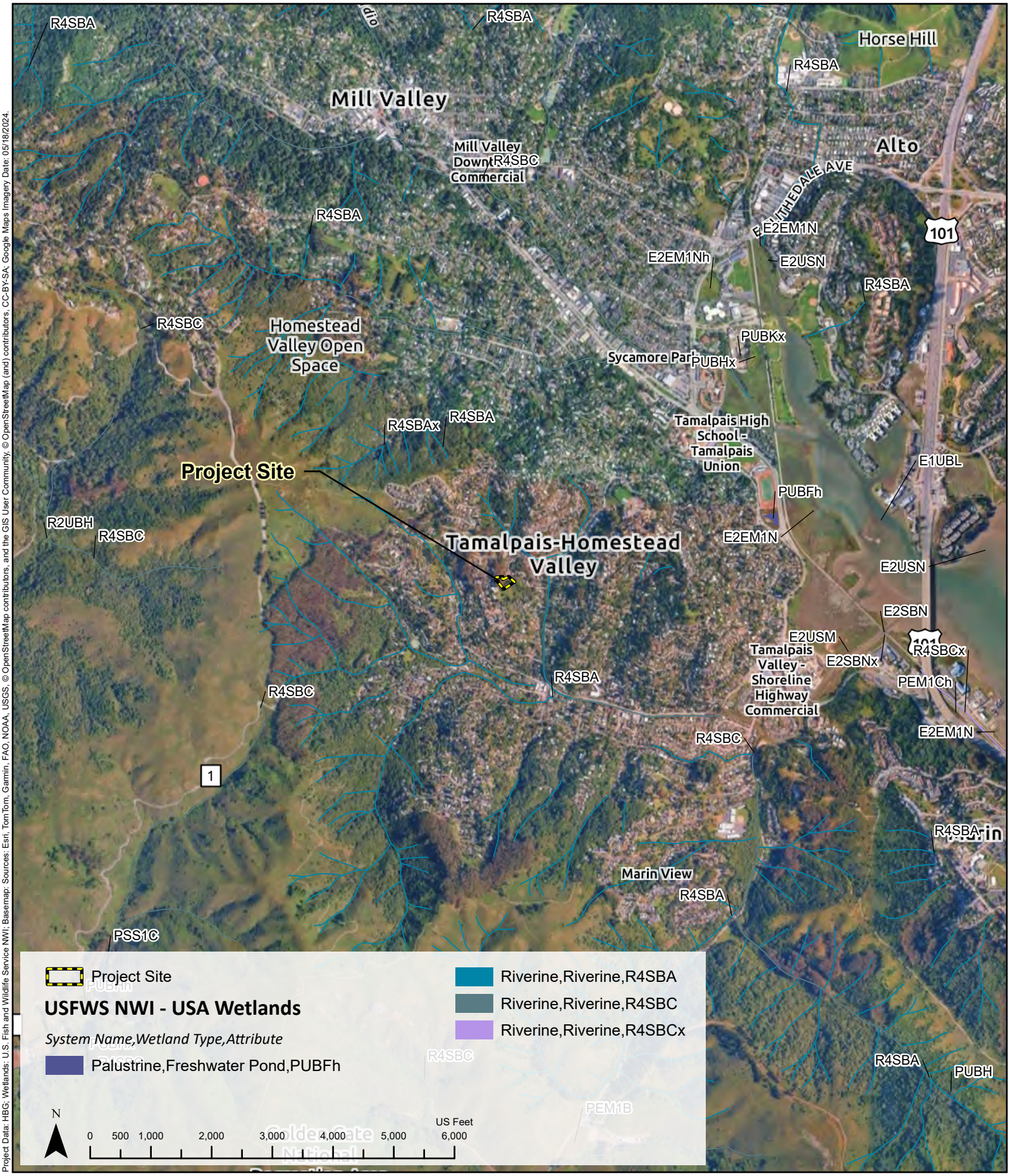
Date Map Created: 3/10/2026
HBG GIS Analyst: Agie Gilmore & Deland Wing
HBG PM: Terry Huffman, PhD; Greg Huffman




Project Data: HBG; Wetlands: U.S. Fish and Wildlife Service NWI; Basemap: Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, © OpenStreetMap (and) contributors, CC-BY-SA; Google Maps Imagery Date: 05/18/2024.

# Figure 8. USFWS National Wetlands Inventory (NWI) Mapping of Project Site

Alta Way Project in APN 049-041-50
Mill Valley, Marin County, California

Huffman-Broadway Group, Inc.
ENVIRONMENTAL REGULATORY CONSULTANTS

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Date Map Created: 3/10/2026
HBG GIS Analyst: Agie Gilmore & Deland Wing
HBG PM: Terry Huffman, PhD; Greg Huffman; Robert F. Perrera

# APPENDIX B

# REGULATORY REVIEW

## REGULATORY REVIEW

The following provides regulatory background information regarding special status species and sensitive habitats:

### Sensitive Habitats

Sensitive habitats are those habitats which have been identified by local, state, or federal agencies as areas which provided special functions or values. These habitats are subject to regulation under various local, state, and federal regulations such as the following:

**Federal Clean Water Act-Section 404, Waters of the U.S.** The U.S. Army Corps of Engineers (USACE) regulates discharge of dredge or fill material into waters of the United States under Section 404 of the CWA. "Discharges of fill material" is defined as the addition of fill material into waters of the United States. Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into waters of the United States to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

**Porter-Cologne Water Quality Control Act, Waters of the State.** The State of California maintains independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Water Pollution Control Act. Waters of the State are defined more broadly than "waters of the US" to mean "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code section 13050(e)). The California State Water Resources Control Board (SWRCB) and its Regional Water Quality Control Boards (RWQCBs) consider wetlands and other waters determined non-jurisdictional by the USACE guidance to remain jurisdictional as waters of the State subject to SWRCB/RWQCB jurisdiction.

**California Fish and Game Code-Lakes and Streams.** California Department of Fish and Wildlife (CDFW) regulates lakes and streams under Section 1602 of the California Fish and Game Code (FGC). The CDFW takes jurisdiction under its Lake and Streambed Alteration Agreement Program for any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This includes ephemeral streams, desert washes, and watercourses with a subsurface flow. It may also apply to work undertaken within the flood plain of a body of water.

**California Department of Fish and Game-Sensitive Natural Communities.** Sensitive natural plant communities include those that CDFW ranks as 'threatened' or 'very threatened' and keeps records of their occurrences in its California Natural Diversity Data Base (CNDDB). Sensitive plant communities are also identified by CDFW on their List of California Natural Communities Recognized by the CNDDB. Impacts to sensitive natural communities must be considered and evaluated under the California Environmental Quality Act (CEQA).

**Marin Countywide Plan**. The Marin Countywide Plan separates Marin County into four separate corridors that broadly define the types of land use and development that are typically encouraged in those areas. These four corridors are the Baylands Corridor, City-Centered Corridor, Inland Rural Corridor, and the Coastal Corridor. The Project Site is mapped within the Marin Countywide Plan in the City-Centered Corridor.

Marin Countywide Plan requirements pertaining to sensitive habitats, particularly requirements associated with the presence of Stream Conservation Areas (SCAs) and Wetland Conservation Areas (WCAs), are applicable countywide. Policies of the Marin Countywide Plan related to Stream Conservation Areas include the establishment of Stream Conservation Areas for the protection of riparian systems, streams, and related habitats. A Stream Conservation Area consists of a watercourse, surrounding banks, and woody riparian vegetation extending laterally from the top of both banks. Only certain uses are allowed in SCAs such as necessary water supply and flood control projects, improvements to fish and wildlife habitat, grazing, agriculture, maintenance of channels for erosion control, water monitoring installations, and trails. Prohibited uses include, but are not limited to, roads and utility lines (except at crossings), confinement of livestock, dumping, use of motorized vehicles, and new structures.

The Countywide Plan states that an SCA is established to protect the active channel, water quality and flood control functions and associated fish and wildlife habitat value along streams. SCAs can be established along perennial, intermittent, and ephemeral streams, and are to encompass jurisdictional wetlands or unvegetated other waters within the stream channel. The Plan indicates that development shall be set back to protect the stream and provide an upland buffer. Best management practices are to be adhered to in all designated SCAs.

The biological goals of the Marin Countywide Plan Policy BIO-4 include protecting, and where possible, restoring the natural structure and function of riparian systems. Policy BIO-4 includes restricting land use within the SCA to protect the active channel, water quality, and flood control functions and associated fish and wildlife habitat values along the stream.

Countywide Plan Policy BIO 4-1 defines the required development setback from riparian corridors within the City-Centered Corridor:

- For parcels more than 2 acres in size, provide a minimum 100-foot development setback on each side of the top of bank;
- For parcels between 2 and 0.5 acres in size, provide a minimum 50-foot development setback on each side of the top of bank;
- For parcels less than 0.5 acres in size, provide a minimum 20-foot development setback. The developed portion(s) of parcels (less than 0.5 acres in size) located behind an existing authorized flood control levee or dike are not subject to a development setback.

Policy BIO 4-1 also defines situations where exceptions to full compliance with all SCA criteria and standards may be allowed. Exceptions are allowed only if the following is true:

- A parcel falls entirely within the SCA; or
- Development on the parcel entirely outside the SCA either is infeasible or would have greater impacts on water quality, wildlife habitat, other sensitive biological resources, or other environmental constraints than development within the SCA.

### Special Status and Other Protected Species

**Special Status Species.** Special status species are species included in federal and state endangered species acts, and additional species in California to be considered in reviews of projects under CEQA.

**Federal Endangered Species Act (FESA).** The FESA is intended to help protect the ecosystems upon which endangered and threatened species depend. The FESA establishes an official listing process for plants and animals considered to be in danger of extinction; requires development of specific plans of action for the recovery of listed species; and restricts activities perceived to harm or kill listed species or affect critical habitat. The FESA prohibits the "take" of endangered or threatened wildlife species and requires federal agencies to ensure that their actions do not jeopardize the continued existence of listed species or adversely modify critical habitat, and to accomplish this in consultation with the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS) pursuant to Section 7 of the FESA.

**California Endangered Species Act (CESA).** CESA directs agencies to consult with CDFW on projects or actions that could affect state listed species, directs CDFW to determine whether jeopardy would occur, and allows CDFW to identify "reasonable and prudent alternatives" to the project consistent with conserving the species. The CESA prohibits the taking of state-listed endangered or threatened plant and wildlife species. CDFW exercises authority over mitigation projects involving state-listed species, including those resulting from CEQA mitigation requirements.

**California Environmental Quality Act Review.** Special status species to be evaluated in reviews pursuant to CEQA include those species listed under FESA or CESA. In addition, the CEQA provides additional protection for unlisted species that meet the "rare" or "endangered" criteria defined in Title 14, California Code of Regulations Section 15380. Species to be included in CEQA review also includes species listed by CDFW as Fully Protected or Species of Special Concern, bird species designated as Bird Species of Conservation Concern by the USFWS, bat species protected by the California Fish and Game Code, and plant species on California Rare Plant Rank (CRPR) Lists 1 and 2.

**Protections for Migratory Birds.** The Migratory Bird Treaty Act (MBTA) implements international treaties devised to protect migratory birds and any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. The State of California also incorporates the protection of nongame birds and birds of prey, including their nests, in Sections 3800, 3513, 3503, and 3503.5 of the California Fish and Game Code. Section 3503 of the Fish and Game Code makes it unlawful to take, possess, or needlessly destroy the nests or eggs of any bird. Section 3503.5 makes it unlawful to take or possess birds of prey (hawks, eagles, vultures, owls) or destroy their nests or eggs.

**Protections for Bat Populations.** Bats and other non-game mammals are protected in California. Section 4150 of the Fish and Game Code states that all non-game mammals or parts thereof may not be taken or possessed except as otherwise provided in the code or in accordance with regulations adopted by the Fish and Game Commission. Thus, destruction of an occupied, non-breeding, 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) is prohibited.

### Marin County Code

Marin County Code Section 22.20.040 requires procedures to protect roosting bats, nesting birds, and the state and federally listed Northern spotted owl. In areas where a Biological Site Assessment identifies a high probability for the presence of roosting bats, Code Section 22.20.040(E) requires a two-step process for removal of trees with potential bat habitat during certain times of the year. If a

Biological Site Assessment identifies areas with a high probability of the presence of nesting birds and the project requires tree removal, grading, or other site disturbances during the nesting season, Code Section 22.20.040(F) requires pre-construction bird nesting surveys and, if nesting birds are found, establishment of appropriate buffer zones and installation of exclusion fencing to ensure no disturbance to active nests until young have fledged. In addition, Marin County Code Section 22.20.040(G) requires special conditions to protect Northern spotted owl be implemented if a Biological Site Assessment identifies a Northern spotted owl nest within 500 feet of proposed outdoor construction activity involving tree removal, grading, or other site disturbances.

Tree replacement policies from the Marin County Code may also be relevant to the proposed project. Marin County Municipal Code Chapters 22.27 and 22.62 state that Protected Trees shall not be removed except in compliance with Section 22.62.040 (Exemptions), and as provided for in Chapter 22.62 (Tree Removal Permits). A Tree Removal Permit is required for the removal of trees in the following instances: (1) More than two “Protected Trees” are being removed from a developed lot in a 12-month period; (2) The tree qualifies as a “Heritage Tree”; and (3) The tree is a “Protected Tree” or “Heritage Tree” and is located in a Stream Conservation Area or a Wetland Conservation Area. Protected and Heritage trees are limited to tree species native to Marin County. Additionally, the removal of any Protected or Heritage tree on a lot is exempt from Tree Removal Permit requirements if the general health of the tree is so poor due to disease, damage, or age that efforts to ensure its long-term health and survival are unlikely to be successful.

# APPENDIX C

# BIOLOGICAL SPECIES TABLES

| Table 1. Special Status Plants with Potential to Occur in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| Napa false indigo<br><br>*(Amorpha californica var. napensis)* | -- / -- / 1B.2<br>1B.2<br>G4T2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Broadleafed upland forest, chaparral, cismontane woodland. Openings in forest or woodland or in chaparral. 30-735 m / April - July | No Potential. Although a remnant broadleaf upland forest occurs on a portion of the site, it is highly degraded with understory and groundcover of primarily non-native plants, and would not support this species. | None. |
| bent-flowered fiddleneck<br><br>*(Amsinckia lunaris)* | -- / -- / 1B.2<br>1B.2<br>G3 / S3<br>BLM_S-Sensitive \| SB_UCBG-UC Botanical Garden at Berkeley \| SB_UCSC-UC Santa Cruz | Cismontane woodland, valley and foothill grassland, coastal bluff scrub. 3-795 m. / March - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Robbins' broomrape<br><br>*(Aphyllon robbinsii)* | -- / -- / 1B.1<br>1B.1<br>G1 / S1 | Coastal bluff scrub, coastal dunes (possibly). Rocky or sandy soil on bluffs, cliffs, landslides, or shell mounds; possibly on sand dunes. Only confirmed host is Eriophyllum staechadifolium. 0-100 m. / No Bloom Period | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Franciscan manzanita<br><br>*(Arctostaphylos franciscana)* | Endangered / -- / 1B.1<br>1B.1<br>GHC / S1<br>SB_UCBG-UC Botanical Garden at Berkeley | Chaparral. Serpentine outcrops in chaparral. 30-215 m. / February - April | No Potential. The habitats including serpentine outcrops suitable to support this species do not occur on the Project Site. | None. |
| Mt. Tamalpais manzanita<br><br>*(Arctostaphylos montana ssp. montana)* | -- / -- / 1B.3<br>1B.3<br>G3T3 / S3<br>SB_UCBG-UC Botanical Garden at Berkeley | Chaparral, valley and foothill grassland. Serpentine slopes in chaparral and grassland. 150-680 m. / February - April | No Potential. The habitats including serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| Presidio manzanita<br><br>*(Arctostaphylos montana ssp. ravenii)* | Endangered / Endangered / 1B.1<br>1B.1<br>G3T1 / S1 | Chaparral, coastal prairie, coastal scrub. Open, rocky serpentine slopes. 20-215 m. / February - March | No Potential. The habitats including rocky serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| Marin manzanita<br><br>*(Arctostaphylos virgata)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_USDA-US Dept of Agriculture | Broadleafed upland forest, closed-cone coniferous forest, chaparral, north coast coniferous forest. On sandstone or granitic 1-800 m. / January - March | No Potential. Although a remnant broadleaf upland forest occurs on a portion of the site, it is highly degraded with understory and groundcover of primarily non-native plants. No manzanita were observed on the property. | None. |

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|---|---|---|---|---|
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| marsh sandwort<br><br>*(Arenaria paludicola)* | Endangered / Endangered / 1B.1<br>1B.1<br>G1 / S1<br>SB_SBBG-Santa Barbara Botanic Garden | Marshes and swamps. Growing up through dense mats of Typha, Juncus, Scirpus, etc. in freshwater marsh. Sandy soil. 3-170 m. / May - August | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| coastal marsh milk-vetch<br><br>*(Astragalus pycnostachyus var. pycnostachyus)* | -- / -- / 1B.2<br>1B.2<br>G2T2 / S2<br>BLM_S-Sensitive \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_SBBG-Santa Barbara Botanic Garden \| SB_UCBG-UC Botanical Garden at Berkeley | Coastal dunes,marshes and swamps, coastal scrub. Mesic sites in dunes or along streams or coastal salt marshes. 0-155 m. / April - October | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Thurber's reed grass<br><br>*(Calamagrostis crassiglumis)* | -- / -- / 2B.1<br>2B.1<br>G5Q / S2 | Coastal scrub, marshes and swamps. Usually in marshy swales surrounded by grassland or coastal scrub. 5-50 m. / May - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Tiburon mariposa-lily<br><br>*(Calochortus tiburonensis)* | Threatened / Threatened / 1B.1<br>1B.1<br>G1 / S1<br>SB_UCBG-UC Botanical Garden at Berkeley | Valley and foothill grassland. On open, rocky, slopes in serpentine grassland. 50-150 m. / March - June | No Potential. The habitats including serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| coastal bluff morning-glory<br><br>*(Calystegia purpurata ssp. saxicola)* | -- / -- / 1B.2<br>1B.2<br>G4T2T3 / S2S3<br>BLM_S-Sensitive \| SB_UCSC-UC Santa Cruz | Coastal dunes, coastal scrub, coastal bluff scrub, north coast coniferous forest. 4-165m. / May - September | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| bristly sedge<br><br>*(Carex comosa)* | -- / -- / 2B.1<br>2B.1<br>G5 / S2<br>IUCN_LC-Least Concern | Marshes and swamps, coastal prairie, valley and foothill grassland. Lake margins, wet places; site below sea level is on a Delta island. -5-1010 m. | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |

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|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| Lyngbye's sedge<br><br>*(Carex lyngbyei)* | -- / -- / 2B.2<br>2B.2<br>G5 / S3<br>IUCN_LC-Least Concern | Marshes and swamps (brackish or freshwater). 0-200 m. | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| northern meadow sedge<br><br>*(Carex praticola)* | -- / -- / 2B.2<br>2B.2<br>G5 / S2 | Meadows and seeps. Moist to wet meadows. 15-3200 m. | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Tiburon paintbrush<br><br>*(Castilleja affinis var. neglecta)* | Endangered / Threatened / 1B.2<br>1B.2<br>G4G5T1T2 / S1S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCBG-UC Botanical Garden at Berkeley | Valley and foothill grassland. Rocky serpentine sites. 120-400 m. / No Bloom Period | No Potential. The habitats including rocky serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| Mason's ceanothus<br><br>*(Ceanothus masonii)* | -- / Rare / 1B.2<br>1B.2<br>G1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_USDA-US Dept of Agriculture | Chaparral. Serpentine ridges or slopes in chaparral or transition zone. 180-460 m. | No Potential. The habitats incluidng serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| Point Reyes salty bird's-beak<br><br>*(Chloropyron maritimum ssp. palustre)* | -- / -- / 1B.2<br>1B.2<br>G4?T2 / S2<br>BLM_S-Sensitive \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Coastal salt marsh. Usually in coastal salt marsh with Salicornia, Distichlis, Jaumea, Spartina, etc. 0-115 m. / June - October | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| San Francisco Bay spineflower<br><br>*(Chorizanthe cuspidata var. cuspidata)* | -- / -- / 1B.2<br>1B.2<br>G2T1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub. Closely related to C. pungens. Sandy soil on terraces and slopes. 2-550 m. / April - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Franciscan thistle<br><br>*(Cirsium andrewsii)* | -- / -- / 1B.2<br>1B.2<br>G3 / S3<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Coastal bluff scrub, broadleafed upland forest, coastal scrub, coastal prairie. Sometimes serpentine seeps. 0-295 m. / March - July | No Potential. Although a remnant broadleaf upland forest occurs on a portion of the site, it is highly degraded with understory and groundcover of primarily non-native plants, and would not support this species. Also, serpentine soils do not occur. | None. |

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|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| Mt. Tamalpais thistle<br><br>*(Cirsium hydrophilum var. vaseyi)* | -- / -- / 1B.2<br>1B.2<br>G2T2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Broadleafed upland forest, chaparral, meadows and seeps. Serpentine seeps and streams in chaparral and woodland. 180-610 m. / May - August | No Potential. Although a remnant broadleaf upland forest occurs on a portion of the site, it is highly degraded with understory and groundcover of primarily non-native plants, and would not support this species. No serpentine seeps or streams. | None. |
| Presidio clarkia<br><br>*(Clarkia franciscana)* | Endangered / Endangered / 1B.1<br>1B.1<br>G1 / S1<br>SB_UCBG-UC Botanical Garden at Berkeley | Coastal scrub, valley and foothill grassland. Serpentine outcrops in grassland or scrub. 20-305 m. / May - July | No Potential. The habitats including serpentine outcrops suitable to support this species do not occur on the Project Site. | None. |
| round-headed collinsia<br><br>*(Collinsia corymbosa)* | -- / -- / 1B.2<br>1B.2<br>G1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Coastal dunes. 0-30 m. / April - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| San Francisco collinsia<br><br>*(Collinsia multicolor)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>BLM_S-Sensitive \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCSC-UC Santa Cruz | Closed-cone coniferous forest, coastal scrub. On decomposed shale (mudstone) mixed with humus; sometimes on serpentine. 10-275 m. / March - May | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| silverskin lichen<br><br>*(Dermatocarpon meiophyllizum)* | -- / -- / 2B.3<br>2B.3<br>G3G5 / S3 | Coastal prairie, lower montane coniferous forest, north coast coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Usually aquatic to semi-aquatic, within splash zone of lakes or streams. Preferred habitat is undisturbed, exposed streams with large rocks or bedrock at high elevations, but it is also found in cold, deep canyons at lower elevations. 60-2300 m. / No Bloom Period | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| western leatherwood<br><br>*(Dirca occidentalis)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Broadleafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. 20-640 m. / November - March | No Potential. Although a remnant broadleaf upland forest occurs on a portion of the site, it is highly degraded with understory and groundcover of primarily non-native plants, and would not support this species. | None. |
| Tiburon buckwheat<br><br>*(Eriogonum luteolum var. caninum)* | -- / -- / 1B.2<br>1B.2<br>G5T2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Chaparral, valley and foothill grassland, cismontane woodland, coastal prairie. Serpentine soils; sandy to gravaelly sites. 60-640 m. / May - September | No Potential. The habitats including serpentine soils suitable to support this species do not occur on the Project Site. | None. |

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|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| minute pocket moss<br><br>*(Fissidens pauperculus)* | -- / -- / 1B.2<br>1B.2<br>G3? / S2<br>USFS_S-Sensitive | North coast coniferous forest. Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 30-1025 m. / No Bloom Period | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Marin checker lily<br><br>*(Fritillaria lanceolata var. tristulis)* | -- / -- / 1B.1<br>1B.1<br>G5T2 / S2<br>SB_UCSC-UC Santa Cruz | Coastal bluff scrub, coastal scrub, coastal prairie. Occurrences reported from canyons and riparian areas as well as rock outcrops; often on serpentine. 5-305 m. / February - May | No Potential. The habitats and serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| fragrant fritillary<br><br>*(Fritillaria liliacea)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| USFS_S-Sensitive | Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland. Often on serpentine; various soils reported though usually on clay, in grassland. 3-385 m. / February - April | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| blue coast gilia<br><br>*(Gilia capitata ssp. chamissonis)* | -- / -- / 1B.1<br>1B.1<br>G5T2 / S2<br>SB_UCBG-UC Botanical Garden at Berkeley | Coastal dunes, coastal scrub. 3-200 m. / April - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| dark-eyed gilia<br><br>*(Gilia millefoliata)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>BLM_S-Sensitive \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Coastal dunes. 1-60 m. / April - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| San Francisco gumplant<br><br>*(Grindelia hirsutula var. maritima)* | -- / -- / 3.2<br>3.2<br>G5T1Q / S1<br>SB_UCSC-UC Santa Cruz | Coastal scrub, coastal bluff scrub, valley and foothill grassland. Sandy or serpentine slopes, sea bluffs. 15-305 m. / June - September | No Potential. The habitats and soil types suitable to support this species do not occur on the Project Site. | None. |
| Diablo helianthella<br><br>*(Helianthella castanea)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>BLM_S-Sensitive \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 45-1070 m. / March - June | No Potential. Although a remnant broadleaf upland forest occurs on a portion of the site, it is highly degraded with understory and groundcover of primarily non-native plants, and would not support this species. | None. |

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|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| congested-headed hayfield tarplant<br><br>*(Hemizonia congesta ssp. congesta)* | -- / -- / 1B.2<br>1B.2<br>G5T2 / S2<br>SB_UCBG-UC Botanical Garden at Berkeley | Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 5-520 m. / April - November | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Marin western flax<br><br>*(Hesperolinon congestum)* | Threatened / Threatened / 1B.1<br>1B.1<br>G1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCBG-UC Botanical Garden at Berkeley | Chaparral, valley and foothill grassland. In serpentine barrens and in serpentine grassland and chaparral. 60-400 m. / April - July | No Potential. The habitats including serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| water star-grass<br><br>*(Heteranthera dubia)* | -- / -- / 2B.2<br>2B.2<br>G5 / S2<br>IUCN_LC-Least Concern | Marshes and swamps. Alkaline, still or slow-moving water. Requires a pH of 7 or higher, usually in slightly eutrophic waters. 15-1510 m. / July - August | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Santa Cruz tarplant<br><br>*(Holocarpha macradenia)* | Threatened / Endangered / 1B.1<br>1B.1<br>G1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCBG-UC Botanical Garden at Berkeley | Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 10-275 m. / June - October | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Kellogg's horkelia<br><br>*(Horkelia cuneata var. sericea)* | -- / -- / 1B.1<br>1B.1<br>G4T1? / S1?<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCSC-UC Santa Cruz \| USFS_S-Sensitive | Closed-cone coniferous forest, coastal scrub, coastal dunes, chaparral. Old dunes, coastal sandhills; openings. Sandy or gravelly soils. 5-430 m. / February - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Point Reyes horkelia<br><br>*(Horkelia marinensis)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>BLM_S-Sensitive \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCSC-UC Santa Cruz | Coastal dunes, coastal prairie, coastal scrub. Sandy flats and dunes near coast; in grassland or scrub plant communities. 2-775 m. / May - September | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| thin-lobed horkelia<br><br>*(Horkelia tenuiloba)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>BLM_S-Sensitive \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Broadleafed upland forest, chaparral, valley and foothill grassland. Sandy soils; mesic openings. 45-640 m. / May - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |

| Table 1. Special Status Plants with Potential to Occur in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| island tube lichen<br><br>*(Hypogymnia schizidiata)* | -- / -- / 1B.3<br>1B.3<br>G2G3 / S2 | Chaparral, closed-cone coniferous forest. On bark and wood of hardwoods and conifers. 255-545 m. / No Bloom Period | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| small groundcone<br><br>*(Kopsiopsis hookeri)* | -- / -- / 2B.3<br>2B.3<br>G4? / S1S2 | North coast coniferous forest. Open woods, shrubby places, generally on Gaultheria shallon. 120-1435 m. / April - August | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| beach layia<br><br>*(Layia carnosa)* | Threatened / Endangered / 1B.1<br>1B.1<br>G2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_SBBG-Santa Barbara Botanic Garden | Coastal dunes, coastal scrub. On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 3-30 m. / March - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| rose leptosiphon<br><br>*(Leptosiphon rosaceus)* | -- / -- / 1B.1<br>1B.1<br>G1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Coastal bluff scrub. 10-140 m. / April - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| San Francisco lessingia<br><br>*(Lessingia germanorum)* | Endangered / Endangered / 1B.1<br>1B.1<br>G1 / S1 | Coastal scrub. On remnant dunes. Open sandy soils relatively free of competing plants. 3-155 m. / July - November | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Tamalpais lessingia<br><br>*(Lessingia micradenia var. micradenia)* | -- / -- / 1B.2<br>1B.2<br>G2T2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_USDA-US Dept of Agriculture | Chaparral, valley and foothill grassland. Usually on serpentine, in serpentine grassland or serpentine chaparral. Often on roadsides. 60-305 m. / July - October | No Potential. The habitats including serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| marsh microseris<br><br>*(Microseris paludosa)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>BLM_S-Sensitive \| SB_SBBG-Santa Barbara Botanic Garden \| SB_UCSC-UC Santa Cruz | Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. 3-610 m. / April - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |

| Table 1. Special Status Plants with Potential to Occur in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| elongate copper moss<br><br>*(Mielichhoferia elongata)* | -- / -- / 4.3<br>4.3<br>G5 / S3S4<br>USFS_S-Sensitive | Cismontane woodland. Moss growing on very acidic, metamorphic rock or substrate; usually in higher portions in fens. Often on substrates naturally enriched with heavy metals (e.g. copper) such as mine tailings. 5-1085 m. / No Bloom Period | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Marin County navarretia<br><br>*(Navarretia rosulata)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>BLM_S-Sensitive \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Closed-cone coniferous forest, chaparral. Dry, open rocky places; can occur on serpentine. 185-640 m. / May - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| white-rayed pentachaeta<br><br>*(Pentachaeta bellidiflora)* | Endangered / Endangered / 1B.1<br>1B.1<br>G1 / S1<br>SB_UCBG-UC Botanical Garden at Berkeley | Valley and foothill grassland, cismontane woodland. Open dry rocky slopes and grassy areas, often on soils derived from serpentine bedrock. 35-610 m. / March - May | No Potential. The habitats and serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| Choris' popcornflower<br><br>*(Plagiobothrys chorisianus var. chorisianus)* | -- / -- / 1B.2<br>1B.2<br>G3T1Q / S1<br>BLM_S-Sensitive \| SB_UCSC-UC Santa Cruz | Chaparral, coastal scrub, coastal prairie. Mesic sites. 5-705 m. / March - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| San Francisco popcornflower<br><br>*(Plagiobothrys diffusus)* | -- / Endangered / 1B.1<br>1B.1<br>G1Q / S1<br>SB_UCSC-UC Santa Cruz | Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 45-360 m. / March - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| hairless popcornflower<br><br>*(Plagiobothrys glaber)* | -- / -- / 1A<br>1A<br>GX / SX | Meadows and seeps, marshes and swamps. Coastal salt marshes and alkaline meadows. 5-125 m. / March - May | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| North Coast semaphore grass<br><br>*(Pleuropogon hooverianus)* | -- / Threatened / 1B.1<br>1B.1<br>G2 / S2<br>BLM_S-Sensitive \| SB_BerrySB-Berry Seed Bank \| SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Broadleafed upland forest, meadows and seeps, north coast coniferous forest. Wet grassy, usually shady areas, sometimes freshwater marsh; associated with forest environments. 45-1160 m. / April - June | No Potential. Although a remnant broadleaf upland forest occurs on a portion of the site, it is highly degraded with understory and groundcover of primarily non-native plants, and would not support this species. | None. |

| Table 1. Special Status Plants with Potential to Occur in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| Oregon polemonium<br><br>*(Polemonium carneum)* | -- / -- / 2B.2<br>2B.2<br>G3G4 / S2 | Coastal prairie, coastal scrub, lower montane coniferous forest. 15-1525 m. / April - September | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Marin knotweed<br><br>*(Polygonum marinense)* | -- / -- / 3.1<br>3.1<br>G2 / S2 | Marshes and swamps. Coastal salt marshes and brackish marshes. 0-10 m. / May - August | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Tamalpais oak<br><br>*(Quercus parvula var. tamalpaisensis)* | -- / -- / 1B.3<br>1B.3<br>G4T2 / S2 | Lower montane coniferous forest, cismontane woodland. 200-640 m. / March - April | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Point Reyes checkerbloom<br><br>*(Sidalcea calycosa ssp. rhizomata)* | -- / -- / 1B.2<br>1B.2<br>G5T2 / S2 | Marshes and swamps. Freshwater marshes near the coast.5-95 m. / April - September | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Marin checkerbloom<br><br>*(Sidalcea hickmanii ssp. viridis)* | -- / -- / 1B.1<br>1B.1<br>G2TH / SH | Chaparral. Serpentine or volcanic soils; sometimes appears after burns. 1-425 m. / May - June | No Potential. The habitats including serpentine or volcanic soils suitable to support this species do not occur on the Project Site. | None. |
| Scouler's catchfly<br><br>*(Silene scouleri ssp. scouleri)* | -- / -- / 2B.2<br>2B.2<br>G5T4T5 / S2S3 | Coastal bluff scrub, coastal prairie, valley and foothill grassland. 5-315 m. / June - August | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| San Francisco campion<br><br>*(Silene verecunda ssp. verecunda)* | -- / -- / 1B.2<br>1B.2<br>G5T1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCSC-UC Santa Cruz | Coastal scrub, valley and foothill grassland, coastal bluff scrub, chaparral, coastal prairie. Often on mudstone or shale; one site on serpentine. 30-645 m. / March - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |

| Table 1. Special Status Plants with Potential to Occur in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| long-styled sand-spurrey<br><br>*(Spergularia macrotheca var. longistyla)* | -- / -- / 1B.2<br>1B.2<br>G5T2 / S2 | Marshes and swamps, meadows and seeps. Alkaline. 0-220 m. / February - May | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Santa Cruz microseris<br><br>*(Stebbinsoseris decipiens)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCSC-UC Santa Cruz | Broadleafed upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, valley and foothill grassland. Open areas in loose or disturbed soil, usually derived from sandstone, shale or serpentine, on seaward slopes. 90-750 m. / April - May | No Potential. Although a remnant broadleaf upland forest occurs on a portion of the site, it is highly degraded with understory and groundcover of primarily non-native plants, and would not support this species. | None. |
| Tamalpais jewelflower<br><br>*(Streptanthus batrachopus)* | -- / -- / 1B.3<br>1B.3<br>G2 / S2<br>SB_UCSC-UC Santa Cruz | Closed-cone coniferous forest, chaparral. Talus serpentine outcrops. 335-670 m. / April - July | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| Tiburon jewelflower<br><br>*(Streptanthus glandulosus ssp. niger)* | Endangered / Endangered / 1B.1<br>1B.1<br>G4T1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCBG-UC Botanical Garden at Berkeley | Valley and foothill grassland. Shallow, rocky serpentine slopes. 30-150 m. / May - June | No Potential. The habitats and rocky serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| Mt. Tamalpais bristly jewelflower<br><br>*(Streptanthus glandulosus ssp. pulchellus)* | -- / -- / 1B.2<br>1B.2<br>G4T2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden | Chaparral, valley and foothill grassland. Serpentine slopes. 125-670 m. / May - July | No Potential. The habitats and serpentine soils suitable to support this species do not occur on the Project Site. | None. |
| Suisun Marsh aster<br><br>*(Symphyotrichum lentum)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_USDA-US Dept of Agriculture | Marshes and swamps (brackish and freshwater). Most often seen along sloughs with Phragmites, Scirpus, blackberry, Typha, etc. 0-15 m. / May - November | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |

| Table 1. Special Status Plants with Potential to Occur in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Rare Plant Rank**[2]<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range/Bloom Period** | **Potential Site for Occurrence** | **Recommended Action** |
| two-fork clover<br><br>*(Trifolium amoenum)* | Endangered / -- / 1B.1<br>1B.1<br>G1 / S1<br>SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden \| SB_UCBG-UC Botanical Garden at Berkeley \| SB_USDA-US Dept of Agriculture | Valley and foothill grassland, coastal bluff scrub. Sometimes on serpentine soil, open sunny sites, swales. Most recently cited on roadside and eroding cliff face. 5-310 m. / April - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| saline clover<br><br>*(Trifolium hydrophilum)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2 | Marshes and swamps, valley and foothill grassland, vernal pools. Mesic, alkaline sites. 1-335 m. / April - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| San Francisco owl's-clover<br><br>*(Triphysaria floribunda)* | -- / -- / 1B.2<br>1B.2<br>G2? / S2? | Coastal prairie, coastal scrub, valley and foothill grassland. On serpentine and non-serpentine substrate (such as at Pt. Reyes). 1-150 m. / April - June | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |
| coastal triquetrella<br><br>*(Triquetrella californica)* | -- / -- / 1B.2<br>1B.2<br>G2 / S2<br>USFS_S-Sensitive | Coastal bluff scrub, coastal scrub. Grows within 30m from the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. 20-1175 m. / No Bloom Period | No Potential. The habitats suitable to support this species do not occur on the Project Site. | None. |

| Table 2. Special Status Animal Species that Have Been Reported in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Taxonomic Class**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range** | **Potential for Site Occurrence** | **Recommended Action** |
| Insects<br>Opler's longhorn moth<br>*(Adela oplerella)* | -- / --<br>G2 / S2 | From Marin County and the Oakland area on the inner coast ranges south to Santa Clara County. One record from Santa Cruz County. All but Santa Cruz site is on serpentine grassland. Larvae feed on Platystemon californicus. | No Potential. The habitats including serpentine soils that are necessary to support this species do not occur on the Project Site. | None. |
| Insects<br>obscure bumble bee<br>*(Bombus caliginosus)* | -- / --<br>G2G3 / S1S2<br>IUCN_VU-Vulnerable | Coastal areas from Santa Barbara County north to Washington state. Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia. | Unlikely. This species is not likely to occur within the degraded habitats present on the property. | None. |
| Insects<br>Crotch's bumble bee<br>*(Bombus crotchii)* | -- / Candidate Endangered<br>G2 / S2<br>IUCN_EN-Endangered | Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum. | Unlikely. This species is not likely to occur within the degraded habitats present on the property. | None. |
| Insects<br>western bumble bee<br>*(Bombus occidentalis)* | -- / Candidate Endangered<br>G3 / S1<br>IUCN_VU-Vulnerable \| USFS_S-Sensitive | Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease. | Unlikely. This species is not likely to occur within the degraded habitats present on the property. | None. |
| Insects<br>American bumble bee<br>*(Bombus pensylvanicus)* | -- / --<br>G3G4 / S2<br>IUCN_VU-Vulnerable | Long-tongued; forages on a wide variety of flowers including vetches (Vicia), clovers (Trifolium), thistles (Cirsium), sunflowers (Helianthus), etc. Nests above ground under long grass or underground. Queens overwinter in rotten wood or underground. | Unlikely. This species is not likely to occur within the degraded habitats present on the property. | None. |
| Crustaceans<br>Tomales isopod<br>*(Caecidotea tomalensis)* | -- / --<br>G2 / S2S3 | Inhabits localized freshwater ponds or streams with still or near-still water from San Mateo to Del Norte County. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Insects<br>Marin elfin butterfly<br>*(Callophrys mossii marinensis)* | -- / --<br>G4T1 / S2 | Found only in the redwood forest areas of Marin County. Larvae collected and reared on Sedum spathulifolium. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

| Table 2. Special Status Animal Species that Have Been Reported in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Taxonomic Class**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range** | **Potential for Site Occurrence** | **Recommended Action** |
| Insects<br>sandy beach tiger beetle<br>*(Cicindela hirticollis gravida)* | -- / --<br>G5T2 / S2 | Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Insects<br>monarch - California overwintering population<br>*(Danaus plexippus plexippus pop. 1)* | Proposed Threatened / --<br>G4T1T2Q / S2<br>IUCN_EN-Endangered \| USFS_S-Sensitive | Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby. | No Potential. The habitats that are necessary to support a winter roost site for this species do not occur on the Project Site. | None. |
| Mollusks<br>western ridged mussel<br>*(Gonidea angulata)* | -- / --<br>G3 / S2<br>IUCN_VU-Vulnerable | Primarily creeks and rivers and less often lakes. Originally in most of state, now extirpated from Central and Southern California. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Insects<br>Ricksecker's water scavenger beetle<br>*(Hydrochara rickseckeri)* | -- / --<br>G2? / S2? | Aquatic. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Insects<br>Mission blue butterfly<br>*(Icaricia icarioides missionensis)* | Endangered / --<br>G5T2 / S2 | Inhabits grasslands of the San Francisco peninsula. Three larval host plants: Lupinus albifrons, L. variicolor, and L. formosus, of which L. albifrons is favored. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Insects<br>Pheres blue butterfly<br>*(Icaricia icarioides pheres)* | -- / --<br>G5TX / SX | Coastal dunes of San Francisco. Used Lupinus sp. and Lotus sp. as host plants. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Insects<br>bumblebee scarab beetle<br>*(Lichnanthe ursina)* | -- / --<br>G2 / S2 | Inhabits coastal sand dunes from Sonoma County south to San Mateo County. Usually flies close to sand surface near the crest of the dunes. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

| Table 2. Special Status Animal Species that Have Been Reported in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Taxonomic Class**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range** | **Potential for Site Occurrence** | **Recommended Action** |
| Arachnids<br>Tiburon micro-blind harvestman<br>*(Microcina tiburona)* | -- / --<br>G2 / S2 | Open hilly grassland habitat in areas of serpentine bedrock. Found on the undersides of serpentine rocks near permanent springs. | No Potential. The habitats including serpentine that are necessary to support this species do not occur on the Project Site. | None. |
| Mollusks<br>robust walker<br>*(Pomatiopsis binneyi)* | -- / --<br>G1 / S1 | Freshwater. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mollusks<br>Pacific walker<br>*(Pomatiopsis californica)* | -- / --<br>G1 / S1<br>IUCN_DD-Data Deficient | Freshwater. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Crustaceans<br>hyporheic amphipod<br>*(Stygobromus hyporheicus)* | -- / --<br>G1 / SX | Known only from Marin County. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Insects<br>San Francisco Bay Area leaf-cutter bee<br>*(Trachusa gummifera)* | -- / --<br>G1 / S1 | Flight period from May to June. Documented visiting Pickeringia flowers but examination of pollen loads on females and pollen in brood cells indicate the species is polylectic. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mollusks<br>mimic tryonia (=California brackishwater snail)<br>*(Tryonia imitator)* | -- / --<br>G2 / S2<br>IUCN_DD-Data Deficient | Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County. Found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mollusks<br>Marin hesperian<br>*(Vespericola marinensis)* | -- / --<br>G2 / S2 | Found in moist spots in coastal brushfield and chaparral vegetation in Marin County. Under leaves of cow-parsnip, around spring seeps, in leafmold along streams, in alder woods and mixed evergreen forest. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

| Table 2. Special Status Animal Species that Have Been Reported in the Vicinity of the Project Site and Recommended Actions, Marin County, California | | | | |
|---|---|---|---|---|
| **SPECIES**<br>**Taxonomic Class**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range** | **Potential for Site Occurrence** | **Recommended Action** |
| Fish<br>green sturgeon - southern DPS<br>*(Acipenser medirostris pop. 1)* | Threatened / --<br>G2T1 / S1<br>AFS_VU-Vulnerable \| CDFW_SSC-Species of Special Concern \| IUCN_EN-Endangered | Spawning site fidelity. Spawns in the Sacramento, Feather and Yuba Rivers. Presence in upper Stanislaus and San Joaquin Rivers may indicate spawning. Non-spawning adults occupy marine/estuarine waters. Delta Estuary is important for rearing juveniles. Spawning occurs primarily in cool (11-15 C) sections of mainstem rivers in deep pools (8-9 meters) with substrate containing small to medium sized sand, gravel, cobble, or boulder. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Fish<br>tidewater goby<br>*(Eucyclogobius newberryi)* | Endangered / --<br>G3 / S3<br>AFS_EN-Endangered \| CDFW_SSC-Species of Special Concern \| IUCN_NT-Near Threatened | Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Fish<br>coho salmon - central California coast ESU<br>*(Oncorhynchus kisutch pop. 4)* | Endangered / Endangered<br>G5T2Q / S2<br>AFS_EN-Endangered | Federal listing = pops between Punta Gorda and San Lorenzo River. State listing = pops south of Punta Gorda. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Fish<br>longfin smelt - San Francisco Bay-Delta DPS<br>*(Spirinchus thaleichthys pop. 2)* | Endangered / Threatened<br>G5TNRQ / S1<br>IUCN_LC-Least Concern | Pelagic and anadromous within the Sacramento-San Joaquin River Delta, San Francisco Bay, and Gulf of the Farallones. Spawns in lower freshwater reaches of Sacramento and San Joaquin Rivers. First year in Suisun Bay; later SF Bay or Gulf of the Farallones. Occurs in salinities ranging from pure freshwater to pure saltwater; typically salinities ranging from 14-28 parts per thousand (ppt). Generally occupies water temperatures from 61-68F, with spawning occurring in water temperatures from 41-58F. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Fish<br>eulachon<br>*(Thaleichthys pacificus)* | Threatened / --<br>G4 / S1<br>CDFW_SSC-Species of Special Concern \| IUCN_LC-Least Concern | Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Amphibians<br>California giant salamander<br>*(Dicamptodon ensatus)* | -- / --<br>G2G3 / S2S3<br>CDFW_SSC-Species of Special Concern \| IUCN_NT-Near Threatened | Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

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| **SPECIES**<br>**Taxonomic Class**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range** | **Potential for Site Occurrence** | **Recommended Action** |
| Amphibians<br>foothill yellow-legged frog - north coast DPS<br>*(Rana boylii pop. 1)* | -- / --<br>G3T4 / S4<br>BLM_S-Sensitive \| CDFW_SSC-Species of Special Concern \| USFS_S-Sensitive | Northern Coast Ranges north of San Francisco Bay Estuary, Klamath Mountains, and Cascade Range including watershed subbasins (HU 8) Lower Pit, Battle Creek, Thomes Creek, and Big Chico Creek in Lassen, Shasta, Tehama, and Butte Counties. Partly shaded shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying and at least 15 weeks to attain metamorphosis. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Amphibians<br>California red-legged frog<br>*(Rana draytonii)* | Threatened / --<br>G2G3 / S2S3<br>CDFW_SSC-Species of Special Concern \| IUCN_VU-Vulnerable | Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Reptiles<br>northwestern pond turtle<br>*(Actinemys marmorata)* | Proposed Threatened / --<br>G2 / SNR<br>BLM_S-Sensitive \| CDFW_SSC-Species of Special Concern \| IUCN_VU-Vulnerable \| USFS_S-Sensitive | Northwestern pond turtles occupy ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. The turtles prefer aquatic habitats with calm waters, vegetated banks and emergent logs or rocks to use as basking sites. The turtles also rely on suitable upland areas of scrub and woodlands for aestival refugia and may use upland habitats up to 0.5 km from water for activities such as egg-laying. Pond turtles living in streams may vacate flood-prone areas during the rainy season. Northwestern pond turtles occur broadly in suitable habitats throughout the state of California. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Reptiles<br>San Francisco gartersnake<br>*(Thamnophis sirtalis tetrataenia)* | Endangered / Endangered<br>G5T2Q / S2<br>CDFW_FP-Fully Protected | Vicinity of freshwater marshes, ponds and slow-moving streams in San Mateo County and extreme northern Santa Cruz County. Prefers dense cover and water depths of at least one foot. Upland areas near water are also very important. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>western snowy plover<br>*(Anarhynchus nivosus nivosus)* | Threatened / --<br>G3T3 / S3<br>CDFW_SSC-Species of Special Concern | Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>great egret<br>*(Ardea alba)* | -- / --<br>G5 / S4<br>CDF_S-Sensitive \| IUCN_LC-Least Concern | Colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes. | No Potential. The habitats that are necessary to support a rookery for this species do not occur on the Project Site. | None. |

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|---|---|---|---|---|
| **SPECIES**<br>**Taxonomic Class**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range** | **Potential for Site Occurrence** | **Recommended Action** |
| Birds<br>great blue heron<br>*(Ardea herodias)* | -- / --<br>G5 / S4<br>CDF_S-Sensitive \| IUCN_LC-Least Concern | Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows. | No Potential. The habitats that are necessary to support a rookery for this species do not occur on the Project Site. | None. |
| Birds<br>short-eared owl<br>*(Asio flammeus)* | -- / --<br>G5 / S2<br>CDFW_SSC-Species of Special Concern \| IUCN_LC-Least Concern \| USFWS_BCC-Birds of Conservation Concern | Found in swamp lands, both fresh and salt; lowland meadows; irrigated alfalfa fields. Tule patches/tall grass needed for nesting/daytime seclusion. Nests on dry ground in depression concealed in vegetation. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>Cooper's hawk<br>*(Astur cooperii)* | -- / --<br>G5 / S4<br>CDFW_WL-Watch List \| IUCN_LC-Least Concern | Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>burrowing owl<br>*(Athene cunicularia)* | -- / Candidate Endangered<br>G4 / S2<br>BLM_S-Sensitive \| CDFW_SSC-Species of Special Concern \| IUCN_LC-Least Concern \| USFWS_BCC-Birds of Conservation Concern | Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>northern harrier<br>*(Circus hudsonius)* | -- / --<br>G5 / S3<br>CDFW_SSC-Species of Special Concern \| IUCN_LC-Least Concern \| USFWS_BCC-Birds of Conservation Concern | Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>black swift<br>*(Cypseloides niger)* | -- / --<br>G4 / S3<br>CDFW_SSC-Species of Special Concern \| IUCN_VU-Vulnerable \| USFWS_BCC-Birds of Conservation Concern | Coastal belt of Santa Cruz and Monterey counties; central and southern Sierra Nevada; San Bernardino and San Jacinto mountains. Breeds in small colonies on cliffs behind or adjacent to waterfalls in deep canyons and sea-bluffs above the surf; forages widely. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>snowy egret<br>*(Egretta thula)* | -- / --<br>G5 / S4<br>IUCN_LC-Least Concern | Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

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|---|---|---|---|---|
| **SPECIES**<br>**Taxonomic Class**<br>**Common Name**<br>***Scientific Name*** | **STATUS**<br>**Federal / State**<br>**Global / State Rank**<br>**Other State / Federal Status** | **Habitat/Range** | **Potential for Site Occurrence** | **Recommended Action** |
| Birds<br>white-tailed kite<br>*(Elanus leucurus)* | -- / --<br>G5 / S3S4<br>BLM_S-Sensitive \| CDFW_FP-Fully Protected \| IUCN_LC-Least Concern | Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>American peregrine falcon<br>*(Falco peregrinus anatum)* | Delisted / Delisted<br>G4T4 / S3S4<br>CDF_S-Sensitive | Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>saltmarsh common yellowthroat<br>*(Geothlypis trichas sinuosa)* | -- / --<br>G5T3 / S3<br>CDFW_SSC-Species of Special Concern \| USFWS_BCC-Birds of Conservation Concern | Resident of the San Francisco Bay region, in fresh and salt water marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>Caspian tern<br>*(Hydroprogne caspia)* | -- / --<br>G5 / S4<br>IUCN_LC-Least Concern | Nests on sandy or gravelly beaches and shell banks in small colonies inland and along the coast. Inland freshwater lakes and marshes; also, brackish or salt waters of estuaries and bays. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>California black rail<br>*(Laterallus jamaicensis coturniculus)* | -- / Threatened<br>G3T1 / S2<br>BLM_S-Sensitive \| CDFW_FP-Fully Protected \| IUCN_EN-Endangered | Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>Alameda song sparrow<br>*(Melospiza melodia pusillula)* | -- / --<br>G5T2T3 / S2<br>CDFW_SSC-Species of Special Concern \| USFWS_BCC-Birds of Conservation Concern | Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides) and in Salicornia. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>San Pablo song sparrow<br>*(Melospiza melodia samuelis)* | -- / --<br>G5T2 / S2<br>CDFW_SSC-Species of Special Concern \| USFWS_BCC-Birds of Conservation Concern | Resident of salt marshes along the north side of San Francisco and San Pablo bays. Inhabits tidal sloughs in the Salicornia marshes; nests in Grindelia bordering slough channels. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

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| Birds<br>double-crested cormorant<br>*(Nannopterum auritum)* | -- / --<br>G5 / S4<br>CDFW_WL-Watch List \| IUCN_LC-Least Concern | Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins. | No Potential. The habitats that are necessary to support a rookery for this species do not occur on the Project Site. | None. |
| Birds<br>black-crowned night heron<br>*(Nycticorax nycticorax)* | -- / --<br>G5 / S4<br>IUCN_LC-Least Concern | Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots. | No Potential. The habitats that are necessary to support a rookery for this species do not occur on the Project Site. | None. |
| Birds<br>California Ridgway's rail<br>*(Rallus obsoletus obsoletus)* | Endangered / Endangered<br>G3T1 / S2<br>CDFW_FP-Fully Protected | Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>bank swallow<br>*(Riparia riparia)* | -- / Threatened<br>G5 / S3<br>BLM_S-Sensitive \| IUCN_LC-Least Concern | Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Birds<br>Northern Spotted Owl<br>*(Strix occidentalis caurina)* | Threatened / Threatened<br>G3G4T3 / S2<br>CDF_S-Sensitive | Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris, and space under canopy. | Unlikely. Although the property contains a prevalence of dusky-footed woodrats which is the main prey item, the property is a landlocked habitat surrounded by residential development and not contiguous with known nesting or foraging habitats for the species. The nearest nesting activity center is 0.44 miles away. | None. |
| Mammals<br>pallid bat<br>*(Antrozous pallidus)* | -- / --<br>G4 / S3<br>BLM_S-Sensitive \| CDFW_SSC-Species of Special Concern \| IUCN_LC-Least Concern \| USFS_S-Sensitive | Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>Townsend's big-eared bat<br>*(Corynorhinus townsendii)* | -- / --<br>G4 / S2<br>BLM_S-Sensitive \| CDFW_SSC-Species of Special Concern \| IUCN_LC-Least Concern \| USFS_S-Sensitive | Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

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| Mammals<br>southern sea otter<br>*(Enhydra lutris nereis)* | Threatened / --<br>G4T2 / S3<br>CDFW_FP-Fully Protected \| IUCN_EN-Endangered \| MMC_SSC-Species of Special Concern | Nearshore marine environments from about Ano Nuevo, San Mateo Co. to Point Sal, Santa Barbara Co. Needs canopies of giant kelp and bull kelp for rafting and feeding. Prefers rocky substrates with abundant invertebrates. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>North American porcupine<br>*(Erethizon dorsatum)* | -- / --<br>G5 / S3<br>IUCN_LC-Least Concern | Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges. Wide variety of coniferous and mixed woodland habitat. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>Steller sea lion<br>*(Eumetopias jubatus)* | Delisted / --<br>G3 / S2<br>IUCN_NT-Near Threatened \| MMC_SSC-Species of Special Concern | Breeds on Ano Nuevo, San Miguel and Farallon islands, Point St. George, and Sugarloaf. Hauls-out on islands and rocks. Needs haul-out and breeding sites with unrestricted access to water, near aquatic food supply and with no human disturbance. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>hoary bat<br>*(Lasiurus cinereus)* | -- / --<br>G3G4 / S4<br>IUCN_LC-Least Concern | Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>western red bat<br>*(Lasiurus frantzii)* | -- / --<br>G4 / S3<br>CDFW_SSC-Species of Special Concern \| IUCN_LC-Least Concern | Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>San Pablo vole<br>*(Microtus californicus sanpabloensis)* | -- / --<br>G5T1T2 / S1S2<br>CDFW_SSC-Species of Special Concern | Saltmarshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>salt-marsh harvest mouse<br>*(Reithrodontomys raviventris)* | Endangered / Endangered<br>G1G2 / S3<br>CDFW_FP-Fully Protected \| IUCN_EN-Endangered | Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat, but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow; builds loosely organized nests. Requires higher areas for flood escape. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

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| Mammals<br>Angel Island mole<br><br>*(Scapanus latimanus insularis)* | -- / --<br>GNRT1 / S2? | Known only from Angel Island in San Francisco Bay. Needs friable soils for burrowing. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>Monterey vagrant shrew<br><br>*(Sorex vagrans paludivagus)* | -- / --<br>G5T1 / S2 | Moist habitats from Monterey Bay north to San Francisco peninsula. Inhabits riparian, tidal, and freshwater wetlands. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |
| Mammals<br>American badger<br><br>*(Taxidea taxus)* | -- / --<br>G5 / S3<br>CDFW_SSC-Species of Special Concern \| IUCN_LC-Least Concern | Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows. | No Potential. The habitats that are necessary to support this species do not occur on the Project Site. | None. |

**Determination of Occurrence Potential:** Following the desktop review and field surveys, HBG assessed the potential for the occurrence of special status species on the Project site. Biological conditions (vegetation communities, wildlife habitats, disturbances, etc.) and the habitat and life cycle requirements of special status species identified for analysis in the desktop review were considered."Recent" occurrences are defined as observed within the past 30 years. Based on these considerations, species were assigned to the following categories:
**No Potential:** Habitat on and adjacent to the site is clearly nonpotential for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
**Unlikely:** Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is nonpotential or of very poor quality. The species is not likely to be found on the site.
Moderate Potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is nonpotential. The species has a moderate probability of being found on the site.
**High Potential:** All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly potential. The species has a high probability of being found on the site.
**Present:** Species is observed on the site or has been recorded (i.e., CNDDB, other reports) on the site recently. NOTE: The potential for bird species were further distinguished into those that may: 1) nest within or near the Project site; 2) forage within or near the Project site; and/or 3) occur on or near the Project site only as transients during migratory flights or other dispersal events."

**1.Source:** California Natural Diversity Data Base, Natural Heritage Division, California Department of Fish and Wildlife for the Cotati 7.5 Minute Quadrangle Map and surrounding areas, information dated May 2024. CNDDB Code descriptions -https://map.dfg.ca.gov/rarefind/view/RF_FieldDescriptions.htm#:

**2. California Rare Plant Ranks**
1A - Presumed extirpated in California and either rare or extinct elsewhere 1B - Rare or Endangered in California and elsewhere
2A - Presumed extirpated in California, but more common elsewhere 2B - Rare or Endangered in California, but more common elsewhere
3 - Plants for which we need more information – Review list
4 - Plants of limited distribution – Watch list

**Threat Code Extensions:**
.1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
.3 – Not very threatened in California (under 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)"

**3.Status Codes:**

**Federal:**
FE = Federally listed Endangered
FT = Federally listed Threatened
FPE = Federally Proposed Endangered
FPT = Federally Proposed Threatened
FC = Federal Candidate Species
BCC = USFWS Bird Species of Conservation Concern

**State:**
SE = California State-listed Endangered
ST = California State-listed Threatened
SR = California State Rare
SCE = California State Candidate Endangered
SCT = California State Candidate Threatened
CFP = California Fully Protected
SSC = CDFW Species of Special Concern
WL = CDFW Watch List Species"

**4. Global Rank** - The Global Rank is a reflection of the overall condition and imperilment of an element throughout its global range. Both the Global and State ranks represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heaviest on the rarity factors. The Global Ranks are assigned by NatureServe in coordination with the appropriate state program(s) where the element occurs.
**GX - Presumed Extinct (species)** — Not located despite intensive searches and virtually no likelihood of rediscovery.
**Extinct (ecological communities and systems)** — Eliminated throughout its range, with no restoration potential due to extinction of dominant or characteristic taxa and/or elimination of the sites and ecological processes on which the type depends.
**GH - Possibly Extinct** — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty. Examples of such evidence include 1) that a species has not been documented in approximately 20–40 years despite some searching or some evidence of significant habitat loss or degradation; 2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.
**G1 - Critically Imperiled** — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
**G2 - Imperiled** — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
**G3 - Vulnerable** — At moderate risk of extinction or elimination due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
**G4 - Apparently Secure** — Uncommon but not rare; some cause for long - term concern due to declines or other factors.
**G5 - Secure** — Common; widespread and abundant.
**GNR - Unranked** — Global rank not yet assessed.
**GU - Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.
**G#G# - Range Rank** — A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty about the exact status of a taxon or community.
**G#T# - Infraspecific Taxon** — The status of infraspecific taxa (subspecies or varieties) are indicated by a "T - rank" following the species' Global Rank. Rules for assigning T - ranks follow the same principles as those for Global Ranks. However, a T - rank cannot imply the subspecies or variety is more abundant than the species. With the subspecies, the G - rank reflects the condition of the entire species, whereas the T - rank reflects the global situation of just the subspecies or variety.
**? - Qualifier: Inexact Numeric Rank** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.
**Q - Qualifier: Questionable Taxonomy** — The distinctiveness of this entity as a taxon or community at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower - priority (numerically higher) conservation status rank.
**C - Qualifier: Captive or Cultivated Only** — The taxon or community at present is presumed or possibly extinct or eliminated in the wild across its entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside its native range, or as a reintroduced population or ecosystem restoration, not yet established.

**5. State Rank** The State Rank is a reflection of the condition and imperilment of an element throughout its range within the state. Both the Global and State ranks represent a letter+number score that reflects a combination of Rarity, Threat and Trend factors, weighted more heavily on the rarity factors. The State Ranks are assigned by California heritage biologists using standard natural heritage methodology.
**SX - Presumed Extirpated** — Species or community is believed to be extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
**SH - Possibly Extirpated (Historical)** — Species or community occurred historically in the state, and there is some possibility that it may be rediscovered. All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists.
**S1 - Critically Imperiled** — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
**S2 - Imperiled** — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.
**S3 - Vulnerable** — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
**S4 - Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
**S5 - Secure** — Common, widespread, and abundant in the state.
**SNR - Unranked** — State conservation status not yet assessed.
**SU - Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.
**S#S# - Range Rank** — A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.
**? - Qualifier: Inexact or Uncertain** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

**6. Bloom Period Calflora:** Information on California plants for education, research and conservation. [web application]. 2026. Berkeley, California: The Calflora Database [a non-profit organization]. Available: https://www.calflora.org/app/taxon?crn=1 (Accessed: Feb 9, 2026).

# APPENDIX D

# USFWS INFORMATION FOR PLANNING AND CONSULTATION (IPaC)

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Marin County, California


## Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

# Endangered species

**This resource list is for informational purposes only and does not constitute an analysis of project level impacts.**

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Mammals

| NAME | STATUS |
|---|---|
| Salt Marsh Harvest Mouse Reithrodontomys raviventris<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/613 | Endangered |

## Birds

| NAME | STATUS |
|---|---|
| California Least Tern Sternula antillarum browni<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/8104 | Endangered |
| California Ridgway's Rail Rallus obsoletus obsoletus<br>Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/4240 | Endangered |
| Northern Spotted Owl Strix occidentalis caurina<br>Wherever found<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/1123 | Threatened |

Western Snowy Plover  Charadrius nivosus nivosus — Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
https://ecos.fws.gov/ecp/species/8035

## Reptiles

| NAME | STATUS |
|---|---|
| Green Sea Turtle  Chelonia mydas | Threatened |
| No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/6199 | |
| Northwestern Pond Turtle  Actinemys marmorata | Proposed Threatened |
| Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/1111 | |

## Amphibians

| NAME | STATUS |
|---|---|
| California Red-legged Frog  Rana draytonii | Threatened |
| Wherever found<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/2891 | |

## Fishes

| NAME | STATUS |
|---|---|
| Tidewater Goby  Eucyclogobius newberryi | Endangered |
| Wherever found<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/57 | |

## Insects

| NAME | STATUS |
|---|---|
| Monarch Butterfly  Danaus plexippus | Proposed Threatened |
| Wherever found<br>There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/9743 | |

## Flowering Plants

| NAME | STATUS |
|---|---|
| Marin Dwarf-flax  Hesperolinon congestum | Threatened |
| Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/5363 | |
| Santa Cruz Tarplant  Holocarpha macradenia | Threatened |
| Wherever found<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>https://ecos.fws.gov/ecp/species/6832 | |
| Showy Indian Clover  Trifolium amoenum | Endangered |
| Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/6459 | |
| White-rayed Pentachaeta  Pentachaeta bellidiflora | Endangered |
| Wherever found<br>No critical habitat has been designated for this species.<br>https://ecos.fws.gov/ecp/species/7782 | |

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

# Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

There are Bald Eagles and/or Golden Eagles in your project area.

**Measures for Proactively Minimizing Eagle Impacts**
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

**Ensure Your Eagle List is Accurate and Complete**
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

**Review the FAQs**
The FAQs below provide important additional information and resources.

| NAME | BREEDING SEASON |
|---|---|
| Bald Eagle Haliaeetus leucocephalus<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br>https://ecos.fws.gov/ecp/species/1626 | Breeds Jan 1 to Aug 31 |

Golden Eagle  Aquila chrysaetos

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Breeds Jan 1 to Aug 31

# Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence** (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

**Breeding Season** ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

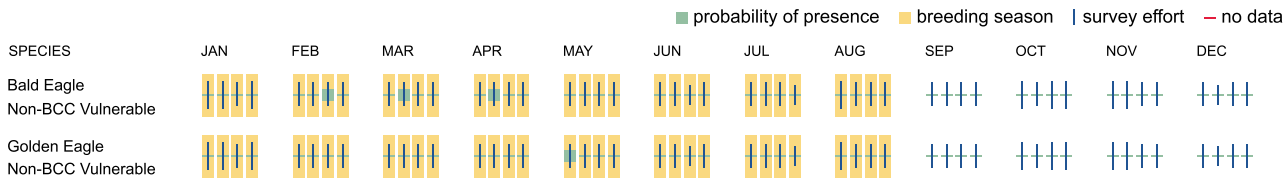
**Survey Effort** (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data** (–)
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.






## Bald & Golden Eagles FAQs

**What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?**

The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle (Bald and Golden Eagle Protection Act requirements may apply).

**Proper interpretation and use of your eagle report**
On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there,

and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

**How do I know if eagles are breeding, wintering, or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**Interpreting the Probability of Presence Graphs**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

***How is the probability of presence score calculated? The calculation is done in three steps:***
The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

**Breeding Season ()**
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort ()**
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data ()**
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



# Migratory birds

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

**Measures for Proactively Minimizing Migratory Bird Impacts**

Your IPaC Migratory Bird list showcases birds of concern, including Birds of Conservation Concern (BCC), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the Nationwide avoidance and minimization measures for birds document, and any other project-specific avoidance and minimization measures suggested at the link Measures for avoiding and minimizing impacts to birds for the birds of concern on your list below.

**Ensure Your Migratory Bird List is Accurate and Complete**

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles document, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

**Review the FAQs**

The FAQs below provide important additional information and resources.

| NAME | BREEDING SEASON |
|---|---|
| Allen's Hummingbird Selasphorus sasin<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9637 | Breeds Feb 1 to Jul 15 |
| Bald Eagle Haliaeetus leucocephalus<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br>https://ecos.fws.gov/ecp/species/1626 | Breeds Jan 1 to Aug 31 |
| Belding's Savannah Sparrow Passerculus sandwichensis beldingi<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/8 | Breeds Apr 1 to Aug 15 |
| Black Oystercatcher Haematopus bachmani<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9591 | Breeds Apr 15 to Oct 31 |
| Black Swift Cypseloides niger<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8878 | Breeds Jun 15 to Sep 10 |
| Black Turnstone Arenaria melanocephala<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| Brandt's Cormorant Urile penicillatus<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Apr 15 to Sep 15 |
| Bullock's Oriole Icterus bullockii<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds Mar 21 to Jul 25 |
| California Gull Larus californicus<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 1 to Jul 31 |
| California Spotted Owl Strix occidentalis occidentalis<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/7266 | Breeds Mar 10 to Jun 15 |
| Clark's Grebe Aechmophorus clarkii<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Jun 1 to Aug 31 |
| Common Yellowthroat Geothlypis trichas sinuosa<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/2084 | Breeds May 20 to Jul 31 |

Elegant Tern Thalasseus elegans — Breeds Apr 5 to Aug 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8561

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Heermann's Gull Larus heermanni — Breeds Mar 15 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Marbled Godwit Limosa fedoa — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Northern Harrier Circus hudsonius — Breeds Apr 1 to Sep 15

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/8350

Nuttall's Woodpecker Dryobates nuttallii — Breeds Apr 1 to Jul 20

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Red Knot Calidris canutus roselaari — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8880

Santa Barbara Song Sparrow Melospiza melodia graminea — Breeds Mar 1 to Sep 5

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/5513

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe Aechmophorus occidentalis — Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

| | |
|---|---|
| Western Gull Larus occidentalis<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Apr 21 to Aug 25 |
| Western Screech-owl Megascops kennicottii cardonensis<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds Mar 1 to Jun 30 |
| Willet Tringa semipalmata<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds elsewhere |
| Wrentit Chamaea fasciata<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 15 to Aug 10 |

# Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence** (▪)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

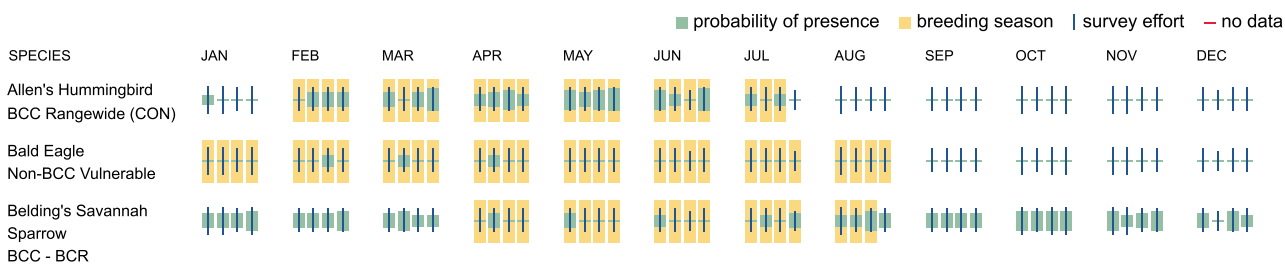
**Breeding Season** ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

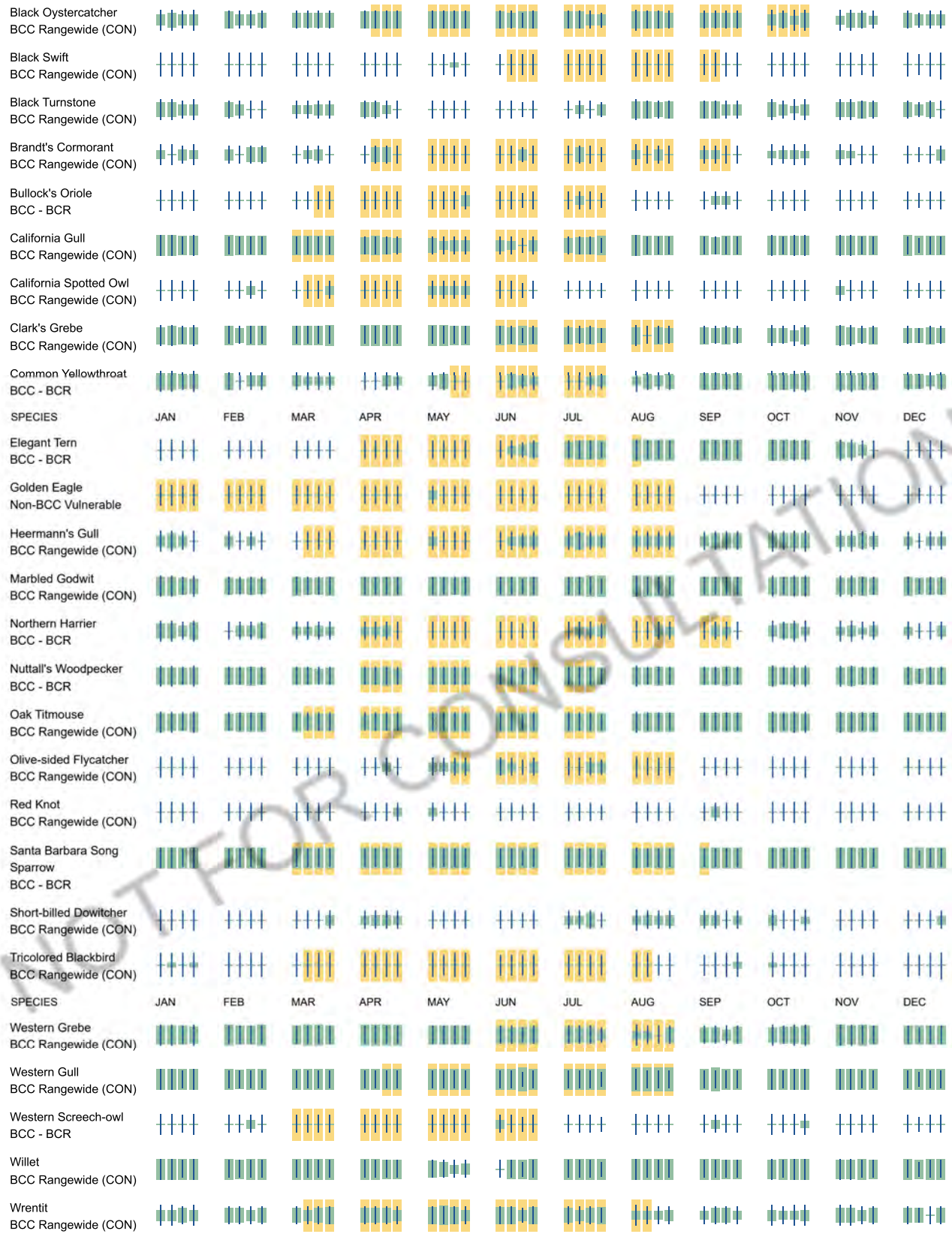
**Survey Effort** (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data** (–)
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.








## Migratory Bird FAQs

**Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.**

Nationwide Avoidance & Minimization Measures for Birds describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the Bald and Golden Eagle Protection Act and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle (Bald and Golden Eagle Protection Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the Rapid Avian Information Locator (RAIL) Tool.

**Why are subspecies showing up on my list?**

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering, or migrating in my area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the RAIL Tool and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Bald and Golden Eagle Protection Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

**Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

**Proper interpretation and use of your migratory bird report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

**Interpreting the Probability of Presence Graphs**
Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

***How is the probability of presence score calculated? The calculation is done in three steps:***

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

**Breeding Season ()**
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort ()**
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data ()**
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

# Facilities

## National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

## Fish hatcheries

There are no fish hatcheries at this location.

# Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

**NOTE:** This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

**Data limitations**

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

**Data exclusions**

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

**Data precautions**

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

# APPENDIX E

# ARBORIST REPORT

California Tree and Landscape Consulting, Inc.
411 Grass Valley Hwy, #1050, Auburn, CA 95603 (530) 745-4086

August 15, 2025, Revised January 28, 2026

Equity Smart Investments LP
Attn: Eric Nuttall
5701 Lonetree Blvd, #102
Mill Valley, CA 95765
Phone: (916) 802-3374
Via Email: eric.nuttall10@gmail.com

# UPDATED PRELIMINARY ARBORIST REPORT AND TREE INVENTORY

**RE**: **Alta Way, County of Marin, California [APN 049-041-50]**

## EXECUTIVE SUMMARY

Eric Nuttall contacted California Tree and Landscape Consulting, Inc. to document the trees on the property for a better understanding of the existing resource and any potential improvement obstacles that may arise. Eric Nuttall requested an Arborist Report and Tree Inventory suitable for submittal to the County of Marin. This is a Preliminary Arborist Report and Tree Inventory for the initial filing of plans to develop the property.

Thomas M. Stein, ISA Certified Arborist WE-12854A and Edwin E. Stirtz ISA Certified Arborist WE 0510A, visited the property on June 21, 2022, to provide species identification, measurements of DBH and canopy, field condition notes, recommended actions, ratings, and approximate locations for the trees. Edwin Stirtz revisited the site on July 29, 2025 to confirm any tree death or failures since the time of the previous site visit. There were no significant changes noted. There were 85 trees evaluated, 23 of which are protected according to the County of Marin. Ten trees are located off the parcel but were included in the inventory because they may be impacted by development of the parcel.
See Appendices for specific information on each tree.

**TABLE 1**

| Tree Species | Total Trees Inventoried | Trees on this Site[1] | Protected Trees | Total Proposed for Removal | Trees to be Removed Requiring Permit and Mitigation[2] | Total Proposed for Retention |
|---|---|---|---|---|---|---|
| California Bay Laurel, *Umbelluria californica* | 15 | 14 | 10 | 15 | 5 | 0 |
| California Toyon, *Heteromeles arbutifolia* | 2 | 2 | 0 | 2 | 0 | 0 |
| Coast Live Oak, *Quercus agrifolia* | 19 | 18 | 13 | 17 | 6 | 2 |
| Eucalyptus, *Eucalyptus sp.* | 45 | 38 | 0 | 24 | 0 | 21 |
| Madrone, *Arbutus* | 1 | 1 | 0 | 1 | 0 | 0 |
| Prunus, *Prunus sp.* | 3 | 2 | 0 | 3 | 0 | 0 |

[1] CalTLC, Inc. is not a licensed land surveyor. Tree locations are approximate and we do not determine tree ownership. Trees which appear to be on another parcel are listed as off-site and treated as the property of that parcel.

[2] Protected trees in poor condition which have an arborist rating of a 2 or lower do not require removal permits or replacement/fees.

| Tree Species | Total Trees Inventoried | Trees on this Site[1] | Protected Trees | Total Proposed for Removal | Trees to be Removed Requiring Permit and Mitigation[2] | Total Proposed for Retention |
|---|---|---|---|---|---|---|
| TOTAL | 85 | 75 | 23 | 62 | 11 | 23 |

62 trees are proposed for removal. 21 trees proposed for removal are considered protected by the County of Marin Tree Preservation ordinance, 11 of which require a permit and replacement or fee[2]. The in lieu fee is $500.00 per protected tree. The total fee for the removal of the 21 protected trees is $5,500.00.

## ASSIGNMENT

Perform an examination of the site to document the presence and condition of trees protected by the County of Marin. The study area for this effort includes the deeded parcel as delineated in the field by the property fences and any significant or protected trees overhanging from adjacent parcels.

Prepare a report of findings. All trees protected by the County of Marin are included in the inventory.

## METHODS

Appendix 2 in this report is the detailed inventory and recommendations for the trees. The following terms and Table A – Ratings Descriptions will further explain our findings.

The protected trees evaluated as part of this report have a numbered tag that was placed on each one that is 1-1/8” x 1-3/8", green anodized aluminum, “acorn” shaped, and labeled: CalTLC, Auburn, CA with 1/4” pre-stamped tree number and Tree Tag. They are attached with a natural-colored aluminum 10d nail, installed at approximately 6 feet above ground level on the approximate north side of the tree. The tag should last ~10-20+ years depending on the species, before it is enveloped by the trees’ normal growth cycle.

## TERMS

**Species** of trees is listed by our local common name and botanical name by genus and species.

**DBH** (diameter breast high) is normally measured at 4’6” (54” above the average ground height, but if that varies then the location where it is measured is noted here. A steel diameter tape was used to measure the trees.

**Canopy radius** is measured in feet. It is the farthest extent of the crown composed of leaves and small twigs measured by a steel tape. This measurement often defines the Critical Root Zone (CRZ) or Protection Zone (PZ), which is a circular area around a tree with a radius equal to this measurement.

**Actions** listed are recommendations to improve health or structure of the tree. Trees in public spaces require maintenance. If a tree is to remain and be preserved, then the tree may need some form of work to reduce the likelihood of failure and increase the longevity of the tree. Preservation requirements and actions based on a proposed development plan are not included here.

**Arborist Rating** is subjective to condition and is based on both the health and structure of the tree. All of the trees were rated for condition, per the recognized national standard as set up by the Council of Tree and Landscape Appraisers and the International Society of Arboriculture (ISA) on a numeric scale of 5 (being the highest) to 0 (the worst condition,

dead). The rating was done in the field at the time of the measuring and inspection.

## Table A – Ratings Descriptions

| | | |
|---|---|---|
| No problem(s) | 5 | excellent |
| No apparent problem(s) | 4 | good |
| Minor problem(s) | 3 | fair |
| Major problem(s) | 2 | poor |
| Extreme problem(s) | 1 | hazardous, non-correctable |
| Dead | 0 | dead |

Rating #0: This indicates a tree that has no significant sign of life.

Rating #1: The problems are extreme. This rating is assigned to a tree that has structural and/or health problems that no amount of work or effort can change. The issues may or may not be considered a dangerous situation.

Rating #2: The tree has major problems. If the option is taken to preserve the tree, its condition could be improved with correct arboricultural work including, but not limited to: pruning, cabling, bracing, bolting, guying, spraying, mistletoe removal, vertical mulching, fertilization, etc. If the recommended actions are completed correctly, hazard can be reduced and the rating can be elevated to a 3. If no action is taken the tree is considered a liability and should be removed.

Rating #3: The tree is in fair condition. There are some minor structural or health problems that pose no immediate danger. When the recommended actions in an arborist report are completed correctly the defect(s) can be minimized or eliminated.

Rating #4: The tree is in good condition and there are no apparent problems that a Certified Arborist can see from a visual ground inspection. If potential structural or health problems are tended to at this stage future hazard can be reduced and more serious health problems can be averted.

Rating #5: No problems found from a visual ground inspection. Structurally, these trees have properly spaced branches and near perfect characteristics for the species. Highly rated trees are not common in natural or developed landscapes. No tree is ever perfect especially with the unpredictability of nature, but with this highest rating, the condition should be considered excellent.

**Notes** indicate the health, structure and environment of the tree and explain why the tree should be removed or preserved. Additional notes may indicate if problems are minor, extreme or correctible.

**Remove** is the recommendation that the tree be removed. The recommendation will normally be based either on poor structure or poor health and is indicated as follows:

Yes H – Tree is unhealthy
Yes S – Tree is structurally unsound

## Observations and Conclusions

The site is located in an existing subdivision with a street and utilities to the front of the property. The site is currently fairly dense with Eucalyptus trees and a few protected trees. The topography of the lot requires significant grading to accommodate any improvements. This will require removal of 21 protected trees and clean up, fire safe vegetation management for the ungraded areas.

Refer to Appendix 2 – Tree Data for details.

## Construction Impact Assessment

This Arborist Report and Tree Inventory is intended to provide to Eric Nuttall, the County of Marin, and other members of the development team a detailed *pre-development review* of the species, size, and current structure and vigor of the

trees within and/or overhanging the proposed project area. At this time, grading plans prepared by GUIDE Engineering indicate that 62 trees will be removed and 23 trees will be protected in place. The trees to be protected will sustain negligible to moderate encroachment (specifically identified in the inventory data) and may require root pruning and/or supplemental irrigation. This should be determined by the project arborist at the time of grading. Tree protection fencing shall be installed between the limits of grading and retained trees.

The area of retained trees requires clean up of all debris and woody material beneath the trees to reduce fire risk. All trees shall be pruned to a height of 15' above grade (15' due to slope of terrain) and eucalyptus bark should be removed.

### DISCUSSION

Trees need to be protected from normal construction practices if they are to remain healthy and viable on the site. Our recommendations are based on experience, and County ordinance requirements, so as to enhance tree longevity. This requires their root zones remain intact and viable, despite heavy equipment being on site, and the need to install foundations, driveways, underground utilities, and landscape irrigation systems. Simply walking and driving on soil has serious consequences for tree health.

Following is a summary of Impacts to trees during construction and Tree Protection measures that should be incorporated into the site plans in order to protect the trees. Once the plans are approved, they become the document that all contractors will follow. ***The plans become the contract between the owner and the contractor, so that only items spelled out in the plans can be expected to be followed. Hence, all protection measures, such as fence locations, mulch requirements and root pruning specifications must be shown on the plans.***

## RECOMMENDATIONS: SUMMARY OF TREE PROTECTION MEASURES

Hire a Project Arborist to help ensure protection measures are incorporated into the site plans and followed. The Project Arborist should, in cooperation with the Engineers and/or Architects:

- Identify the Root Protection Zones on the final construction drawings, prior to bidding the project.
- Show the placement of tree protection fences, as well as areas to be irrigated, fertilized and mulched on the final construction drawings.
- Clearly show trees for removal on the plans and mark them clearly on site. A Contractor who is a Certified Arborist should perform tree and stump removal, or alternatively the project arborist may direct these activities.. All stumps within the root zone of trees to be preserved shall be ground out using a stump router or left in place. **No trunk within the root zone of other trees shall be removed using a backhoe or other piece of grading equipment**.
- Prior to any grading, or other work on the site that will come within 50' of any tree to be preserved:
    1. . Erect Tree Protection Fences. Place boards against trees located within 3' of construction zones, even if fenced off.
    3. Remove lower foliage on retained trees that may interfere with equipment PRIOR to having grading or other equipment on site. The Project Arborist should approve the extent of foliage elevation, and oversee the pruning, performed by a contractor who is an ISA Certified Arborist.
- For grade cuts, expose roots by hand digging, potholing or using an air spade and then cut roots cleanly prior to further grading outside the tree protection zones.
- For fills, if a cut is required first, follow as for cuts.

- Where possible, specify geotextile fabric and/or thickened paving, re-enforced paving, and structural soil in lieu of compacting, and avoid root cutting as much as possible, prior to placing fills on the soil surface. Any proposed retaining wall or fill soil shall be discussed with the engineer and arborist in order to reduce impacts to trees to be preserved.
- Clearly designate an area on the site outside the drip line of all trees where construction materials may be stored, and parking can take place. No materials or parking shall take place within the root zones of protected trees.
- Design utility and irrigation trenches to minimize disturbance to tree roots. Where possible, dig trenches with hydro-vac equipment or air spade, placing pipes underneath the roots, or bore the deeper trenches underneath the roots.
- Include on the plans an Arborist inspection schedule to monitor the site during (and after) construction to ensure protection measures are followed and make recommendations for care of the trees on site, as needed.

General Tree protection measures are included as Appendix 3. These measures need to be included on the Site, Grading, Utility and Landscape Plans. A final report of recommendations specific to the plan can be completed as part of, and in conjunction with, the actual plans. This will require the arborist working directly with the engineer and architect for the project. If the above recommendations are followed, the amount of time required by the arborist for the final report should be minimal.

Report Prepared by:

Caroline Nicholas
Arborist Assistant

Project Arborist:

Edwin E. Stirtz
Consulting Arborist
ISA Certified Arborist #WE-0510AM, TRAQ

Enc.: Appendix 1 – Tree Inventory Field Exhibit & Site Plans
Appendix 2 – Tree Data
Appendix 3 – General Practices for Tree Protection



**California Tree & Landscape Consulting, Inc.**

411 Grass Valley Hwy #1050
Auburn, CA 95603


# MAP OF PROPERTY SHOWING APPROXIMATE TREE LOCATIONS

The GIS locations used in this exhibit were collected using IOS and Android technology and are not surveyed locations.

*Due to the age of the aerial imagery provided by ESRI there are times when vegetation that appears in the aerial image had in fact been previously removed.*

Arborist Rating

- 0-Dead
- 1-Extreme structure or health problems
- 2-Major Structure or health problems
- 3-Minor Problems
- 4-No Apparent Problems
- 5- Excellent
- Unprotected

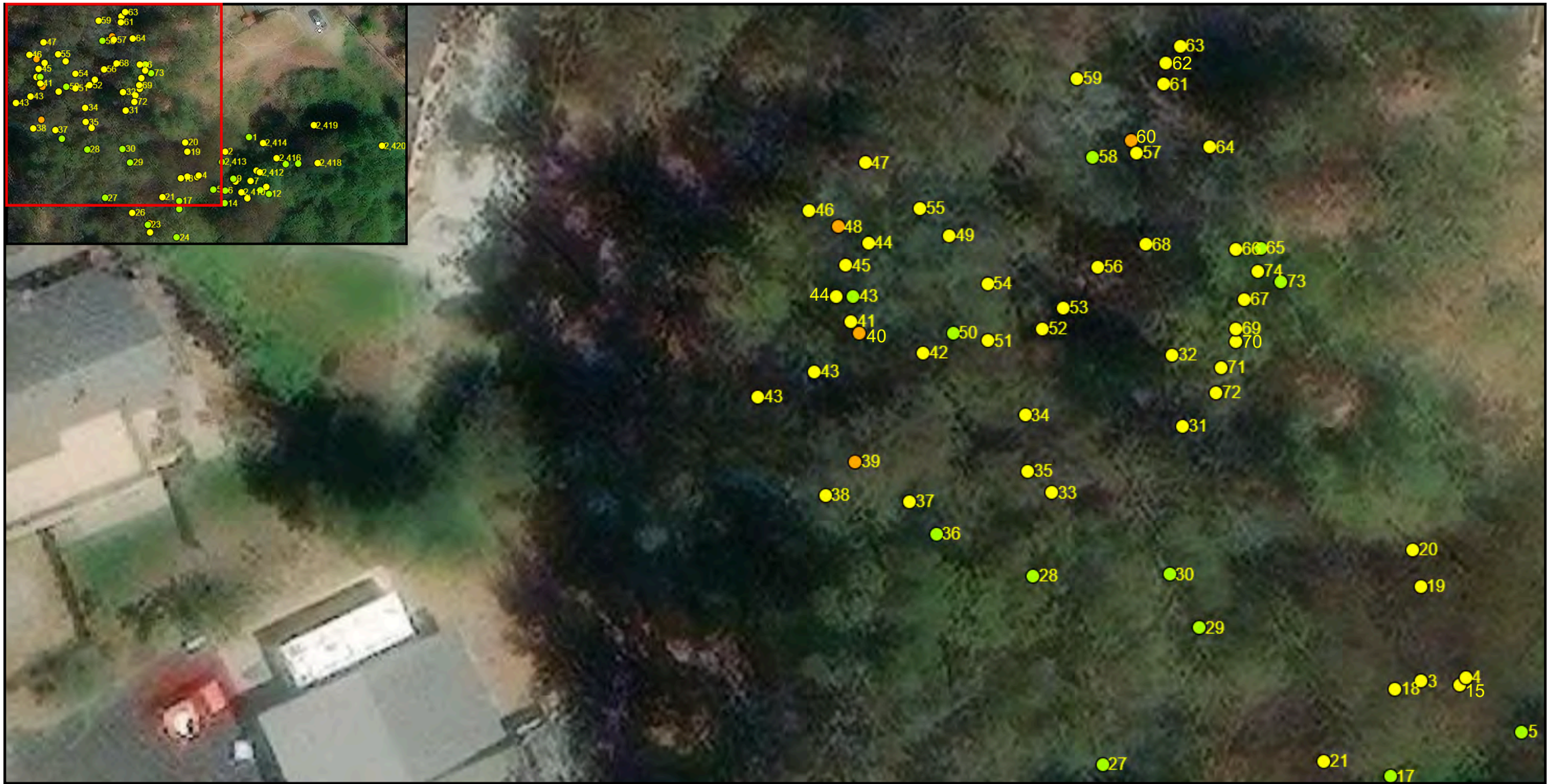
**Alta Way, APN 049-041-50**

County of Marin, CA

**Sheet No.** 1

Prepared for: Equity Smart Inventments LP

Date: 8/15/2025

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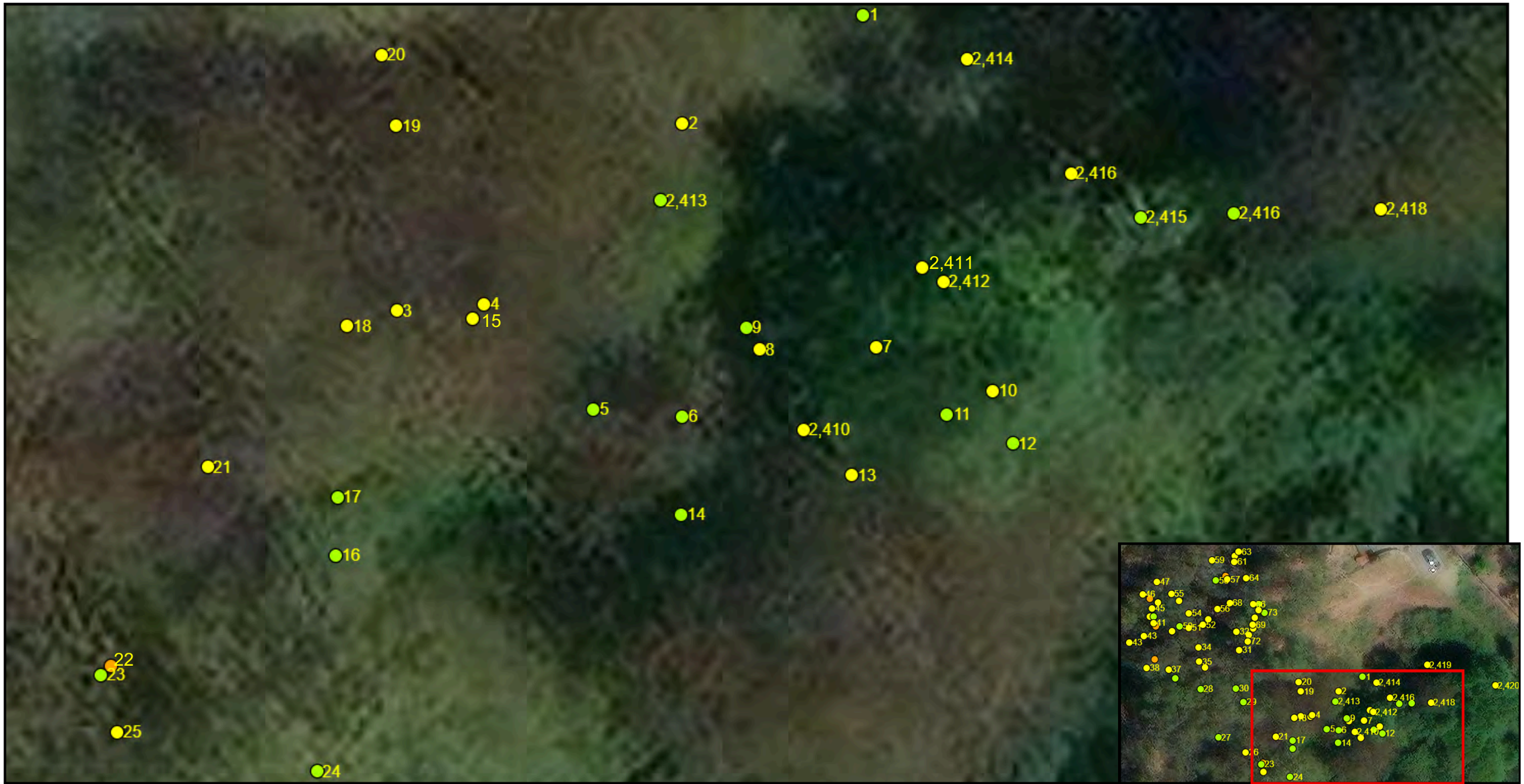
**Alta Way, APN 049-041-50**

County of Marin, CA

**Sheet No. 2**

Prepared for: Equity Smart Inventments LP

Date: 8/15/2025






**California Tree & Landscape Consulting, Inc.**

411 Grass Valley Hwy #1050
Auburn, CA 95603

# MAP OF PROPERTY SHOWING APPROXIMATE TREE LOCATIONS

The GIS locations used in this exhibit were collected using IOS and Android technology and are not surveyed locations.

*Due to the age of the aerial imagery provided by ESRI there are times when vegetation that appears in the aerial image had in fact been previously removed.*

Arborist Rating

- 0-Dead
- 1-Extreme structure or health problems
- 2-Major Structure or health problems
- 3-Minor Problems
- 4-No Apparent Problems
- 5- Excellent
- ▲ Unprotected

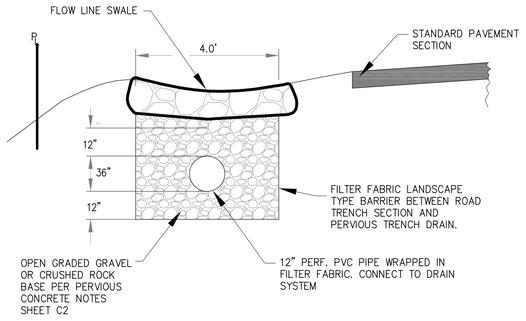
**Alta Way, APN 049-041-50**

County of Marin, CA

**Sheet No. 3**

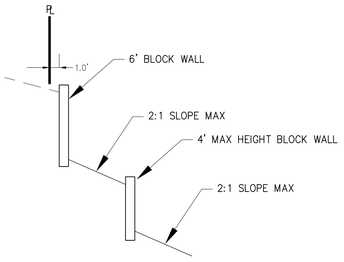
Prepared for: Equity Smart Inventments LP

Date: 8/15/2025



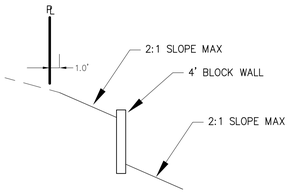

## A INFILTRATION TRENCH DETAIL

N.T.S.



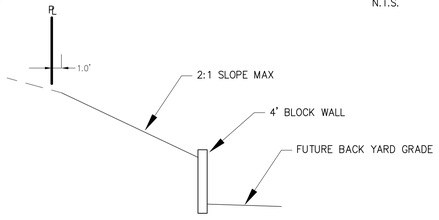

## B SOUTH PL SECTION I

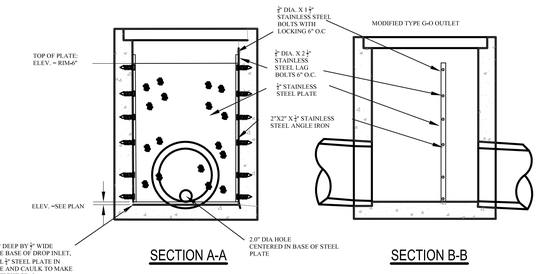
N.T.S.




## C SOUTH PL SECTION II

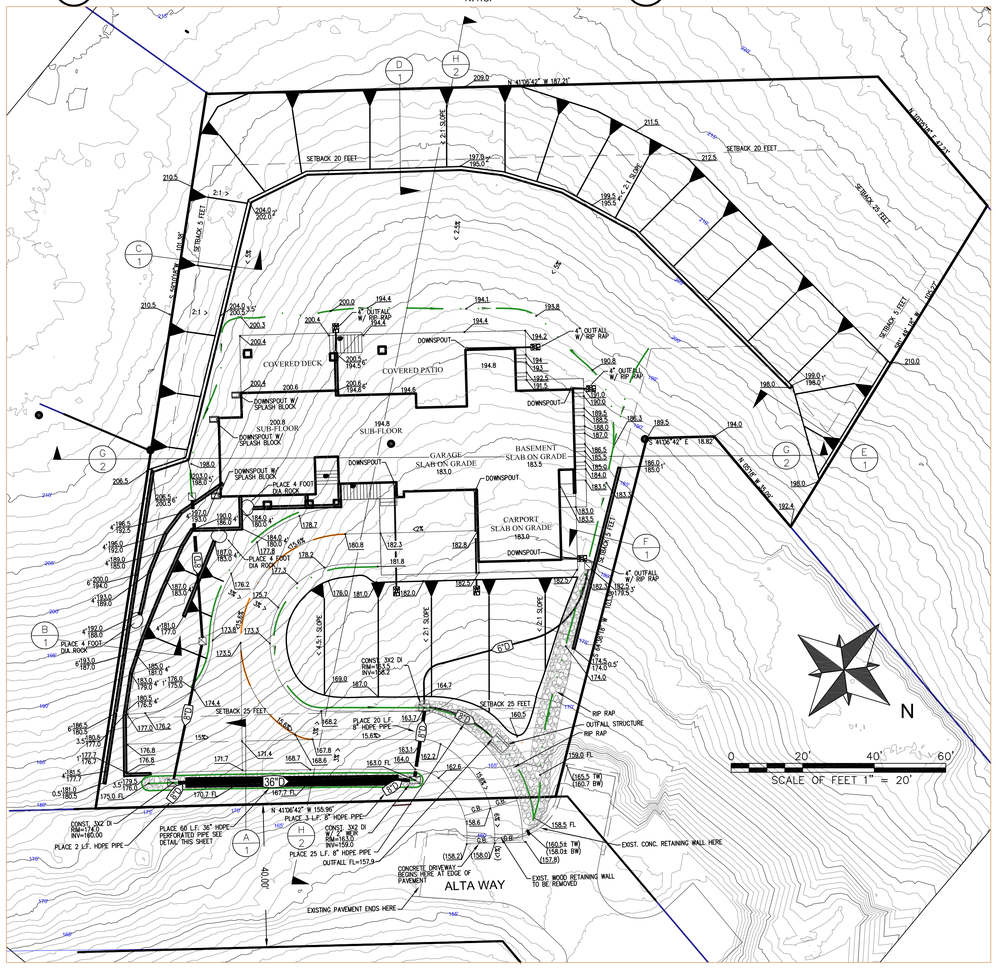
N.T.S.



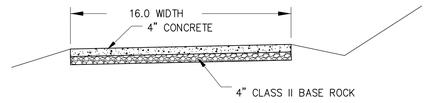

## H CATCH BASIN WITH ORIFICE DETAIL

N.T.S.




## I DRIVEWAY CROSS SECTION

N.T.S.




*NOTES:

THE PLAN PREPARER SHALL CERTIFY TO THE COUNTY IN WRITING UPON THE COMPLETION OF WORK THAT ALL GRADING AND DRAINAGE IMPROVEMENTS WERE INSTALLED IN ACCORDANCE WITH THE APPROVED PLANS AND FIELD DIRECTION. BE AWARE THAT A DPW ENGINEER WILL NEED TO INSPECT AND ACCEPT WORK AFTER RECEIPT OF CERTIFICATION LETTER. CERTIFICATION LETTERS SHALL REFERENCE BUILDING PERMIT NUMBER OR NUMBERS FOR SPECIFIC WORK BEING CERTIFIED, THE ADDRESS OF THE PROPERTY AND THE ASSESSOR'S PARCEL NUMBER (APN), AND SHALL BE SIGNED AND STAMPED BY THE CERTIFYING PROFESSIONAL.

GEOTECHNICAL REVIEW AND ACCEPTANCE: THE PLANS, INCLUDING AT A MINIMUM ANY GRADING, DRAINAGE, AND FOUNDATION PLANS, WILL NEED TO BE REVIEWED AND APPROVED BY THE SOILS ENGINEER. REVIEW SHALL BE REQUIRED WHEN ALL SIGNIFICANT CHANGES TO THE PLAN SET ARE IMPLEMENTED. APPROVAL SHALL BE EITHER BY THE SOILS ENGINEER'S STAMP AND ORIGINAL SIGNATURE ON THE PLANS OR BY A STAMPED AND SIGNED LETTER. THE LETTER SHALL REFERENCE PLANS REVIEWED, SPECIFYING SITE, STRUCTURAL, AND DRAINAGE PLANS WITH DATE OF DRAWINGS, AND VERIFY THAT PLANS ADDRESS ANY RECOMMENDATIONS PREVIOUSLY OFFERED.

PER MARIN COUNTY CODE SECTION 24.04.016, IF CONSTRUCTION ACTIVITY, EQUIPMENT, VEHICLES AND/OR MATERIAL DELIVERY AND STORAGE CAUSE DAMAGE TO ANY EXISTING FACILITY (E.G., PAVEMENT, CURB, GUTTER, SIDEWALK, LANDSCAPING) BEYOND NORMAL WEAR AND TEAR, AS DETERMINED BY THE AGENCY, THEN THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REPAIR OF SAME.

LOTS SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET (5% FOR 10 FEET), WHERE LOT LINES, WALLS, SLOPES, OR OTHER PHYSICAL BARRIERS PROHIBIT 6 INCHES OF FALL WITHIN 10 FEET, DRAINS OR SWALES SHALL BE CONSTRUCTED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM 2% AWAY FROM THE BUILDING (2% FOR 10 FEET).

PER 2022 CALIFORNIA RESIDENTIAL CODE R401.3, LOTS SHALL BE GRADED TO DRAIN SURFACE WATER AWAY FROM FOUNDATION WALLS. THE GRADE SHALL FALL A MINIMUM OF 6 INCHES WITHIN THE FIRST 10 FEET (5% FOR 10 FEET), WHERE LOT LINES, WALLS, SLOPES, OR OTHER PHYSICAL BARRIERS PROHIBIT 6 INCHES OF FALL WITHIN 10 FEET, DRAINS OR SWALES SHALL BE CONSTRUCTED TO ENSURE DRAINAGE AWAY FROM THE STRUCTURE. IMPERVIOUS SURFACES WITHIN 10 FEET OF THE BUILDING FOUNDATION SHALL BE SLOPED A MINIMUM 2% AWAY FROM THE BUILDING (2% FOR 10 FEET). PLANS SHALL DEMONSTRATE CONFORMANCE FOR ALL PERVIOUS AND IMPERVIOUS SURFACES AROUND THE BUILDING.

PER 2022 CALIFORNIA PLUMBING CODE § 1101.6.5, SUBSOIL DRAINAGE SHOULD NOT OUTLET WITHIN 10 FEET OF THE PROPERTY LINES.

ANY OFF-HAUL MUST BE LEGALLY HANDLED AND COUNTY NOTIFIED AS TO WHERE OFF HAUL WILL BE TAKEN IF REQUIRED BY EXCESS SOILS.

EROSION AND SEDIMENT CONTROLS SHALL BE IMPLEMENTED YEAR-ROUND.

ALL EARTH MOVING EQUIPMENT SHALL BE MECHANICALLY MAINTAINED AND LEAKS QUICKLY REPAIRED.

A CONTAINED TRASH ENCLOSURE SHALL BE MAINTAINED ONSITE AND EMPTIED AS REQUIRED.

PER MARIN COUNTY CODE SECTION 24.04.016, IF CONSTRUCTION ACTIVITY, EQUIPMENT, VEHICLES AND/OR MATERIAL DELIVERY AND STORAGE CAUSE DAMAGE TO ANY EXISTING FACILITY (E.G., PAVEMENT, CURB, GUTTER, SIDEWALK, LANDSCAPING) BEYOND NORMAL WEAR AND TEAR, AS DETERMINED BY THE AGENCY, THEN THE PERMITTEE SHALL BE RESPONSIBLE FOR THE REPAIR OF SAME.

**Design Professional: Low Carbon Concrete Compliance Form**
**Cement Limit Pathway**

Project Name: Cinicorn Home - Equity Smart Investments LP

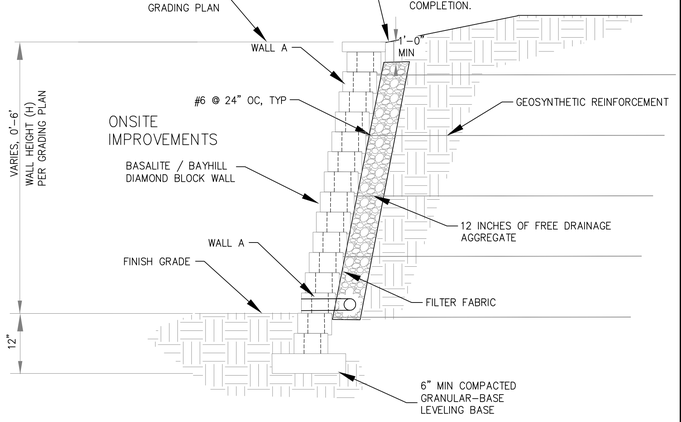
Project Address: 560 Alta Way Mill Valley, CA

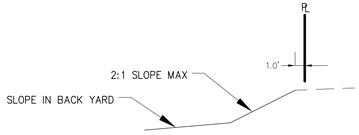
| THE DESIGN PROFESSIONAL OR RESPONSIBLE APPLICANT ON THE DESIGN TEAM SHALL COMPLETE AND SUBMIT TO THE BUILDING DEPARTMENT FOR PLAN CHECK TO REVIEW. | | | | | | | STEPS |
|---|---|---|---|---|---|---|---|
| Date: | 8-22-23 | | | | | | 1) Provide Date, Company Information, and Signature |
| Company Name: | Crosby Horse Design | | | | | | |
| Print Name: | Chris Crosby | | | | | | |
| Signature: | | | | | | | |
| **Application** (E.g., foundation, slab, sidewalks, pool, etc.) | **If Applicable, Pre-Qualified Mix Design** (County Reference No.) | **Specified Strength** (psi) | **Allowable Cement from Table 19.67.050** lbs/cy(c) | (lbs. of sacks) QSM lbs/sack | **If Applicable Allowable Cement -High Early Strength add 50%** lbs/cy(c) | (lbs. of sacks) QSM lbs/sack | 2) Provide information for all unique concrete mix designs used on the project. Use the supplementary table on the next page for more space. |
| ex. Sidewalks | ex. 1 | ex. 3000 | ex. 410 | ex. 4.4 | ex. 533 | ex. 5.7 | 3) If Ready-Mix Design Number has been pre-qualified with the County, provide Pre-Qualified Mix Design reference number. Ssee pre-qualified mixes at https://marincounty.org/-/media/marincounty/marincounty/doc/lowcarbonconcretecodes |
| Foundations | | 3000 | 410 | 4.4 | | | |
| Slab | | 2500 | 362 | 3.9 | | | 4) Place or print this compliance form within structural plans. If a licensed professional is present, that person MUST stamp the mix design to ensure it complies, otherwise a signature of the responsible applicant will suffice. |
| | | | | | | | |
| | | | | | | | |

v4 Land Use.docx 03/01/2022

AVERAGE SLOPE:
21%–22%

SPECIAL INSPECTION NOTE: SPECIAL INSPECTION IS REQUIRED AND SHALL BE PERFORMED BY A CALIFORNIA REGISTERED PROFESSIONAL ENGINEER. A STAMPED AND SIGNED LETTER STATING THAT THE CONSTRUCTION OF THE RETAINING WALL AND ITS COMPONENTS HAVE BEEN BUILT AND COMPLETED IN ACCORDANCE WITH THE SUBMITTED APPROVED DESIGN AND CALCULATIONS SHALL BE PROVIDED TO THE ENGINEERING AND SURVEYING DIVISION PRIOR TO THE PROJECT'S FINAL COMPLETION.



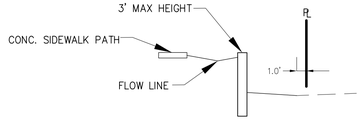




## D WEST PL SECTION

N.T.S.

## E WEST PL SECTION

N.T.S.




## F WEST PL SECTION

N.T.S.

NOTE:

MASONRY F'm = 1,900psi (MIN)
CONCRETE F'c = 1,900psi (MIN)
REBAR Fy = 60,000 psi

## G MASONRY RETAINING WALL

N.T.S.

| DATE | APPROVED BY | REVISION | NO. |
|---|---|---|---|
| | | | |

DATE: DEC. 2024
SCALE:
DRAWN BY: S.A. & R.S.
DESIGNED BY: J.B. & R.S.
CHECKED BY: J.B. & R.S.

Guide ENGINEERING
LAND ENGINEERING AND PLANNING
5930 GRANITE LAKE DR. #150
GRANITE BAY, CA 95746
PHONE: 916-797-0248
projects@guide-engineering

# CIVIL IMPROVEMENT PLANS
# ALTA WAY
## GRADING PLAN
## MARIN COUNTY, CALIFORNIA

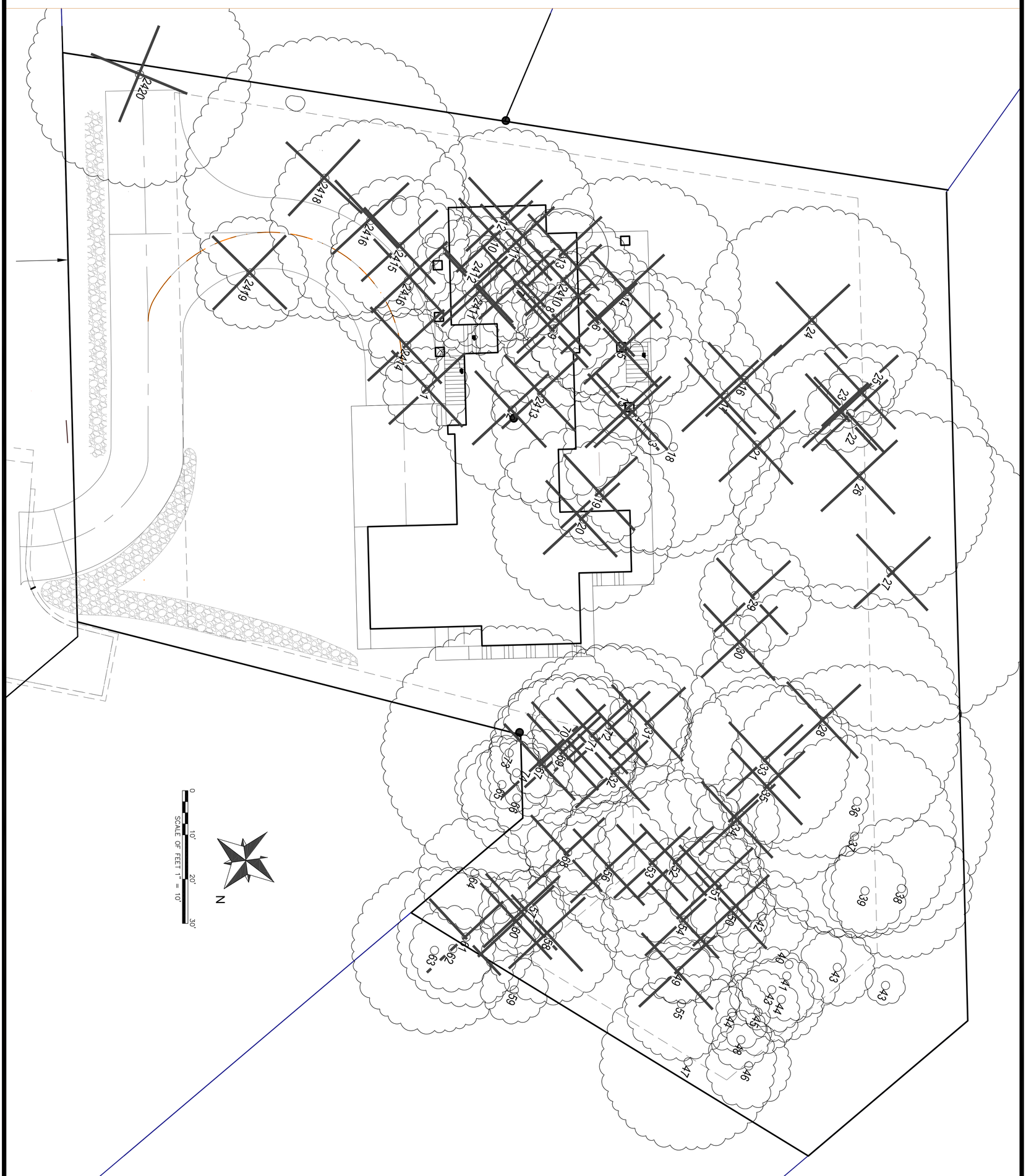
PREPARED UNDER THE DIRECTION OF:

REGISTERED PROFESSIONAL ENGINEER
JARED BROWN
LIC. No. C65430
Exp. 09/30/25
CIVIL
STATE OF CALIFORNIA

NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED BY THE ENGINEER

PROJECT NUMBER: 2022-015-016

SHEET 1 OF 6




| TREE TAG | DBH | NAME | REMOVAL |
|---|---|---|---|
| 1 | 8 | BAY LAUREL | YES |
| 2 | 5 | COAST LIVE OAK | YES |
| 3 | 4 | COAST LIVE OAK | YES |
| 4 | 4 | COAST LIVE OAK | YES |
| 5 | 9 | BAY LAUREL | YES |
| 6 | 9 | MADRONE | YES |
| 7 | 8 | BAY LAUREL | YES |
| 8 | 10 | COAST LIVE OAK | YES |
| 9 | 10 | BAY LAUREL | YES |
| 10 | 7 | COAST LIVE OAK | YES |
| 11 | 22 | COAST LIVE OAK | YES |
| 12 | 16 | COAST LIVE OAK | YES |
| 13 | 14 | BAY LAUREL | YES |
| 14 | 18 | COAST LIVE OAK | YES |
| 15 | 37 | EUCALYPTUS | YES |
| 16 | 8 | BAY LAUREL | YES |
| 17 | 7 | BAY LAUREL | YES |
| 18 | 6 | COAST LIVE OAK | YES |
| 19 | 17 | PRUNUS | YES |
| 20 | 6 | BAY LAUREL | YES |
| 21 | 4 | COAST LIVE OAK | YES |
| 22 | 5 | BAY LAUREL | YES |
| 23 | 10 | COAST LIVE OAK | YES |
| 24 | 5 | COAST LIVE OAK | YES |
| 25 | 15 | EUCALYPTUS | YES |
| 26 | 49 | EUCALYPTUS | YES |
| 27 | 27 | EUCALYPTUS | YES |
| 28 | 37a | EUCALYPTUS | YES |
| 29 | 7 | BAY LAUREL | YES |
| 30 | 5 | COAST LIVE OAK | YES |
| 31 | 9 | COAST LIVE OAK | YES |
| 32 | 31 | PRUNUS | YES |
| 33 | 18 | EUCALYPTUS | YES |
| 34 | 5 | EUCALYPTUS | YES |
| 35 | 14 | EUCALYPTUS | YES |
| 36 | 41 | EUCALYPTUS | YES |
| 37 | 5 | COAST LIVE OAK | YES |
| 38 | 9 | EUCALYPTUS | YES |
| 39 | 26 | EUCALYPTUS | NO |
| 40 | 40 | EUCALYPTUS | NO |
| 41 | 16 | EUCALYPTUS | NO |
| 42 | 8 | EUCALYPTUS | NO |
| 43 | 40 | EUCALYPTUS | NO |
| 44 | 10 | EUCALYPTUS | NO |
| 45 | 42 | EUCALYPTUS | NO |
| 46 | 20 | EUCALYPTUS | NO |
| 47 | 13 | EUCALYPTUS | NO |
| 48 | 6 | EUCALYPTUS | NO |
| 49 | 9 | EUCALYPTUS | NO |
| 50 | 11 | EUCALYPTUS | NO |
| 51 | 8 | EUCALYPTUS | YES |
| 52 | 6 | EUCALYPTUS | YES |
| 53 | 21 | EUCALYPTUS | YES |
| 54 | 22 | EUCALYPTUS | YES |
| 55 | 15 | BAY LAUREL | YES |
| 56 | 16 | EUCALYPTUS | YES |
| 57 | 10 | EUCALYPTUS | YES |
| 58 | 28 | EUCALYPTUS | YES |
| 59 | 11 | EUCALYPTUS | YES |
| 60 | 6 | EUCALYPTUS | YES |
| 61 | 31 | EUCALYPTUS | YES |
| 62 | 9 | EUCALYPTUS | YES |
| 63 | 24 | EUCALYPTUS | YES |
| 64 | 15 | COAST LIVE OAK | YES |
| 65 | 8 | EUCALYPTUS | NO |
| 66 | 9 | EUCALYPTUS | NO |
| 67 | 4 | EUCALYPTUS | YES |
| 68 | 35 | EUCALYPTUS | YES |
| 69 | 8 | EUCALYPTUS | YES |
| 70 | 31 | EUCALYPTUS | YES |
| 71 | 22 | EUCALYPTUS | YES |
| 72 | 32 | EUCALYPTUS | YES |
| 73 | 37 | EUCALYPTUS | NO |
| 74 | 12 | EUCALYPTUS | NO |
| 2410 | 6 | COAST LIVE OAK | YES |
| 2411 | 7 | BAY LAUREL | YES |
| 2413 | 21 | BAY LAUREL | YES |
| 2414 | 8 | CALIFORNIA TOYON | YES |
| 2415 | 12 | COAST LIVE OAK | YES |
| 2416 | 28 | EUCALYPTUS | YES |
| 2417 | 17 | BAY LAUREL | YES |
| 2418 | 77 | BAY LAUREL | YES |
| 2419 | 39 | BAY LAUREL | YES |

PREPARED UNDER THE DIRECTION OF:

JARED RUCKMAN
REGISTERED PROFESSIONAL ENGINEER
Lic. No. C95430
Exp. 09/30/25
Civil
STATE OF CALIFORNIA

NOT APPROVED FOR CONSTRUCTION UNLESS SIGNED BY THE ENGINEER

PROJECT NUMBER: 2022-015-016

SHEET 5 OF 6

# CIVIL IMPROVEMENT PLANS
# ALTA WAY
## TREE REMOVAL PLAN
## MARIN COUNTY, CALIFORNIA

Guide ENGINEERING
LAND ENGINEERING AND PLANNING
5930 GRANITE LAKE DR. #150
GRANITE BAY, CA 95746
PHONE: 916-787-0248
projects@guide-engineering

| | |
|---|---|
| DATE: | DEC. 2024 |
| SCALE: | |
| DRAWN BY: | S.A. & R.S. |
| DESIGNED BY: | J.B. & R.S. |
| CHECKED BY: | J.B. & R.S. |

| NO. | REVISION | APPROVED BY | DATE |
|---|---|---|---|
| | | | |

## APPENDIX 2 – TREE DATA

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | | No | No | No | California Bay Laurel | *Umbelluria californica* | | 8 | 54 | 9 | 3 Fair - Minor Problems | Remove | Slightly southeast lower canopy suppressed. |
| 2 | | No | No | No | Coast Live Oak | *Quercus agrifolia* | | 5 | 54 | 4 | 2 Major Structure or Health Problems | Remove | Suppressed. Above average amount of dead branches. |
| 3 | | No | No | No | Coast Live Oak | *Quercus agrifolia* | | 4 | 54 | 4 | 2 Major Structure or Health Problems | Remove | Suppressed. Above average amount of dead branches. |
| 4 | | No | No | No | Coast Live Oak | *Quercus agrifolia* | | 4 | 54 | 6 | 2 Major Structure or Health Problems | Remove | Suppressed. Above average amount of dead branches. |
| 5 | | No | No | No | California Bay Laurel | *Umbelluria californica* | | 9 | 54 | 15 | 3 Fair - Minor Problems | Remove | Codominant at 18 feet above grade. Leans slightly north. Suppressed lower canopy. |
| 6 | | No | No | No | California Bay Laurel | *Umbelluria californica* | | 9 | 54 | 16 | 3 Fair - Minor Problems | Remove | Leans slightly southeast. Suppressed lower canopy. |
| 7 | 2011 | No | No | No | Madrone | *Arbutus* | | 8 | 54 | 12 | 2 Major Structure or Health Problems | Remove | Dead branch south side, 5 feet above grade. Trunk bends to the southeast. Extremely Sparse canopy. |
| 8 | | No | No | No | California Bay Laurel | *Umbelluria californica* | | 4 | 54 | 13 | 2 Major Structure or Health Problems | Remove | Trunk has bend to southwest. Lower canopy suppressed. |
| 9 | | Yes | No | No | California Bay Laurel | *Umbelluria californica* | 5,5 | 10 | 54 | 17 | 3 Fair - Minor Problems | Remove | Branches at grade. North branch bends west. |
| 10 | | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 7 | 54 | | 2 Major Structure or Health Problems | Remove | Crook in trunk at 3 feet. Old wounds with slight decay. |
| 11 | 2016 | Yes | Yes | No | Coast Live Oak | *Quercus agrifolia* | 7,15 | 22 | 54 | | 3 Fair - Minor Problems | Remove | Branches at 3 feet above grade. North stems grafted for 4 feet. Leans moderately north. |

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12 | 2015 | Yes | No | No | California Bay Laurel | *Umbelluria californica* | 7,9 | 16 | 54 | 19 | 3 Fair - Minor Problems | Remove | Branches of 2 feet above grade. Lower canopy suppressed. |
| 13 | | No | No | No | California Toyon | *Heteromeles arbutifolia* | | 6 | 54 | 10 | 2 Major Structure or Health Problems | Remove | Trunk has crook at 3 feet above grade. Bends at 7 feet to south. Suppressed. |
| 14 | 2013 | Yes | Yes | No | Coast Live Oak | *Quercus agrifolia* | | 18 | 54 | 25 | 3 Fair - Minor Problems | Remove | Secondary lateral to east has broken off 7 feet above grade. Out of balance northeast. Codominant branching 8 feet above grade. |
| 15 | | No | No | Yes | Eucalyptus | *Eucalyptus sp.* | | 37 | 54 | 31 | 2 Major Structure or Health Problems | Remove | Leans slightly southeast. Sparse upper canopy. |
| 16 | | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 7 | 54 | 11 | 3 Fair - Minor Problems | Remove | Sparse lower canopy. Leans west. Suppressed. |
| 17 | 2064 | Yes | No | Yes | California Bay Laurel | *Umbelluria californica* | 4,5,8 | 17 | 54 | 12 | 3 Fair - Minor Problems | Remove | Branches at grade. Suppressed. Northeast stem leans moderately northeast. |
| 18 | | Yes | Yes | No | Coast Live Oak | *Quercus agrifolia* | 9,9 | 18 | 54 | 24 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. | Branches one foot above grade. Above average amount of deadwood in lower canopy. South stem has extreme lean south. |
| 19 | | No | No | Yes | Prunus | *Prunus sp.* | | 6 | 54 | 11 | 2 Major Structure or Health Problems | Remove | Suppressed. One-sided north. |
| 20 | 17 | Yes | No | No | California Bay Laurel | *Umbelluria californica* | 8,9 | 17 | 54 | 20 | 2 Major Structure or Health Problems | Remove | Branches at 3 feet above grade with included bark. Moderate lean southeast. Suppressed lower canopy. |
| 21 | | No | No | No | Coast Live Oak | *Quercus agrifolia* | | 4 | 54 | 9 | 2 Major Structure or Health Problems | Remove | Suppressed lower canopy. |
| 22 | | No | No | No | California Bay Laurel | *Umbelluria californica* | | 5 | 54 | 8 | 1 Extreme Structure or Health Problems | Remove | Trunk is broken and decayed 2 feet above grade and leaning on adjacent tree. |

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | 2063 | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 10 | 54 | | 3 Fair - Minor Problems | Remove | Leans slightly east. |
| 24 | | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 15 | 54 | 25 | 3 Fair - Minor Problems | Remove | Trunk bends north at 9 feet. Multiple partially callused pruning wounds. |
| 25 | 2059 | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 7 | 54 | 7 | 2 Major Structure or Health Problems | Remove | Suppressed lower canopy. Moderate lean southeast. |
| 26 | 2065 | Yes | Yes | No | California Bay Laurel | *Umbelluria californica* | 6,8,9,15 | 38 | 54 | 29 | 2 Major Structure or Health Problems | Remove | Branches at 3-4 feet above grade with inclusions. Leans southeast. Root collar obscured by debris. |
| 27 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 49 | 54 | 35 | 3 Fair - Minor Problems | Remove | Overburdened lateral branches to south. |
| 28 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 37 | 54 | 30 | 3 Fair - Minor Problems | Remove | Root crown obscured by debris. Leans slightly east. |
| 29 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 9 | 54 | 12 | 3 Fair - Minor Problems | Remove | Lower trunk root crown obscured by debris. |
| 30 | | No | No | No | Coast Live Oak | *Quercus agrifolia* | | 5 | 54 | 6 | 3 Fair - Minor Problems | Remove | Out of balance southwest. |
| 31 | | No | No | No | Prunus | *Prunus sp.* | | 9 | 54 | 9 | 2 Major Structure or Health Problems | Remove | Lower lateral attachments at 3 feet above grade. Bends at 5 feet above grade to north. |
| 32 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 31 | 54 | 28 | 2 Major Structure or Health Problems | Remove | Previous leader failure, has regrown. |
| 33 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 18 | 24 | 18 | 2 Major Structure or Health Problems | Remove | Branches 4 feet above grade. Leaning moderately to the southwest. |
| 34 | | No | No | No | Coast Live Oak | *Quercus agrifolia* | | 5 | 54 | 9 | 2 Major Structure or Health Problems | Remove | Moderate lean/bending southeast. Deadwood and lower canopy suppressed. |

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 14 | 54 | 22 | 2 Major Structure or Health Problems | Remove | Moderate lean southeast. Lower canopy suppressed. Dead tree leaning on it. |
| 36 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 41 | 54 | 30 | 3 Fair - Minor Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Codominant branching at 6 feet above grade with inclusion. Broken Eucalyptus caught in crotch. Out of balance south. |
| 37 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | 6,6,14 | 26 | 54 | 22 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Branches at grade. Root crown obscured by debris. Suppressed lower canopy. |
| 38 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 40 | 54 | 15 | 2 Major Structure or Health Problems | Retain, protect in place. | DBH/DLR estimated. Codominant branching at 6 feet above grade with inclusion. Tree is in state of decline. |
| 39 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 16 | 54 | 9 | 1 Extreme Structure or Health Problems | Retain, protect in place. | Codominant at 7 feet above grade with inclusions. Sparse upper canopy. |
| 40 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 40 | 54 | 12 | 1 Extreme Structure or Health Problems | Retain, protect in place. | Leans moderately east. Sparse canopy and overall suppressed. |
| 41 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 8 | 54 | 13 | 2 Major Structure or Health Problems | Retain, protect in place. | Suppressed lower canopy. |
| 42 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 13 | 54 | 10 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Dimensions estimated because tree is covered in poison oak vines. Suppressed. |
| 43 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 20 | 54 | 8 | 2 Major Structure or Health Problems | Retain, protect in place. | Dieback in upper canopy. Root crown obscured by debris. |
| 44 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | 5,6 | 11 | 54 | 8 | 2 Major Structure or | Retain, protect in place. | Branches 6 inches above grade. Sparse canopy. |

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Health Problems | | |
| 45 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 10 | 54 | 9 | 2 Major Structure or Health Problems | Retain, protect in place. | Root crown obscured by debris. Moderate lean west. |
| 46 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 9 | 54 | 9 | 2 Major Structure or Health Problems | Retain, protect in place. | Dimensions estimated. Lower trunk/root crown obscured by debris. Moderate lean east. |
| 47 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 37 | 54 | 19 | 2 Major Structure or Health Problems | Retain, protect in place. | Lower trunk obscured by debris. Leans slightly east. DLR estimated. |
| 48 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 6 | 54 | 6 | 1 Extreme Structure or Health Problems | Retain, protect in place. | Broken at 7 feet above grade. |
| 49 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 6 | 54 | 7 | 2 Major Structure or Health Problems | Remove | Leans slightly east. Dead branches in mid canopy. |
| 50 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 8 | 54 | 9 | 3 Fair - Minor Problems | Remove | Low live crown ratio. |
| 51 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 11 | 54 | 11 | 2 Major Structure or Health Problems | Remove | Dimensions estimated. |
| 52 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 22 | 54 | 18 | 2 Major Structure or Health Problems | Remove | Dimensions estimated. Low live crown ratio. Leans slightly south. |
| 53 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | 8,14 | 22 | 54 | 21 | 2 Major Structure or Health Problems | Remove | Branches at 2.5 feet above grade. Lower trunk/root crown obscured. Low live crown ratio. |
| 54 | 2056 | Yes | No | No | California Bay Laurel | *Umbelluria californica* | 7,7,8 | 22 | 54 | 18 | 2 Major Structure or | Remove | Branches at 1-2 feet above grade. Suppressed. Dimensions estimated. |

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Health Problems | | |
| 55 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 15 | 54 | 12 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Dimensions estimated. Low live crown ratio. |
| 56 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 16 | 54 | 14 | 2 Major Structure or Health Problems | Remove | Leans slightly south. Low live crown ratio. |
| 57 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 10 | 54 | 9 | 2 Major Structure or Health Problems | Remove | Dimensions estimated. Sparse upper canopy. |
| 58 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | 9,19 | 28 | 54 | 15 | 3 Fair - Minor Problems | Remove | Branches at grade. Lower trunk/root crown obscured by debris. Slight lean east. |
| 59 | | No | No | Yes | Eucalyptus | *Eucalyptus sp.* | | 11 | 54 | 7 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Dimensions estimated. |
| 60 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 9 | 54 | 5 | 1 Extreme Structure or Health Problems | Remove | Broken leader at ~13 feet above grade. |
| 61 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 31 | 54 | 15 | 2 Major Structure or Health Problems | Remove | DLR estimated. Lower trunk/root crown obscured by debris. Low live crown ratio. |
| 62 | | No | No | Yes | Eucalyptus | *Eucalyptus sp.* | | 9 | 54 | 9 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Dimensions estimated. Root crown obscured by debris. Suppressed. |
| 63 | | No | No | Yes | Eucalyptus | *Eucalyptus sp.* | | 24 | 54 | 18 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Dimensions estimated. Growing ~12 feet west of property line. Out of balance northwest. Dimensions estimated. |
| 64 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 15 | 54 | 12 | 2 Major Structure or | Retain, protect in place. Minor to moderate | Leans slightly east. Low live crown ratio. |

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Health Problems | encroachment for grading. Root prune as necessary. | |
| 65 | | Yes | No | Yes | Coast Live Oak | *Quercus agrifolia* | | 8 | 54 | 10 | 3 Fair - Minor Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Lateral branches at 3-5 feet above grade. Suppressed lower canopy. |
| 66 | | No | No | Yes | Eucalyptus | *Eucalyptus sp.* | | 9 | 54 | 12 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Dimensions estimated. Low live crown ratio. |
| 67 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 4 | 54 | 7 | 2 Major Structure or Health Problems | Remove | Lateral branch at 3 feet above grade. Sparse canopy. |
| 68 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 8 | 54 | 9 | 2 Major Structure or Health Problems | Remove | Trunk bends east at 22 feet above grade. Sparse canopy. |
| 69 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 35 | 54 | 16 | 2 Major Structure or Health Problems | Remove | Dimensions estimated. Leans slightly southwest. Low live crown ratio. |
| 70 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 31 | 54 | 15 | 2 Major Structure or Health Problems | Remove | Dimensions estimated. Slightly south. Trunk bends moderate south at 35 feet above grade. |
| 71 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | | 22 | 54 | 13 | 2 Major Structure or Health Problems | Remove | Dimensions estimated. Trunk bends northeast. |
| 72 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | 5,9,18 | 32 | 54 | 17 | 2 Major Structure or Health Problems | Remove | Branches at 2-3 feet above grade. Low live crown ratio. Hanging dead branch on south side. |
| 73 | | No | No | Yes | Eucalyptus | *Eucalyptus sp.* | | 37 | 54 | 28 | 3 Fair - Minor Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | DLR estimated. Out of balance south. |

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 74 | | No | No | Yes | Eucalyptus | *Eucalyptus sp.* | | 22 | 54 | 8 | 2 Major Structure or Health Problems | Retain, protect in place. Minor to moderate encroachment for grading. Root prune as necessary. | Low live crown ratio. Sparse canopy. |
| 2410 | | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 12 | 54 | 15 | 2 Major Structure or Health Problems | Remove | Trunk has moderate lean southwest, straightening at 6 feet. |
| 2411 | | No | No | No | Prunus | *Prunus sp.* | | 6 | 54 | 12 | 2 Major Structure or Health Problems | Remove | Slightly northeast. Codominant branching at 4.5 feet above grade. Sparse canopy. |
| 2412 | 2010 | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 7 | 54 | 15 | 2 Major Structure or Health Problems | Remove | Leaning northeast. Sparse canopy. Codominant at 16 feet above grade. Dimensions estimated. |
| 2413 | Over-grown | Yes | No | No | California Bay Laurel | *Umbelluria californica* | | 21 | 54 | 24 | 3 Fair - Minor Problems | Remove | Lateral branching at 7&9 feet above grade with inclusions. |
| 2414 | | No | No | No | California Toyon | *Heteromeles arbutifolia* | 4,4 | 8 | 54 | 8 | 2 Major Structure or Health Problems | Remove | Extreme lean north. East branch at grade trunks is grafted at 3 feet above grade. |
| 2415 | 2008 | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 12 | 54 | 15 | 3 Fair - Minor Problems | Remove | DLR estimated. Bending trunk at 9 feet, straightening out 20 feet above grade. Low live crown ratio. |
| 2416 | | No | No | No | Eucalyptus | *Eucalyptus sp.* | 8,8,12 | 28 | 54 | 18 | 2 Major Structure or Health Problems | Remove | Branches one foot above grade. Root collar obscured by debris. Sparse mid canopy. |
| 2417 | 2007 | Yes | No | No | California Bay Laurel | *Umbelluria californica* | | 17 | 54 | 22 | 3 Fair - Minor Problems | Remove | DLR estimated. |
| 2418 | 2005 | Yes | Yes | No | California Bay Laurel | *Umbelluria californica* | 24,25,28 | 77 | 54 | 31 | 2 Major Structure or Health Problems | Remove | Branches 3 feet above grade with inclusions. Basal cavity northeast side with a depth greater than 3 feet. Ganoderma conk on northeast side. |
| 2419 | 2006 | Yes | Yes | No | California Bay Laurel | *Umbelluria californica* | 19,20 | 39 | 54 | 12 | 2 Major Structure or | Remove | Branches at grade. North stem has moderate lean northeast. Dimensions estimated. |

| Tag # | Old Tag # | Protected By Code | Heritage Tree | Offsite | Common Name | Scientific Name | Multi-Stems | DBH (in.) | Measured At (in.) | Measured Canopy Radius (ft.) | Arborist Rating | Dvlpmt Status | Notes |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Health Problems | | |
| 2420 | 2004 | Yes | No | No | Coast Live Oak | *Quercus agrifolia* | | 12 | 54 | 24 | 2 Major Structure or Health Problems | Remove | Two feet west of property corner. Moderately in Northeast. Bending to greater bend to the north east at 20 feet above grade. |

Highlighted trees require a removal permit and replacement or fee

## APPENDIX 3 – GENERAL PRACTICES FOR TREE PROTECTION

**Definitions:**

Root zone: The roots of trees grow fairly close to the surface of the soil, and spread out in a radial direction from the trunk of tree. A general rule of thumb is that they spread 2 to 3 times the radius of the canopy, or 1 to 1½ times the height of the tree. It is generally accepted that disturbance to root zones should be kept as far as possible from the trunk of a tree.

Inner Bark: The bark on large valley oaks and coast live oaks is quite thick, usually 1" to 2". If the bark is knocked off a tree, the inner bark, or cambial region, is exposed or removed. The cambial zone is the area of tissue responsible for adding new layers to the tree each year, so by removing it, the tree can only grow new tissue from the edges of the wound. In addition, the wood of the tree is exposed to decay fungi, so the trunk present at the time of the injury becomes susceptible to decay. Tree protection measures require that no activities occur which can knock the bark off the trees.

**Methods Used in Tree Protection:**

No matter how detailed Tree Protection Measures are in the initial Arborist Report, they will not accomplish their stated purpose unless they are applied to individual trees and a Project Arborist is hired to oversee the construction. The Project Arborist should have the ability to enforce the Protection Measures. The Project Arborist should be hired as soon as possible to assist in design and to become familiar with the project. He must be able to read and understand the project drawings and interpret the specifications. He should also have the ability to cooperate with the contractor, incorporating the contractor's ideas on how to accomplish the protection measures, wherever possible. It is advisable for the Project Arborist to be present at the Pre-Bid tour of the site, to answer questions the contractors may have about Tree Protection Measures. This also lets the contractors know how important tree preservation is to the developer.

Root Protection Zone (RPZ): Since in most construction projects it is not possible to protect the entire root zone of a tree, a Root Protection Zone is established for each tree to be preserved. The minimum Root Protection Zone is the area underneath the tree's canopy (out to the dripline, or edge of the canopy), plus 1'. The Project Arborist must approve work within the RPZ.

Irrigate, Fertilize, Mulch: Supplemental irrigation, fertilization and or addition of mulch may be required at some point in time during the course of construction. The project arborist will recommend any or all of these mitigation measures as necessary during the course of construction.

Fence: Fence around the Root Protection Zone and restrict activity therein to prevent soil compaction by vehicles, foot traffic or material storage. The fenced area shall be off limits to all construction equipment, unless there is express written notification provided by the Project Arborist, and impacts are discussed and mitigated prior to work commencing.

> No storage or cleaning of equipment or materials, or parking of any equipment can take place within the fenced off area, known as the RPZ.
>
> The fence should be highly visible, and stout enough to keep vehicles and other equipment out. I recommend the fence be made of orange plastic protective fencing, kept in place by t-posts set no farther apart than 6'.
>
> In areas of intense impact, a 6' chain link fence is preferred.

In areas with many trees, the RPZ can be fenced as one unit, rather than separately for each tree.

Where tree trunks are within 3' of the construction area, place 2" by 4" boards vertically against the tree trunks, even if fenced off. Hold the boards in place with wire. Do not nail them directly to the tree. The purpose of the boards is to protect the trunk, should any equipment stray into the RPZ.

Elevate Foliage: Where indicated, remove lower foliage from a tree to prevent limb breakage by equipment. Low foliage can usually be removed without harming the tree, unless more than 25% of the foliage is removed. Branches need to be removed at the anatomically correct location in order to prevent decay organisms from entering the trunk. For this reason, a contractor who is an ISA Certified Arborist should perform all pruning on protected trees.[3]

Expose and Cut Roots: Breaking roots with a backhoe, or crushing them with a grader, causes significant injury, which may subject the roots to decay. Ripping roots may cause them to splinter toward the base of the tree, creating much more injury than a clean cut would make. At any location where the root zone of a tree will be impacted by a trench or a cut (including a cut required for a fill and compaction), the roots shall be exposed with either a backhoe digging radially to the trunk, by hand digging, or by a hydraulic air spade, and then cut cleanly with a sharp instrument, such as chainsaw with a carbide chain. Once the roots are severed, the area behind the cut should be moistened and mulched. A root protection fence should also be erected to protect the remaining roots, if it is not already in place. Further grading or backhoe work required outside the established RPZ can then continue without further protection measures.

Protect Roots in Deeper Trenches: The location of utilities on the site can be very detrimental to trees. Design the project to use as few trenches as possible, and to keep them away from the major trees to be protected. Wherever possible, in areas where trenches will be very deep, consider boring under the roots of the trees, rather than digging the trench through the roots. This technique can be quite useful for utility trenches and pipelines.

Protect Roots in Small Trenches: After all construction is complete on a site, it is not unusual for the landscape contractor to come in and sever a large number of "preserved" roots during the installation of irrigation systems. The Project Arborist must therefore approve the landscape and irrigation plans. The irrigation system needs to be designed so the main lines are located outside the root zone of major trees, and the secondary lines are either laid on the surface (drip systems), or carefully dug with a hydraulic or air spade, and the flexible pipe fed underneath the major roots.

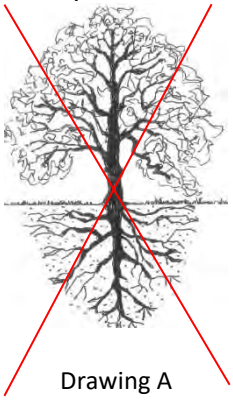
Design the irrigation system so it can slowly apply water (no more than ¼" to ½" of water per hour) over a longer period of time. This allows deep soaking of root zones. The system also needs to accommodate infrequent irrigation settings of once or twice a month, rather than several times a week.

Monitoring Tree Health During and After Construction: The Project Arborist should visit the site at least twice a month during construction to be certain the tree protection measures are being followed, to monitor the health of impacted trees, and make recommendations as to irrigation or other needs. After construction is complete, the arborist should monitor the site monthly for one year and make recommendations for care where needed. If longer term monitoring is required, the arborist should report this to the developer and the planning agency overseeing the project.

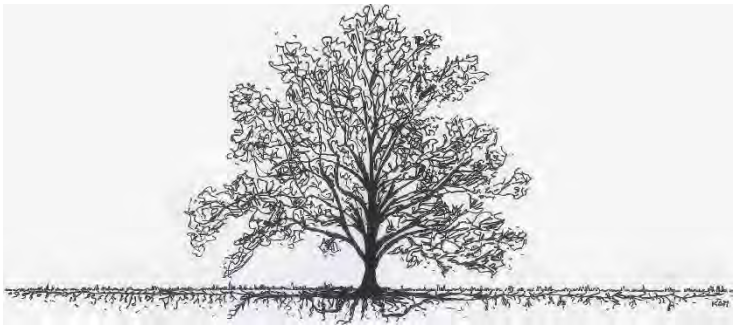
[3] International Society of Arboriculture (ISA), maintains a program of Certifying individuals. Each Certified Arborist has a number and must maintain continuing education credits to remain Certified.

## Root Structure

The majority of a tree's roots are contained in a radius from the main trunk outward approximately two to three times the canopy of the tree. These roots are located in the top 6" to 3' of soil. It is a common misconception that a tree underground resembles the canopy (see Drawing A below). The correct root structure of a tree is in Drawing B. All plants' roots need both water and air for survival. Surface roots are a common phenomenon with trees grown in compacted soil. Poor canopy development or canopy decline in mature trees is often the result of inadequate root space and/or soil compaction.



Drawing A
Common misconception of where tree roots are assumed to be located



Drawing B
The reality of where roots are generally located

## Structural Issues

Limited space for canopy development produces poor structure in trees. The largest tree in a given area, which is 'shading' the other trees is considered Dominant. The 'shaded' trees are considered Suppressed. The following picture illustrates this point. Suppressed trees are more likely to become a potential hazard due to their poor structure.

Dominant Tree

Growth is upright

Canopy is balanced by limbs and foliage equally

Suppressed Tree

Canopy weight all to one side

Limbs and foliage grow away from dominant tree

Co-dominant leaders are another common structural problem in trees.

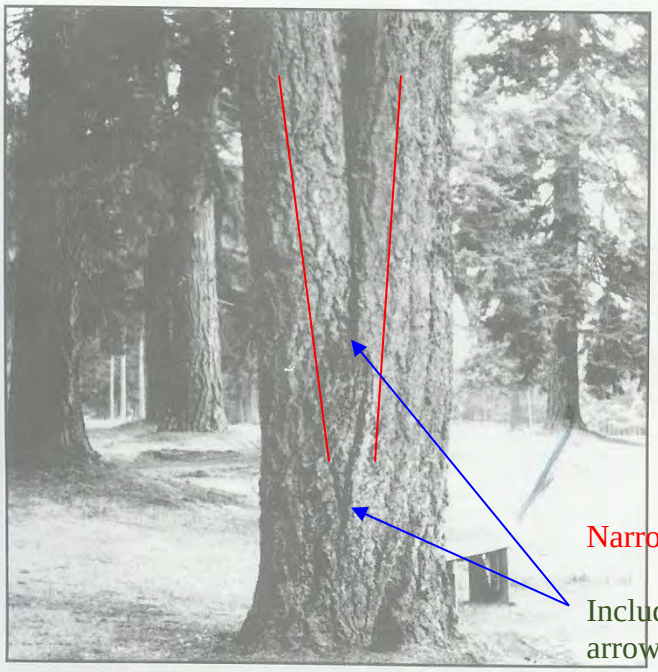


Figure 6. Codominant stems are inherently weak because the stems are of similar diameter.

The tree in this picture has a co-dominant leader at about 3' and included bark up to 7 or 8'. Included bark occurs when two or more limbs have a narrow angle of attachment resulting in bark between the stems – instead of cell to cell structure. This is considered a critical defect in trees and is the cause of many failures.

Narrow Angle

Included Bark between the arrows

Photo from Evaluation of Hazard Trees in Urban Areas by Nelda P. Matheny and James R. Clark, 1994 International Society of Arboriculture

## Pruning Mature Trees for Risk Reduction

There are few good reasons to prune mature trees. Removal of deadwood, directional pruning, removal of decayed or damaged wood, and end-weight reduction as a method of mitigation for structural faults are the only reasons a mature tree should be pruned. Live wood over 3" should not be pruned unless absolutely necessary. Pruning cuts should be clean and correctly placed. Pruning should be done in accordance with the American National Standards Institute (ANSI) A300 standards. It is far better to use more small cuts than a few large cuts as small pruning wounds reduce risk while large wounds increase risk.

Pruning causes an open wound in the tree. Trees do not "heal" they compartmentalize. Any wound made today will always remain, but a healthy tree, in the absence of decay in the wound, will 'cover it' with callus tissue. Large, old pruning wounds with advanced decay are a likely failure point. Mature trees with large wounds are a high failure risk.

Overweight limbs are a common structural fault in suppressed trees. There are two remedial actions for overweight limbs (1) prune the limb to reduce the extension of the canopy, or (2) cable the limb to reduce movement. Cables do not hold weight they only stabilize the limb and require annual inspection.

Photo of another tree – not at this site.

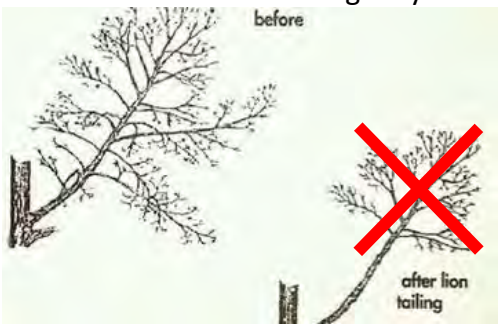
Normal limb structure

Over weight, reaching limb with main stem diameter small compared with amount of foliage present

Photo of another tree – not at this site

Lion's – Tailing is the pruning practice of removal of "an excessive number of inner and/or lower lateral branches from parent branches. Lion's tailing is not an acceptable pruning practice" ANSI A300 (part 1) 4.23. It increases the risk of failure.

Pruning – Cutting back trees changes their natural structure, while leaving trees in their natural form enhances longevity.




## Arborist Classifications

There are different types of Arborists:

Tree Removal and/or Pruning Companies. These companies may be licensed by the State of California to do business, but they do not necessarily know anything about trees;

Arborists. Arborist is a broad term. It is intended to mean someone with specialized knowledge of trees but is often used to imply knowledge that is not there.

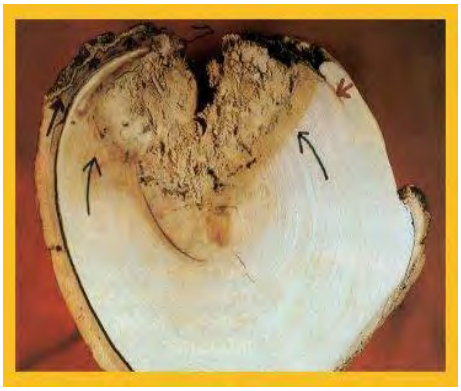
ISA Certified Arborist: An International Society of Arboriculture Certified Arborist is someone who has been trained and tested to have specialized knowledge of trees. You can look up certified arborists at the International Society of Arboriculture website: isa-arbor.org.

Consulting Arborist: An American Society of Consulting Arborists Registered Consulting Arborist is someone who has been trained and tested to have specialized knowledge of trees and trained and tested to provide high quality reports and documentation. You can look up registered consulting arborists at the American Society of Consulting Arborists website: https://www.asca-consultants.org/

## Decay in Trees

Decay (in General): Fungi cause all decay of living trees. Decay is considered a disease because cell walls are altered, wood strength is affected, and living sapwood cells may be killed. Fungi decay wood by secreting enzymes. Different types of fungi cause different types of decay through the secretion of different chemical enzymes. Some decays, such as white rot, cause less wood strength loss than others because they first attack the lignin (causes cell walls to thicken and reduces susceptibility to decay and pest damage) secondarily the cellulose (another structural component in a cell walls). Others, such as soft rot, attack the cellulose chain and cause substantial losses in wood strength even in the initial stages of decay. Brown rot causes wood to become brittle and fractures easily with tension. Identification of internal decay in a tree is difficult because visible evidence may not be present.


According to Evaluation of Hazard Trees in Urban Areas (Matheny, 1994) decay is a critical factor in the stability of the tree. As decay progresses in the trunk, the stem becomes a hollow tube or cylinder rather than a solid rod. This change is not readily apparent to the casual observer. Trees require only a small amount of bark and wood to transport water, minerals and sugars. Interior heartwood can be eliminated (or degraded) to a great degree without compromising the transport process. Therefore, trees can contain significant amounts of decay without showing decline symptoms in the crown.



Compartmentalization of decay in trees is a biological process in which the cellular tissue around wounds is changed to inhibit fungal growth and provide a barrier against the spread of decay agents into barrier zones is the formation of the tree may be able to limit decay pruning cuts, in the event that there located vertically along the main trunk of the tree, the likelihood of decay progression and the associated structural loss of integrity of the internal wood is high.

additional cells. The weakest of the vertical wall. Accordingly, while a progression inward at large are more than one pruning cut

## Oak Tree Impacts

Our native oak trees are easily damaged or killed by having the soil within the Critical Root Zone (CRZ) disturbed or compacted. All of the work initially performed around protected trees that will be saved should be done by people rather than by wheeled or track type tractors. Oaks are fragile giants that can take little change in soil grade, compaction, or warm season watering. Don't be fooled into believing that warm season watering has no adverse effects on native oaks. Decline and eventual death can take as long as 5-20 years with poor care and inappropriate watering. Oaks can live hundreds of years if treated properly during construction, as well as later with proper pruning, and the appropriate landscape/irrigation design.