

APPENDIX E

Biological Resources Data

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APPENDIX E

The following tables provide a review of special-status species known or suspected from the nine United States Geological Survey (USGS) quadrangles encompassing and surrounding the LRDP EIR Study Area. Table E-1 provides information on special-status plants and Table E-2 information on special-status animal species. This includes a conclusion on possible presence within the EIR Study Area. These tables were developed as part of the as part of the Draft EIR on the *Wildland Vegetative Fuel Management Plan*¹ and were refined and updated to address the potential for occurrence within the entire LRDP EIR Study Area.

¹ *UC Berkeley Hill Campus, Wildlife Vegetative Fuel Management Plan*, State Clearinghouse No 2019110389, prepared for University of California, Berkeley, Capital Strategies – Physical & Environmental Planning, August 2020.

Table E-1 Special-Status Plant Species Known or Suspected to Occur in Berkeley Hills Vicinity and Potential for Occurrence in EIR Study Area

Species	Listing Status ¹ Federal	Listing Status ¹ State	Listing Status ¹ CRPR	Habitat	Potential for Occurrence ²
Bent-flowered fiddleneck <i>Amsinckia lunaris</i>	–	–	1B.2	Cismontane woodland, valley and foothill grassland, coastal bluff scrub. 10–2,608 feet in elevation. Blooms March–June.	May occur. Hill Campus East in Study Area contains potentially suitable woodland, grassland, and scrub habitat for this species.
Pallid manzanita <i>Arctostaphylos pallida</i>	FT	SE	1B.1	Broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. Grows on uplifted marine terraces on siliceous shale or thin chert. May require fire. 591–1,509 feet in elevation. Blooms December–March.	May occur. Hill Campus East in Study Area contains potentially suitable woodland and scrub habitat for this species.
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	–	–	1B.2	Lowground, alkali flats, and flooded lands; in annual grassland or in playas or vernal pools. 0–551 feet in elevation. Blooms March–June.	Not expected to occur. Study Area does not contain alkaline soils.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	–	–	1B.2	Chaparral, valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 115–4,806 feet in elevation. Blooms March–June.	May occur. Hill Campus East in Study Area contains potentially suitable grassland and woodland habitat.
Big tarplant <i>Blepharizonia plumosa</i>	–	–	1B.1	Dry hills and plains in annual grassland. Clay to clay-loam soils; usually on slopes and often in burned areas. 98–1,657 feet in elevation. Blooms July–October.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.
Mt. Diablo fairy-lantern <i>Calochortus pulchellus</i>	–	–	1B.2	On wooded and brushy slopes. 98–3,002 feet in elevation. Blooms April–June.	May occur. Hill Campus East in Study Area contains potentially suitable woodland and shrub habitat.
Coastal bluff morning-glory <i>Calystegia purpurata</i> ssp. <i>saxicola</i>	–	–	1B.2	Coastal dunes, coastal scrub, coastal bluff scrub, north coast coniferous forest. 33–344 feet in elevation. Blooms April–September.	Not expected to occur. Study Area does not contain suitable coastal dune habitat.
Bristly sedge <i>Carex comosa</i>	–	–	2B.1	Lake margins, wet places, grassland. -16–5,315 feet in elevation. Blooms May–September.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i>	–	–	1B.1	Grassland habitat, often associated with alkaline soils, sometimes described as heavy white clay. 0–755 feet in elevation. Blooms May–October.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.
Point Reyes salty bird's-beak <i>Chloropyron maritimum</i> ssp. <i>palustre</i>	–	–	1B.2	Usually in coastal salt marsh with <i>Salicornia</i> , <i>Distichlis</i> , <i>Jaumea</i> , <i>Spartina</i> , etc. 0–377 feet in elevation. Blooms June–October.	Not expected to occur. Study Area does not contain suitable salt marsh habitat.
San Francisco Bay spineflower <i>Chorizanthe cuspidata</i> var. <i>cuspidata</i>	–	–	1B.2	Sandy soil on terraces and slopes. 10–705 feet in elevation. Blooms April–July.	Not expected to occur. Study Area does not contain sandy terrace habitat.
Robust spineflower <i>Chorizanthe robusta</i> var. <i>robusta</i>	FE	–	1B.1	Sandy terraces and bluffs or in loose sand. 30–804 feet in elevation. Blooms April–September.	Not expected to occur. Study Area does not contain sandy terrace or sandy bluff habitat.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Listing Status ¹ CRPR	Habitat	Potential for Occurrence ²
Bolander's water-hemlock <i>Cicuta maculata</i> var. <i>bolanderi</i>	–	–	2B.1	Marshes and swamps, fresh or brackish water. 0–656 feet in elevation. Blooms July–September.	Not expected to occur. Study Area does not contain suitable marsh or swamp habitat.
Franciscan thistle <i>Cirsium andrewsii</i>	–	–	1B.2	Coastal bluff scrub, broadleaved upland forest, coastal scrub, coastal prairie. Sometimes serpentine seeps. 0–492 feet in elevation. Blooms March–July.	May occur. Hill Campus East in Study Area contains potentially suitable coastal scrub habitat.
Presidio clarkia <i>Clarkia franciscana</i>	FE	SE	1B.1	Serpentine outcrops in grassland or scrub. 66–1,001 feet in elevation. Blooms May–July.	Not expected to occur. Study Area does not contain serpentine soils.
Western leatherwood <i>Dirca occidentalis</i>	–	–	1B.2	On brushy slopes, mesic sites; mostly in mixed evergreen and foothill woodland communities. 82–1,394 feet in elevation. Blooms January–March.	Known to occur. Species reported from Strawberry Canyon and Claremont Canyons.
Tiburon buckwheat <i>Eriogonum luteolum</i> var. <i>caninum</i>	–	–	1B.2	Serpentine soils; sandy to gravelly sites. 0–2,297 feet in elevation. Blooms May–September.	Not expected to occur. Study Area does not contain serpentine soils.
Jepson's coyote-thistle <i>Eryngium jepsonii</i>	–	–	1B.2	Vernal pools, valley and foothill grassland. Clay. 10–984 feet in elevation. Blooms April–August.	Not expected to occur. Study Area does not contain vernal pool habitat.
San Joaquin spearscale <i>Extriplex joaquinana</i>	–	–	1B.2	In seasonal alkali wetlands or alkali sink scrub with <i>Distichlis spicata</i> , <i>Frankenia</i> , etc. 3–2,740 feet in elevation. Blooms April–October.	Not expected to occur. Study Area does not contain alkali wetland or alkali sink scrub habitat.
Minute pocket moss <i>Fissidens pauperculus</i>	–	–	1B.2	Moss growing on damp soil along the coast. In dry streambeds and on stream banks. 33–3,360 feet in elevation.	May occur. Hill Campus East in Study Area contains potentially suitable stream bank habitat.
Fragrant fritillary <i>Fritillaria liliacea</i>	–	–	1B.2	Often on serpentine; various soils reported though usually on clay, in grassland. 10–1,312 feet in elevation. Blooms February–April.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.
Blue coast gilia <i>Gilia capitata</i> ssp. <i>chamissonis</i>	–	–	1B.1	Coastal dunes, coastal scrub. 10–656 feet in elevation. Blooms April–July.	Not expected to occur. Study Area does not contain suitable coastal dune habitat.
Dark-eyed gilia <i>Gilia millefoliata</i>	–	–	1B.2	Coastal dunes. 3–197 feet in elevation. Blooms April–July.	Not expected to occur. Study Area does not contain suitable coastal dune habitat.
Diablo helianthella <i>Helianthella castanea</i>	–	–	1B.2	Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 148–3,510 feet in elevation. Blooms March–June.	May occur. Hill Campus East in Study Area contains potentially suitable woodland habitat.
Congested-headed hayfield tarplant <i>Hemizonia congesta</i> ssp. <i>congesta</i>	–	–	1B.2	Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 66–2,133 feet in elevation. Blooms April–November.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Listing Status ¹ CRPR	Habitat	Potential for Occurrence ²
Water star-grass <i>Heteranthera dubia</i>	–	–	2B.2	Alkaline, still or slow-moving water. Requires a pH of 7 or higher, usually in slightly eutrophic waters. 49–4,954 feet in elevation. Blooms July–October.	Not expected to occur. Study Area does not contain suitable alkaline aquatic habitat.
Loma Prieta hoita <i>Hoita strobilina</i>	–	–	1B.1	Chaparral, cismontane woodland, riparian woodland. Serpentine; mesic sites. 197–3,199 feet in elevation. Blooms May–July.	Not expected to occur. Study Area does not contain serpentine soils.
Santa Cruz tarplant <i>Holocarpha macradenia</i>	FT	SE	1B.1	Coastal prairie, coastal scrub, valley and foothill grassland. Light, sandy soil or sandy clay; often with nonnatives. 33–722 feet in elevation. Occurrences at elevations greater than 400 feet are introduced. Blooms June–October.	Not expected to occur. Nearest known occurrences are either extirpated or are part of an introduced population within Wildcat Canyon Regional Park approximately 4 miles north of Study Area.
Kellogg's horkelia <i>Horkelia cuneata</i> var. <i>sericea</i>	–	–	1B.1	Old dunes, coastal sandhills; openings. 16–705 feet in elevation. Blooms April–September.	Not expected to occur. Study Area does not contain dune habitat.
Carquinez goldenbush <i>Isocoma arguta</i>	–	–	1B.1	Alkaline soils, flats, lower hills. On low benches near drainages and on tops and sides of mounds in swale habitat. 3–164 feet in elevation. Blooms August–December.	Not expected to occur. Study Area does not contain alkaline soils.
Northern California black walnut <i>Juglans hindsii</i>	–	–	1B.1	Riparian forest, riparian woodland. Few extant native stands remain; widely naturalized. Deep alluvial soil, associated with a creek or stream. 0–2,100 feet in elevation. Blooms April–May.	Not expected to occur. Species is conspicuous and has not been reported from Study Area.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE	–	1B.1	Vernal pools, swales, low depressions, in open grassy areas. 3–1,476 feet in elevation. Blooms March–June.	Not expected to occur. Study Area does not contain vernal pool habitat.
Delta tule pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	–	–	1B.2	Freshwater and brackish marshes. Usually on marsh and slough edges. 0–16 feet in elevation. Blooms May–July.	Not expected to occur. Study Area does not contain marsh habitat and is outside of the elevation range of this species.
Beach layia <i>Layia carnososa</i>	FE	SE	1B.1	On sparsely vegetated, semi-stabilized dunes, usually behind foredunes. 0–98 feet in elevation. Blooms March–July.	Not expected to occur. Study Area does not contain dune habitat.
Rose leptosiphon <i>Leptosiphon rosaceus</i>	–	–	1B.1	Coastal bluff scrub. 33–459 feet in elevation. Blooms April–July.	Not expected to occur. Study Area does not contain coastal bluff habitat.
Hall's bush-mallow <i>Malacothamnus hallii</i>	–	–	1B.2	Chaparral, coastal scrub. Some populations on serpentine. 33–2,395 feet in elevation. Blooms May–September.	May occur. Hill Campus East in Study Area contains potentially suitable coastal scrub habitat.
Oregon meconella <i>Meconella oregana</i>	–	–	1B.1	Coastal prairie, coastal scrub. Open, moist places. 197–2,100 feet in elevation. Blooms March–April.	May occur. Hill Campus East in Study Area contains potentially suitable coastal scrub habitat.
Mt. Diablo cottonweed <i>Micropus amphibolus</i>	–	–	3.2	Bare, grassy or rocky slopes. 148–2,707 feet in elevation. Blooms March–May.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Listing Status ¹ CRPR	Habitat	Potential for Occurrence ²
San Antonio Hills monardella <i>Monardella antonina</i> ssp. <i>antonina</i>	–	–	3	Cismontane woodland, chaparral. 1,050–3,281 feet in elevation. Blooms June–August.	May occur. Hill Campus East in Study Area contains potentially suitable woodland habitat.
Woodland woollythreads <i>Monolopia gracilens</i>	–	–	1B.2	Grassy sites, in openings; sandy to rocky soils. Often seen on serpentine after burns but may have only weak affinity to serpentine. 328–3,937 feet in elevation. Blooms March–July.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.
Lime Ridge navarretia <i>Navarretia gowenii</i>	–	–	1B.1	On clay, serpentine soils. 591–1,001 feet in elevation. Blooms May–June.	Not expected to occur. Study Area does not contain serpentine soils.
Antioch Dunes evening-primrose <i>Oenothera deltoides</i> ssp. <i>howellii</i>	FE	SE	1B.1	Interior dunes. Remnant river bluffs and sand dunes east of Antioch. 0–98 feet in elevation. Blooms March–September.	Not expected to occur. Study Area does not contain dune habitat.
Choris' popcornflower <i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i>	–	–	1B.2	Chaparral, coastal scrub, coastal prairie. Mesic sites. 49–525 feet in elevation. Blooms March–June.	May occur. Hill Campus East in Study Area contains potentially suitable coastal scrub and grassland habitat.
San Francisco popcornflower <i>Plagiobothrys diffusus</i>	–	SE	1B.1	Valley and foothill grassland, coastal prairie. Historically from grassy slopes with marine influence. 148–1,181 feet in elevation. Blooms March–June.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.
Hairless popcornflower <i>Plagiobothrys glaber</i>	–	–	1A	Coastal salt marshes and alkaline meadows. 16–591 feet in elevation. Blooms March–May.	Not expected to occur. Study Area does not contain salt marsh habitat.
Marin knotweed <i>Polygonum marinense</i>	–	–	3.1	Coastal salt marshes and brackish marshes. 0–33 feet in elevation. Blooms May–August.	Not expected to occur. Study Area does not contain salt marsh habitat.
Adobe sanicle <i>Sanicula maritima</i>	–	SR	1B.1	Meadows and seeps, valley and foothill grassland, chaparral, coastal prairie. Moist clay or ultramafic soils. 98–787 feet in elevation. Blooms February–May.	May occur. Hill Campus East in Study Area contains potentially suitable grassland habitat.
Long-styled sand-spurrey <i>Spergularia macrotheca</i> var. <i>longistyla</i>	–	–	1B.2	Marshes, swamps, meadows, and seeps. Alkaline. 0–836 feet in elevation. Blooms February–May.	Not expected to occur. Study Area does not contain marsh or swamp habitat or alkaline soils.
Most beautiful jewelflower <i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	–	–	1B.2	Serpentine outcrops, on ridges and slopes. 312–3,281 feet in elevation. Blooms April–September.	Not expected to occur. Study Area does not contain serpentine soils.
Slender-leaved pondweed <i>Stuckenia filiformis</i> ssp. <i>alpina</i>	–	–	2B.2	Shallow, clear water of lakes and drainage channels. 984–7,054 feet in elevation. Blooms May–July.	Not expected to occur. Study Area does not contain suitable lake or drainage channel habitat.
California seablite <i>Suaeda californica</i>	FE	–	1B.1	Margins of coastal salt marshes. 0–16 feet in elevation. Blooms July–October.	Not expected to occur. Study Area does not contain salt marsh habitat.
Saline clover <i>Trifolium hydrophilum</i>	–	–	1B.2	Salt marsh, swamp, vernal pool, and wetlands. Mesic, alkaline sites. 0–984 feet in elevation. Blooms April–June.	Not expected to occur. Study Area does not contain salt marsh, swamp, or vernal pool habitat.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Listing Status ¹ CRPR	Habitat	Potential for Occurrence ²
San Francisco owl's-clover <i>Triphysaria floribunda</i>	–	–	1B.2	Coastal prairie and coastal scrub. On serpentine and non-serpentine substrate (such as at Pt. Reyes). 3–492 feet in elevation. Blooms April–June.	Not expected to occur. Species associated with coastal areas not found in Study Area.
Oval-leaved viburnum <i>Viburnum ellipticum</i>	–	–	2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 705–4,593 feet in elevation. Blooms May–June.	May occur. Hill Campus East in Study Area contains potentially suitable woodland habitat.

Notes: CRPR = California Rare Plant Rank; CESA = California Endangered Species Act; CEQA = California Environmental Quality Act; ESA = Endangered Species Act; NPPA = Native Plant Protection Act

1 Legal Status Definitions

Federal:

FE Federally Listed as Endangered (legally protected by ESA)

FT Federally Listed as Threatened (legally protected by ESA)

State:

SE State Listed as Endangered (legally protected by CESA)

SR State Listed as Rare (legally protected by NPPA)

California Rare Plant Ranks:

1A Plant species that are presumed extirpated or extinct because they have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California but may still occur elsewhere in its range.

1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA).

2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA).

3 Plant species for which there is not enough information to assign the species to one of the other ranks or reject them.

Threat Ranks:

0.1 Seriously threatened in California (over 80 percent of occurrences threatened; high degree and immediacy of threat)

0.2 Moderately threatened in California (20–80 percent occurrences threatened; moderate degree and immediacy of threat)

0.3 Not very threatened in California (less than 20 percent of occurrences threatened / low degree and immediacy of threat or no current threats known)

2 Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present because of poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available and there have been nearby recorded occurrences of the species.

Known to occur: The species has been observed within EIR Study Area.

Sources: CNDDDB 2020; CNPS 2020; CCCCI 2016; CCCCI 2019a; USFWS 2020a

Table E-2 Special-Status Wildlife Species Known to Occur in Berkeley Hills Vicinity and Potential for Occurrence in EIR Study Area

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence ²
Amphibians and Reptiles				
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT	ST	Typically found in chaparral and scrub habitats but will also use adjacent grassland, oak savanna and woodland habitats. Areas with rock outcrops, deep crevices or abundant rodent burrows, where shrubs form a vegetative mosaic with oak trees and grasses.	Known to occur. Hill Campus East in Study Area is within the range of Alameda whipsnake and a large portion has been designated Critical Habitat. Individuals have been documented in several locations within and adjacent to Hill Campus East which contains a mosaic of scrub patches embedded within grassland and woodland cover, which could potentially be used by Alameda whipsnake.
California red-legged frog <i>Rana draytonii</i>	FT	SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. In the dry months, use a variety of microsites that remain moist and cool through the summer including leaf litter, dense understory, or small mammal burrows for refuge and foraging.	May occur. Hill Campus East in Study contains potentially suitable habitat. Nearest known occurrence is approximately 0.7 mile north of Study Area within a botanic garden pond in Tilden Regional Park, however, this occurrence is presumed to be extirpated due to an infestation of nonnative bullfrogs. Other known occurrences of this species within Wildcat Creek watershed, approximately 1.9 miles north of the Plan Area.
California tiger salamander <i>Ambystoma californiense</i>	FT	ST	Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Not expected to occur. Nearest known occurrences are approximately 7.2 miles south and 8.3 miles east of Study Area and are both considered extirpated due to urban and residential development. There are no known occurrences within or adjacent to Study Area and suitable vernal pool or grassland habitat with associated aquatic habitat for this species is absent.
Foothill yellow-legged frog <i>Rana boylei</i>	-	SE	West/central coast clade. Partly-shaded, gently flowing, low-gradient, shallow streams and riffles with a rocky substrate in a variety of habitats. Need at least some cobble-sized substrate for egg-laying. Need at least 15 weeks to attain metamorphosis.	Not expected to occur. Nearest known occurrence is approximately 2.6 miles southeast of Study Area. Other nearby occurrences (i.e., within 4 miles) are considered extirpated, including one 1912 record within Claremont Creek in Study Area. Strawberry Creek and Claremont Creek within Study Area have been substantially altered or are characterized by steep banks, high-gradient, fast-moving flows, and a general lack of pools, which do not provide adequate habitat.
Green sea turtle <i>Chelonia mydas</i>	FT	-	Marine. Completely herbivorous; needs adequate supply of seagrasses and algae.	Not expected to occur. Study Area does not contain suitable marine habitat.
Northern California legless lizard <i>Anniella pulchra</i>	-	SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	Not expected to occur. Study Area outside of current range of species.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence ²
Western pond turtle <i>Actinemys marmorata</i>	–	SSC	Aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6,000 feet elevation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.3 mile from water for egg-laying.	May occur. There is one known occurrence approximately 1.4 mile south and one approximately 0.8 mile north of Study Area. Aquatic habitat within Hill Campus East in Study Area (e.g., Strawberry Creek, Claremont Creek, ponds associated with the UC Berkeley Botanical Garden) provide potentially suitable habitat.
Birds				
Alameda song sparrow <i>Melospiza melodia pusillula</i>	–	SSC	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits <i>Salicornia</i> marshes; nests low in <i>Grindelia</i> bushes and in <i>Salicornia</i> .	Not expected to occur. Study Area does not contain suitable salt marsh habitat.
American peregrine falcon <i>Falco peregrinus anatum</i>	FD	SD FP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest consists of a scrape or a depression or ledge in an open site.	Known to occur. Species known to nest on Campanile in Campus Park.
Bald eagle <i>Haliaeetus leucocephalus</i>	FD	SE FP	Lower montane coniferous forest, old growth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Not expected to occur. Nearest known occurrence is adjacent to San Pablo Reservoir approximately 3.4 miles north of Study Area, and suitable nesting habitat or nearby aquatic foraging habitat is absent.
Black skimmer <i>Rynchops niger</i>	–	SSC	Alkali playa, sand shore. Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	Not expected to occur. Study Area does not contain suitable beach or gravel bar habitat.
Burrowing owl <i>Athene cunicularia</i>	–	SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel (<i>Otospermophilus beecheyi</i>).	May occur. There is one known occurrence approximately 4.9 miles northwest of Study Area in the City of Richmond. Additionally, there have been several additional observations of the species; however, these observations are concentrated 3.5 miles west of Study Area in Cesar Chavez Park, and other areas along shoreline of San Francisco Bay. Hill Campus East in Study Area contains some grassland habitat which may be suitable habitat.
Cackling (=Aleutian Canada) goose <i>Branta hutchinsii leucopareia</i>	FD	–	Winters on lakes and inland prairies. Forages on natural pasture or that cultivated to grain; loaf on lakes, reservoirs, ponds.	Not expected to occur. Suitable pasture, prairie, and other agricultural habitat is not present within Study Area.
California (Ridgway's) clapper rail <i>Rallus obsoletus</i>	FE	SE FP	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed but feeds away from cover on invertebrates from mud-bottomed sloughs.	Not expected to occur. Study Area does not include suitable marsh habitat.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence ²
California black rail <i>Laterallus jamaicensis coturniculus</i>	–	ST FP	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that do not fluctuate during the year and dense vegetation for nesting habitat.	Not expected to occur. Study Area does not include suitable marsh habitat.
California least tern <i>Sternula antillarum browni</i>	FE	SE FP	Alkali playa, wetland. Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	Not expected to occur. Study Area does not include suitable sand beach, alkali flat, or other suitable nesting habitat.
Golden eagle <i>Aquila chrysaetos</i>	–	FP	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	May occur. Hill Campus East in Study contains potentially suitable habitat, although no known records of nesting have been reported.
Northern harrier <i>Circus hudsonius</i>	–	SSC	Coastal salt and fresh-water marsh. Nest and forage in grasslands, from salt grass in desert sink to mountains. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a mound of sticks in wet areas.	May occur. Hill Campus East in Study contains potentially suitable habitat..
Saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	–	SSC	Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	Not expected to occur. Study Area does not contain suitable marsh habitat.
San Pablo song sparrow <i>Melospiza melodia samuelis</i>	–	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.	Not expected to occur. Study Area does not contain suitable marsh habitat.
Suisun song sparrow <i>Melospiza melodia maxillaris</i>	–	SSC	Marsh and swamp, wetlands. Resident of brackish-water marshes surrounding Suisun Bay. Inhabits cattails, tules and other sedges, and <i>Salicornia</i> ; also known to frequent tangles bordering sloughs.	Not expected to occur. Study Area does not contain suitable marsh habitat.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT	SSC	Great Basin standing waters, sand shore, wetland. Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Not expected to occur. Study Area does not contain suitable nesting habitat (e.g., lake shore, beach, levees).
Western yellow-billed cuckoo <i>Coccyzus americanus</i>	FT	SE	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not expected to occur. Study Area is outside of the current known range of this species and suitable habitat is absent.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence ²
White-tailed kite <i>Elanus leucurus</i>	–	FP	Cismontane woodland, marsh and swamp, riparian woodland, valley and foothill grassland, and wetlands. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	May occur. Hill Campus East in Study contains suitable habitat
Yellow rail <i>Coturnicops noveboracensis</i>	–	SSC	Freshwater marsh, meadow, and seep. Summer resident in eastern Sierra Nevada in Mono County.	Not expected to occur. Study Area does not contain suitable marsh habitat.
Yellow warbler <i>Setophaga petechia</i>	–	SSC	Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	May occur. Hill Campus East in Study contains suitable riparian woodland habitat, and the species has been observed recently within and adjacent to Study Area.
Yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	–	SSC	Marsh and swamp, wetland. Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds. Nests only where large insects such as Odonata are abundant, nesting timed with maximum emergence of aquatic insects.	Not expected to occur. Study Area does not contain suitable marsh habitat.
Fish				
Delta smelt <i>Hypomesus transpacificus</i>	FT	SE	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay.	Not expected to occur. Study Area does not contain suitable aquatic habitat.
Longfin smelt <i>Spirinchus thaleichthys</i>	FC	SSC	Found in open waters of estuaries, mostly in middle or bottom of water column. Prefers salinities of 15-30 ppt but can be found in completely freshwater to almost pure seawater.	Not expected to occur. Study Area does not contain suitable aquatic habitat.
Sacramento perch <i>Archoplites interruptus</i>	–	SSC	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water. Aquatic vegetation is essential for young.	Not expected to occur. Study Area is outside of current range of this species. There are known occurrences of Sacramento perch within Lake Anza and Jewel Lake approximately 1 mile north of Study Area in a separate watershed; however, it is unclear whether these fish were introduced into these reservoirs or if they were naturally occurring.
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.	Not expected to occur. Study Area does not contain suitable brackish water (e.g., lagoons) habitat.

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence ²
Salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE	SE FP	Only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat but may occur in other marsh vegetation types and in adjacent upland areas. Does not burrow, build loosely organized nests. Requires higher areas for flood escape.	Not expected to occur. Study Area does not contain suitable salt marsh habitat.
Salt-marsh wandering shrew <i>Sorex vagrans halicoetes</i>	-	SSC	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 feet above sea level where abundant driftwood is scattered among <i>Salicornia</i> .	Not expected to occur. Study Area does not contain suitable salt marsh habitat.
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	-	SSC	Forest habitats of moderate canopy and moderate to dense understory. May prefer chaparral and redwood habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	Known to occur. Observed in Hill Campus East of Study Area in woodland and scrub habitat.
San Pablo vole <i>Microtus californicus sanpabloensis</i>	-	SSC	Salt marshes of San Pablo Creek, on the south shore of San Pablo Bay. Constructs burrow in soft soil. Feeds on grasses, sedges and herbs. Forms a network of runways leading from the burrow	Not expected to occur. Study Area does not contain suitable salt marsh habitat and is outside known range.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	-	SSC	Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Sensitive to human disturbance.	May occur. There is one known historic (1938) occurrence of a colony in the Study Area associated with Strawberry Creek but is possibly extirpated. Potentially suitable habitat is present within and adjacent to Study Area within buildings and structures with limited human disturbance.
Western mastiff bat <i>Eumops perotis californicus</i>	-	SSC	Many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, and chaparral. Primarily a cliff-dweller, this species roosts in crevices in cliff faces, high buildings, trees, and tunnels.	Not expected to occur. There is one historic (1899) occurrence of this species near the City of Hayward approximately 15.6 miles southeast of Study Area. Typically roosts in cliffs and rock crevices, which are not present in Study Area.
Western red bat <i>Lasiurus blossevillii</i>	-	SSC	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).	May occur. Study Area contains potentially suitable roosting habitat for this species in areas with riparian habitat with dense foliage.

Notes: CNDDDB = California Natural Diversity Database; CEQA = California Environmental Quality Act

1 Legal Status Definitions

Federal:

FE Federally Listed as Endangered (legally protected)

FT Federally Listed as Threatened (legally protected)

FC Federal Candidate Species

FD Federally Delisted

Species	Listing Status ¹ Federal	Listing Status ¹ State	Habitat	Potential for Occurrence ²
Western bumble bee <i>Bombus occidentalis</i>	-	SC	Bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for the queens.	Not expected to occur. Study Area is within historic range. However, western bumble bee has recently undergone a decline in abundance and distribution and is no longer present across much of its historic range. In California, western bumble bee populations are currently largely restricted to high elevation sites in Sierra Nevada and a few locations on the northern California coast.
Mammals				
Alameda Island mole <i>Scapanus latimanus parvus</i>	-	SSC	Only known from Alameda Island. Found in a variety of habitats, especially annual and perennial grasslands. Prefers moist, friable soils. avoids flooded soils.	Not expected to occur. Study Area is outside of the known range.
American badger <i>Taxidea taxus</i>	-	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	May occur. Hill Campus East in Study contains potentially suitable habitat There is one historic (1925) occurrence approximately 1.5 miles east of Study Area..
Berkeley kangaroo rat <i>Dipodomys heermanni berkeleyensis</i>	-	-	Considered extinct. Open grassy hilltops and open spaces in chaparral and blue oak/digger pine woodlands. Needs fine, deep, well-drained soil for burrowing.	Not expected to occur. Species is considered extinct and believed to no longer occur in Study Area.
Big free-tailed bat <i>Nyctinomops macrotis</i>	-	SSC	Low-lying arid areas in Southern California. Need high cliffs or rocky outcrops for roosting sites. Feeds principally on large moths.	Not expected to occur. Study Area is outside of typical range. There is one known historic (1912) occurrence on the UC Berkeley campus and one near the City of Martinez (1979) approximately 10.3 miles northeast of Study Area. These observations are considered vagrants or extralimital records, and species is not expected to occur regularly in region.
Mountain lion <i>Puma concolor</i>	-	SC	Mountain lions inhabit a wide range of ecosystems, including mountainous regions, forests, deserts, and wetlands. Mountain lions establish and defend large territories and can travel large distances in search of prey or mates. The Central Coast and Southern California Evolutionarily Significant Units (ESUs) were granted emergency listing status in April of 2020, and CDFW is currently reviewing a petition to list these ESUs as threatened under CESA.	May occur. Hill Campus East in Study contains potentially suitable habitat Known to occur within East Bay Hills. Habitat within Hill Campus East is likely only marginally suitable for denning, the species likely moves across and forages through the Hill Campus East with regularity.
Pallid bat <i>Antrozous pallidus</i>	-	SSC	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts must protect bats from high temperatures. Sensitive to disturbance of roosting sites.	May occur. Study Area contains potentially suitable roost habitat associated with large trees with exfoliating bark, crevices, or cavities. In addition, potentially suitable habitat occurs within and adjacent to Study Area within buildings and other structures where human disturbance is infrequent.

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1 Legal Status Definitions

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FE Federally Listed as Endangered (legally protected)

FT Federally Listed as Threatened (legally protected)

FC Federal Candidate Species

FD Federally Delisted

State:

FP Fully protected (legally protected)

SSC Species of special concern (no formal protection other than CEQA consideration)

SE State Listed as Endangered (legally protected)

ST State Listed as Threatened (legally protected)

SC State Candidate for listing (legally protected)

2 Potential for Occurrence Definitions

Not expected to occur: Species is unlikely to be present because of poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.

May occur: Suitable habitat is available; however, there are little to no other indicators that the species might be present.

Known to occur: The species has been observed within the Plan Area.

Sources: Black and Vaughn 2005; CNDDB 2020; CCCI 2019b; CCCI 2019c; eBird 2020; USFWS 2009; USFWS 2010; USFWS 2020a; Xerces 2018