
IV. ENVIRONMENTAL IMPACT ANALYSIS

D. BIOLOGICAL AND FORESTRY RESOURCES

INTRODUCTION

The information presented in this section is based on a site survey conducted by WRA on September 18, 2012, a 2012 northern spotted owl survey report prepared by Glenn Edwards, and the 2006 Draft Subsequent Environmental Impact Report for the previous Upper Road Land Division project prepared for the Town of Ross by Donaldson Associates (Town of Ross 2006c) (Appendix E-1).

ENVIRONMENTAL SETTING

The project site is comprised of a single, irregularly shaped, 35.97-acre parcel of hillside land on the southeastern section of Bald Hill, which is located on the northern slope of Mount Tamalpais (Figure III-2). The site is adjacent to MMWD lands and Natalie Coffin Green Park (a Town facility) on the west and southerly sides. The remaining adjacent and nearby land is privately-owned and mostly developed with single family homes, some of which are on large lots. The average slope of the site is about 27 percent, but the lot is much steeper in areas. The site is heavily wooded with native oak, redwood, and other trees and non-native Scotch and French Broom shrubs. The site also contains a large rock outcropping and two swales (Swan Swale and Frog Swale). A third, unnamed, watercourse drains a small area near the project entrance and forms a part of the site boundary near Upper Road. Two non-habitable dilapidated small cabins, a greenhouse, deck, and two wooden dilapidated water tanks exist on the site.

The project site is located on the southeastern slope of Bald Hill with elevations ranging from approximately 100 feet above sea level along Ross Creek in Natalie Coffin Green Park to over 665 feet at the site's far northwestern corner. Bald Hill rises an additional 475 feet above the site toward the northwest. Drainage from the site, and the flanks of Bald Hill above it, flows generally to the east and south and discharges into Ross Creek downstream from Phoenix Lake. There are three small intermittent drainage channels that collect runoff from the site and some adjoining land and transport it to Ross Creek.

According to the Soil Survey of Marin County, California (U.S. Department of Agriculture 2012), the predominant soil type on the property is the Tocaloma-McMullin Complex, which is a gravelly to gravelly clay loam, above the lowest swale and Franciscan Mélange from the swale to the road.¹

¹ U.S. Department of Agriculture (USDA), Natural Resources Conservation Service. 2012. Web Soil Survey. Online at <http://websoilsurvey.nrcs.usda.gov>; most recently accessed: September 12, 2012.

The climate of Marin County is characterized as Mediterranean, with cool wet winters and warm dry summers. Mean annual rainfall in Ross is 47.5 inches, which is substantially higher than most other locations in the Bay Area. Precipitation occurs primarily during the winter wet season, which extends from November through March. Long-term precipitation records indicate that wetter and drier cycles lasting several years are common in the region.

Biotic Habitats

The following section provides a brief overview of the habitat types present within the project site, including a discussion of forestry resources on-site. All plant species have been named according to *The Jepson Manual, 2nd Edition* (Baldwin et al. 2012)². A list of all plant and wildlife species observed on the site during site surveys is presented below in Table IV.D-1 and IV.D-2, respectively.

**Table IV.D-1
Plant Species Observed on the Project Site**

Scientific Name	Common Name	Wetland Indicator Status
Adoxaceae		
<i>Sambucus nigra</i>	blue elderberry	FAC
Agavaceae		
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	common soap plant	NL
Anacardiaceae		
<i>Toxicodendron diversilobum</i>	poison oak	NL
Apiaceae		
<i>Osmorhiza berteroi</i>	sweet cicely	FACU
<i>Perideridia kelloggii</i>	Kellogg's yampah	NL
<i>Sanicula bipinnatifida</i>	purple sanicle	NL
<i>Sanicula crassicaulis</i>	Pacific sanicle	NL
<i>Torilis arvensis</i> *	hedge parsley	NL
Apocynaceae		
<i>Vinca major</i> *	periwinkle	NL
Aquifoliaceae		
<i>Ilex aquifolium</i> *	English holly	NL
Araliaceae		
<i>Aralia californica</i>	elk clover	FACW
<i>Hedera helix</i> *	English ivy	NL
Asphodelaceae		
<i>Kniphofia uvaria</i> *	redhot poker	NL
Asteraceae		
<i>Anisocarpus madioides</i>	woodland madia	NL
<i>Artemisia californica</i>	California sagebrush	NL
<i>Artemisia douglasiana</i>	mugwort	FAC
<i>Baccharis pilularis</i>	coyote brush	NL
<i>Carduus pycnocephalus</i> *	Italian thistle	NL
<i>Cirsium vulgare</i> *	bull thistle	FACU
<i>Crepis</i> sp.*	hawksbeard	NL

² Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds). 2012. *The Jepson Manual: Vascular Plants of California, 2nd Edition*

Scientific Name	Common Name	Wetland Indicator Status
<i>Erigeron karvinskianus</i> *	Latin American fleabane	FAC
<i>Eurybia radulina</i>	rough aster	NL
<i>Grindelia camporum</i>	common gumplant	FACW
<i>Hemizonia congesta</i> ssp. <i>congesta</i>	hayfield tarplant	NL
<i>Hypochaeris radicata</i> *	rough cat's-ear	FACU
<i>Logfia gallica</i> *	narrow-leaf cottonrose	NL
<i>Madia gracilis</i>	gumweed tarweed	NL
<i>Madia sativa</i>	coast tarweed	NL
<i>Pseudognaphalium californicum</i>	ladie's tobacco	NL
<i>Silybum marianum</i> *	milk thistle	NL
<i>Soliva sessilis</i> *	burweed	FACU
<i>Sonchus asper</i> ssp. <i>asper</i> *	prickly sow thistle	FAC
<i>Sonchus oleraceus</i> *	common sow thistle	NL
<i>Uropappus lindleyi</i>	silver puffs	NL
Betulaceae		
<i>Corylus cornuta</i> var. <i>californica</i>	California hazelnut	FACU
Boraginaceae		
<i>Cynoglossum grande</i>	Pacific hound's tongue	NL
<i>Myosotis latifolia</i> *	broadleaf forget-me-not	NL
<i>Nemophila heterophylla</i>	white baby blue-eyes	NL
<i>Nemophila pedunculata</i>	littlefoot baby blue-eyes	FAC
<i>Phacelia distans</i>	distant phacelia	OBL
Brassicaceae		
<i>Cardamine californica</i>	milk maids	NL
<i>Cardamine oligosperma</i>	bittercress	NL
<i>Sisymbrium officinale</i> *	hedge mustard	NL
Campanulaceae		
<i>Githopsis specularioides</i>	common bluecup	FACU
Caprifoliaceae		
<i>Lonicera hispidula</i>	pink honeysuckle	FACU
<i>Symphoricarpos albus</i> var. <i>laevigatus</i>	snowberry	FACU
<i>Symphoricarpos mollis</i>	creeping snowberry	NL
Caryophyllaceae		
<i>Polycarpon tetraphyllum</i> *	fourleaf manyseed	NL
<i>Stellaria media</i> *	common chickweed	FACU
Cistaceae		
<i>Cistus incanus</i> *	hairy rockrose	NL
Convolvulaceae		
<i>Calystegia purpurata</i> ssp. <i>purpurata</i>	Pacific morning-glory	NL
Cucurbitaceae		
<i>Marah fabacea</i>	California manroot	NL
Cupressaceae		
<i>Sequoia sempervirens</i>	coast redwood	NL
Cyperaceae		
<i>Carex globosa</i>	round-fruit sedge	NL
<i>Carex nudata</i>	naked sedge	FACW
Dryopteridaceae		
<i>Dryopteris arguta</i>	wood fern	NL
<i>Polystichum munitum</i>	sword fern	FACU
Ericaceae		
<i>Arbutus menziesii</i>	Pacific madrone	NL
Euphorbiaceae		
<i>Euphorbia crenulata</i> *	Chinese caps	NL
Fabaceae		
<i>Acmispon parviflorus</i>	small-flowered lotus	NL
<i>Acmispon wrangelianus</i>	Wrangle's lotus	NL

Scientific Name	Common Name	Wetland Indicator Status
<i>Cytisus scoparius</i> *	Scotch broom	NL
<i>Genista monspessulana</i> *	French broom	NL
<i>Lathyrus vestitus</i> var. <i>vestitus</i>	Pacific pea	NL
<i>Medicago arabica</i> *	spotted bur clover	NL
<i>Medicago polymorpha</i> *	bur medic	FACU
<i>Spartium junceum</i> *	Spanish broom	NL
<i>Trifolium bifidum</i> var. <i>bifidum</i>	Pinole clover	NL
<i>Trifolium ciliolatum</i>	tree clover	NL
<i>Trifolium dubium</i> *	shamrock clover	UPL
<i>Trifolium gracilentum</i>	pinpoint clover	NL
<i>Trifolium microcephalum</i>	maiden clover	FAC
<i>Trifolium microdon</i>	thimble clover	NL
<i>Trifolium willdenovii</i>	tomcat clover	NL
<i>Vicia americana</i> var. <i>americana</i>	American vetch	FAC
<i>Vicia sativa</i> ssp. <i>nigra</i> *	garden vetch	FACU
<i>Vicia sativa</i> ssp. <i>sativa</i> *	common vetch	FACU
<i>Vicia villosa</i> ssp. <i>varia</i> *	hairy vetch	NL
Fagaceae		
<i>Notholithocarpus densiflorus</i>	tanoak	NL
<i>Quercus agrifolia</i>	coast live oak	NL
<i>Quercus garryana</i>	Oregon white oak	UPL
<i>Quercus kelloggii</i>	California black oak	NL
<i>Quercus lobata</i>	valley oak	FACU
<i>Quercus x morehus</i>	oracle oak	NL
Geraniaceae		
<i>Geranium dissectum</i> *	cutleaf geranium	NL
<i>Geranium molle</i> *	dove's-foot geranium	NL
Iridaceae		
<i>Iris douglasiana</i>	Douglas iris	NL
<i>Iris germanica</i> *	German iris	NL
<i>Sisyrinchium bellum</i>	blue-eyed grass	FACW
Juncaceae		
<i>Juncus patens</i>	common rush	FACW
<i>Luzula comosa</i>	wood rush	FAC
Lamiaceae		
<i>Clinopodium douglasii</i>	yerba buena	NL
<i>Stachys rigida</i>	rough hedge nettle	FACW
Lauraceae		
<i>Umbellularia californica</i>	California bay	FAC
Liliaceae		
<i>Agapanthus praecox</i> *	lily-of-the-Nile	NL
<i>Prosartes hookeri</i>	drops-of-gold	NL
<i>Trillium ovatum</i>	wake robin	FACU
Montiaceae		
<i>Claytonia perfoliata</i>	<i>Claytonia perfoliata</i>	<i>Claytonia perfoliata</i>
Moraceae		
<i>Ficus carica</i> *	common fig	FACU
Myrsinaceae		
<i>Anagallis arvensis</i>	scarlet pimpernel	NL
<i>Cyclamen</i> sp.*	cyclamen	NL
<i>Trientalis latifolia</i>	woodland star	NL
Orchidaceae		
<i>Epipactis helleborine</i> *	broadleaf helleborine	FACU
<i>Piperia transversa</i>	royal rein orchid	NL
Oxalidaceae		
<i>Oxalis oregana</i>	redwood sorrel	FACU

Scientific Name	Common Name	Wetland Indicator Status
<i>Oxalis pes-caprae</i> *	Bermuda buttercup	NL
Phrymaceae		
<i>Mimulus aurantiacus</i>	sticky monkey	NL
Pinaceae		
<i>Pseudotsuga menziesii</i>	Douglas fir	NL
Plantaginaceae		
<i>Plantago lanceolata</i> *	English plantain	FAC
<i>Veronica americana</i>	brooklime	OBL
Poaceae		
<i>Agrostis pallens</i>	seashore bentgrass	FACU
<i>Agrostis stolonifera</i> *	creeping bentgrass	FACW
<i>Aira caryophyllea</i> *	silver hairgrass	FACU
<i>Avena barbata</i> *	slender oat	NL
<i>Avena fatua</i> *	wild oat	NL
<i>Brachypodium distachyon</i> *	false brome	NL
<i>Briza maxima</i> *	rattlesnake grass	NL
<i>Briza minor</i> *	quaking grass	FAC
<i>Bromus carinatus</i> var. <i>carinatus</i>	California brome	NL
<i>Bromus catharticus</i> *	Chilean brome	NL
<i>Bromus diandrus</i> *	ripgut brome	NL
<i>Bromus hordeaceus</i> *	soft chess	FACU
<i>Bromus laevipes</i>	woodland brome	NL
<i>Bromus sterilis</i> *	poverty brome	NL
<i>Cortaderia jubata</i> *	Pampas grass	FACU
<i>Cynosurus echinatus</i> *	dogtail grass	NL
<i>Elymus glaucus</i> ssp. <i>glaucus</i>	blue wild-rye	FACU
<i>Festuca arundinacea</i> *	tall fescue	FACU
<i>Festuca bromoides</i> *	brome fescue	FAC
<i>Festuca californica</i>	California fescue	FACU
<i>Festuca idahoensis</i>	Idaho fescue	NL
<i>Festuca microstachys</i>	Pacific fescue	NL
<i>Festuca myuros</i> *	rattail fescue	FACU
<i>Festuca perennis</i> *	Italian rye grass	FAC
<i>Gastridium phleoides</i> *	nit grass	FACU
<i>Holcus lanatus</i> *	common velvet grass	FAC
<i>Hordeum murinum</i> ssp. <i>leporinum</i> *	mouse barley	FACU
<i>Melica californica</i>	California onion grass	NL
<i>Melica geyeri</i>	Geyer's onion grass	NL
<i>Melica imperfecta</i>	small-flowered onion grass	NL
<i>Melica torreyana</i>	Torrey's onion grass	NL
<i>Poa annua</i> *	annual bluegrass	FACU
<i>Stipa pulchra</i>	purple needlegrass	NL
<i>Trisetum canescens</i>	tall Trisetum	NL
Polygalaceae		
<i>Polygala californica</i>	California milkwort	NL
Polypodiaceae		
<i>Polypodium calirhiza</i>	nested polypody	NL
Pteridaceae		
<i>Adiantum jordanii</i>	maidenhair fern	FAC
<i>Pentagramma triangularis</i>	goldback fern	NL
Ranunculaceae		
<i>Ranunculus californicus</i> var. <i>californicus</i>	California buttercup	FACU
<i>Ranunculus parviflorus</i> *	small-flower buttercup	FAC
Rhamnaceae		
<i>Frangula californica</i>	California coffeeberry	NL
Rosaceae		

Scientific Name	Common Name	Wetland Indicator Status
<i>Cotoneaster</i> sp.*	cotoneaster	NL
<i>Fragaria vesca</i>	woodland strawberry	UPL
<i>Heteromeles arbutifolia</i>	toyon	NL
<i>Pyracantha</i> sp.*	firethorn	NL
<i>Rosa gymnocarpa</i>	wood rose	FACU
<i>Rubus armeniacus</i> *	Himalaya blackberry	FACU
<i>Rubus leucodermis</i>	wild raspberry	FACU
<i>Rubus parviflorus</i>	thimble berry	FAC
<i>Rubus ursinus</i>	California blackberry	FACU
Rubiaceae		
<i>Galium aparine</i>	common bedstraw	FACU
<i>Galium californicum</i> ssp. <i>californicum</i>	California bedstraw	NL
<i>Galium porrigens</i> var. <i>porrigens</i>	climbing bedstraw	NL
<i>Galium triflorum</i>	fragrant bedstraw	FACU
<i>Sherardia arvensis</i> *	blue madder	NL
Salicaceae		
<i>Populus fremontii</i> ssp. <i>fremontii</i>	Fremont cottonwood	FACW
Sapindaceae		
<i>Acer macrophyllum</i>	bigleaf maple	FAC
<i>Aesculus californica</i>	California buckeye	NL
Solanaceae		
<i>Solanum americanum</i>	American nightshade	FACU
Themidaceae		
<i>Dichelostemma congestum</i>	ookow	NL
Source: Town of Ross (2006c), WRA 2012. OBL = Obligate FACW = Facultative Wetland FAC = Facultative FACU = Facultative Upland UPL = Upland +/- = Higher/lower end of category NI = No investigation *Introduced, non-native species		

Table IV.D-2
Wildlife Species Observed on the Project Site

Common Name	Scientific Name
BIRDS	
Turkey vulture	<i>Cathartes aura</i>
Red-shouldered hawk	<i>Buteo lineatus</i>
Red-tailed hawk	<i>Buteo jamaicensis</i>
Northern spotted owl	<i>Strix occidentalis caurina</i>
Steller's jay	<i>Cyanocitta stelleri</i>
Western scrub-jay	<i>Aphelocoma californica</i>
Wrentit	<i>Chamaea fasciata</i>
Spotted towhee	<i>Pipilo maculatus</i>
MAMMALS	
Black-tailed deer	<i>Odocoileus hemionus</i>
Dusky-footed woodrat	<i>Neotoma fuscipes</i>
Source: WRA site visit, September 18, 2012.	

Vegetation

Vegetation on the site is composed primarily of oak-bay woodland, with redwood forest in the draws on the lower elevations and small areas of open grassland and scrub at the upper elevations of the site. Sparse riparian vegetation consisting primarily of elk clover (*Aralia californica*) and bigleaf maple (*Acer macrophyllum*), occurs along Swan and Frog Swales on the site. French broom (*Genista monspessulana*) and Scotch broom (*Cytisus scoparius*), both introduced and highly invasive plant species have spread throughout most of the site, forming dense thickets where they have not been cut back. Several large rock outcrops occur along the spur ridge at the western edge of the site.

The composition of the woodland varies with slope and exposure, and has been severely affected by Sudden Oak Death (SOD). Woodland tree species on the site consist of coast live oak (*Quercus agrifolia*), California black oak (*Q. kelloggii*), Oregon white oak (*Q. garryana*), California bay (*Umbellularia californica*), Pacific madrone (*Arbutus menziesii*), Douglas fir (*Pseudotsuga menziesii*), and bigleaf maple. The understory is now dominated by thickets of broom, together with native species such as honeysuckle (*Lonicera hispidula*), California huckleberry (*Vaccinium ovatum*), poison oak (*Toxicodendron diversilobum*), western sword fern (*Polystichum munitum*), and California hazelnut (*Corylus cornuta* var. *californica*). Coast redwood (*Sequoia sempervirens*) forms the dominant cover on the lower slopes of the site along Swan and Frog Swales, with limited understory due to the intense shade. The redwood trees on the site have re-sprouted after timber harvest in the past.

Scrub and grassland vegetation occurs along the spur ridge at the western edge of the site, continuing as an open oak savanna on the MMWD lands further west. Scrub vegetation occurs on the steep east facing slopes, composed of bush monkeyflower (*Mimulus aurantiacus*), coyote brush (*Baccharis pilularis*), toyon (*Heteromeles arbutifolia*), and poison oak. Native and introduced grasses and forbs occur in the grassland and savanna, and extend into the understory of the woodland on the site, dominated by wild oat (*Avena* sp.), ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), quaking grass (*Briza minor*), California fescue (*Festuca californica*), Idaho fescue (*Festuca idahoensis*), purple needlegrass (*Stipa pulchra*), dogtail (*Cynosurus echinatus*), brodiaea (*Brodiaea* sp.), iris (*Iris* sp.), filaree (*Erodium* sp.), vetch (*Vicia* sp.) soap plant (*Chlorogalum pomeridianum*), and California poppy (*Eschscholzia californica*).

Forest

Although the project site is not technically zoned as forest land or timberland by the Town of Ross, Public Resources Code section 12220(g) defines forest land as:

“land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.”

By this definition, the project area would be considered forest land. Trees in the woodland and forest vary in age, size, condition and distribution. Considerable tree loss was observed during the August 2010 field reconnaissance, presumably from the effects of SOD (Arborlogic 2012). A number of species are being affected by SOD, including tanoaks (*Notholithocarpus densiflorus*), coast live oaks, black oaks, and madrone which are dying in large numbers, and California buckeye, California bay, huckleberry, and rhododendron are suspected to be hosts or potential carriers of the fungus suspected to cause mortality, *Phytophthora ramorum*. This fungus and several beetle species are consistently associated with the dying trees. The disease is contributing to significant changes in vegetative cover over large parts of coastal California, including Marin County, altering habitat for woodland-dependent species and exacerbating hazardous fire conditions where wildlands interface with developed areas.

The updated tree survey in 2010 mapped all trees with trunk diameters of eight inches or more located within the project area. A total of 2,020 (2,187 alive minus 167 dead) trees with trunk diameters of eight inches or more measured at 4.5 feet above grade were identified and mapped within the limits of the survey area in the 2010 inventory. Of this total, 826 were California bay, 555 coast live oak, 236 madrone, 193 redwood, 63 valley oak, 49 black oak, 17 Douglas-fir, 6 bigleaf maple, and 167 were snags of dead oaks. The number of snags and downed trees has increased 21 percent from since the tree survey conducted in 2001 and 2003.

Wildlife Habitat

The size of the site, proximity to other undeveloped property and open space, presence of surface water, and varied vegetative cover contribute to the wildlife habitat value of the property. The dramatic loss of trees due to SOD and the spread of broom are changing the habitat value, and in many ways limiting opportunities for many species of wildlife. Broom creates dense thickets that outcompete native groundcover species and limit foraging opportunities for birds and mammals. This is particularly true as the broom spreads from the relatively sparse understory of the woodland into the surrounding grasslands.

The increased number of downed trees and snags are important elements of a functional forest system. Snags have been defined as any dead or partially dead tree at least 4" diameter at breast height (dbh) and at least six feet tall. Partially dead trees, for example redwood trees with dead tops caused by lightning, wind, age, rodents, or other factors, can provide habitat for species dependent upon snags. Live or "green" wildlife tree is a term used to describe a living tree that could be retained as a snag recruitment tree and may also have other wildlife habitat attributes such as green culls. Retention of structural habitat elements can sustain biological diversity, including key species, and maintain soil productivity (California Resource Agency 1998).

Wildlife that occur on, or frequent the site are commonly associated with woodland, forest, scrub and grassland habitats. Trees in the woodland and forest provide nesting and perching substrate and foraging opportunities for numerous bird species, such as chestnut-backed chickadee (*Poecile rufescens*), oak titmouse (*Baeolophus inornatus*), and yellow warbler (*Dendroica petechial*). The trees produce seed crops in the fall, particularly oaks, which are

consumed by insects, birds, and mammals, and provide an important source of food through the fall and winter months for species such as black-tailed deer (*Odocoileus hemionus*), western grey squirrel (*Sciurus griseus*), and Western scrub jay (*Aphelocoma californica*). Other wildlife commonly associated with the dense woodland and forest habitat include: dusky-footed woodrat (*Neotoma fuscipes*), ringneck snake (*Diadophis punctatus*), and California slender salamander (*Batrachoseps attenuatus*). The large rock outcrops provide sunning areas for reptiles such as western fence lizard (*Sceloporus occidentalis*) and California alligator lizard (*Elgaria multicarinata*), as well as protective cover for woodrats. The small extent of grassland which extend onto the adjacent MMWD lands provide habitat for numerous animal species including California vole (*Microtus californicus*), pocket gopher (*Geomyidae* spp.), and Pacific gopher snake (*Pituophis catenifer catenifer*).

Vegetation and Wildlife

The plants species listed in Table IV.D-1 were observed during the field survey conducted on September 18, 2012, supplemented by species noted in the 2006 Draft SEIR (Town of Ross 2006c). Plant species nomenclature follows *The Jepson Manual, 2nd Edition* (Baldwin et al. 2012). The U.S. Fish and Wildlife Service (USFWS) wetland indicator status of each plant has been shown following its common name.

Special-Status Plants and Animals

Federal and state endangered species legislation gives special-status to several plant and animal species known to occur in the vicinity of the project site. In addition, state resource agencies and professional organizations, whose lists are recognized by agencies when reviewing environmental documents, have identified as sensitive some species occurring in the vicinity of the project site. Such species are referred to collectively as “species of special-status” and include plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered under the Federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA); animals listed as “fully protected” under the California Fish and Game Code; animals designated as “Species of Special Concern” by the California Department of Fish and Wildlife (CDFW; formerly California Department of Fish and Game (CDFG)); and plants listed as rare or endangered by California Native Plant Society (CNPS) [see regulatory setting section, below]. Collectively, these plants and animals are referred to as “special-status species.”

For the purposes of this Draft SEIR, all the special-status species addressed in the 2006 Draft SEIR (Town of Ross 2006c), as well as additional special-status species identified in recent queries of the California Natural Diversity Data Base (CNDDDB) (CDFW 2012) the CNPS Inventory (2012), and lists produced by the USFWS (2012), are addressed and evaluated. Those additional special-status species and those known to occur in habitats similar to those found on the project site are listed in Table IV.D-3. Sources of information for this table included:

- *California's Wildlife, Volumes I, II, and III* (Zeiner et. al 1988-1990)
- CNDDDB (CDFG³ 2012)
- *Endangered and Threatened Wildlife and Plants* (USFWS 2009)
- *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFG 2009)
- *The CNPS's Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2012)
- CDFG publication "*Amphibians and Reptile Species of Special Concern in California*" (Jennings and Hayes 1994)
- CDFG publication "*California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California*" (Shuford and Gardali 2008)

In addition, the USFWS official species list for the quadrangles surrounding and including (San Rafael [467A]) the project site was consulted (USFWS 2012). The specific habitat requirements and the locations of known occurrences of each special-status species were the principal criteria used for inclusion in the list of species potentially occurring on the site.

A search of published accounts for all of the relevant special-status plant and animal species was conducted for the San Rafael United States Geologic Survey (USGS) 7.5-minute quadrangle in which the project site occurs, and for the three adjacent quadrangles (Bolinas, Point Bonita, and San Quentin) using the CNDDDB Rarefind 3 program. All species listed as occurring in these quadrangles with CNPS Ranks 1A, 1B, 2, 3, or 4 were also reviewed. This information was used to evaluate the potential for special-status plant and animal species that occur on-site. Ten special-status plant species and 20 special-status wildlife species occur in the vicinity of the project site. These species, and their potential to occur in the project site, are listed in Table IV.D-3.

Special-Status Plant Species

Reconnaissance-level surveys were conducted on September 18, 2012 by WRA for habitats capable of supporting special-status plant species. The CNDDDB (CDFG 2012) and CNPS (2012) records were queried to determine which special-status plant species could occur within habitats found at the project site. Lastly, any additional species listed on the USFWS list (2012) were added. All of the species identified in these queries were compiled and considered for their potential to occur within the site.

³ *Beginning January 1, 2013, the California Department of Fish and Game (CDFG) officially changed their department to California Department of Fish and Wildlife (CDFW). All publications prior to January 1, 2013 are herein referenced to CDFG, while all post January 1, 2013 references herein are of CDFW.*

Sixty-nine special-status plant species have been documented within the greater vicinity of the project site. Of these, ten have a moderate potential to occur within the vicinity of the project site; however, four of these do not have the potential to occur within the project site. Table IV.D-3 discusses the potential for occurrence of these special-status plant species in the general vicinity of the project site.

The majority of the species were rejected for occurrence based on one or more of the following reasons:

1. The species has a very limited range of geographic location and has never been observed in the vicinity of the project site;
2. Common plants which are nearly always associated with the special-status species, and which indicate the presence of suitable, intact habitat, are absent from the project site;
3. Specific soil conditions, such as serpentine soils or adobe clays, are absent from the project site;
4. Specific hydrologic conditions, such as perennially saturated soils, are absent from the project site;
5. Specific soil chemistry conditions, such alkali or acidic hummus, are absent from the project site;
6. Specific landforms, such as coastal dunes or vernal pools, are absent from the project site.

Certain species are not considered further: species that occur in habitats not present on the site (e.g., marshes, swamps and vernal pools, chaparral, coastal scrub, etc.) or at elevations well above that of the site, species considered to be extirpated from the County by CNPS, and the species known distribution of which does not include the area of the site.

Serpentine and volcanic (i.e. basalt, breccia) soils, outcrops, and inclusions are completely absent from the project site; as such, those species that are uniquely adapted to serpentine conditions would not occur on the site. The project site is composed of upland habitats completely absent of perennial or seasonal wetland habitats within which several of the special-status plant species analyzed herein are located. Additionally, the understory of the woodland and forest habitats within the project site are dominated by non-native shrubs (French broom, Scotch broom), which may preclude the presence of several special-status herbaceous species and reduce the potential from "high" to "moderate" for several special-status shrub species.

Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

The following special-status plant species have a moderate potential to occur within the project site.

Napa false indigo (*Amorpha californica* var. *napensis*)*CNPS Rank 1B*

Napa false indigo is a small deciduous tree in the pea family (Fabaceae) that blooms from April to July, with identifiable vegetative structures remaining into early fall. It typically occurs on north-facing aspects in openings in broadleaf upland forest, chaparral, and cismontane woodland habitat at elevations ranging from 395 to 6,560 feet (CDFG 2012, CNPS 2012). Soil survey data at known locations in Marin and Sonoma Counties suggest that this species is typically located on moderately acid (pH 5.6) to neutral (pH 6.7) loams, often mixed with larger textures derived from a variety of parent materials (CDFG 2012, CSRL 2012). Observed associated species include California bay laurel (*Umbellularia californica*), black oak (*Quercus kelloggii*), coast live oak (*Q. agrifolia*), Douglas fir (*Pseudotsuga menziesii*), tanoak (*Lithocarpus densiflorus*), Pacific madrone (*Arbutus menziesii*), California hazelnut (*Corylus cornuta* var. *californica*), ocean spray (*Holodiscus discolor*), poison oak (*Toxicodendron diversilobum*), wood fern (*Dryopteris arguta*), bracken fern (*Pteridium aquilinum*), wood rose (*Rosa gymnocarpa*), and rein orchid (*Piperia transversa*) (CDFG 2012).

Potential to Occur On-site

Napa false indigo is known from 21 USGS 7.5-minute quadrangles in Marin, Monterey, Napa, and Sonoma Counties (CNPS 2012). There are 45 CNDDDB (CDFG 2012) records from California, and ten CCH (2012) records from Marin County. The project site is located within the southernmost extent of the species documented distribution, except for one documented location in Monterey County (CDFG 2012). The oak-bay woodland and underlying gravelly loam substrate within the project site is characteristic of this species habitat, and therefore could support it. However, the understory of the woodland is extremely dense with invasive French broom and Scotch broom which may out-compete Napa false indigo. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

Western leatherwood (*Dirca occidentalis*)*CNPS Rank 1B*

Western leatherwood is a deciduous shrub in the mezereum family (Thymelaeaceae) that blooms from January to April, but is typically identifiable via vegetative structures into late summer and/or early fall. It typically occurs on brushy, mesic slopes in partial shade in broadleaf upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, and riparian woodland habitat at elevations range from 165 to 1,285 feet (CDFG 2012, CNPS 2012, Baldwin et al. 2012). Observed associated species include coast live oak (*Quercus agrifolia*), California bay (*Umbellularia californica*), Pacific madrone (*Arbutus menziesii*), California coffeeberry (*Frangula californica*), poison oak (*Toxicodendron diversilobum*), toyon (*Heteromeles arbutifolia*), California buckeye (*Aesculus californica*), California hazelnut (*Corylus cornuta* var. *californica*), coyote brush (*Baccharis pilularis*), yerba buena (*Clinopodium douglasii*), sword fern (*Polystichum munitum*), Pacific sanicle (*Sanicula crassicaulis*), and Douglas iris (*Iris douglasiana*) (CDFG 2012).

Potential to Occur On-site

Western leatherwood is known from 19 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Marin, Santa Clara, San Mateo, and Sonoma counties (CNPS 2012). There are 52 CNDDDB (CDFG 2012) records from California, and twelve CCH (2012) records from Marin County. The nearest documented occurrence is from 1990 near Lagunitas Creek, approximately three miles west of the project site (CDFG 2012). The most recent documented occurrence is from February 2001, at Devils Gulch, near Nicasio, Marin County, approximately eight miles northwest of the project site (CDFG 2012). The oak-bay woodland and underlying gravelly loam substrate within the project site is characteristic of this species habitat, and therefore could support it. However, the understory of the woodland is extremely dense with invasive French broom and Scotch broom which may out-compete western leatherwood. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

California bottle-brush grass (*Elymus californicus*)*CNPS Rank 4*

California bottle-brush grass is a perennial graminoid in the grass family (Poaceae) that blooms from May to November. It typically occurs along stream banks or other mesic sites within broadleaf upland forest, cismontane woodland, North Coast coniferous forest, and riparian woodland habitat at elevations ranging from 45 to 1,530 feet (CNPS 2012, CDFG 2012). Observed associated species are not reported in the literature.

Potential to Occur On-site

California bottle-brush grass is known from seven USGS 7.5-minute quadrangles in Marin, Santa Cruz, San Mateo, and Sonoma counties (CNPS 2012). There are no CNDDDB (2012)

records within the greater vicinity of the project site, and 20 CCH (2012) records from Marin County. The nearest and most recent documented occurrence in Marin County is from May 1991 near Nicasio Reservoir, approximately eight miles northwest of the project site (CCH 2012). The oak-bay woodland and redwood forest within the project site is characteristic of this species habitat, and therefore could support it. However, the understory of the woodland and forest is extremely dense with invasive French broom and Scotch broom which may out-compete California bottle-brush grass. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

Minute pocket moss (*Fissidens pauperculus*)

CNPS Rank 1B

Minute pocket moss is a moss in the pocket moss family (Fissidentaceae). It typically occurs on damp soils, dry streambeds, and moist streambanks in North Coast coniferous forest at elevations ranging from 30 to 3,330 feet (CDFG 2012, CNPS 2012). Observed associated species include coast redwood (*Sequoia sempervirens*), bigleaf maple (*Acer macrophyllum*), tanoak (*Notholithocarpus densiflorus*), and dogwood (*Cornus* sp.) (CDFG 2012).

Potential to Occur On-site

Minute pocket moss is known from twelve USGS 7.5-minute quadrangles in Butte, Del Norte, Humboldt, Marin, Mendocino, and Santa Cruz counties. There are two CNDDDB (CDFG 2012) records within the greater vicinity of the project site, and no CCH (2012) records from Marin County. The nearest and most recent documented occurrence from Marin County is from August 2010 on the west side of Mount Tamalpais, approximately five miles southwest of the project site (CNDDDB 2012). The streams within redwood forest within the project site are characteristic of this species habitat, and therefore could support it. However, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

White seaside tarplant (*Hemizonia congesta* ssp. *congesta*)

CNPS Rank 1B

Hayfield tarplant is an annual herb in the sunflower family (Asteraceae) that blooms from April to November. It typically occurs in grassy areas and fallow fields in coastal scrub, and valley and foothill grassland at elevations ranging from 65 to 1,840 feet (CDFG 2012, CNPS 2012). Observed associated species include coast live oak (*Quercus agrifolia*), white hyacinth (*Triteleia hyacinthina*), Italian rye grass (*Festuca perennis*), little rattlesnake grass (*Briza minor*), pennyroyal (*Mentha pulegium*), and spiny-fruited buttercup (*Ranunculus muricatus*) (CDFG 2012).

Potential to Occur On-site

White seaside tarplant is known from 23 USGS 7.5-minute quadrangles in Marin, Mendocino, San Francisco, San Mateo, and Sonoma counties (CNPS 2012). There are three CNDDDB (CDFG 2012) records within the greater vicinity of the project site, and 85 CCH (2012) records from Marin County. The nearest documented occurrence is from October 1947 near Ross Lake, approximately one mile southwest of the project site (CDFG 2012). The most recent documented occurrence from Marin County is from 2008 near Two Rock Ranch Preserve, approximately 23 miles north of the project site (CNDDDB 2012). The grassland habitat in western portion of the project site is characteristic of this species habitat; however, the oak-bay woodland and redwood forest within the project site does not provide habitat for this species. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

Santa Cruz tarplant (*Holocarpha macradenia*)

Federal Threatened, State Endangered, CNPS Rank 1B

Santa Cruz tarplant is an annual forb in the sunflower family (Asteraceae) that blooms from June to October. It typically occurs on light, sandy clay to sandy soils in coastal prairie, valley and foothill grassland, and coastal scrub habitat at elevations ranging from 30 to 715 feet (CDFG 2012, CNPS 2012). Observed associated species include coyote brush (*Baccharis pilularis*), sticky monkey (*Mimulus aurantiacus*), soft chess (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), salt grass (*Distichlis spicata*), Italian rye grass (*Festuca perennis*), California oat grass (*Danthonia californica*), rattlesnake grass (*Briza maxima*), nit grass (*Gastridium phleoides*), purple needlegrass (*Stipa pulchra*), annual hair grass (*Deschampsia danthonioides*), coast tarweed (*Madia sativa*), and white hayfield tarweed (*Hemizonia congesta* ssp. *luzulifolia*) (CDFG 2012).

Potential to Occur On-site

Santa Cruz tarplant is known from 13 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Marin, Monterey, Santa Cruz, and Solano counties (CNPS 2012). There are two CNDDDB (CDFG 2012) records within the greater vicinity of the project site, and one CCH (2012) record from Marin County. The nearest and most recent documented occurrence from Marin County is from July 1883 in the Town of Ross, less than one mile east of the project site (CDFG 2012). The grassland habitat in western portion of the project site is characteristic of this species habitat; however, the oak-bay woodland and redwood forest within the project site does not provide habitat for this species. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

Thin-lobed horkelia (*Horkelia tenuiloba*)*CNPS Rank 1B*

Santa Rosa horkelia is a perennial herb in the rose family (Rosaceae) that blooms from May to July. It typically occurs in mesic openings in broadleaf upland forest, coastal scrub, chaparral, and valley and foothill grassland habitat at elevations ranging from 160 to 1,640 feet (CDFG 2012, CNPS 2012). Soil survey data at known locations suggest that this species is typically located on very strongly acid (pH 5.0) to slightly acid (pH 6.5) fine sandy loams to very gravelly sands derived from sandstone or serpentine rock (CDFG 2012, CSRL 2012). Observed associated species include Douglas fir (*Pseudotsuga menziesii*), chamise (*Adenostoma fasciculatum*), poison oak (*Toxicodendron diversilobum*), Stanford's manzanita (*Arctostaphylos stanfordiana*), Baker's manzanita (*A. bakeri* ssp. *bakeri*), yerba santa (*Eriodictyon californicum*), Rincon Ridge manzanita (*Ceanothus confusus*), California blackberry (*Rubus ursinus*), modesty (*Whipplea modesta*), yerba buena (*Satureja douglasii*), beard tongue (*Penstemon* spp.), purple needlegrass (*Nassella pulchra*), and California oat grass (CDFG 2012).

Potential to Occur On-site

Thin-lobed horkelia is known from 15 USGS 7.5-minute quadrangles in Marin, Mendocino, and Sonoma counties (CNPS 2012). There are five CNDDDB (CDFG 2012) records within the greater vicinity of the project site, and 23 CCH (2012) records from Marin County. The nearest documented occurrence is from July 1935 on the north side of Mount Tamalpais, approximately two miles south of the project site (CDFG 2012). The most recent documented occurrence in Marin County is from June 2004 on the south side Mount Tamalpais, approximately three miles south of the project site (CDFG 2012). The grassland habitat in the western portion of the project site is characteristic of this species habitat; however, the oak-bay woodland and redwood forest within the project site does not provide habitat for this species. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

Marsh microseris (*Microseris paludosa*)*CNPS Rank 1B*

Marsh microseris is a perennial herb in the sunflower family (Asteraceae) that blooms from April to June, sometimes into July. It typically occurs in closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland habitat at elevations ranging from 15 to 985 feet (CDFG 2012, CNPS 2012). Observed associated species include coast live oak, coyote brush, English plantain (*Plantago lanceolata*), blue-eyed grass, bracken fern (*Pteridium aquilinum*), rough cat's ear, common velvet grass, little rattlesnake grass (*Briza minor*), and Douglas iris (*Iris douglasiana*) (CDFG 2012).

Potential to Occur On-site

Marsh microseris is known from 23 USGS 7.5-minute quadrangles in Marin, Mendocino, Monterey, San Benito, Santa Cruz, San Francisco, San Luis Obispo, San Mateo, and Sonoma counties (CNPS 2012). There are two CNDDDB (CDFG 2012) records within the greater vicinity of the project site, and five CCH (2012) records from Marin County. The nearest documented occurrence is from May 1944 on the south side of Mount Tamalpais, approximately three miles south of the project site (CDFG 2012). The most recent documented occurrence is from April 2005 near Abbotts Lagoon, approximately 23 miles northwest of the project site (CDFG 2012). The grassland habitat in western portion of the project site is characteristic of this species habitat; however, the oak-bay woodland and redwood forest within the project site does not provide habitat for this species due to the dense overstory canopy cover. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

North Coast semaphore grass (*Pleuropogon hooverianus*)*State Threatened, CNPS Rank 1B*

North Coast semaphore grass is a perennial herb in the grass family (Poaceae) that blooms from April to June. It typically occurs in shady, wet grassy areas in broadleaf upland forest, meadow, seep, and North Coast coniferous forest habitat at elevations ranging from 30 to 2,205 feet (CDFG 2012, CNPS 2012). Soil survey data at known locations suggest that this species is typically located on strongly to slightly acid (pH 5.5 to 6.1) gravelly to sandy loams derived from a variety of orogeny (CDFG 2012, CSRL 2012). Observed associated species include coast live oak (*Quercus agrifolia*), California bay (*Umbellularia californica*), rushes (*Juncus* spp.), California blackberry (*Rubus ursinus*), dense sedge (*Carex densa*), field sedge (*Carex praegracilis*), and harding grass (*Phalaris aquatica*) (CDFG 2012).

Potential to Occur On-site

North Coast semaphore grass is known from eleven USGS 7.5-minute quadrangles in Marin, Mendocino, and Sonoma counties (CNPS 2012). There are two CNDDDB (CDFG 2012) records within the greater vicinity of the project site, and 14 CCH (2012) records from Marin County. The nearest documented occurrence is from September 1990 in Lagunitas Meadows, approximately one mile southwest of the project site (CDFG 2012). The most recent documented occurrence from Marin County is from May 2005 in Woodacre, approximately five miles northwest of the project site (CDFG 2012). The streamsidings within the oak-bay woodland and redwood forest within the project site is characteristic of this species habitat, and therefore could support it. However, the understory of the woodland and forest is extremely dense with invasive French broom and Scotch broom which may out-compete North Coast semaphore grass. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

Nodding semaphore grass (*Pleuropogon refractus*)

CNPS Rank 4

Nodding semaphore grass is a perennial graminoid in the grass family (Poaceae) that blooms from March to August, and may be identifiable into early fall. It typically occurs in mesic sites, along streams, grassy flats, shady banks, and wet meadows often underlain by granitic substrates in meadow and seep, lower montane coniferous forest, North Coast coniferous forest, and riparian forest habitat at elevations ranging from 0 to 5,200 feet (CDFG 2012, CNPS 2012, Baldwin et al. 2012). Observed associated species are not reported from the literature.

Potential to Occur On-site

Nodding semaphore grass is recorded from only one USGS 7.5-minute quadrangle, but is documented from Del Norte, Humboldt, Marin, and Mendocino counties (CNPS 2012). There are no CNDDDB (CDFG 2012) records from the greater vicinity of the project site, and eight CCH (2012) records from Marin County. The nearest and most recent documentation from Marin County is from August 1977 near Bolinas, approximately seven miles southwest of the project site (CCH 2012). The streamsides within the oak-bay woodland and redwood forest within the project site is characteristic of this species habitat, and therefore could support it. However, the understory of the woodland and forest is extremely dense with invasive French broom and Scotch broom which may out-compete nodding semaphore grass. Additionally, surveys for special-status plant species were conducted by a qualified botanist on April 7, May 7, and July 21, 2003, resulting in negative findings of any special-status plant species.

Special-Status Wildlife Species

The following special-status wildlife species are not known from the site due to lack of suitable habitat or because the site is located outside their currently known range include Myrtle's silverspot butterfly (*Speyeria zarene myrtleae*), Callippe silverspot butterfly (*Speyeria callippe callippe*), Mission blue butterfly (*Plebejus icariodes missionensis*), San Bruno elfin butterfly (*Callophrys mossii bayensis*), Bay checkerspot butterfly (*Euphydryas editha bayensis*), California freshwater shrimp (*Syncaris pacifica*), Delta smelt (*Hypomesus transpacificus*), spring-run Chinook salmon (*Oncorhynchus tshawytscha*), winter-run Chinook salmon (*O. tshawytscha*), Tomales roach (*Lavinia symmetricus* ssp.), Sacramento splittail (*Pogonichthys macrolepidotus*), California clapper rail (*Rallus longirostris obsoletus*), black rail (*Laterallus jamaicensis*), Western snowy plover (*Charadrius alexandrinus nivosus*), California least tern (*Sterna antillarum browni*), marbled murrelet (*Brachyramphus marmoratus*), Point Reyes mountain beaver (*Aplodontia rufa phaea*), Point Reyes jumping mouse (*Zapus trinotatus orarius*), salt marsh harvest mouse (*Reithrodontomys raviventris*), San Pablo vole (*Microtus californicus sanpabloensis*), salt marsh wandering shrew (*Sorex vagrans halicoetes*), and Suisun shrew (*Sorex ornatus sinuosus*). Additionally, no marine mammals or sea turtles are included in this list because there is no marine component to the project site.

Although the previously listed animal species are included in the special-status species search results for the four quadrangles related to the site, they are not included in Table IV.D-3 due to

lack of suitable habitat on-site or within the immediate vicinity of the proposed project. The twenty special-status animals included in the table are addressed because they have been documented within the greater vicinity of the project site, or have the potential to occur within the greater vicinity of the project site. Sufficient information regarding these species exists to evaluate the potential impacts the proposed project may or may not have on them. Based upon this evaluation, of the 20 special-status animals, only five species have the potential to occur on-site that merit additional discussion: western red bat (*Lasiurus blossevillii*), northern spotted owl (*Strix occidentalis caurina*), California red-legged frog (*Rana draytonii*), Pacific pond turtle (*Actinemys marmorata*), and Central California Coast Distinct Population Segment of steelhead (*Oncorhynchus mykiss*). A habitat assessment and a search of historic records were conducted to establish the likely presence or absence on the site for these species. Below are detailed discussions that include an analysis of their legal status, ecology, and the suitability of the site and the waters adjacent to the site to support them.

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**Table IV.D-3
Special-Status Species That Could Occur in the Project Vicinity**

Species	Status	Habitat	Occurrence in the Project site
PLANTS			
<i>Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act</i>			
Sonoma alopecurus (<i>Alopecurus aequalis</i> var. <i>sonomensis</i>)	FE, Rank 1B	Freshwater marshes and swamps, riparian scrub; closely associated with other wetland species. Elevation range: 15 – 1200 feet. Blooms: May – July.	No Potential. The project site does not contain perennial wetland habitat (marshes) necessary to support this species.
Tiburon mariposa lily (<i>Calochortus</i> <i>tiburonensis</i>)	FT; ST; Rank 1B	Valley and foothill grassland; located on open, grassy or rocky slopes derived from serpentine. Elevation range: 160 – 490 feet. Blooms: March – June.	No Potential. The project site does not contain serpentine grassland or outcrop habitat necessary to support this species.
Tiburon paintbrush (<i>Castilleja affinis</i> ssp. <i>tiburonensis</i>)	FE; ST; Rank 1B	Valley and foothill grassland; located in grassy, open areas and rock outcrops underlain by serpentine substrate. Elevation range: 195 – 1300 feet. Blooms: April – June.	No Potential. The project site does not contain serpentine grassland or outcrop habitat necessary to support this species.
Mason's ceanothus (<i>Ceanothus masonii</i>)	SR; Rank 1B	Chaparral; located on serpentine ridges and slopes in chaparral or transitional zones. Elevation range: 745 – 1625 feet. Blooms: March – April.	No Potential. The project site does not contain serpentine chaparral or outcrop habitat necessary to support this species.
Sonoma spineflower (<i>Chorizanthe valida</i>)	FE, SE, Rank 1B	Coastal prairie; in sandy soils. Elevation range: 35 – 1000 feet. Blooms: June – August.	No Potential. The project site does not contain coastal prairie habitat necessary to support this species.
Marin western flax (<i>Hesperolinon</i> <i>congestum</i>)	FT, ST, Rank 1B	Chaparral, valley and foothill grassland; located on serpentine substrate. Elevation range: 15 – 1205 feet. Blooms: April – July.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
Santa Cruz tarplant (<i>Holocarpha</i> <i>macradenia</i>)	FT, SE, Rank 1B	Coastal prairie, coastal scrub, valley and foothill grassland; located on light, sandy to sandy clay substrate; tolerant of non-native herbaceous vegetation. Elevation range: 30 – 715 feet. Blooms: June – October.	Moderate Potential. The project site contains grassland habitat that may support this species; however, areas within the project site do not have the potential to support this species due to dense forest and woodland canopy.
beach layia (<i>Layia carnosa</i>)	FE; SE; Rank 1B	Coastal dunes; located in sparsely vegetated semi-stabilized dunes behind foredunes. Elevation range: 0 – 195 feet. Blooms: March – July.	No Potential. The project site does not contain coastal dune habitat necessary to support this species.
white-rayed pentachaeta (<i>Pentachaeta</i> <i>bellidiflora</i>)	FE, SE, Rank 1B	Valley and foothill grassland; located on open, dry rocky slopes and grassy areas, often on substrate derived from serpentine. Elevation range: 110 – 2015 feet. Blooms: March – May.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
North Coast semaphore grass (<i>Pleuropogon</i> <i>hooverianus</i>)	ST, Rank 1B	Broadleaf upland forests, meadows and seeps, freshwater marshes and swamps, North Coast coniferous forest, shaded, wet, and grassy areas in forested habitat. Elevation range: 10 – 635 feet. Blooms May – August.	Moderate Potential. The project site contains forest habitat that may support this species; however, the extent of invasive understory (i.e. French broom, Scotch broom) likely reduces the potential for occurrence. North Coast semaphore grass was not observed during reconnaissance surveys. Additionally, this species is typically located in wetland habitat not present in the project site.

Species	Status	Habitat	Occurrence in the Project site
Tiburon jewel-flower (<i>Streptanthus glandulosus</i> ssp. <i>niger</i>)	FE; SE; Rank 1B	Valley and foothill grassland; located on shallow rocky substrates derived from serpentine. Elevation range: 100 – 490 feet. Blooms: May – June.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
Showy Rancheria clover (<i>Trifolium amoenum</i>)	FE, Rank 1B	Valley and foothill grassland, coastal bluff scrub, swales, open sunny sites, sometimes on serpentine. Elevation range: 15 – 1365 feet. Blooms: April – June.	No Potential. The project site does not contain serpentine grassland or coastal scrub necessary to support this species.
<i>Other Special-Status Plants listed by the California Native Plant Society (CNPS)</i>			
Napa false indigo (<i>Amorpha californica</i> var. <i>napensis</i>)	Rank 1B	Openings in broadleaf upland forest, chaparral, cismontane woodland. Elevation range: 395 – 6560 feet. Blooms: April – July.	Moderate Potential. The project site contains forest and woodland habitat that may support this species; however, the extent of invasive understory (i.e. French broom, Scotch broom) likely reduces the potential for occurrence. Napa false indigo was not observed during reconnaissance surveys.
coast rock cress (<i>Arabis blepharophylla</i>)	Rank 4	Broadleaf upland forest, coastal bluff scrub, coastal prairie, coastal scrub; open areas, located on rocky sites, typically on coastal bluffs. Elevation range: 10 – 3575 feet. Blooms: February – May.	Unlikely. Although the project site contains forested habitat, this species is closely associated with open rock outcrops near the coast.
Mt. Tamalpais manzanita (<i>Arctostaphylos montana</i> ssp. <i>montana</i>)	Rank 1B	Chaparral, valley and foothill grassland; on rocky serpentine slopes in scrub and grassland. Elevation range: 520 – 2470 feet. Blooms: February – April.	No Potential. The project site does not contain serpentine chaparral or grassland habitat necessary to support this species.
Marin manzanita (<i>Arctostaphylos virgata</i>)	Rank 1B	Broadleaf upland forest, closed-cone coniferous forest, chaparral, North Coast coniferous forest; on sandstone and granitic substrates. Elevation range: 195 – 2275 feet. Blooms: January – March.	Unlikely. Although the project site contains forested habitat, no manzanita species (<i>Arctostaphylos</i> spp.) have been observed within the site.
Carlotta Hall's lace fern (<i>Aspidotis carlotta-halliae</i>)	Rank 4	Chaparral, cismontane woodland; located on rocky outcrops and rocky substrate derived from serpentine. Elevation range: 325 – 4550 feet. Blooms: January – December.	No Potential. The project site does not contain serpentine outcrops in chaparral or woodland habitat necessary to support this species.
Brewer's milk-vetch (<i>Astragalus breweri</i>)	Rank 4	Chaparral, cismontane woodland, meadows and seeps, valley and foothill grassland; typically located on rocky to gravelly substrate derived from serpentine or volcanics. Elevation range: 290 – 2375 feet. Blooms: April – June.	No Potential. The project site does not contain serpentine or volcanic habitat necessary to support this species.
ocean bluff milk-vetch (<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>)	Rank 1B	Coastal dunes, coastal scrub, coastal salt marshes; mesic sites in dunes, along streams, and marshes. Elevation range: 0 – 100 feet. Blooms: April – October.	No Potential. The project site does not contain coastal scrub, coastal marsh, or coastal dune habitat necessary to support this species.

Species	Status	Habitat	Occurrence in the Project site
serpentine reed grass (<i>Calamagrostis ophitidis</i>)	Rank 4	Chaparral, lower montane coniferous forest, meadows and seeps, valley and foothill grassland; located on open, rocky, often north-facing, slopes underlain by serpentine substrate. Elevation range: 290 – 3465 feet. Blooms: April – July.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
Brewer's red maids (<i>Calandrinia breweri</i>)	Rank 4	Chaparral, coastal scrub; located on sandy to loamy substrate, often in recently burnt areas. Elevation range: 30 – 3965 feet. Blooms: March – June.	No Potential. The project site does not contain chaparral or coastal scrub habitat necessary to support this species.
Oakland star tulip (<i>Calochortus umbellatus</i>)	Rank 4	Broadleaf upland forest, chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland; located on serpentine substrates. Elevation range: 325 – 2275 feet. Blooms: March – May.	Unlikely. Although the project site contains forest and woodland habitat, this species is known from serpentine and volcanic sites.
seaside bittercress (<i>Cardamine angulata</i>)	Rank 2	North Coast coniferous forest, lower montane coniferous forest; located in wet areas and along streambanks. Elevation range: 210 – 2975 feet. Blooms: March – July.	Unlikely. Although the project site contains streams in redwood forest, there is only one documented occurrence of this species from Marin County, dating from 1915. Additionally, the density of invasive species in the understory, likely precludes the presence of this species.
bristly sedge (<i>Carex comosa</i>)	Rank 2	Typically on lake and pond margins in coastal prairie, marshes and swamps, valley and foothill grassland. Elevation range: 0 – 425 feet. Blooms: May – September.	No Potential. The project site does not contain perennial wetland (i.e. marsh) habitat necessary to support this species.
Lyngbye's sedge (<i>Carex lyngbyei</i>)	Rank 2	Freshwater and brackish marshes and swamps. Elevation range: 0 – 35 feet. Blooms: May – August.	No Potential. The project site does not contain perennial wetland (i.e. marsh) habitat necessary to support this species.
glory bush (<i>Ceanothus gloriosus</i> var. <i>exaltatus</i>)	Rank 4	Chaparral. Elevation range: 90 – 1985 feet. Blooms: March – August.	No Potential. The project site does not contain maritime chaparral habitat necessary to support this species.
Point Reyes bird's-beak (<i>Chloropyron maritimum</i> ssp. <i>palustre</i>)	Rank 1B	Coastal salt marshes; located in low-growing saltgrass and pickleweed mats. Elevation range: 0 – 35 feet. Blooms: June – October.	No Potential. The project site does not contain coastal salt marsh habitat necessary to support this species.
San Francisco Bay spineflower (<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>)	Rank 1B	Coastal bluff scrub, coastal dunes, coastal prairie, coastal scrub; located on sandy substrates of terraces and slopes. Elevation range: 10 – 700 feet. Blooms: April – August.	No Potential. The project site does not contain coastal dune, scrub, or prairie habitat necessary to support this species.
Franciscan thistle (<i>Cirsium andrewsii</i>)	Rank 1B	Coastal bluff scrub, broadleaf upland forest, coastal scrub; typically located on serpentine substrate, often along seeps. Elevation range: 0 – 490 feet. Blooms: March – July.	Unlikely. Although the project site contains forest habitat, this species is closely associated with coastal sites in scrub and coastal forest habitat. Additionally, this species has an affinity for serpentine soils not located in the project site.

Species	Status	Habitat	Occurrence in the Project site
Mt. Tamalpais thistle (<i>Cirsium hydrophilum</i> var. <i>vaseyi</i>)	Rank 1B	Broadleaf upland forest, chaparral; located on streams and serpentine seeps in woodland and scrub habitat. Elevation range: 780 – 2015 feet. Blooms: May – August.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
seaside Cistanthe (<i>Cistanthe maritima</i>)	Rank 4	Coastal bluff scrub, coastal scrub, valley and foothill grassland; located on sandy substrate. Elevation range: 15 – 975 feet. Blooms: February – April.	No Potential. The project site does not coastal scrub or sandy grassland habitat necessary to support this species.
round-leaved Chinese houses (<i>Collinsia corymbosa</i>)	Rank 1B	Coastal dunes, coastal prairie. Elevation range: 0 – 65 feet. Blooms: April – June.	No Potential. The project site does not contain coastal prairie or coastal dune habitat necessary to support this species.
western leatherwood (<i>Dirca occidentalis</i>)	Rank 1B	Broadleaf upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, North Coast coniferous forest, riparian forest, riparian woodland; located on brushy, mesic slopes in woodland and forest. Elevation range: 165 – 1285 feet. Blooms: January – April.	Moderate Potential. The project site contains woodland and forest habitat that may support this species; however, the extent of invasive understory (i.e. French broom, Scotch broom) likely reduces the potential for occurrence. Western leatherwood was not observed during reconnaissance surveys.
California bottle-brush grass (<i>Elymus californicus</i>)	Rank 4	Broadleaf upland forest, cismontane woodland, North Coast coniferous forest, riparian woodland. Elevation range: 45 – 1530 feet. Blooms: May – November.	Moderate Potential. The project site contains bay-oak woodland and redwood forest that may support this species; however, the extent of invasive understory (i.e. French broom, Scotch broom) likely reduces the potential for occurrence. California bottle-brush grass was not observed during reconnaissance surveys.
Tiburon buckwheat (<i>Eriogonum luteolum</i> var. <i>caninum</i>)	Rank 1B	Chaparral, valley and foothill grassland, cismontane woodland, coastal prairie; located on sandy or gravelly substrate derived from serpentine. Elevation range: 0 – 2275 feet. Blooms: May – September.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
San Francisco wallflower (<i>Erysimum franciscanum</i>)	Rank 4	Chaparral, coastal dunes, coastal scrub, valley and foothill grassland; typically serpentine or granite derived substrate, sometimes roadsides. Elevation range: 0 – 1790 feet. Blooms: March – June.	No Potential. The project site does not contain granitic or serpentine habitat necessary to support this species.
minute pocket moss (<i>Fissidens pauperculus</i>)	Rank 1B	North Coast coniferous forest; located on damp soil along the coast, and in dry streambanks and streambeds. Elevation range: 30 – 3330 feet.	Moderate Potential. The project site contains streambeds within coniferous forest that may support this species.
Marin checker lily (<i>Fritillaria lanceolata</i> var. <i>tristulis</i>)	Rank 1B	Coastal bluff scrub, coastal scrub, coastal prairie; observed in canyons, riparian areas, and rock outcrops; often located on serpentine substrate. Elevation range: 45 – 490 feet. Blooms: February – May.	No Potential. The project site does not contain coastal dune, scrub, or prairie habitat necessary to support this species.
fragrant fritillary (<i>Fritillaria liliacea</i>)	Rank 1B	Coastal scrub, valley and foothill grassland, coastal prairie, cismontane woodland; located in grassy sites underlain by clay, typically derived from volcanics or serpentine. Elevation range: 10 – 1335 feet. Blooms: February – April.	No Potential. Although the project site contains woodland and grassland habitat, this species is known from clay substrates derived from volcanic and serpentine sources not documented in the project site.
blue coast gilia (<i>Gilia capitata</i> ssp. <i>chamissonis</i>)	Rank 1B	Coastal dunes, coastal scrub. Elevation range: 5 – 600 feet. Blooms: April – July.	No Potential. The project site does not contain coastal scrub or coastal dune habitat necessary to support this species.

Species	Status	Habitat	Occurrence in the Project site
woolly-headed gilia (<i>Gilia capitata</i> ssp. <i>tomentosa</i>)	Rank 1B	Coastal bluff scrub; rocky outcrops on the coast. Elevation range: 15 – 155 feet. Blooms: May – July.	No Potential. The project site does not contain coastal scrub habitat necessary to support this species.
San Francisco gumplant (<i>Grindelia hirsutula</i> var. <i>maritima</i>)	Rank 3	Coastal bluff scrub, coastal scrub, valley and foothill grassland; located on sandy serpentine substrate. Jepson Manual, 2 nd Edition does not recognize this variety nor are there comments on rarity. Elevation range: 45 – 1300 feet. Blooms: June – September.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
Diablo Helianthella (<i>Helianthella castanea</i>)	Rank 1B	Broadleaf upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland; typically located in oak woodland/chaparral ecotone underlain by rocky, azonal substrates, often in partial shade. Elevation range: 195 – 4225 feet. Blooms: March – June.	Unlikely. Although the project site contains forested habitat, this species is closely associated with chaparral-woodland edges not present in the project site.
Hayfield tarplant (<i>Hemizonia congesta</i> ssp. <i>congesta</i>)	Rank 3	Coastal scrub, valley and foothill grassland. Elevation range: 65 – 1840 feet. Blooms: April – October.	Moderate Potential. The project site contains grassland habitat that may support this species; however, areas within the project site do not have the potential to support this species due to dense forest and woodland canopy.
Kellogg's horkelia (<i>Horkelia cuneata</i> var. <i>sericea</i>)	Rank 1B	Closed cone coniferous forest, coastal scrub, chaparral; located in openings on relict dunes and coastal sandhills. Elevation range: 30 – 650 feet. Blooms: April – September.	No Potential. The project site does not contain coastal scrub, maritime chaparral, or closed-cone coniferous forest necessary to support this species.
thin-lobed horkelia (<i>Horkelia tenuiloba</i>)	Rank 1B	Broadleaf upland forest, coastal scrub, valley and foothill grassland, chaparral; in mesic openings, on sandy substrate. Elevation range: 165 – 1640 feet. Blooms: May – July.	Moderate Potential. The project site contains grassland habitat that may support this species; however, areas within the project site do not have the potential to support this species due to dense forest and woodland canopy.
small groundcone (<i>Kopsiopsis hookeri</i>)	Rank 2	North Coast coniferous forest; located in open woods, shrublands, generally hosts on salal (<i>Gaultheria shallon</i>). Elevation range: 290 – 2880 feet. Blooms: April – August.	No Potential. The project site does not contain the host species, salal, necessary to support this species.
bristly leptosiphon (<i>Leptosiphon acicularis</i>)	Rank 4	Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland; located on shallow, rocky substrate in foothill positions. Elevation range: 175 – 4875 feet. Blooms: April – July.	No Potential. The project site does not contain open grassland/woodland with thin, rocky soils necessary to support this species.
large-flowered leptosiphon (<i>Leptosiphon grandiflorus</i>)	Rank 4	Coastal bluff scrub, closed-cone coniferous forest, cismontane woodland, coastal dunes, coastal prairie, coastal scrub, valley and foothill grassland; located on sandy substrate. Elevation range: 15 – 3965 feet. Blooms: April – August.	No Potential. The project site does not contain coastal scrub, dune, or prairie habitat, nor does it contain sandy substrate necessary to support this species.
woolly-headed lessingia (<i>Lessingia hololeuca</i>)	Rank 3	Broadleaf upland forest, coastal scrub, lower montane coniferous forest, valley and foothill grassland; typically on clay, serpentine substrate. Elevation range: 3 – 2885 feet. Blooms: April – June.	No Potential. The project site does not contain serpentine habitat necessary to support this species.

Species	Status	Habitat	Occurrence in the Project site
Tamalpais lessingia (<i>Lessingia micradenia</i> var. <i>micradenia</i>)	Rank 1B	Chaparral, valley and foothill grassland; typically located in serpentine grassland or serpentine scrub, often on roadsides. Elevation range: 325 – 1625 feet. Blooms: June – October.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
Mt. Diablo cottonweed (<i>Micropus amphibolus</i>)	Rank 3	Broadleaf upland forest, chaparral, cismontane woodland, valley and foothill grassland; typically on thin, rocky soils. Elevation range: 145 – 2710 feet. Blooms: March – May.	No Potential. The project site does not contain open grassland/woodland with thin, rocky soils necessary to support this species.
marsh microseris (<i>Microseris paludosa</i>)	Rank 1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, valley and foothill grassland. Elevation range: 5 – 300 feet. Blooms: April – June.	Moderate Potential. The project site contains grassland habitat that may support this species; however, the woodland habitat within the project site contains a dense canopy which would likely preclude this species.
Baker's navarretia (<i>Navarretia leucocephala</i> ssp. <i>bakeri</i>)	Rank 1B	Wet, mesic sites underlain by adobe and/or alkaline substrate in cismontane woodland, meadows, seeps, vernal pools, valley and foothill grassland, lower montane coniferous forest. Elevation range: 15 – 5710 feet. Blooms: April – July.	No Potential. The project site does not seasonal wetlands/vernal pools or adobe clay soils necessary to support this species.
Marin County navarretia (<i>Navarretia rosulata</i>)	Rank 1B	Closed-cone coniferous forest, chaparral; located on dry, rocky sites often formed from serpentine. Elevation range: 650 – 2065 feet. Blooms: May – July.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
Gairdner's yampah (<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>)	Rank 4	Broadleaf upland forest, chaparral, coastal prairie, valley and foothill grassland, vernal pools; located in vernal mesic sites. Elevation range: 0 – 1985 feet. Blooms: June – October.	No Potential. The project site does not contain open mesic areas or seasonal wetlands necessary to support this species.
hairless popcornflower (<i>Plagiobothrys glaber</i>)	Rank 1A	Meadows and seeps, marshes and swamps; located in coastal salt marshes and alkaline meadows. Elevation range: 45 – 585 feet. Blooms: March – May.	No Potential. The project site does not contain coastal salt marsh habitat necessary to support this species.
nodding semaphore grass (<i>Pleuropogon refractus</i>)	Rank 4	Lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, riparian forest. Elevation range: 0 – 5200 feet. Blooms: March – August.	Moderate Potential. The project site contains forest and riparian habitat that may support this species; however, the extent of invasive understory (i.e. French broom, Scotch broom) likely reduces the potential for occurrence. Nodding semaphore grass was not observed during reconnaissance surveys.
Oregon polemonium (<i>Polemonium carneum</i>)	Rank 2	Coastal prairie, coastal scrub, lower montane coniferous forest. Elevation range: 0 – 5950 feet. Blooms: April – September.	No Potential. The project site does not contain coastal prairie, coastal scrub, or coastal coniferous forest habitat necessary to support this species.
Marin knotweed (<i>Polygonum marinense</i>)	Rank 3	Salt and brackish coastal marshes. Elevation range: 0 – 35 feet. Blooms: sometimes April, May – August, sometimes October.	No Potential. The project site does not contain coastal salt marsh habitat necessary to support this species.
Tamalpais oak (<i>Quercus parvula</i> var. <i>tamalpaisensis</i>)	Rank 1B	Lower montane coniferous forest; highly restricted to the slopes of Mt. Tamalpais. Elevation range: 325 – 2275 feet. Blooms: March – April.	Unlikely. This species is highly restricted to the slopes of Mt. Tamalpais. Additionally, shrub form oak species (<i>Quercus</i> spp.) were not observed in the project site.

Species	Status	Habitat	Occurrence in the Project site
Lobb's buttercup (<i>Ranunculus lobbii</i>)	Rank 4	Cismontane woodland, North Coast coniferous forest, valley and foothill grassland, vernal pools; located in mesic, vernal wet areas. Elevation range: 45 – 1530 feet. Blooms: February – May.	No Potential. The project site does not contain vernal pool or open still water habitat necessary to support this species.
Point Reyes checkerbloom (<i>Sidalcea calycosa</i> ssp. <i>rhizomata</i>)	Rank 1B	Marshes and swamps; located in freshwater marsh habitat near the coast. Elevation range: 10 – 245 feet. Blooms: April – September.	No Potential. The project site does not contain coastal salt marsh habitat necessary to support this species.
Marin checkerbloom (<i>Sidalcea hickmanii</i> ssp. <i>viridis</i>)	Rank 1B	Chaparral; located on serpentine or volcanic substrate, often located in burns. Elevation range: 160 – 1400 feet. Blooms: May – June.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
Santa Cruz Stebbinsoseris (<i>Stebbinsoseris decipiens</i>)	Rank 1B	Broadleaf upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub; located on open, loose or disturbed substrate derived from sandstone, shale, or serpentine. Elevation range: 30 – 1625 feet. Blooms: April – May.	Unlikely. This species is closely associated with sites open sites directly on the coast or coastal influence.
Tamalpais jewel-flower (<i>Streptanthus batrachopus</i>)	Rank 1B	Closed-cone coniferous forest, chaparral; located on serpentine talus slopes. Elevation range: 990 – 2115 feet. Blooms: April – July.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
Mt. Tamalpais jewelflower (<i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i>)	Rank 1B	Chaparral, valley and foothill grassland; located on serpentine slopes. Elevation range: 490 – 2600 feet. Blooms: May – August.	No Potential. The project site does not contain serpentine habitat necessary to support this species.
saline clover (<i>Trifolium hydrophilum</i>)	Rank 1B	Marshes and swamps, mesic portions of alkali vernal pools, mesic, alkali valley and foothill grassland. Elevation range: 0 – 985 feet. Blooms: April – June.	No Potential. The project site does not contain alkali wetland habitat (marsh, vernal pool) necessary to support this species.
ANIMALS			
<i>Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act</i>			
American Badger (<i>Taxidea taxus</i>)	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	Unlikely. Dense stands of French broom throughout the site and the relative absence of open habitat greatly reduces the suitability for this species. The sites proximity to human disturbance also limits the potential for this species to use the site.
Pallid Bat (<i>Antrozous pallidus</i>)	SSC	Grasslands, chaparral, woodlands, and forests of California; most common in dry rocky open areas providing roosting opportunities.	Unlikely. The site does not contain suitable rocky roost habitat for this species.
Townsend's Big-eared Bat (<i>Euderma maculatum</i>)	SSC	Lives in a wide variety of habitats but most common in mesic sites. Day roosts highly associated with caves and mines. Need appropriate roosting, maternity, and hibernacula sites free from human disturbance.	Unlikely. The site does not contain mines, caves, or suitable rocky roost habitat for this species.

Species	Status	Habitat	Occurrence in the Project site
Western Red Bat (<i>Lasiurus blossevillii</i>)	SSC	This species is typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores).	Possible. The project site contains potentially suitable riparian roost habitat, and Ross Creek can support foraging for this species as well.
Burrowing Owl (<i>Athene cunicularia</i>)	SSC	Open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	Absent. The site does not support appropriate breeding habitat (i.e., ground burrows of suitable size or refuge piles) for burrowing owls.
Northern Harrier (<i>Circus cyaneus</i>)	SSC	Nests and forages in grassland habitats, usually in association with coastal salt and freshwater marshes. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas. May also occur in alkali desert sinks.	Unlikely. The site does not support nesting habitat, and typical open grassland and coastal marsh habitat is not present.
Saltmarsh Common Yellowthroat (<i>Geothlypis trichas sinuosa</i>)	SSC	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.	Unlikely. The site does not support thick stands of tall grasses or tules used as nesting habitat.
Short-eared Owl (<i>Asio flammeus</i>)	SSC	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.	Absent. The site does not support suitable nesting habitat for this species.
Northern Spotted Owl (<i>Strix occidentalis caurina</i>)	FT, SSC	Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. Prefers high, multistory canopy dominated by big trees, trees with cavities or broken tops, woody debris and space under canopy.	Present. This species has been documented within the site.
Black Swift (<i>Cypseloides niger</i>)	BCC, SSC	Generally found in the coastal belt of Santa Cruz and Monterey County; 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 surf; forages widely.	Unlikely. No waterfalls or suitable nesting habitat are present within the site. Species may rarely occur over the project site during migration periods.
Bank Swallow (<i>Riparia riparia</i>)	ST	Migrant in riparian and other lowland habitats in western California. Colonial nester in riparian areas with vertical cliffs and banks with fine-textured or fine-textured sandy soils near streams, rivers, lakes or the ocean.	Unlikely. The site lacks suitable cliffs and banks with fine textured sandy soils that could support colonial breeding by this species.
San Pablo Song Sparrow (<i>Melospiza melodia samuelis</i>)	BCC, SSC	Resident of salt marshes along the north side of San Francisco and San Pablo Bays. Inhabits tidal sloughs in the <i>Salicornia</i> marshes; nests in <i>Grindelia</i> bordering slough channels.	Unlikely. Salt marsh habitat is not found at or within the vicinity of the project site. Nesting habitat is not supported by the project site.

Species	Status	Habitat	Occurrence in the Project site
California Red-legged Frog (<i>Rana draytonii</i>)	FT, SSC	Permanent rivers, streams and stock ponds of the Sierra foothills and coast range, preferring deep pools with overhanging vegetation, or dense shrubby or emergent riparian vegetation for shading. Must have continuous water between 11 and 20 weeks for successful breeding and upland estivation habitat.	Possible. Ross Creek could provide non-breeding aquatic habitat and foraging habitat for the species. The closest documented occurrence is over six miles for the project site, but Phoenix Lake to the southwest may provide suitable breeding habitat for the species. Tributaries to Ross Creek within the project site provide only marginal habitat and would likely only support dispersal if the species was found in the area.
Foothill Yellow-legged Frog (<i>Rana boylei</i>)	SSC	Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	Unlikely. The site does not support suitable basking habitat or substrate composition to support the species within Ross Creek. Higher gradient tributaries within the project site are ephemeral or lack suitable habitat. The closest documented occurrence is over four miles to the west.
Pacific Pond Turtle (<i>Actinemys marmorata</i>)	SSC	Open slow-moving water of rivers and streams of central California with rocks and logs for basking.	Possible. This species has been documented in Phoenix Lake, approximately 0.3 miles southwest of the project site. The portion of Ross Creek traversing the project site may provide suitable aquatic habitat for the species.
Coho Salmon - Central California Coast Evolutionarily Significant Unit (<i>Oncorhynchus kisutch</i>)	FE, SE	Occurs inland and in coastal marine waters. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water and sufficient dissolved oxygen.	Absent. The project site does not provide suitable aquatic habitat to support this species. Ross Creek is not documented to support this species. Additionally, this species is considered extirpated from the Corte Madera Creek watershed and San Francisco Bay.
Steelhead - Central California Coast Distinct Population Segment (<i>Oncorhynchus mykiss</i>)	FT	Occurs from the Russian River south to Soquel Creek and Pajaro River. Also in San Francisco and San Pablo Bay Basins. Adults migrate upstream to spawn in cool, clear, well-oxygenated streams. Juveniles remain in fresh water for one or more years before migrating downstream to the ocean.	Present. Ross Creek is designated critical habitat and is documented to support steelhead below Phoenix Lake. Tributaries within the project site are unlikely to support steelhead due to a lack of suitable habitat and a number of natural fish passage barriers located a short distance from each confluence with Ross Creek.
Chinook Salmon - California Coastal Evolutionarily Significant Unit (<i>Oncorhynchus tshawytscha</i>)	FT	California Coastal Chinook Salmon ESU includes all naturally spawned populations of Chinook salmon from rivers and streams south of the Klamath River (exclusive) to the Russian River (inclusive). Adult numbers depend on pool depth and volume, amount of cover, and proximity to gravel. Water temps >27 degrees C lethal to adults.	Absent. The project site does not provide suitable aquatic habitat to support this species. Ross Creek is not documented to support this ESU of Chinook salmon.
Tidewater Goby (<i>Eucyclogobius newberryi</i>)	FE, SSC	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.	Absent. The project site does not provide suitable aquatic habitat to support this species. This species is considered extirpated from the Corte Madera Creek watershed and San Francisco Bay.

Species	Status	Habitat	Occurrence in the Project site																				
Monarch Butterfly (<i>Danaus plexippus</i>)	Winter roost sites monitored by CDFW	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, Monterey cypress), with nectar and water sources nearby.	Unlikely. Suitable roost habitat not found within the project site.																				
<p>*Explanation of Occurrences within the project site</p> <p>Present: Species observed on the sites at time of field surveys or during recent past.</p> <p>Possible: Species not observed on the site, but it could occur there from time to time.</p> <p>Unlikely: Species not observed on the site, and would not be expected to occur there except, perhaps, as a transient.</p> <p>Absent: Species not observed on the site, and precluded from occurring there because habitat requirements not met.</p> <p>STATUS CODES</p> <table border="0" data-bbox="88 560 1302 698"> <tr> <td colspan="2"><u>Federal Endangered Species Act (ESA)</u></td> <td colspan="2"><u>California Endangered Species Act (CESA)</u></td> </tr> <tr> <td>FE</td> <td>Federally Endangered</td> <td>SE</td> <td>State Endangered</td> </tr> <tr> <td>FT</td> <td>Federally Threatened</td> <td>ST</td> <td>State Threatened</td> </tr> <tr> <td>FPE</td> <td>Federally proposed for listing as Endangered</td> <td>SCE</td> <td>State candidate for listing as Endangered</td> </tr> <tr> <td>FPT</td> <td>Federally proposed for listing as Threatened</td> <td>SCT</td> <td>State candidate for listing as Threatened</td> </tr> </table> <p><u>California Department of Fish and Game</u></p> <p>FP Fully Protected</p> <p>SSC Species of Special Concern</p> <p>WL Watch list</p> <p><u>California Native Plant Society Listing (CNPS)</u></p> <p>1A Plants Presumed Extinct in California</p> <p>1B Plants rare, threatened, or endangered in California and elsewhere</p> <p>2 Plants rare, threatened, or endangered in California but more common elsewhere</p> <p>3 Plants about which information is needed-a review list</p> <p>4 Plants of limited distribution-a watch list</p> <p>.1 - seriously threatened in California (high degree/immediacy of threat)</p> <p>.2 - fairly threatened in California (moderate degree/immediacy of threat)</p> <p>.3 - not very threatened in California (low degree/immediacy of threats or no current threats known)</p>				<u>Federal Endangered Species Act (ESA)</u>		<u>California Endangered Species Act (CESA)</u>		FE	Federally Endangered	SE	State Endangered	FT	Federally Threatened	ST	State Threatened	FPE	Federally proposed for listing as Endangered	SCE	State candidate for listing as Endangered	FPT	Federally proposed for listing as Threatened	SCT	State candidate for listing as Threatened
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Western Red Bat (*Lasiurus blossevillii*)*State Species of Special Concern*

Western red bat is recognized as a Species of Special Concern by CDFW. This species is highly migratory and broadly distributed, reaching from southern Canada through much of the western United States. They are typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas possibly and association with riparian habitat (particularly willows, cottonwoods, and sycamores). Foraging typically occurs within two hours of sunset, and common invertebrate prey items include homopterans, coleopterans, dipterans, and hymenopterans. Mating occurs in late summer or early fall and females become pregnant in spring. Winter behavior for this species is poorly understood.

Potential to Occur On-site

The project site is located within the species known distribution, and the existing riparian habitat within the vicinity of Ross Creek could provide suitable roost habitat. Foraging habitat is also supported along Ross Creek and Phoenix Lake. Because of the difficulty in detecting occupied Western red bat roost sites, and the specialized equipment required to identify flying bats, the limited occurrence data for this species in the area may not be indicative of the existing habitats ability to support this highly migratory species.

Northern Spotted Owl (*Strix occidentalis caurina*)*Federally Threatened, State Species of Special Concern*

The Northern Spotted Owl (NSO) is recognized as a Species of Special Concern by CDFW, and the northern subspecies (*Strix occidentalis caurina*) was listed as threatened by the U.S. Fish and Wildlife Service (USFWS) in 1990. Spotted owl is sensitive to habitat destruction and fragmentation, and significant loss or modification to existing habitat may be considered a "take" under FESA. Spotted owl is widely distributed in forested regions from southern British Columbia through Washington, Oregon, and northwestern California, with the southern edge of their breeding territory reaching into Marin County. Through an inventory in 1997 and 1998, approximately 75 pairs of spotted owls were located in Marin County, although large portions of private lands were not surveyed and the overall number of pairs is undoubtedly higher (Edwards, 2012). In the southern portion of their range, suitable breeding habitat for spotted owl consists of coniferous forest, mixed evergreen forest, and oak woodland. The owls roost in dense, multi-layered canopy during the day, and forage at night. Large blocks of from 100 to over 600 acres of mature forest with permanent water and suitable nesting trees and snags are required for successful reproduction. The owls usually nest in tree or snag cavities, the broken top of large trees, and less frequently in large clumps of mistletoe, an abandoned raptor or raven nest, or other locations. Prey consists primarily of small mammals, including woodrats, mice, and voles (Town of Ross 2006c).

Potential to Occur On-site

Based on available information from the Point Reyes Bird Observatory (PBRO) and protocol level surveys conducted by GTE from August through September, 2012 and 2013, NSO is known to occur within the project site and in the vicinity of the project site. NSO are utilizing the habitat within the site and vicinity for nesting, roosting and foraging, as this area provides more suitable habitat than the surrounding properties (Edwards, 2012). The majority of the project site contains marginal NSO habitat due to lack of adequate multi-storied structure and low canopy cover (Edwards, 2012). The project site does not contain critical habitat for this species; however, the site is within 0.25 miles of designated critical habitat to the west.

California Red-legged Frog (*Rana draytonii*)

Federally Threatened

The California Red-legged Frog (CRLF) was listed as Threatened by the USFWS under the authority of the Federal Endangered Species Act on May 23, 1996. The frog was listed because it had been extirpated from 70 percent of its historic range and remaining populations are currently threatened by a wide variety of human impacts (66 FR 14626). The critical habitat map for this species became effective in 2010. The project site is not within critical habitat for the CRLF. The nearest designated critical habitat is located approximately 10.7 miles northwest.

The CRLF is the largest native frog in California with adults attaining a length of 3.4-5.4 inches (85-138 mm) snout-to-vent length (SVL) (Jennings and Hayes 1994). The habitats observed to contain the largest densities of CRLF are associated with deep-water pools (27 inches [>0.7 meters] deep) with stands of overhanging willows (*Salix* spp.) and an intermixed fringe of cattails (*Typha latifolia*), tules (*Scirpus* spp.), or sedges (*Carex* sp.) (Hayes and Jennings 1988).

Continued survival of frogs in all aquatic habitats seems to be based on the continued presence of ponds, springs, or pools that are disjunct from perennial streams. Such habitats provide the continued basis for successful reproduction and recruitment year after year into nearby drainages that may lose frog populations due to stochastic events such as extreme flooding or droughts. Juvenile frogs are often observed sunning themselves during the day in the warm, surface-water layer associated with floating and submerged vegetation (Hayes and Tennant 1986). Adult frogs are largely nocturnal and are known to sit on stream banks or on the low hanging limbs of willow trees over pools of water where they can detect small mammal prey (Hayes and Tennant 1986, Jennings and Hayes 1994). Radio tracking studies conducted in lagoons and the lower portions of streams along the central coast of California show that adult CRLF will move within the riparian zone from well-vegetated areas to pools of water to hydrate during periods of time when many of the central coast streams are dry except for isolated pools (Rathbun et al. 1993). During wet periods (especially in the winter and early spring months), CRLF can move long distances (e.g., 1 mile) between aquatic habitats, often over areas that are considered to be unsuitable for frogs (e.g., roads, open fields, croplands, etc.). Such

activities can result in frogs ending up in isolated aquatic habitats well away from the nearest known frog populations.

Potential to Occur On-site

The CNDDDB records do not indicate any historical occurrences for this species from the Ross Creek watershed, and Swan Swale and Frog Swale drainages within the project site do not provide suitable breeding habitat for this species due to the lack of pool depth and inundation period. Additionally, Ross Creek is not anticipated to support CRLF breeding because higher winter flows, cool water temperatures, existing riparian canopy, and the presence of predatory fish species all reduce the habitat suitability of the creek as a breeding location (Fellers and Guscio 2004). Because of these existing habitat conditions, the project site is not anticipated to support CRLF breeding.

The closest documented occurrences of CRLF to the project site are approximately 6.7 miles to the west and 6.9 miles to the southwest. Phoenix Lake, southwest of the project site, may provide suitable breeding habitat for CRLF, although the species has not been documented at this location. Additionally, Bon Tempe Lake and Lagunitas Lake are within one mile of Phoenix Lake. The establishment of dispersing frogs at these lakes could result in a population of CRLF within the range of the project site.

In the event that CRLF are utilizing breeding habitat within one mile of the project site, the project site could support dispersal habitat for CRLF. The project site does not however support breeding habitat, and any CRLF utilizing the area would likely only be temporarily. Because of the lack of suitable aquatic breeding habitat, the potential for CRLF to use the project site is low.

Pacific Pond Turtle (*Actinemys marmorata*)

State Species of Special Concern

The Pacific pond turtle (PPT) is recognized as a Species of Special Concern by CDFW. This turtle is uncommon to common in suitable aquatic habitat throughout California, west of the Sierra-Cascade crest and Transverse Ranges. PPT inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation. PPT also occupies man-made habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks and sand. Warm, shallow, nutrient-rich waters are ideal as they support PPT prey items, which include aquatic invertebrates and occasionally fish, carrion, and vegetation. Turtles require suitable aquatic habitat for most of the year; however, PPT often occupies creeks, rivers, and coastal lagoons that become seasonally unsuitable. To escape periods of high water flow, high salinity, or prolonged dry conditions, PPT may move upstream and/or take refuge in vegetated, upland habitat for up to four months (Rathbun et al. 2002). Although upland habitat is utilized for refuging and nesting, this species preferentially utilizes aquatic and riparian corridors for movement and dispersal.

PPT nests from late April through July. This species requires open, dry upland habitat with friable soils for nesting and prefer to nest on unshaded slopes within five to 100 meters of suitable aquatic habitat (Rathbun et al. 1992). Females venture from water for several hours in the late afternoon or evening during the nesting season to excavate a nest, lay eggs, and bury the eggs to incubate and protect them. Nests are well-concealed, though native mammals are occasionally able to locate and predate upon eggs. Hatchlings generally emerge in late fall but may overwinter in the nest and emerge in early spring of the following year.

Potential to Occur On-site

The closest documented occurrence of PPT is found at Phoenix Lake, approximately 0.3 miles southwest of the project site. Suitable aquatic rearing habitat for this species likely exists along the southern portion of the project site; however, PPT nesting habitat is unlikely to be supported because of the lack of open, unshaded hillside. In addition to supporting suitable aquatic habitat, Ross Creek could also serve as PPT dispersal corridor between Phoenix Lake and Corte Madera Creek.

Steelhead (*Oncorhynchus mykiss*)

Federally Threatened, State Species of Special Concern

The Central California Coast Distinct Population Segment of steelhead (steelhead) was listed as threatened by the National Marine Fisheries Service (NMFS) on 17 October 1997 (National Marine Fisheries Service 1997). The species was listed due to a presumed 85 percent decline in fish stocks between 1960 and 1997. These declines are presumed to be associated with negative effects caused by water development projects, predation by introduced fishes and invertebrates, modification of spawning streams by livestock grazing, agricultural activities, urbanization, water pollution, and overfishing (National Marine Fisheries Service 1997).

The Steelhead is a member of the rainbow trout complex of salmonids that is native to western North America and northeastern Asia (Moyle 2002). The taxonomy of this fish is very complex and also has a complicated history—largely due to indiscriminate mixing of stocks over the past 134 years (Moyle 2002). The species referred to in this report is the Central California coast Distinct Population Segment of steelhead by the National Marine Fisheries Service (1997).

Potential to Occur On-site

Steelhead have been documented using Ross Creek up to Phoenix Lake, which is a total fish passage barrier that prevents further upstream migration by the species (Leidy et al. 2005). The construction of Phoenix Lake reduced the amount of available spawning and rearing habitat for the species by blocking access to the headwater portion of the watershed. Downstream of the lake, Ross Creek supports rearing habitat for young-of-year and juvenile steelhead, and is considered a nursery area for the species (Leidy et al. 2005). Ross Creek has also been designated critical habitat for steelhead up to Phoenix Lake by NMFS.

Steelhead are likely to occur within the portion of Ross Creek that traverses the southern boundary of the project site. Large pools shaded by riparian vegetation could support year round rearing habitat for the species. The southern portion of the project site also serves as a migration corridor for steelhead moving between the base of Phoenix Lake and Corte Madera Creek.

Swan Swale, Frog Swale, the unnamed tributaries to Ross Creek found within the project site are unlikely to support steelhead. Large natural fish passage barriers are located a short distance from each tributaries confluence with Ross Creek. Frog Swale, the western tributary to Ross Creek within the project site, has a very steep gradient boulder field and ephemeral conditions that preclude steelhead from accessing the majority of the feature. Swan Swale, the eastern tributary to Ross Creek within the project site, has a narrow incised channel with several large headcuts obscured by boulder and woody debris that block passage up the feature. Neither tributary supports suitable habitat for the species.

Other Sensitive Habitats

Wetlands and Waters of the U.S.

The project site was surveyed to determine if any wetlands and non-wetland waters potentially subject to jurisdiction by the Corps, RWQCB, or CDFW were present. The assessment was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status⁴ of OBL, FACW, or FAC as given on the National Wetland Plant List (Lichvar 2012). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, algal mats, and oxidized root channels, or indirect (secondary) indicators, such as a water table within two feet of the soil surface during the dry season. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual (Environmental Laboratory 1987), the Arid West Regional Supplement (Corps 2008), and Field Indicators of Hydric Soils in the United States (USDA 2010). Additionally, linear features and/or non-wetland waters were assessed based on the presence of an ordinary high water mark (OHWM) following Corps regulatory guidance (Corps 2005).

The project site contains two linear non-wetland water features, colloquially known as Frog Swale and Swan Swale. These drainage features are natural watercourses that are tributary to Ross Creek. A watercourse is defined by CDFW as a stream channel in which water currently flows, or has flowed over a given course as defined by the topography that confines the water to

⁴ OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

this course when the water rises to its highest level (CDFW 2010). Therefore, Swan and Frog Swales meet the regulatory definition of a stream or creek. These features are potentially within the jurisdiction of the Corps under Section 404 of the Clean Water Act, RWQCB under the Porter Cologne Act and Section 401 of the Clean Water Act, and CDFW under Section 1602 of the California Fish and Game Code.

REGULATORY SETTING

There are a number of federal, state, and local regulations designed to protect biotic resources that are recognized as sensitive or of special importance. The following is a description of those regulations and how they apply to the biotic resources within the project site.

Federal Regulations

Special-Status Species

The Federal Endangered Species Act (FESA) of 1973 prohibits federal agencies from authorizing, permitting, or funding any action that would jeopardize the continued existence of a plant or animal species listed or a candidate for listing as Threatened or Endangered under the ESA. If a federal agency is involved with a proposed action or project that may adversely affect a listed plant or animal, that agency must enter into consultation with the USFWS under Section 7 (a) (2) of the FESA.

Individuals, corporations, and state or local agencies with proposed actions or projects that do not require authorizing, permitting, or funding from a federal agency but that may result in the “take” of listed species or candidate species are required to apply to the USFWS for a Section 10(a) incidental take permit.

Critical Habitat

Critical habitat is a term defined in the FESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The FESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species’ recovery. In many cases, this level of protection is similar to that already provided to species by the FESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species’ recovery are protected by the prohibition against adverse modification of critical habitat.

Migratory Bird Treaty Act & Bald and Golden Eagle Protection Act

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the Code of

Federal Regulations Part 10. "Take" is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that causes nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend would be in violation of the MBTA.

The Bald and Golden Eagle Protection Act (16 U.S.C. 668) was passed in 1940 to protect bald eagles and was later amended to include golden eagles. Under the act it is unlawful to import, export, take, sell, purchase, or barter any bald eagle or golden eagle, their parts, products, nests, or eggs. Take includes pursuing, shooting, poisoning, wounding, killing, capturing, trapping, collecting, molesting, or disturbing eagles.

Clean Water Act Section 404 & 401

The U.S. Army Corps of Engineers (Corps) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into waters of the United States, including wetlands, under Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344). Waters of the United States are defined in Title 33 CFR Part 328.3(a) and include a range of wet environments such as lakes, rivers, streams (including intermittent streams), mudflats, sand flats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds. The lateral limits of jurisdiction in those waters may be divided into three categories – territorial seas, tidal waters, and non-tidal waters – and is determined depending on which type of waters is present (Title 33 CFR Part 328.4(a), (b), (c)). Activities in waters of the United States regulated under Section 404 include fill for development, water resource projects (such as dams and levees), infrastructure developments (such as highways and airports) and mining projects. Section 404 of the CWA requires a federal license or permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).

Section 401 of the Clean Water Act (33 U.S.C. 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 from the state in which the discharge originates or would originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the affected waters at the point where the discharge originates or would originate, that the discharge will comply with the applicable effluent limitations and water quality standards. A certification obtained for the construction of any facility must also pertain to the subsequent operation of the facility. The responsibility for the protection of water quality in California rests with the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs). The RWQCB's Water Quality Control Plan for the North Coast Basin (Basin Plan) and the California Water Code define waters of the state as follows: "'Waters of the state' means any surface water or groundwater, including saline waters, within the boundaries of the state (Water Code §13050 (e))." This definition is broader than that of "waters of the United States" and consequently should always be considered when determining impacts upon water resources.

State Regulations

California Endangered Species Act

The State of California enacted similar laws to the FESA, the California Native Plant Protection Act (NPPA) in 1977 and the California Endangered Species Act (CESA) in 1984. The CESA expanded upon the original NPPA and enhanced legal protection for plants, but the NPPA remains part of the California Fish and Game Code. To align with the FESA, CESA created the categories of “threatened” and “endangered” species. The State converted all animal species listed as “rare” under the FESA into the CESA as threatened species, but did not do so for rare plants. Thus, these laws provide the legal framework for protection of California-listed rare, threatened, and endangered plant and animal species. CDFW implements NPPA and CESA, and its Wildlife and Habitat Data Analysis Branch maintains the California Natural Diversity Database (CNDDDB), a computerized inventory of information on the general location and status of California’s rarest plants, animals, and natural communities. During the CEQA review process, CDFW is given the opportunity to comment on the potential of the proposed project to affect listed plants and animals.

The Natural Community Conservation Planning Act

The Natural Community Conservation Planning (NCCP) Act of 1991 represents an unprecedented effort by the State of California, and numerous private and public partners, to broaden its orientation and objectives beyond those of the CESA and FESA (refer to discussions above). The primary objective of the NCCP Act is to conserve natural communities at the ecosystem scale while accommodating compatible land use. The NCCP seeks to anticipate and prevent the controversies and gridlock caused by species’ listings by focusing on the long-term stability of wildlife and plant communities and including key interests in the process.

Fully Protected Species & Species of Special Concern

The classification of “fully protected” was CDFW’s initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibian and reptiles, birds, and mammals. Most of the species on these lists have subsequently been listed under CESA and/or FESA. The Fish and Game Code sections (fish at §5515, amphibian and reptiles at §5050, birds at §3511, and mammals at §4700) dealing with “fully protected” species states that these species “...may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species,” although take may be authorized for necessary scientific research. This language makes the “fully protected” designation the strongest and most restrictive regarding the “take” of these species. In 2003, the code sections dealing with fully protected species were amended to allow CDFW to authorize take resulting from recovery activities for state-listed species.

Species of special concern (SSC) are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to CDFW because they are declining at a rate that could result in listing or historically occurred in low numbers and known threats to their

persistence currently exist.⁵ This designation is intended to result in special consideration for these animals by CDFW, land managers, consulting biologist, and others, and is intended to focus attention on the species to help avert the need for costly listing under FESA and CESA and cumbersome recovery efforts that might ultimately be required. This designation also is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them. Although these species generally have no special legal status, they are given special consideration under CEQA during project review.

California Fish and Game Code Sections 3503 & 3513

According to Section 3503 of the California Fish and Game Code it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird (except English sparrows (*Passer domesticus*) and European starlings (*Sturnus vulgaris*)). Section 3503.5 specifically protects birds in the orders Falconiformes and Strigiformes (birds-of-prey). Section 3513 essentially overlaps with the MBTA, prohibiting the take or possession of any migratory non-game bird. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by CDFW.

California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 gave the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protects endangered and rare plants from take.

California Native Plant Society

The California Native Plant Society (CNPS) publishes and maintains an Inventory of Rare and Endangered Vascular Plants of California in both hard copy and electronic version.⁶ The Inventory assigns plants to the following categories:

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

With the following modifiers:

- 1 seriously threatened in California (high degree/immediacy of threat)

⁵ The term *Species of special concern (SSC)* is defined in the CDFW CNDDDB Special Animals List, January 2011.

⁶ CNPS Rare and Endangered Vascular Plants of California Electronic Version: <http://www.rareplants.cnps.org/>. Accessed April 12, 2011.

- 2 fairly threatened in California (moderate degree/immediacy of threat)
- 3 not very threatened in California (low degree/immediacy of threats or no current threats known)

Impacts to plants on lists 1 and 2 are typically assumed to meet CEQA's threshold of significance. The CNPS considers it to be mandatory that these species are fully considered during the preparation of environmental documentation relating to CEQA. Therefore, this Draft SEIR considers plants listed as 1 and 2 as special-status species. Very few list 3 and 4 plants meet the definitions of Section 1901 Chapter 10 Native Plant Protection Act or Sections 2062 and 2067 California Endangered Species Act of the CDFW Code and are eligible for state listing. However, the CNPS strongly recommends that these species be fully considered during the preparation of environmental documentation relating to CEQA. This may be particularly appropriate for the type locality of a List 4 plant, for populations at the periphery of a species range or in areas where the taxon is especially uncommon or has sustained heavy losses, or from populations exhibiting unusual morphology or occurring on unusual substrates. In addition, plants deemed significant by an experienced botanist may be considered to be significant under CEQA.

Porter-Cologne Water Quality Control Act

Waters of the State are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The RWQCB protects all waters in its regulatory scope, but has special responsibility for isolated wetlands and headwaters. These water bodies have high resource value, are vulnerable to filling, and may not be regulated by other programs, such as Section 404 of the CWA. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program, which regulates discharges of dredged and fill material under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact waters of the State are required to comply with the terms of the Water Quality Certification Program. If a proposed project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the State, the RWQCB has the option to regulate such activities under its State authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

California Fish and Game Code Section 1600

Streams, lakes, and riparian vegetation as habitat for fish and other wildlife species, are subject to jurisdiction by CDFW under Sections 1600-1616 of the California Fish and Game Code. Any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake; generally require a 1602 Lake and Streambed Alteration Agreement. The term

“stream,” which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife.⁷ Riparian is defined as, “on, or pertaining to, the banks of a stream”; therefore, riparian vegetation is defined as, “vegetation, which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself.”⁸ Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFW.

Sensitive Vegetation Communities

Sensitive vegetation communities are natural communities and habitats that are either unique, of relatively limited distribution in the region, or of particularly high wildlife value. However, these communities may or may not necessarily contain special-status species. These sensitive natural communities are usually identified in local or regional plans, policies or regulations, or by CDFW (i.e., CNDDDB) or the USFWS. Impacts to sensitive natural communities and habitats must be considered and evaluated under CEQA.

Z'berg-Nejedly Forest Practice Act

The Z'berg-Nejedly Forest Practice Act of 1973 is intended to encourage prudent and responsible forest resource management calculated to serve the public's need for timber and other forest products, while giving consideration to the public's need for watershed protection, fisheries and wildlife, and recreational opportunities. The Forest Practice Act requires that a Timber Harvest Plan be prepared by a Registered Professional Forester. The Timber Harvest Plan is submitted to the California Department of Forestry and Fire Protection for review and approval in order for timber operations to occur. The Timber Harvest Plan must identify the location of timber operations, the methods of timber operations, and adopt feasible mitigation measures to avoid significant adverse impacts on the environment.

Forest Practice Rules

The purpose of the Forest Practice Rules is to implement the provisions of the Z'berg-Nejedly Forest Practice Act of 1973 in a manner consistent with other laws, including but not limited to the Timberland Productivity Act of 1982, CEQA, the Porter Cologne Water Quality Act, and CESA. The provisions of these rules shall be followed by Registered Professional Foresters in

⁷ California Department of Fish and Game. *Environmental Services Division (ESD). 1994. A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607, California Fish and Game Code.*

⁸ California Department of Fish and Game. *Environmental Services Division (ESD). 1994. Ibid.*

preparing Timber Harvest Plans, and by the California Board of Forestry and Fire Protection in reviewing such plans to achieve the policies described in the Public Resources Code and Government Code.

Cal Fire

Cal Fire enforces the laws that regulate logging on privately owned lands in California. These laws are found in the Forest Practice Act of 1973 to ensure that logging is done in a manner that will preserve and protect fish, wildlife, forests, and streams. Additional rules enacted by the California Board of Forestry and Fire Protection are also enforced to protect these resources. Cal Fire is responsible for ensuring that private landowners abide by these laws when harvesting trees. Although there are specific exemptions in some cases, compliance with the Forest Practice Act and California Board of Forestry and Fire Protection rules applies to all commercial harvesting operations for landowners of small parcels, to ranchers owning hundreds of acres, and to large timber companies with thousands of acres.

Local Regulations

Town of Ross General Plan

The Ross General Plan Part II, Our Relationship with the Natural Environment, includes policies that the proposed project would be subject to. These policies include, but are not limited to: protection of environmental resources, tree canopy preservation, tree maintenance and replacement, natural areas retention, and open space planning. Protection of Environmental Resources includes hillsides, creeks, drainage ways, trees, and tree groves. Specific policies that apply to the proposed project are described below.

- Policy 1.1 Protection of Environmental Resources: Protect environmental resources, such as hillsides, ridgelines, creeks, drainage ways, trees and tree groves, threatened and endangered species habitat, riparian vegetation, cultural places, and other resources. These resources are unique in the planning area because of their scarcity, scientific value, aesthetic quality and cultural significance.
- Policy 1.2 Tree Canopy Preservation: Protect and expand the tree canopy of Ross to enhance the beauty of the natural landscape. Recognize that the tree canopy is critical to provide shade, reduce ambient temperatures, improve the uptake of carbon dioxide, prevent erosion and excess stormwater runoff, provide habitat for wildlife and birds, and protect the ecosystem of the under-story vegetation.
- Policy 1.3 Tree Maintenance and Replacement: Assure proper tree maintenance and replacement.
- Policy 1.4 Natural Areas Retention: Maximize the amount of land retained in its natural state. Wherever possible, residential development should be designed to

preserve, protect and restore native site vegetation and habitat. In addition, where possible and appropriate, invasive vegetation should be removed.

Town of Ross Tree Ordinances

Town of Ross Municipal Code Chapter 12.12.010(4) states that removal of trees on unimproved property shall require a permit which shall be obtained from the director of public works pursuant to Chapter 12.24. Chapter 12.24 describes the planting, alteration, removal, or maintenance of trees and includes a definition of “protected trees.” In order to protect trees during construction of a project and thereafter, and to maximize the chances of their subsequent survival, a tree protection plan shall be required for the proposed project in accordance with Chapter 12.24.100 of the Town’s municipal code.

ENVIRONMENTAL IMPACTS

Thresholds of Significance

This section describes potential impacts to biological resources that may occur as a result of the construction and operation of the proposed project. Development of the project area as proposed would ultimately result in conversion of some of the site’s natural habitat into structures, pavement (roadway and parking areas), and landscaping. These proposed uses would result in several impacts on the area’s biological resources, which may constitute significant adverse effects. CEQA and the CEQA Guidelines provide guidance in evaluating project impacts and determining which impacts will be significant. CEQA defines “significant effect on the environment” as “a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.” Appendix G of the CEQA Guidelines provides a checklist of other potential impacts to consider when analyzing the significance of project effects. The impacts listed in Appendix G may or may not be significant, depending on the level of the impact. For biological and forestry resources, these impacts include whether the project would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act?

- 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?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?
- Result in the loss of forest land or conversion of forest land to non-forest use?
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

This section describes the assumptions and thresholds of significance developed to evaluate impacts on the biological resources of the project site that would result from developing the proposed project. Two general assumptions that influence the assessment of impacts to the project site's biotic resources are as follows:

1. Direct impacts to plant and wildlife species are assumed to be correlated with the loss of habitats with which these species are associated. These losses would result from site excavation, grading, filling, infrastructure construction, or other damage to habitats such that they can no longer sustain a species, or so that the number of individuals that they sustain is reduced, and direct loss due to death or injury or disturbance by construction activities and human uses to the extent that the species cannot continue their lifecycle activities. The conversion of these natural communities to structures, landscaping, and infrastructure may therefore result in the loss of or reduction of use for some plant and animal species. The existing species are usually eliminated, but may be replaced with a suite of species that tolerate these development activities, but may not be as desirable, if suitable habitat is still available. Removal of a sensitive habitat, such as riparian habitat, that is replaced by the development would be a permanent, direct impact. Direct impacts may also be temporary if they disturb a habitat that is subsequently restored or displace individuals of a given species that later return to the site.
2. Indirect impacts could also occur. If remaining fragments of undeveloped habitat are isolated from larger areas of contiguous habitat, the remaining habitats are expected to have lower biological values than those prevailing before development. Some species can no longer subsist in these smaller fragments, the fragments may be heavily influenced by surrounding stressors, or species may not reproduce successfully without exchange with other populations. Indirect impacts can occur in portions of the site not directly impacted, or to off-site habitats and species, due to such factors as degraded water quality; changes in hydrology; noise or dust from transport of soil or materials; disturbance of wildlife from

human activities and domestic animals; predation by domestic and urban-adapted species; competition by introduced plant species; and other factors.

The following assumptions were made to complete this evaluation:

- Water quality treatment of runoff from the development will be located within the development footprint. The project would treat runoff, as described in Section IV.G (Hydrology and Water Quality).
- All site access for construction and the ultimate development would be from existing roadways only, specifically from Upper Road.

Biological and Forestry Resources Impacts not Further Analyzed

The following issues were addressed in the Initial Study (see Appendix A) and Section IV.A of the Draft SEIR and were determined to result in no impact or a less-than-significant impact and not warrant further analysis:

- Conflict with the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Conservation Plan

Project Impacts and Mitigation Measures

Impact BIO-1 Special-Status Wildlife Species

Impact BIO-1a: Disturbance to Northern Spotted Owl

During the site visit, NSO was observed, and NSO protocol level surveys conducted in 2013 identified one NSO nest on the project site which produced one young which has fledged off the nest at this time. Based on the findings from the GTE and Point Reyes Bird Observatory (PRBO) survey reports, it appears that the NSO pair has established an activity area that utilizes the habitat within portions of the subject property. Because proposed project improvements are located within a 0.25 mile radius from the NSO nest area, and may modify NSO habitat, any project construction that occurs within the NSO breeding season (February 1 – August 31) could result in an incidental take of NSO (USFWS 2012), unless it has been determined through additional protocol level surveys that the NSO's are not nesting, then no seasonal operational limitations would apply. Project impacts to NSO are ***potentially significant*** and will require consultation with USFWS.

Mitigation Measure BIO-1a

A pair of breeding NSO is known in the vicinity of the project site; therefore, consultation with USFWS will be required. Consultation with USFWS will provide additional or equivalent mitigation measures to ensure that no take or significant impacts occur to NSO. As a result of a known nesting NSO pair in the vicinity of the project site, such measures shall include but may not be limited to:

- a) Prior to the start of construction, protocol level surveys (USFWS 2012) shall be performed by a permitted biologist within the project site and surrounding accessible areas up to a distance of 1.3 miles. The survey period for the California Coast Range is March 1 through August 31. These surveys will determine the breeding status of NSO in the vicinity of the project site and assist in determining work windows and exclusion buffers.
- b) If an active nest is found within or adjacent to the project area, project activities within 0.25 miles of the nest can not occur without consultation with USFWS.
- c) Activities that do not modify NSO habitat may occur if at least 0.25 miles from an active NSO nest or Activity Center. An Activity Center is defined by USFWS (2012) as “a location or point representing ‘the best of’ detections’ such as nest stands, stands used by roosting pairs or territorial singles, or concentrated nighttime detections. Activity centers are within the core use area and are represented by this central location.”
- d) No night work shall be permitted during the breeding season. If night work is required outside of the breeding season, the lighting shall be directed downward.
- e) All workers shall ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash from the construction area are deposited in covered or closed trash containers. The trash containers shall not be left open and unattended overnight.
- f) Modification of NSO habitat shall be compensated at a minimum ratio of 1:1 to compensate impacts to foraging, roosting and nesting habitat by project activities. Consultation with USFWS shall determine if an increase in the minimum mitigation ratio is required. Compensation may be accomplished on-site, off-site, or through the purchase of suitable habitat credits from an authorized USFWS conservation bank.

Implementation of Mitigation Measure BIO-1a would mitigate impacts to NSO to a less-than-significant level should they occur on-site prior to construction.

Impact BIO-1b: Impacts to Other Nesting Birds

The project site may contain or be adjacent to suitable nesting habitat for birds, including non-special-status raptors, protected under the Fish and Game Code and the Migratory Bird Treaty Act. Harm or disruption to nesting birds and/or their eggs or young as a result of project construction would be considered a violation of state and federal law, and therefore, would be considered a **potentially significant** impact.

Mitigation Measure BIO-1b

To avoid impacting nesting birds (including CDFW Species of Special Concern), one of the following measures shall be implemented:

- a) Conduct grading and construction activities from September 1st through January 31st, when birds are not likely to be nesting on the site;

- OR -
- b) Conduct pre-construction surveys for nesting birds if construction is to take place during the nesting season (February 1 through August 31). A qualified wildlife biologist shall conduct a pre-construction nest survey no more than 5 days prior to initiation of grading to provide confirmation of the presence or absence of active nests on or immediately adjacent to the project site. If active nests are encountered, species-specific measures shall be prepared by a qualified biologist and implemented to prevent abandonment of the active nest. At a minimum, grading and tree removal in the vicinity of the nest shall be deferred until the young birds have fledged. A minimum exclusion buffer of 50 feet for non-raptor species and 250 feet for raptor species shall be maintained during construction, depending on the species and location. The perimeter of the nest-setback zone shall be fenced or adequately demarcated with staked flagging at 20-foot intervals, and construction personnel and activities restricted from the area. A survey report by the qualified biologist verifying that (1) no active nests are present, or (2) that the young have fledged, shall be submitted to the Town prior to initiation of grading in the nest-setback zone. The qualified biologist shall serve as a construction monitor during those periods when construction activities occur near active nest areas to ensure that no inadvertent impacts on these nests occur.

If active nests are encountered and mitigation is required, the applicant shall submit a deposit to cover the cost of a Town-retained biologist to periodically monitor the site to ensure the recommended mitigation is followed.

Implementation of the above measure would mitigate impacts to nesting birds to a less-than-significant level should they occur on-site prior to construction.

Impact BIO-1c: Impacts to California Red-legged Frog

Depending on the time of year of proposed construction activities, build-out of the proposed project could have a direct effect on individual CRLF that may disperse in the Ross Creek watershed. The occurrence of CRLF may be rare, suitable dispersal habitat exists along the southern edge of the project site within the vicinity of the proposed retention wall. Construction of the proposed retention wall and associated fill material will modify existing upland habitat. While the modification of habitat is not anticipated to significantly affect CRLF, any direct impact to CRLF dispersing through the project site would be considered a significant impact. Construction related activity including the installation of a temporary access road to the retention wall and associated fill material, and the sediment detention basins in Swan Swale could also impact dispersing CRLF. Construction activity within the northern portion of the project site is not anticipated to impact CRLF or CRLF habitat. Any potential direct effects to this species would be a ***potentially significant*** impact.

Mitigation Measure BIO-1c

To minimize disturbance to dispersing or foraging CRLF, all grading activity within upland habitat (within 100 feet of aquatic habitat) shall be conducted during the dry season, generally between May 1 and October 15, or before the onset of the rainy season,⁹ whichever occurs first, unless exclusion fencing is utilized. Construction that commences in the dry season may continue into the rainy season if exclusion fencing is placed between the construction site and Ross Creek, a wetland feature, and drainage features to keep the frog from entering the construction area. Additionally the following measures shall be implemented to lessen impacts to CRLF:

- Prior to building permit issuance the applicant shall submit evidence to the building department to demonstrate that they have retained a qualified biologist to implement each of the following measures.
- Prior to the start of construction, pre-construction surveys for CRLF shall be conducted by a USFWS approved biologist according to USFWS presence/absence survey protocols for CRLF. The survey protocol consists of two nighttime surveys and one daytime survey and shall cover the project site and aquatic features within 200 feet of the project site. Additionally, for construction activity within 100 feet of Ross Creek, a survey shall be conducted by a qualified biologist each day prior to the start of construction activities to ensure that no CRLF are present in the construction area. If CRLF are observed in the construction area or access areas, all work in the vicinity of the CRLF shall be stopped and the USFWS shall be consulted immediately. The

⁹ The rainy season includes periods when a ½-inch of rain or more is predicted within a 24-hour period and is generally between October and April.

biologist shall submit a summary of their findings to the town planner by email prior to the start of construction.

- Exclusion fencing shall be installed around any work area within 100 feet of a drainage, wetland, or Ross Creek, unless construction activity will be completed in one day or less at that location. A USFWS approved biologist shall be present to monitor the installation of the exclusion fence.
- Because dusk and dawn are often the times when CRLF are most actively foraging, all construction activities shall cease one half hour before sunset and shall not begin prior to one half hour before sunrise. Construction activities shall not occur during rain events, as CRLF are most likely to disperse during periods of precipitation, unless a survey is conducted by a qualified biologist each day prior to the start of construction activities and one half hour before sunset to ensure that no CRLF are observed in the construction area or access areas.
- Any open holes or trenches shall be covered at the end of each working day to prevent CRLF from becoming entrapped.
- A Spill Prevention and Control Plan shall be created, and made part of the plans for the building permit application. The plan and materials necessary to implement it shall be accessible on-site. Heavy equipment shall be checked daily for leaks. Equipment with leaks shall not be used until leaks are fixed. Refueling shall occur at designated sites outside of active stream channels or above the OHWM.
- Any disturbed ground shall receive appropriate erosion control treatment and native seed mix within seven days following completion of construction or within seven days following a seasonal stoppage of construction.
- All workers shall ensure that food scraps, paper wrappers, food containers, cans, bottles, and other trash from the construction area are deposited in covered or closed trash containers. The trash containers shall not be left open and unattended overnight.

Implementation of the above measures would mitigate impacts to CRLF to a less-than-significant level.

Impact BIO-1d: Impacts to Pacific Pond Turtle

The proposed construction activities and build-out of the proposed project could have a direct effect on PPT occurring in upland habitat in the southern portion of the project site. Construction of the proposed retention wall and associated construction activities within the southern portion of the project site could impact PPT, and will modify existing upland habitat along Ross Creek. While the modification of habitat is not anticipated to significantly affect PPT, any direct impact to PPT utilizing aquatic habitat within Ross Creek would be considered a significant impact. Construction with Swan Swale and within the northern portion of the project

site is not anticipated to impact PPT or PPT habitat. Any potential direct effects to this species would be a **potentially significant** impact.

Mitigation Measure BIO-1d

To minimize disturbance to PPT, prior to the start all grading activity or ground disturbance within upland habitat (within 100 feet of aquatic habitat) a qualified biologist will inspect the work area for PPT. Additionally the following measure shall be implemented to lessen impacts to PPT:

- Prior to building permit issuance the applicant shall submit evidence to the building department to demonstrate that they have retained a qualified biologist to implement each of the following measures.
- Pre-construction surveys for PPT shall be conducted prior to the initial start of construction activities, and each day prior to the start of construction for any habitat within 100 feet of habitat within 100 feet of Ross Creek. If PPT are observed in the construction area or access areas, all work in the vicinity of the PPT shall cease and CDFW shall be consulted to determine appropriate relocation measures.
- Exclusion fencing will be installed around any work area within 100 feet of Ross Creek, unless construction activity will be completed in one day or less at that location.

Implementation of the above measures, along with those outlined for CRLF in Mitigation Measure BIO-1C, would mitigate impacts to PPT to a less-than-significant level.

Impact BIO-1e: Impacts to Steelhead Habitat

Development of the proposed project would not have a direct effect on steelhead, as no suitable aquatic habitat would be altered. However, project construction and operation within Swan Swale and along the southern portion of the project site has the potential to indirectly impact the stream habitat through erosion and loss of riparian vegetation. Impacts related to erosion are discussed in Section IV.G (Hydrology and Water Quality). Because of the steep hillside nature of the project site, grading activity within the northern portion of the project site could result in increased sediment runoff and negatively affect downstream steelhead habitat in Ross Creek. Ross Creek is designated critical habitat for steelhead; therefore, the proposed project activities could have a **potentially significant** impact.

Mitigation Measure BIO-1e

Impacts to riparian vegetation along Ross Creek, erosion, and changes in runoff to Ross Creek, could impact steelhead critical habitat. The following measures are required to ensure that no significant impacts occur to steelhead critical habitat. The NMFS may require additional mitigation after consultation

- Prior to the start of construction related ground disturbance, silt fence with wattles on the inside of fencing shall be placed between the construction area and the banks of Ross Creek and any tributary to Ross Creek to minimize potential sediment runoff into the Ross Creek. Written evidence from a qualified engineer that certifies that the silt fences with wattles have been properly installed shall be provided to the building department prior to construction related ground disturbance. The silt fences and wattles shall be maintained during construction related ground disturbance and until the ground is adequately stabilized.
- No construction activity shall occur within the bed or bank of Ross Creek. Additionally, no construction or construction activity shall occur within 50 feet from the top of bank of Ross Creek.
- If there is any potential for sediment to enter Ross Creek or its tributaries, work within 100 feet of Ross Creek, and any tributary to Ross Creek, shall be conducted between June 15 and October 15 when steelhead are least likely to be moving through Ross Creek.
- Work within Swan Swale shall be conducted in isolation from flowing water. Prior to the start of channel alteration, the work area shall be isolated, and flowing water shall be diverted around the isolated area.
- The project shall follow the appropriate Best Management Practices (BMP's) for construction projects: including, but not limited to the following: (1) a moratorium on grading during a rain event; (2) erosion and sediment control measures shall be installed prior to soil disturbance and maintained at all times, (3) no erosion or sediment control measures will be placed in vegetated areas (4) soil disturbance shall be limited to the minimum area needed to complete the proposed action, (5) delineation and protection of environmentally sensitive areas to prevent construction impacts, (6) installation of fiber rolls and other measures as appropriate to control sediment and erosion, (7) control of spills and litter, (8) control of fuels and other hazardous materials, (9) management of temporary on-site restroom facilities to prevent water quality impacts, and (10) preservation of existing vegetation whenever feasible.
- Prior to the start of work within 100 feet of Ross Creek or within Swan Swale, a qualified biologist shall train construction crews regarding habitat sensitivity, identification of listed species, and required best management practices. The training shall cover the general measures being implemented to conserve the species as they relate to the project, penalties for noncompliance, and species ecology with key identifying features. A factsheet or other supporting materials containing this information shall be prepared and distributed to all project staff. The training shall be conducted in languages other than English, as appropriate, for workers who do not speak or understand English. Prior to building permit issuance the applicant shall submit evidence to the building department to demonstrate that they have retained a qualified biologist to implement this measure.

A written report shall be provided to the planning department to confirm the training has taken place prior to any applicable work.

- At a pre-construction meeting, all workers shall be informed of the importance of preventing accidental spills and the procedure, protocol, and required measures to be followed if an accidental spill or construction site discharge enters waterways, ditches, or other tributaries to waterways.
- Regulatory approval shall be obtained for all work within potentially jurisdictional areas, including approval from the Corps, RWQCB, and CDFW. All work within these areas shall conform to any conditions imposed by the regulating agencies.

These measures, in addition to mitigation measures included in Section IV.G, would reduce potential indirect impacts to these species to a less-than-significant level.

Impact BIO-1f: Disturbance to Bat Species

No obvious signs of bats were observed on-site; however, existing riparian habitat may support roost sites for Western red bat. Bat species designated as “High Priority” by the Western Bat Working Group (WBWG) qualify for legal protection under Section 15380(d) of the CEQA Guidelines. Species designated “High Priority” are defined as “imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats” (CDFG, 2011). Additionally, multiple old wooden buildings on-site could support non-special status bat roosts. Construction activities, including the removal of riparian vegetation and the removal of existing structures, could impact roosting bats and available bat roost habitat. Because all bat species are protected from disturbance during maternal roosting and winter hibernation (CFGC Section 86; 2000; 2014; 3007; 4150, along with Title 14 of California Code of Regulations), any impact to roosting bats during this period would be **potentially significant**.

Mitigation Measure BIO-1f

Preconstruction surveys for bats shall take place during the maternity roosting season (defined as: April 1 through August 31) within riparian habitat and all old wooden buildings within the project site. Surveys shall be conducted by a qualified biologist approved by the Town of Ross no less than 14 days prior to removal of trees, snags or buildings within the project area. Ultrasonic acoustic surveys and/or other site appropriate survey method may be performed to determine the presence or absence of bats utilizing the project site as roosting or foraging habitat. Additionally the following measures shall be implemented to lessen impacts to bats:

- a) If special-status bat species are detected during surveys, appropriate, species and roost specific mitigation measures shall be developed by the qualified biologist. Such measures may include postponing removal of trees, snags or structures until the end of the maternity roosting season or construction of species appropriate roosting habitat within, or adjacent to the project site.

- b) Trees, snags and buildings may be removed outside of the maternity roosting season without performing preconstruction bat surveys.
- c) Feld trees shall remain on the ground for 24 hours prior to being removed or chipped.
- d) For all buildings to be demolished, internal entrance surveys shall be performed by a qualified bat biologist no less than 14 days prior to demolition to determine if buildings currently or previously support roosting bats. If bats are determined to be present, appropriate methods shall be used to exclude bats from the building. Such methods may include installation of one way “valves” to allow bats to exit, but not allow them to reenter the building.
- e) If an identified maternity roost location is removed, species and roost appropriate mitigation shall be developed in consultation with CDFW. Mitigation shall include at minimum the replacement of a suitable roost structure within or immediately adjacent to the project site, such that similar structure shape and thermal properties are met with the replacement roost.
- f) If no active roosts are identified then work may commence as planned. Survey results are valid for 30 days from the survey date. Should work commence later than 30 days from the survey date, surveys should be repeated. No preconstruction bat surveys are required for work conducted between the hibernation season and maternity season (i.e., September 1 through October 31).

Implementation of the above measure would mitigate impacts to bats to a less-than-significant level should they occur on-site prior to construction.

Impact BIO-1g: Disturbance to Special-status Plant Species

No special-status plant species were observed on-site either in September 2012 or the plant surveys conducted in 2003; however, existing grassland, woodland, forest, and riparian habitat may support several special-status plant species. Construction activities including the removal of vegetation and soil cut-and-fill could impact special-status plant species, if they are present, and therefore impacts would be **potentially significant**.

Mitigation Measure BIO-1g

A qualified botanist shall conduct a pre-construction focused plant survey within the project site during the blooming or other identifiable season to determine presence/absence of special-status plant species. The surveying botanist shall determine the distribution and population, as well as assess the potential for immediate impact from project activities to special-status plant species. It may be determined that special-status plant species are present within the project site, but impacts to such plants may be generally avoided. These plants shall be clearly demarcated by a qualified botanist, and all construction personnel instructed to avoid these species. Consultation with the USFWS shall occur prior to any impacts to federal listed species

(i.e., Santa Cruz tarplant), as well as consultation with the CDFW for impacts to any of the special-status plant.

If special-status plant species are present and cannot be avoided by project construction, at a minimum the special-status plant species shall be relocated on-site away from further impacts directly relating to the project. For shrubs species (i.e., western leatherwood, Napa false indigo), either cuttings of living stems shall be taken, or where appropriate, the entire shrub should be removed for relocation. Numbers of cuttings shall be at least ten times that of the number of shrubs to be removed, and an application of rooting hormone applied to the cutting. Cuttings shall then be grown out for one to two years, and all grown-out plants replanted on-site away from future impacts.

For perennial herbaceous and moss species (i.e., California bottle-brush grass, minute pocket moss, thin-lobed Horkelia, marsh microseris, North Coast coniferous forest, nodding semaphore grass) both bare root stock and seed shall be collected. Bare root stock relocation consists of removal of the live plant, maintaining a substantial portion of the root's intact native soil, and then immediately relocated to an analogous site. Seed collection consists of collecting whole, live seed, some which shall be immediately grown-out and some shall be stored or scattered for supplementing the bare root stock and grown-out seed. Stored seeds shall be grown-out for one to two years, and all grown-out seeds replanted on-site away from future impacts.

For annual herbaceous species (i.e., white seaside tarplant, Santa Cruz tarplant) seeds shall be collected, stored, and scattered in the relocation site. For each species, to increase the survivability potential, relocation site selection shall be analogous to the site characteristics of the existing plant population (e.g., shade, aspect, slope, soil condition). The relocation site shall be prepared prior to relocation of plants/seeds through the removal of invasive species, the installation of irrigation and/or plant protections (e.g., cages), and the application of mulches, weed mats, and/or other materials to retain soil moisture and discourage the emergence of competitive plants.

All site preparation, seed/cutting/root collection, grow-out, and plant installation shall be conducted by a qualified landscape company approved by the Town of Ross with experience working on restoration projects and within the habitats present on-site. Following the relocation, the plantings/seedlings shall be monitored annually for three to five years by a qualified biologist to determine the success of the relocation, potential threats, and make necessary recommendations (e.g., removal of invasive species, increase/defense irrigation) for the on-site maintenance to the contracted landscaping company. An annual report shall be drafted and submitted to all responsible agencies (e.g., CDFW, USFWS) for their review.

Implementation of the above measure would mitigate impacts to special-status plant species to a less-than-significant level should they occur on-site during and following construction.

Impact BIO-2: Direct Impacts to Riparian Habitat

Riparian habitat associated with the Swan Swale is present on-site; and portions of the actual channels (i.e., bed and bank) occur within the project boundaries. The project proposes to construct storm drain inlets and short pipes to downslope outlets/energy dissipaters to merge with sheet flows of runoff flowing to the existing Swan Swale. Four inlet, pipe and dissipater systems are called for along the driveway system. Two detention basins on Swan Swale would capture uphill drainage in a manner that would result in less post project off-site drainage than existing conditions in compliance with Town Code Section 18.39.090 (i).

The Town's 2007-2025 General Plan Policy 6.6, *Creek and Drainageway Setbacks, Maintenance and Restoration*, states that setbacks from creeks shall be maximized to protect riparian areas and to protect residents from flooding and other hazards. The Town encourages restoration of runoff areas, to include but not be limited to such actions as sloping banks, providing native vegetation, protecting habitat, etc. Policy 6.7, *Riparian Vegetation*, requires that modification of natural channels is done in a manner that retains and protects creekside vegetation, integrates fish passage and includes habitat restoration in its natural state. The installation of these detention basins would permanently remove riparian vegetation associated with Swan Swale. This is considered a **potentially significant** impact.

Mitigation Measure BIO-2

The CDFW exerts jurisdiction over the bed and banks of rivers, lakes, and streams according to provisions of Section 1601 to 1603 of the Fish and Game Code. The Fish and Game Code requires a Streambed Alteration Agreement for the fill or removal of material within the bed and banks of a watercourse or waterbody and for the removal of riparian vegetation. Prior to the issuance of a grading permit, the applicant shall obtain a Streambed Alteration Agreement from CDFW. The applicant shall adhere to all conditions of approval listed in the agreement obtained from the regulatory agency. In addition to measures listed by CDFW, the applicant shall compensate for impacts to riparian habitat as required by the policies of the Town of Ross General Plan.

The first element of compensation for impacts to the riparian system by the proposed project shall be to eradicate the French broom and other non-native invasive species (i.e., Scotch and French broom) along the reach of riparian corridor associated with the construction area under the supervision of a qualified botanist. Once these invasive species are removed, native plants adapted to the local riparian system shall be planted to increase the structural diversity of the system and thus increase the wildlife value for the on-site riparian corridor. Also, the applicant shall, prior to acquiring a grading permit, submit to the Town for review and approval a Mitigation and Monitoring Plan that, at a minimum, details the plant mix (native plants consistent with vegetation along Ross Creek adjacent to the project site), planting location, the success criteria, and the monitoring schedule of the enhancement area. The plan shall be reviewed and approved by the Ross Valley Fire Department and Marin Municipal Water District. The enhancement plantings shall be installed prior to the completion of the proposed project and

monitored for a period of five years. Drip irrigation shall be installed and maintained as necessary to ensure that the success criteria are met. Implementation of the above measures would mitigate potentially significant impacts to riparian areas to a less-than-significant level.

Impact BIO-3: Direct Impacts to Waters that May be Present On-site (Jurisdictional Waters)

A significant impact would occur if a project would 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. Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations, but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

As determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S. Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (referred together as the Rapanos decision) impose a "significant nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard. This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters and 2) consideration of hydrologic and ecologic factors (EPA and USACE 2007). The USACE regulates the filling or grading of such waters under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or

permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils

Wetlands are identified by the presence of hydrophilic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Game has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented which protect the habitat values of the drainage in question.

The preliminary waters assessment for the project site was based primarily on the presence of unvegetated, ponded areas or flowing water, or evidence indicating their presence such as a high water mark or a defined drainage course. The construction of the detention ponds within the channel of Swan Swale would be considered temporary impacts under the Clean Water Act and the California Fish and Game Code. Each detention pond will temporarily impact approximately 120 linear feet of waters; however, collection of additional data will be necessary to determine the exact extent of impacts and to prepare a delineation report suitable for submission to the Corps. Therefore, until a formal wetland delineation is conducted to determine the extent to which any wetlands are present on the site, and given the proposed project involves grading portions within drainage features, impacts to wetlands would be ***potentially significant***.

Mitigation Measure BIO-3

A formal wetland delineation shall be conducted on-site to determine the extent to which wetlands are present on the site. Any alterations of, or discharges into, waters of the United States, including Section 404 wetlands must be in conformance with the Sections 404 and 401 of the Clean Water Act via certification and permitting prior to any grading or construction that may impact jurisdictional area(s), as applicable. Therefore, securing 404 and 401 permits under

the Clean Water Act and compliance with the federal and state “no net loss of wetlands” policy and the Town’s wetlands protection policies will be required to result in no net loss of wetlands and waters as a result of the project.

Impacts to wetlands and other waters shall also be minimized via implementation of a Best Management Practices (BMPs) plan that when implemented will protect preserved waters of the U.S./State from inadvertent fill and or project-related water quality degradation. These practices can include installing orange construction fencing buffers, straw wattles, silt fencing, etc. to keep de minimus fill from entering preserved/avoided wetlands and other waters. During project construction near waters of the U.S. to be preserved on-site, a biological monitor shall be present to monitor the integrity of any preserved wetlands and other waters.

Wetland areas that are filled by the proposed project shall be mitigated via implementation of a wetlands compensation plan that is submitted to the Corps and RWQCB in advance of impacts to wetlands and other waters. As approved by the Corps and the RWQCB, the project applicant may:

1. Purchase mitigation credits from an approved wetland conservation bank or an approved in-lieu fee mitigation entity at a minimum 1:1 ratio.
2. As an alternative to the purchase of credits in a mitigation bank, wetlands may be created on-site and, if so, shall have an equal or higher functional value than those wetlands affected by the project (known as in-kind replacement).
3. If wetlands cannot be created in-kind and on-site, and a mitigation bank is not available, other alternatives shall include off-site and/or out-of-kind wetland compensation.

In any case, mitigation requirements for wetland areas that are not avoided shall be that all impacted wetlands are replaced at a minimum 1:1 ratio (for each square foot of impact, one square foot of wetland would be restored/created) or at a ratio determined by the RWQCB and Corps at the time regulatory permits are authorized for the proposed project by these agencies.

If the applicant implements its own wetland mitigation program, mitigation requirements shall be based upon the existing conditions of the wetlands that would be impacted. Where practicable, wetland plant/animal populations shall be relocated from the wetlands that would be impacted to any re-created wetlands.

If the applicant were to implement an applicant responsible wetland mitigation project, the applicant shall establish a five-year program to monitor the progress of the wetland mitigation toward these standards. At the end of each monitoring year, an annual report shall be submitted to the Town of Ross, the RWQCB, and the Corps. This report shall document the hydrological and vegetative condition of the mitigation wetlands, the progress of wetland towards meeting pre-established Success Criteria, and shall recommend remedial measures as necessary to correct deficiencies.

Also, as part of the proposed project, the applicant shall implement construction and storm water BMPs to contain and minimize surface runoff originating from the development, thereby avoiding and/or reducing adverse impacts to nearby wetlands and other waters” as described in Section IV.G (Hydrology and Water Quality) of this Draft SEIR. Standard sediment and erosion control measures (e.g., use of silt fencing around the perimeter of the construction zone) shall be implemented to protect federal- and state-jurisdictional wetlands and waters during construction. Additionally, runoff produced during and after construction is subject to National Pollution Discharge Elimination System Regulations (NPDES) and local water quality and runoff standards. The proposed project is also required to be in compliance with the Town’s 2007-2025 General Plan policies to ensure compliance with state and federal wetlands regulations and mitigation requirements if impacts cannot be avoided.

Implementation of the above measures would mitigate potentially significant impacts to jurisdictional areas to a less-than-significant level should they occur on-site.

Impact BIO-4: Conflict with Local Policies or Ordinances Protecting Biological Resources

The proposed project is subject to the Town of Ross’ 2007-2025 General Plan goals and policies. Relevant policies are described above under Regulatory Setting and the project’s consistency with all applicable General Plan policies is provided in Section IV.H (Land Use). Mitigation measures discussed as described above would reduce potentially significant impacts to biological resources (e.g., threatened and endangered species habitat and riparian vegetation) to a less-than-significant. Mitigation Measures BIO-4a and 4b would ensure the project is consistent with Town policies regarding tree preservation and natural areas retention. Additional measures included in the Hydrology (Chapter IV.G), Geology and Soils (Chapter IV.E) and Cultural Resources (Chapter IV.L) would also reduce potentially significant impacts to resources, such as hillsides, ridgelines, creeks, drainage ways, and cultural places to a **less-than-significant** level.

Impact BIO-4a: Protection of Trees and Tree Groves

As discussed above, a total of 2,020 (2,187 alive minus 167 dead) trees with trunk diameters of eight inches or more measured at 4.5 feet above grade were identified and mapped within the limits of the survey area in the 2010 inventory. The removal of 433 trees (73 "dead/fallen/hazardous/diseased" trees, 140 non-significant trees and 216 significant trees) would reduce the on-site tree count by approximately seven percent. The Town of Ross General Plan Policies 1.1 – 1.3 and Chapter 12.12 of the Town’s municipal code are intended to protect trees and tree groves. The scale of tree removal is considered a **potentially significant** impact.

Mitigation Measure BIO-4a

The project proposes to mitigate for tree removal through the planting of trees on-site. The replanting plan (Figures III-14 through III-16) illustrates that 977 trees are proposed be replanted to completely reforest the site with a greater diversity of native trees. Town Code Section

12.24.080(d) provides for three replacement trees to be planted on a project site for every one removed. Where on-site trees are not feasible, a project sponsor may make an in-lieu payment to the Town for the provision of off-site trees. The applicant shall mitigate for the loss of trees pursuant to Chapter 12.12 of the municipal code or as determined through consultation with the Town of Ross.

In addition, detailed preservation guidelines shall be prepared by a certified arborist to control possible damage to trees to be preserved. The guidelines shall include the following:

- Grade changes within 1.5 times the width of the tree dripline shall be avoided and any encroachment closer than one-third the distance from the dripline to the trunk shall be prohibited or monitored by the arborist. Restrictions on the limits of grading, adjustments to the final grade of cut and fill slopes, and use of retaining walls shall all be used to protect individual trees worthy of preservation.
- Temporary fencing shall be provided along the outermost edge of the dripline of each tree or group of trees to be retained in the vicinity of grading to avoid compaction of the root zone and mechanical damage to trunks and limbs.
- Paving within the tree dripline shall be prohibited or stringently minimize by using porous materials such as gravel, loose boulders, cobbles, wood chips, or bark mulch where hardscape improvements are necessary for access in the vicinity of trees.
- Trenching within the tree dripline shall be prohibited, with any required utility line within the dripline installed by boring or drilling through the soil.
- The amount of landscape irrigation within the tree dripline shall be minimized by prohibiting turf or any landscaping with high water requirements and limiting permanent irrigation improvements to bubbler, drip, or subterranean systems.
- Storage of construction equipment, materials, and stockpiled soils shall be prohibited within the tree dripline.

Implementation of mitigation would lessen potentially significant impacts to trees to a less-than-significant level. Over the short term, tree canopy would be reduced. Planting or afforestation prevents long term net loss if: (a) the mitigation ratio is at least one successful new tree for each tree removed; (b) replacement species have similar mature canopy spread; and (c) indigenous tree replanting improves the native ecosystem by creating a healthy understory of replacement trees. Planting non-invasive trees will assist in the natural return of indigenous species.

Off-site tree planting is a viable mitigation option if there is not enough area on-site to accommodate a 3 to 1 tree planting ratio. More opportunities may exist off-site to maintain

stands that are large, contiguous with other stands, and relatively undisturbed, thereby maximizing habitat value.

Impact BIO-4b: Natural Areas Retention

Policy 1.4 of the Town's General Plan (Natural Areas Retention) requires that projects maximize the amount of land retained in its natural state. Wherever possible, residential development should be designed to preserve, protect and restore native site vegetation and habitat. In addition, where possible and appropriate, invasive vegetation should be removed. The proposed project has been designed based on an opportunities and constraints analysis that demonstrated most of the land above Swan Swale contains unstable soils, mature forests, rock outcroppings, and water courses that constitute significant natural resources meriting protection from insensitive development. The project has been designed such that all three home sites are situated below Swan Swale in the tightest cluster possible under governing R-1:B-10A zoning standards.

Several non-native, invasive species occur on the site. Invasive species, particularly fast-growing herbaceous invaders, are often disturbance-adapted, and soil disturbance of the type that would occur during the construction of the proposed project is often followed by an aggressive invasion of the disturbed area by these species.

Under existing conditions, there are small populations of many non-native species throughout the project site; however, ground disturbance associated with the project would create new areas suitable for recruitment of these non-native species, many of which form dense, monotypic stands, eliminating any natural habitat that the area previously supported. Expansion of these invasive plant populations on the site would also increase the seed bank on the site allowing spread to natural habitats on the site not impacted by the proposed project. Invasion by these non-native species would degrade the functions and values of preserved natural habitat for native plants and wildlife species and reduce the potential for native species to use the landscaped areas within the new development. This is considered a ***potentially significant*** impact.

Mitigation Measure BIO-4b

To reduce the potential establishment or spread of non-native, invasive weed populations as a result of project activities, the following measures shall be implemented:

- Within areas subject to grading activities, concentrations of invasive species that could have a severe ecological impact on surrounding habitat (i.e., French broom) shall be removed prior to grading to limit the spread of seed to new areas.
- Maintain staging areas free of these weeds and their seeds for the duration of their use during project construction.
- If straw is used for road stabilization and erosion control, it shall be certified weed-free.

Implementation of the above measures would mitigate potentially significant impacts related to non-native, invasive weeds to a less-than-significant level.

Impact BIO-5: Loss or Conversion of Forest Land

Forests and forest resources are directly linked to both greenhouse gas (GHG) emissions and efforts to reduce those emissions. For example, conversion of forests to non-forest uses may result in direct emissions of GHG emissions. Such conversion would also remove existing carbon stock (i.e., carbon stored in vegetation), as well as a significant carbon sink (i.e., rather than emitting GHGs, forests remove GHGs from the atmosphere). Changes in forest land or timberland zoning may also ultimately lead to conversions, which could result in GHG emissions, aesthetic impacts, impacts to biological resources and water quality impacts, among others. Therefore, these additions are reasonably necessary to ensure that lead agencies consider the full range of potential impacts in their initial studies.

Although the project site is not technically zoned as forest land or timberland by the Town of Ross, as stated above, the project area would be considered forest land. Therefore, the project would result in the loss or conversion of forest land to non-forest use. This is considered a **potentially significant** impact.

Mitigation Measure BIO-5

Implementation of the Mitigation Measure BIO-4a would mitigate potentially significant impacts related to loss or conversion of forest land to a less-than-significant level. A forest, by definition, is an area with a high density of trees. A typical tree forest is composed of the overstory (canopy or upper tree layer) and the understory. Introducing tree species (replacement trees) into the project site to replace the trees removed is intended to maintain the native biodiversity of the site. The intention is to maintain or improve the native ecosystem (i.e., biodiversity); therefore, growing trees is the same as growing a forest in this instance. To promote the maintenance and growth of native ecosystems, only indigenous trees will be planted.

Quantitatively, it appears the amount of forest habitat will be reduced post-project. Qualitatively, it appears that there is a potential to improve the quality of forest habitat post-project. This can be achieved through the introduction of tree species that will improve the native ecosystem, thereby leading to a qualitative improvement in habitat values.

The planting of indigenous trees will maintain and/or improve the native ecosystem. Indigenous tree planting can be managed in ways that enhance their biodiversity protection functions (maintaining nutrient capital, protecting watersheds and soil structure as well as storing carbon).

Impact BIO-6: Disturbance of Movement, Migration Corridors, and Nursery Sites

The proposed project would result in a significant impact if it substantially interfered 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. As described above, the proposed project has been designed based on an opportunities and

constraints analysis which clusters proposed homes, driveways and the main access road in the northeastern area of the site near existing off-site single-family residences along Upper Road. With the exception of the proposed on-site fill area, no other development is proposed within the 36-acre site. Approximately 72% of the site's boundary adjoins open space and parkland.

The large amount of cover within the project site provides many native and resident species, such as black-tailed deer, protection while moving between foraging and resting sites. It may also provide temporary protection, food sources, and roost sites for migratory species including many bird and bat species. Artificial lighting has the potential to affect nocturnal wildlife movements and increase predation risk for some species. In addition, Swan Swale contains perennial portions and has the potential to provide a migration corridor for semi-aquatic species such as the CRLF. The gradients of both swales are too steep for passage into the project site by special-status fish species, including salmonids; therefore, project activities within the swales will not affect fish movement. The project design does not contain any permanent fencing along the access road or potential building areas, nor will the project result in changes to passage within Swan Swale or Frog Swale. However, movement will be temporarily disrupted during project construction activities through the installation of temporary construction fencing, grading, and creation of the detention ponds in Swan Swale. The removal of invasive plant species such as French broom may result in a beneficial effect for many resident species. Revegetation with native plant species will result in an improved movement corridor by reducing the vegetation density and increasing ease of movement for wildlife species without reducing protective cover. In addition, revegetation should reestablish a more diverse plant community and provide increased food sources and nest sites for many wildlife species. Although temporary, the proposed project activities could have a **potentially significant** impact on wildlife movement through the project site.

Removal of trees in the area of the retaining wall may affect nursery sites for breeding bird and bat species, including NSO. The proposed project will plant trees resulting in a net gain in trees to mitigate for the loss of the removed trees, thus most impacts to nursery sites will be temporary. However, the proposed retention wall location overlaps the NSO occurrence location and opening up this area of the project site by removing trees and constructing a retention wall will change the habitat characteristics in the vicinity. This has the potential to affect NSO use within the project site including the removal of potential satellite roosts during the breeding season. The proposed project activities could have a **potentially significant** impact on NSO in the vicinity.

Although detailed plans for individual residences have not yet been prepared, additional habitat would be developed with possibly pools, patios, lawns and landscaping. The project description does not indicate any fencing on the property. Given the clustered nature of the three proposed homes and their location near existing off-site homes, exclusionary fencing surrounding the new homes is not anticipated to significantly impact wildlife movement through the site. However, the project could affect wildlife movement (e.g., deer and other larger wildlife) if exclusionary fencing is proposed along either Swan Swale or Frog Swale, as drainage channels tend to

serve as important movement corridors for wildlife. This is considered a ***potentially significant*** impact.

Implementation of the Mitigation Measure BIO-6 along with Mitigation Measures BIO-1a, 1c, and 1e would mitigate potentially significant impacts related to wildlife movement to a less-than-significant level.

Mitigation Measure BIO-6

The following measures shall be implemented to address potentially significant indirect impacts to movement, migration corridors, and nursery sites:

- All temporary fencing installed during construction activities shall be removed immediately following completion of project activities.
- The project shall not install artificial night lighting beyond what is necessary for the access road.
- Consultation with USFWS on impacts to NSO and its habitat will determine whether habitat mitigation is necessary, and if required, the appropriate amount and location of habitat to be conserved.
- Use of any exclusionary fencing shall be restricted along Swan Swale and Frog Swale. Exclusionary fencing is any fencing designed to exclude wildlife and contains one or more of the following conditions: lowest horizontal is within 1.5 feet of ground OR highest horizontal is over 6 feet OR top or bottom wire is barbed OR distance between top wires is less than 10 inches.

CUMULATIVE IMPACTS

In the absence of project-specific mitigation, the impacts resulting from the project that are considered “less than significant with mitigation” would all contribute to cumulative impacts in the region. The overall cumulative effect of development is dependent on the degree to which significant vegetation and wildlife resources are protected or mitigated as part of individual developments. This includes preservation of areas of sensitive natural communities, protection of essential habitat for special-status plant and animal species, and avoidance of wetlands. Further environmental review of any specific development proposals in the vicinity of the site should generally serve to ensure that important biological and wetland resources are identified, protected and properly managed, and should serve to prevent any significant adverse development-related impacts.

Cumulative development contributes to an incremental reduction in the amount and connectivity of existing natural communities and wildlife habitat. Measures recommended to mitigate the proposed project’s potential impacts on sensitive natural resources would address the project’s contribution to cumulative impacts. Some species may disperse through the habitat on the project site, but most wildlife presently using the site do so as part of their normal movements

for foraging, mating, and caring for young. Although conversion of undeveloped habitat to residential development would diminish the existing wildlife foraging habitat on-site, implementation of the mitigation measures listed above would reduce the proposed project's potentially significant impacts to biological resources to less-than-significant levels. Therefore, cumulative impacts would be ***less than significant***.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Implementation of the mitigation measures listed above would reduce project impacts related to biological resources to a ***less-than-significant*** level.

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