Appendix B

Biological Resources Reports

Appendix B-1: Special-Status Plant Species with Known or Potential Occurrence in the Vicinity of the Los Amigos Cottages Project site in Sonoma County, California

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Alopecurus aequalis var. *sonomensis* Sonoma alopecurus	FE/None 1B.1	Perennial herb. Marshes and swamps and riparian scrub. Wet areas, marshes, and riparian banks, with other wetland species. Elevation: 15-1,200 feet. Blooms May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Amorpha californica var. *napensis* Napa false indigo	None/None 1B.2	Perennial deciduous shrub. Openings in broadleaved upland forest, chaparral, and cismontane woodland. Elevation: 165-6,560 feet. Blooms Apr-Jul.	Low	Although there are some patches of woodland on the site, suitable habitat for this species is not present on or adjacent to the project site. The nearest documented occurrence is 4.27 miles north of the project site.
Amsinckia lunaris bent-flowered fiddleneck	None/None 1B.2	Annual herb. Cismontane woodland, coastal bluff scrub, and valley and foothill grassland. Elevation: 10-1,640 feet. Blooms Mar-Jun.	Low	Suitable habitat for this species may be present within and adjacent to the project site; however, the nearest documented occurrence is 10.05 miles southeast of the project site from 1940.
Arctostaphylos bakeri ssp. *bakeri* Baker's manzanita	None/SR 1B.1	Perennial evergreen shrub. Broadleaved upland forest and chaparral. Often on serpentine soils. Elevation: 245-985 feet. Blooms Feb-Apr.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Arctostaphylos bakeri ssp. *sublaevis* Cedars manzanita	None/SR 1B.2	Perennial evergreen shrub. Chaparral and closed-cone coniferous forest. In serpentine chaparral and sargent cypress woodland. Typically, in canyons and on slopes. Elevation: 605-2,495 feet. Blooms Feb-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Arctostaphylos densiflora Vine Hill manzanita	None/SE 1B.1	Perennial evergreen shrub. Chaparral. Acid marine sand. Elevation: 165-395 feet. Blooms Feb-Apr.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Arctostaphylos stanfordiana ssp. *decumbens* Rincon Ridge manzanita	None/None 1B.1	Perennial evergreen shrub. Chaparral and cismontane woodland. Highly restricted endemic	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
		to red rhyolites in Sonoma County. Elevation: 245-1,215 feet. Blooms Feb-Apr(May).		above the elevation range of the project site.
Astragalus claranus Clara Hunt's milk-vetch	FE/SE 1B.1	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland. On clay or rocky substrates. Sometimes on serpentinite or volcanic substrates. Elevation: 245-900 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Astragalus rattanii var. *jepsonianus* Jepson's milk-vetch	None/None 1B.2	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland. Often on serpentine soils. Elevation: 970-2,295 feet. Blooms Mar-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Balsamorhiza macrolepis big-scale balsamroot	None/None 1B.2	Perennial herb. Chaparral, cismontane woodland, and valley and foothill grassland. Sometimes on serpentine soils. Elevation: 150-5,100 feet. Blooms Mar-Jun.	Low	Suitable habitat for this species may be present within and adjacent to the project site; however, the nearest documented occurrence is 13.75 miles southeast of the project site.
Blennosperma bakeri Sonoma sunshine	FE/SE 1B.1	Annual herb. Valley and foothill grassland and vernal pools and swales. Elevation: 35-360 feet. Blooms Mar-May.	Not expected	Suitable vernal pool habitat for this species is not present within or adjacent to the project site.
Brodiaea leptandra narrow-anthered brodiaea	None/None 1B.2	Perennial bulbiferous herb. Broadleaved upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland. Volcanic substrates. Elevation: 360-3,000 feet. Blooms May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Calamagrostis crassiglumis Thurber's reed grass	None/None 2B.1	Perennial rhizomatous herb. Coastal scrub and marshes and swamps. Usually in marshy swales surrounded by grassland or coastal scrub. Elevation: 35-195 feet. Blooms May-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Calochortus raichei Cedars fairy-lantern	None/None 1B.2	Perennial bulbiferous herb. Chaparral and closed-cone coniferous forest. Serpentine soils. Elevation: 655-1,610 feet. Blooms May-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.

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Carex comosa bristly sedge	None/None 2B.1	Perennial rhizomatous herb. Coastal prairie, marshes and swamps, and valley and foothill grassland. Lake margins and wet places. Elevation: 0-2,050 feet. Blooms May-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Castilleja uliginosa Pitkin Marsh paintbrush	None/SE 1A	Hemiparasitic perennial herb. Marshes and swamps. Last known remaining plant died in 1987; was known from overgrown freshwater marsh. Elevation: 785 feet. Blooms Jun-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species is considered extirpated in California.
Ceanothus confusus Rincon Ridge ceanothus	None/None 1B.1	Perennial evergreen shrub. Chaparral, cismontane woodland, and closed-cone coniferous forest. Sometimes on serpentinite or volcanic substrates. Elevation: 245-3,495 feet. Blooms Feb-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Ceanothus divergens Calistoga ceanothus	None/None 1B.2	Perennial evergreen shrub. Chaparral. Rocky, serpentine or volcanic substrates. Elevation: 560-3,115 feet. Blooms Feb-Apr.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Ceanothus foliosus var. *vineatus* Vine Hill ceanothus	None/None 1B.1	Perennial evergreen shrub. Chaparral on sandy or acidic soils. Elevation: 150-1,000 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Ceanothus purpureus holly-leaved ceanothus	None/None 1B.2	Perennial evergreen shrub. Chaparral and cismontane woodland. Rocky or volcanic substrates. Elevation: 395-2,100 feet. Blooms Feb-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Ceanothus sonomensis Sonoma ceanothus	None/None 1B.2	Perennial evergreen shrub. Chaparral. Sandy, serpentine or volcanic soils. Elevation: 705-2,625 feet. Blooms Feb-Apr.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Centromadia parryi ssp. *parryi* pappose tarplant	None/None 1B.2	Annual herb. Chaparral, coastal prairie, marshes and swamps, meadows and seeps, and valley and foothill grassland. Often on alkaline soils. Elevation: 0-1,380 feet. Blooms May-Nov.	Moderate	Although the site lacks alkaline soils, suitable habitat for this species is present within and adjacent to the project site and the nearest

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				documented occurrence is 3.35 miles south of the project site.
Chorizanthe valida Sonoma spineflower	FE/SE 1B.1	Annual herb. Coastal prairie on sandy soils. Elevation: 35-1,000 feet. Blooms Jun-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Clarkia imbricata Vine Hill clarkia	FE/SE 1B.1	Annual herb. Chaparral and valley and foothill grassland. Acidic, loam, or sandy soils. Elevation: 165-245 feet. Blooms Jun-Aug.	Low	While suitable habitat for this species may be present within and adjacent to the project site, documented occurrences of this species are localized to an area 6.75 miles southwest of the project site.
Cordylanthus tenuis ssp. *capillaris* Pennell's bird's-beak	FE/SR 1B.2	Hemiparasitic annual herb. Chaparral and closed-cone coniferous forest. Serpentine soils. Elevation: 150-1,000 feet. Blooms Jun-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Cryptantha dissita serpentine cryptantha	None/None 1B.2	Annual herb. Chaparral. Serpentine outcrops. Elevation: 1,295-1,905 feet. Blooms Apr-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Cuscuta obtusiflora var. *glandulosa* Peruvian dodder	None/None 2B.2	Parasitic annual vine. Freshwater marshes and swamps. Elevation: 50-920 feet. Blooms Jul-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Delphinium bakeri Baker's larkspur	FE/SE 1B.1	Perennial herb. Broadleaved upland forest, coastal scrub, and valley and foothill grassland. Only site occurs on northwest-facing slopes, on decomposed shale. Historically known from grassy areas along fencelines. Elevation: 260-1,000 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Delphinium luteum golden larkspur	FE/SR 1B.1	Perennial herb. Chaparral, coastal prairie, and coastal scrub. North-facing rocky slopes. Elevation: 0-330 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Downingia pusilla dwarf downingia	None/None 2B.2	Annual herb. Valley and foothill grassland and vernal pools. Vernal lake and pool margins with a variety of associates. In several types of vernal pools. Elevation: 5-1,460 feet. Blooms Mar-May.	Not expected	Suitable vernal pool habitat for this species is not present within or adjacent to the project site.

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Eastwoodiella californica swamp harebell	None/None 1B.2	Bogs and fens, closed-cone coniferous forest, coastal prairie, freshwater marshes and swamps, meadows and seeps, and North Coast coniferous forest. Mesic sites. Elevation: 5-1,330 feet. Blooms Jun-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Erigeron greenei Greene's narrow-leaved daisy	None/None 1B.2	Perennial herb. Chaparral. Serpentine and volcanic substrates, generally in shrubby vegetation. Elevation: 260-3,295 feet. Blooms May-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Erigeron serpentinus serpentine daisy	None/None 1B.2	Perennial herb. Chaparral. Serpentine seeps. Elevation: 195-2,200 feet. Blooms May-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Eriogonum nervulosum Snow Mountain buckwheat	None/None 1B.2	Perennial rhizomatous herb. Chaparral. Dry serpentine outcrops, balds, and barrens. Elevation: 985-6,905 feet. Blooms Jun-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Fritillaria liliacea fragrant fritillary	None/None 1B.2	Perennial bulbiferous herb. Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland. Often on serpentine or clay soils. Elevation: 10-1,345 feet. Blooms Feb-Apr.	Moderate	Suitable habitat for this species is present within and adjacent to the project site, and the nearest documented occurrence is 4.53 miles northwest of the project site.
Gilia capitata ssp. *tomentosa* woolly-headed gilia	None/None 1B.1	Annual herb. Coastal bluff scrub and valley and foothill grassland. Rocky outcrops. Sometimes on serpentine soils. Elevation: 35-720 feet. Blooms May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site and the nearest documented occurrence is approximately 11 miles southwest of the project site and is from 1947.
Gratiola heterosepala Boggs Lake hedge-hyssop	None/SE 1B.2	Annual herb. Marshes and swamps and vernal pools. Clay soils. Sometimes on lake margins. Elevation: 35-7,790 feet. Blooms Apr-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Hemizonia congesta ssp. *congesta*	None/None 1B.2	Annual herb. Valley and foothill grassland. Grassy valleys and hills, often in fallow fields; sometimes	Moderate	Suitable habitat for this species is present within and adjacent to the project site. The nearest

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congested-headed hayfield tarplant		along roadsides. Elevation: 65-1,835 feet. Blooms Apr-Nov.		documented occurrence is 0.3 mile west of the project site.
Hesperolinon bicarpellatum two-carpellate western flax	None/None 1B.2	Annual herb. Serpentine barrens at edge of chaparral. Elevation: 195-3,295 feet. Blooms (Apr)May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Horkelia tenuiloba thin-lobed horkelia	None/None 1B.2	Perennial herb. Broadleaved upland forest, chaparral, and valley and foothill grassland. Mesic openings in sandy soils. Elevation: 165-1,640 feet. Blooms May-Jul(Aug).	Not expected	Suitable mesic habitat and sandy soils for this species is not present within or adjacent to the project site.
Kopsiopsis hookeri small groundcone	None/None 2B.3	Parasitic perennial rhizomatous herb. North Coast coniferous forest. Open woods, shrubby places, generally on Gaultheria shallon. Elevation: 295-2,905 feet. Blooms Apr-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the Project site. This species occurs above the elevation range of the project site.
Lasthenia burkei Burke's goldfields	FE/SE 1B.1	Annual herb. Meadows and seeps and vernal pools. Elevation: 50-1,970 feet. Blooms Apr-Jun.	Not expected	Suitable vernal pool habitat for this species is not present within or adjacent to the project site.
Lasthenia californica ssp. *bakeri* Baker's goldfields	None/None 1B.2	Perennial herb. Closed-cone coniferous forest, coastal scrub, marshes and swamps, and meadows and seeps. Elevation: 195-1,705 feet. Blooms Apr-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Layia septentrionalis Colusa layia	None/None 1B.2	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland. Scattered colonies in fields and grassy slopes in sandy or serpentine soil. Elevation: 330-3,595 feet. Blooms Apr-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the Project site. This species occurs above the elevation range of the project site.
Legenere limosa legenere	None/None 1B.1	Annual herb. In beds of vernal pools. Elevation: 5-2,885 feet. Blooms Apr-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Leptosiphon jepsonii Jepson's leptosiphon	None/None 1B.2	Annual herb. Chaparral, cismontane woodland, valley and foothill grassland. Open to partially shaded grassy slopes. On volcanics or the periphery of serpentine substrates. Elevation: 330-1,640 feet. Blooms Mar-May.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.

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Lessingia arachnoidea Crystal Springs lessingia	None/None 1B.2	Annual herb. Cismontane woodland, coastal scrub, and valley and foothill grassland. Grassy slopes on serpentine; sometimes on roadsides. Elevation: 195-655 feet. Blooms Jul-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Lilium pardalinum ssp. *pitkinense* Pitkin Marsh lily	FE/SE 1B.1	Perennial bulbiferous herb. Cismontane woodland, marshes and swamps, and meadows and seeps. Saturated, sandy soils with grasses and shrubs. Elevation: 115-215 feet. Blooms Jun-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Limnanthes vinculans Sebastopol meadowfoam	FE/SE 1B.1	Annual herb. Meadows and seeps, valley and foothill grassland, and vernal pools. Swales, wet meadows and marshy areas in valley oak savanna; on poorly drained soils of clays and sandy loam. Elevation: 50-1,000 feet. Blooms Apr-May.	Not expected	Suitable vernal pool and meadow habitat for this species is not present within or adjacent to the project site.
Lupinus sericatus Cobb Mountain lupine	None/None 1B.2	Perennial herb. Broadleaved upland forest, chaparral, cismontane woodland, and lower montane coniferous forest. In stands of knobcone pine-oak woodland, on open wooded slopes in gravelly soils; sometimes on serpentine soils. Elevation: 900-5,005 feet. Blooms Mar-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Microseris paludosa marsh microseris	None/None 1B.2	Perennial herb. Cismontane woodland, closed-cone coniferous forest, coastal scrub, and valley and foothill grassland. Elevation: 15-1,165 feet. Blooms Apr-Jun(Jul).	Moderate	Suitable habitat for this species is present within and adjacent to the project site, and the nearest documented occurrence is 0.37 miles west of the project site, although it is from 1981.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	None/None 1B.1	Annual herb. Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools. Adobe or alkaline soils. Elevation: 15-5,710 feet. Blooms Apr-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Navarretia leucocephala ssp. *plieantha* many-flowered navarretia	FE/SE 1B.2	Annual herb. Volcanic ash flow vernal pools. Elevation: 100-3,115 feet. Blooms May-Jun.	Not expected	Suitable vernal pool habitat for this species is not present within or adjacent to the project site.

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Penstemon newberryi var. *sonomensis* Sonoma beardtongue	None/None 1B.3	Perennial herb. Chaparral. Crevices in rock outcrops and talus slopes. Elevation: 2,295-4,495 feet. Blooms Apr-Aug.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Piperia candida white-flowered rein orchid	None/None 1B.2	Perennial herb. Broadleaved upland forest, lower montane coniferous forest, and North Coast coniferous forest. Sometimes on serpentine soil. Elevation: 100-4,300 feet. Blooms (Mar)May-Sep.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Pleuropogon hooverianus North Coast semaphore grass	None/ST 1B.1	Perennial rhizomatous herb. Broadleaved upland forest, meadows and seeps, and North Coast coniferous forest. Wet grassy, usually shady areas, sometimes freshwater marsh; associated with forest environments. Elevation: 35-2,200 feet. Blooms Apr-Jun.	Not expected	Suitable forest habitat for this species is not present within or adjacent to the project site.
Rhynchospora alba white beaked-rush	None/None 2B.2	Perennial rhizomatous herb. Bogs and fens, marshes and swamps, and meadows and seeps. Freshwater sphagnum bogs. Elevation: 195-6,695 feet. Blooms Jun-Aug.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site.
Rhynchospora californica California beaked-rush	None/None 1B.1	Perennial rhizomatous herb. Bogs and fens, lower montane coniferous forest, marshes and swamps, and meadows and seeps. Open marshy areas. Elevation: 150-3,315 feet. Blooms May-Jul.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site.
Rhynchospora capitellata brownish beaked-rush	None/None 2B.2	Perennial herb. Lower montane coniferous forest, marshes and swamps, meadows and seeps, and upper montane coniferous forest. Mesic sites. Elevation: 150-6,560 feet. Blooms Jul-Aug.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site.
Rhynchospora globularis round-headed beaked-rush	None/None 2B.1	Perennial rhizomatous herb. Freshwater marshes and swamps. Elevation: 150-195 feet. Blooms Jul-Aug.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site.
Sidalcea oregana ssp. *valida* Kenwood Marsh checkerbloom	FE/SE 1B.1	Perennial rhizomatous herb. Marshes and swamps. Edges of freshwater marshes. Elevation: 375-490 feet. Blooms Jun-Sep.	Not expected	Suitable marsh habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Streptanthus brachiatus ssp. *hoffmanii* Freed's jewelflower	None/None 1B.2	Perennial herb. Chaparral and cismontane woodland. Serpentine rock outcrops, primarily in geothermal development areas. Elevation: 1,610-4,005 feet. Blooms May-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Streptanthus glandulosus ssp. *hoffmanii* Hoffman's bristly jewelflower	None/None 1B.3	Annual herb. Chaparral, cismontane woodland, and valley and foothill grassland. Moist, steep rocky banks, in serpentine and non-serpentine soils. Elevation: 395-1,560 feet. Blooms Mar-Jul.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Stuckenia filiformis ssp. *alpina* northern slender pondweed	None/None 2B.2	Aquatic perennial rhizomatous herb. Marshes and swamps. Shallow, clear water of lakes and drainage channels. Elevation: 985-7,055 feet. Blooms May-Jul.	Not expected	Suitable aquatic habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Trifolium amoenum two-fork clover	FE/None 1B.1	Annual herb. Coastal bluff scrub and valley and foothill grassland. Sometimes on serpentine soil, open sunny sites, swales. Most recently cited on roadside and eroding cliff faces. Elevation: 15-1,360 feet. Blooms Apr-Jun.	Low	Although suitable habitat for this species may be present in and adjacent to the project site, the nearest documented occurrence is 8.54 miles southeast of the project site from 1929.
Trifolium buckwestiorum Santa Cruz clover	None/None 1B.1	Annual herb. Broadleaved upland forest, cismontane woodland, and coastal prairie. Moist grassland. Gravelly margins. Elevation: 345-2,000 feet. Blooms Apr-Oct.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.
Trifolium hydrophilum saline clover	None/None 1B.2	Annual herb. Marshes and swamps, valley and foothill grassland, and vernal pools. Mesic or alkaline sites. Elevation: 0-985 feet. Blooms Apr-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.
Triquetrella californica coastal triquetrella	None/None 1B.2	Moss. Coastal bluff scrub and coastal scrub. Grows within 100 feet of the coast in coastal scrub, grasslands and in open gravels on roadsides, hillsides, rocky slopes, and fields. On gravel or thin soil over outcrops. Elevation: 35-330 feet.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CRPR	Habitat Requirements	Potential to Occur	Rationale
Viburnum ellipticum oval-leaved viburnum	None/None 2B.3	Perennial deciduous shrub. Chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 705-4,595 feet. Blooms May-Jun.	Not expected	Suitable habitat for this species is not present within or adjacent to the project site. This species occurs above the elevation range of the project site.

Status (Federal/State)

FE = Federal Endangered
FT = Federal Threatened
FPE = Federal Proposed Endangered
FPT = Federal Proposed Threatened
FC = Federal Candidate
SE = State Endangered
ST = State Threatened
SCE = State Candidate Endangered
SCT = State Candidate Threatened
SR = State Rare

CRPR (CNPS California Rare Plant Rank)

1A = Presumed extirpated in California, and rare or extinct elsewhere
1B = Rare, Threatened, or Endangered in California and elsewhere
2A = Presumed extirpated in California, but common elsewhere
2B= Rare, Threatened, or Endangered in California, but more common elsewhere
3 = Need more information (Review List)
4 = Limited Distribution (Watch List)

CRPR Threat Code Extension

.1 = Seriously endangered in California (>80% of occurrences threatened/high degree and immediacy of threat)
.2 = Moderately threatened in California (20-80% of occurrences threatened/moderate degree and immediacy of threat)
.3 = Not very endangered in California (<20% of occurrences threatened/low degree and immediacy of threat)

Appendix B-2: Special-status Wildlife Species with Known or Potential Occurrence in the Vicinity of the Los Amigos Cottages Project in Sonoma County, California

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Invertebrates				
Bombus occidentalis western bumble bee	None/SCE	Western bumblebee habitat requirements include availability of suitable colony nesting sites, floral resources to obtain nectar and pollen throughout the duration of the colony period (spring, summer and fall), and suitable overwintering sites for queens. Most bumble bees are primitively eusocial insects that live in colonies composed of a queen, workers, and, near the end of the season, reproductive members of the colony (new queens, or gynes, and males). Nest sites typically include underground cavities and open west-southwest slopes bordered by trees. Little is known about hibernacula or overwintering sites.	Not expected	The project site is outside of the species currently known range.
Danaus plexippus plexippus monarch - California overwintering population	FC/None	Monarch adults make massive, multi-generation migrations from spring to fall, flying thousands of miles to breed along the California coast and central Mexico. Monarchs stop to feed on flower nectar and to roost together at night. During warm winter days, the butterflies may take moisture and flower nectar. Most mating happens before they journey north in the spring, when females lay single eggs along the way under host plant (milkweed, *Asclepias* sp.) leaves; caterpillars eat flowers and leaves. Overwintering sites along the California coast are important for conservation of this species.	Moderate	Suitable floral resources (i.e. milkweed) that would support egg laying and larval development may be present within the project site.
Syncaris pacifica California freshwater shrimp	FE/SE	Endemic to Marin, Napa, and Sonoma counties. Found in low elevation, low gradient streams where riparian cover is moderate to heavy. Shallow pools away from main streamflow. Winter: undercut banks with exposed roots. Summer: leafy branches touching water.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
Fish				

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Hesperoleucus venustus navarroensis northern coastal roach	None/None SSC	Habitat generalists. Found generally in a wide variety of habitats in the Navarro River and Russian River basins where there is cover (e.g. fallen trees) and where alien predators are absent. Most abundant in tributaries with clear, well oxygenated water with dominant substrates of cobble and boulder, and shallow depths (average 4-20 inches) with pools up to 3 feet deep.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
Hysterocarpus traskii pomo Russian River tule perch	None/None SSC	Low elevation streams of the Russian River system. Requires clear, flowing water with abundant cover. They also require deep (> 3 feet) pool habitat.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
Mylopharodon conocephalus hardhead	None/None SSC	Low to mid-elevation streams in the Sacramento-San Joaquin drainage. Also present in the Russian River. Clear, deep pools with sand-gravel-boulder bottoms and slow water velocity. Not found where exotic centrarchids predominate.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
Oncorhynchus kisutch coho salmon (central California coast ESU)	FE/SE	Federal listing refers to populations between Punta Gorda and San Lorenzo River. State listing refers to populations south of Punta Gorda. Requires beds of loose, silt-free, coarse gravel for spawning. Also needs cover, cool water, and sufficient dissolved oxygen.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
Oncorhynchus mykiss irideus steelhead (central California coast DPS)	FT/None SSC	DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays. Regardless of life history strategy, for the first year or two of life, rainbow trout and steelhead are found in cool, clear, fast-flowing permanent streams and rivers where riffles predominate over pools, there is ample cover from riparian vegetation or undercut banks, and invertebrate life is diverse and abundant.	Not expected	Suitable aquatic habitat for this species is not present in or adjacent to the project site.
Reptiles				

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
Actinemys marmorata northwestern pond turtle	FPT/None SSC	Northwestern pond turtles are found in rivers, lakes, streams, ponds, wetlands, ephemeral creeks, reservoirs, agricultural ditches, estuaries, and brackish waters. They prefer areas that provide cover from predators, such as vegetation and algae, as well as basking sites for thermoregulation. Adults tend to favor deeper, slow-moving water, whereas hatchlings search for slow and shallow water that is slightly warmer. Terrestrial habitats are used for egg laying and wintering and usually consist of burrows in leaves and soil within 300 feet of water. They are rarely found at elevations above 5,000 feet.	Not expected	Suitable aquatic habitat is not present in or adjacent to (within 300 feet of) the project site.
Amphibians				
Ambystoma californiense California tiger salamander (Sonoma County DPS)	FE/ST	Lives in vacant or mammal-occupied burrows throughout most of the year; in grassland, savanna, or open woodland habitats. Need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	Low	Although suitable breeding habitat may be present for this species in the parcel north of the project, and suitable upland habitat may be present on the site, the Sonoma County DPS is concentrated approximately 7 miles south of the site, and the northernmost occurrence from that population is approximately 6.5 miles south of the project site.
Dicamptodon ensatus California giant salamander	None/None SSC	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
Rana boylii foothill yellow-legged frog (North Coast DPS)	None/None SSC	Foothill yellow-legged frog frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
		fed pools. Foothill yellow-legged frogs rarely stray more than several feet from a water source.		
Rana draytonii California red-legged frog	FT/None 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. Must have access to upland estivation habitat.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
Taricha rivularis red-bellied newt	None/None SSC	Coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. Isolated population of uncertain origin in Santa Clara County. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 3,250 feet to breed, typically in streams with moderate flow and clean, rocky substrate.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
Birds				
Agelaius tricolor tricolored blackbird	None/ST SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony, typically agricultural grain fields or pastures.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
Athene cunicularia burrowing owl	None/SCE 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.	Not expected	Although annual grassland is present on the site, it is only mowed twice per year and this species avoids tall grasses where visibility is limited. In addition, the density of trees and shrubs on the site likely precludes this species from occurring. The nearest documented occurrence is near the Sonoma County Airport approximately 3 miles south of the site.
Coturnicops noveboracensis yellow rail	None/None SSC	Yellow rail is highly secretive and its range and abundance is incompletely known because of this. They prefer densely vegetated marshes, and sedge	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
		marshes/meadows with moist soil or shallow standing water for breeding. They are very rare, but currently known to winter in a few coastal marshes along the Pacific coast and Suisun Marsh near Fairfield, California.		
Elanus leucurus white-tailed kite	None/None FP	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.	Moderate	Suitable nesting and foraging habitat for this species is present in and adjacent to the project site and this species is known to occur in Sonoma County.
Strix occidentalis caurina northern spotted owl	FT/ST	Older stands of forested habitats that contain multi-layered, multi-species canopy with moderate to high canopy closure. Stands typically contain a high number of trees with large cavities and other types of deformities, including large snags (standing dead trees), an abundance of large, dead wood on the ground, and open space within and below the upper canopy for spotted owls to fly. Prey items include primarily flying squirrels and dusky-footed woodrats, as well as mice, voles, rabbits, birds and bats.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
Mammals				
Antrozous pallidus pallid bat	None/None SSC	Found in a variety of habitats including deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in crevices of rock outcrops, caves, mine tunnels, buildings, bridges, and hollows of live and dead trees which must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	Moderate	Suitable roosting and foraging habitat for this species is present in and adjacent to the project site and this species is known to occur in Sonoma County.
Arborimus pomo Sonoma tree vole	None/None SSC	Occurs in the North coast fog belt from Oregon border to Sonoma County. Habitats include Douglas-fir, redwood and montane hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale
		needles of grand fir, hemlock, or spruce. Nests in trees and may use old nests of birds, squirrels, or woodrats.		
Corynorhinus townsendii Townsend's big-eared bat	None/None SSC	Occurs throughout California in a wide variety of habitats. Most common in mesic sites, typically coniferous or deciduous forests. Roosts in the open, hanging from walls, ceilings in caves, lava tubes, bridges, and buildings. Forages in forested habitats along open edges. This species is extremely sensitive to human disturbance.	Moderate	Suitable roosting habitat for this species may be present on adjacent properties and foraging habitat is present on the project site. There is a documented occurrence of this species approximately 0.75-mile southwest of the site from 2017.
Lasiurus frantzii western red bat	None/None SSC	Roosts primarily in foliage of trees, 2-40 feet above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.	Moderate	Suitable roosting and foraging habitat for this species is present in and adjacent to the project site and this species is known to occur in Sonoma County.
Pekania pennanti Fisher	None/None SSC	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	Not expected	Suitable habitat for this species is not present in or adjacent to the project site.
Taxidea taxus American badger	None/None SSC	American badger is most abundant in drier open stages of most shrub, forest, and grassland habitats with friable soils. It digs burrows for cover and will reuse burrows occasionally, but may also dig new burrows each night in the summer. The diet consists of rodents, small mammals, reptiles, insects, birds and carrion.	Low	Although there may be suitable habitat for this species on the project site, development and regular human disturbance in the vicinity of the site likely precludes this species from occurring. Documented occurrences of this species in Sonoma County are concentrated in the foothills and less developed areas, and the nearest documented occurrence is approximately 7 miles east of the site.

Status (Federal/State)

DPS = Distinct Population Segment
FC = Federal Candidate
SC = State Candidate
SCE = State Candidate Endangered

Scientific Name Common Name	Status Fed/State ESA CDFW	Habitat Requirements	Potential to Occur	Rationale

FD =	Federal Delisted	SCT =	State Candidate Threatened
FE =	Federal Endangered	SD =	State Delisted
FP =	CDFW Fully Protected	SE =	State Endangered
FPE =	Federal Proposed Endangered	SR =	State Rare
FPT =	Federal Proposed Threatened	SSC =	CDFW Species of Special Concern
FT =	Federal Threatened	ST =	State Threatened

SPECIAL-STATUS PLANT REPORT
FOR THE

±62-ACRE ARATA LANE STUDY AREA

TOWN OF WINDSOR, SONOMA COUNTY, CALIFORNIA



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APPENDICES

Appendix A. Potentially-occurring Special-status Plants in the Vicinity of the Arata Lane Study Area
Appendix B. Plant Species Observed within the Arata Lane Study Area

SPECIAL-STATUS PLANT REPORT
±62-ACRE ARATA LANE STUDY AREA,
TOWN OF WINDSOR, SONOMA COUNTY, CA

INTRODUCTION

Salix Consulting, Inc. (Salix) conducted a rare plant survey on the ±62-acre Arata Lane study area, in the process of being annexed to the Town of Windsor, in central Sonoma County, California. The study area is located north of Arata Lane and near the intersection of U.S. Route 101. It is situated in Section 2, Township 8 North and Range 8 West on the Healdsburg, California 7.5-minute USGS topographic quadrangle (Figure 1). The approximate coordinates for the property are: 38° 33′ 44.92″ N and 122° 49′ 12.26″ W.

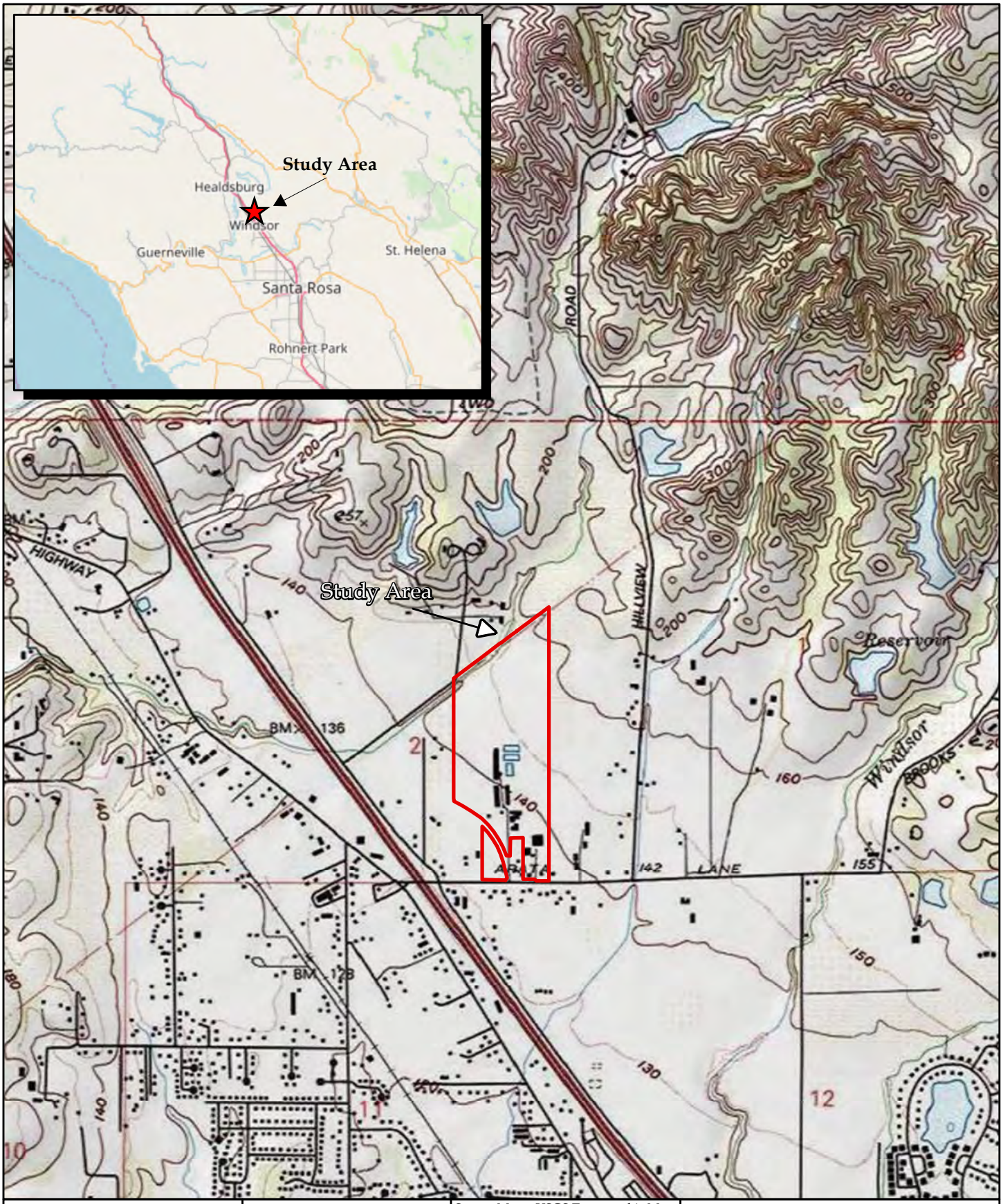
The site is located in the Russian River Valley, approximately two miles from the Russian River, at elevations ranging from approximately 140 feet in the southwest corner of the study area to 160 feet in the northeast corner. The study area is largely pasture and ruderal grassland, used mostly for horse grazing. The parcel contains several residences and associated outbuildings, including livestock shelters. Adjacent land uses include single-family residential development to the south, rural residential and agricultural uses to the west and east, and to the north by agricultural land (vineyards) (Figure 2).

While the Town has not specifically requested the survey, the Santa Rosa Plain Conservation Strategy (SRPCS) study area includes most of Windsor's urban growth boundary and includes the Arata Lane property (USFWS 2005). The majority of the "Windsor Listed Plant Conservation Area" is located south of the Town. However, a small portion of Conservation Area is located just west of the Arata Lane property, on the west side of Hwy. 101, in an area that appears to be zoned "Gateway Commercial." The Arata Lane parcel is not included in this small portion of the Conservation Area. However, due to its proximity, the Arata Lane parcel is close enough to be included in any database search for listed species. The listed plants of concern in the SRPCS include Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*), Sebastopol meadowfoam (*Limnanthes vinculans*), and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*).

Salix studied this area in March 2015 while conducting a preliminary wetland delineation and observed no special-status plants at that time. The purpose of this rare plant survey is to determine presence or absence of 1) the listed plants of concern in the SRPCS as well as their primary constituent elements (PCEs), 2) and any other special-status plant species with potential to occur.

METHODS

Salix queried the California Natural Diversity Data Base (CNDDB 2018) prior to conducting the rare pant survey. The five-quadrangle search area included the Healdsburg, Geyserville, Santa Rosa, Mark West Springs, and Guerneville USGS quadrangles. Salix also queried the California Native Plant Society Inventory (CNPS 2018) for reported occurrences of special-status plant species within the five-quad area. Figure 3 illustrates special-status plant species occurrences reported by the CNDDB within a 5-mile radius of the study area.



Salix consulting, inc.

N

0 1,000 2,000

Feet

Source Maps: USGS Topographic Map
Healdsburg Quad 1:24,000
S02 T08N R09W

Figure 1

SITE AND VICINITY MAP

Arata Lane

Town of Windsor, Sonoma County, CA



Salix consulting, inc.

N

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Feet

Study Area
(±62 acres)

Imagery: 4-20-18 Salix Consulting, Inc.

Figure 2

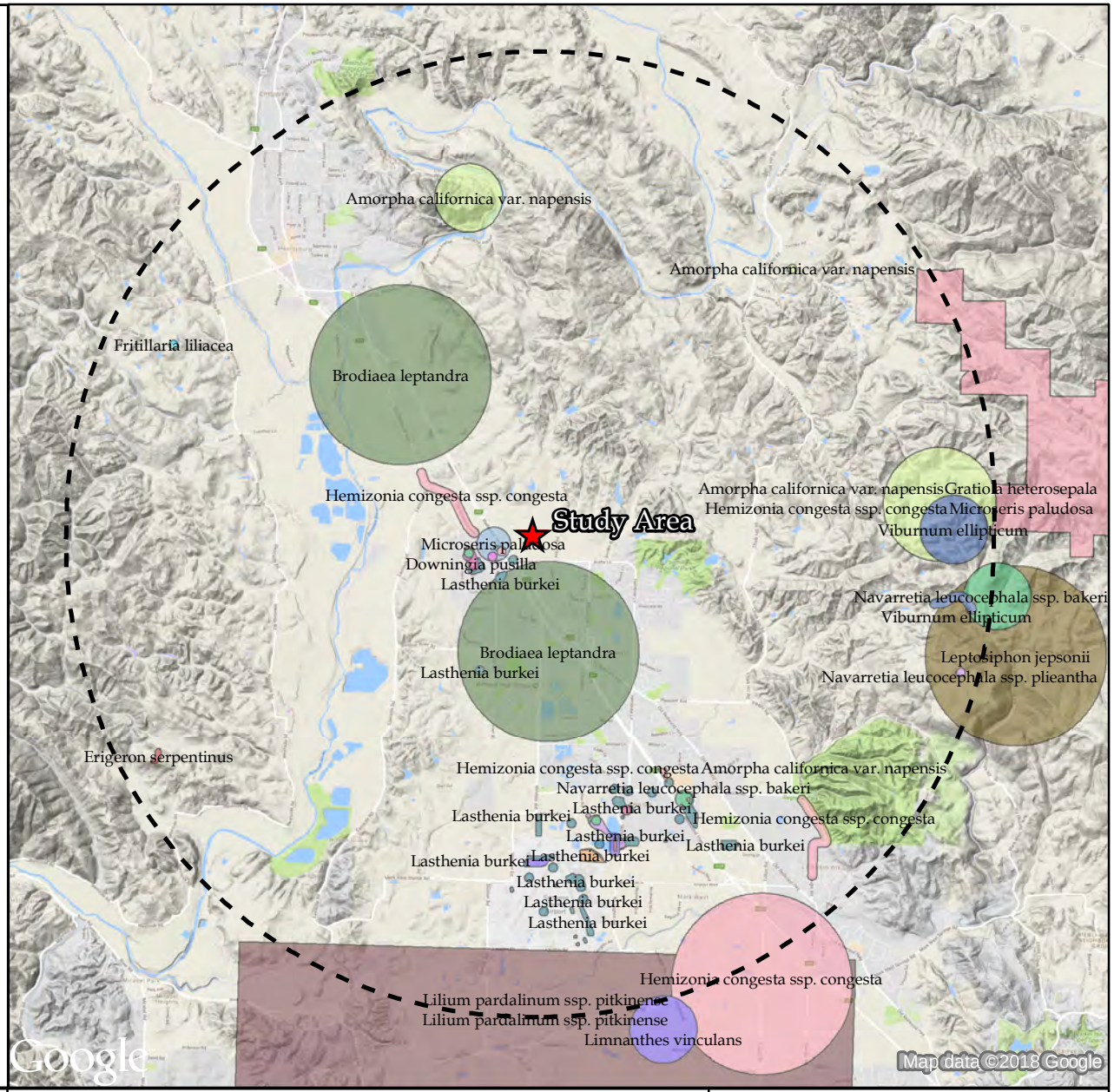
AERIAL MAP

Arata Lane

Town of Windsor, Sonoma County, CA

CNDDB Special-Status Species

- Amorpha californica var. napensis
- Blennosperma bakeri
- Brodiaea leptandra
- Centromadia parryi ssp. parryi
- Cordylanthus tenuis ssp. capillaris
- Downingia pusilla
- Erigeron serpentinus
- Fritillaria liliacea
- Gratiola heterosepala
- Hemizonia congesta ssp. congesta
- Lasthenia burkei
- Leptosiphon jepsonii
- Lilium pardalinum ssp. pitkinense
- Limnanthes vinculans
- Microseris paludosa
- Navarretia leucocephala ssp. bakeri
- Navarretia leucocephala ssp. plieantha
- Viburnum ellipticum



Salix consulting, inc.

N

0 5,000 10,000

Feet

★ Site ⬭ 5-Mile Buffer

Figure 3

CNDDB OCCURRENCES MAP

Arata Lane

Town of Windsor, Sonoma County, CA

Of the 35 plant species identified in the CNDDB and CNPS queries, 22 species were determined to have no potential to occur within the study area due to the lack of suitable habitats or substrates (Appendix A).

Thirteen (13) species were determined to have some potential to occur within the study area and are listed in Appendix A. The list was further refined to exclude pants for which habitat components did not occur within the study area and to include the targeted species listed in Table 1 below. These are discussed in detail in the Findings section below and were the focus of the field survey. All of these species occur within a 5-mile radius of the study area (Figure 3).

Table 1.
Special-Status Plant Species Determined to Have Potential to Occur within the Arata Lane Study Area or listed in the SRPCP as a species of concern

Species	Status* Federal	State	CNPS	Habitat	Potential for Occurrence Within Study Area**
Plants					
Burke's goldfields *Lasthenia burkeid*	FE	CE	1B.1	Meadows and seeps (mesic), Vernal pools	Unlikely. Wetland habitat marginal; wetlands too shallow.
Sonoma sunshine *Blennosperma bakeri*	FE	CE	1B.1	Valley and foothill grassland (mesic), Vernal pools	Unlikely. Wetland habitat marginal; wetlands too shallow
Sebastopol meadowfoam *Limnanthes vinculans*	FE	CE	1B.1	Meadows and seeps, Valley and foothill grassland, Vernal pools, vernally mesic	Possible. Marginal habitat in seasonal wetlands and swales.
many-flowered navarretia *Navarretia leucocephala ssp. plieantha*	FE	CE	1B.2	Vernal pools (volcanic ash flow)	Unlikely. Wetland habitat marginal; wetlands too shallow.
congested-headed hayfield tarplant *Hemizonia congesta, ssp. congesta*	-	-	1B.2	Valley and foothill grassland, sometimes roadsides	Unlikely. Marginal habitat present in pastures.
dwarf downingia *Downingia pusilla*	-	-	2B.2	Valley and foothill grassland (mesic), Vernal pools	Unlikely. Seasonal wetland habitat marginal.

Table 1.
Special-Status Plant Species Determined to Have Potential to Occur within the Arata Lane Study Area or listed in the SRPCP as a species of concern

Species	Status* Federal	State	CNPS	Habitat	Potential for Occurrence Within Study Area**

*Status Codes:
Federal
FE Federal Endangered
State
CE California Endangered

CNPS
Rank 1B Rare, Threatened, or Endangered in California
Rank 2 R, T, or E in California, more common elsewhere
1- Seriously threatened in California
2- Fairly threatened in California

**Definitions for the Potential to Occur:
None. No suitable habitat (or nesting habitat) present within the study area.
Unlikely: Minimal or marginal quality habitat in the study area. Disturbance or other activities may restrict or eliminate possibility of species occurring.
Possible. Suitable habitat occurs within the study area. Study area within range of species.
Likely. Study area provides desirable habitat for species and there is a very high probability for its occurrence. Species documented to occur nearby in similar habitat.
Observed: Species was observed within the study area.

Field surveys were conducted on the site on April 20 and May 24 by Jeff Glazner. In addition, the site was evaluated in March 2015 during a preliminary wetland delineation and rare plant survey. The study area was walked along meandering transects, focusing on areas with the highest potential to support special status species. A list of target species is presented in Table 1. Plant species observed during the surveys are presented in Appendix B.

FINDINGS

Hydrology

The study area occurs in the Russian River watershed (Hydrologic Unit Code 18010110). One unnamed tributary to the Russian River occurs along the northern boundary of the study area. This drainage flows in a south-westerly direction and leaves the study area at the intersection of the northern and western study area boundaries. The drainage flows west under US Highway 101 and into the Russian River less than 2 miles west of the site.

Soils

Three soil units have been mapped within the study area (Figure 3) and include the following (NRCS 2015):

Cole silt loam, 0 to 2 percent slopes

The Cole series consists of very deep, somewhat poorly-drained soils that formed in alluvium from mixed sources. They display poor runoff and slow permeability. Cole soils are on river terraces, basins flood plains, or on alluvial fans with slopes of 0 to 5 percent. Mean annual precipitation is 25 to 50 inches, and elevations are 50 to 1,500 feet. Cole soils are used mostly for production of orchards, vineyards, truck crops, and irrigated pasture. Uncultivated areas have oak-grass vegetation with some shrubs and forbs.

Cole silt loam, 0-2 percent slopes have a depth to restrictive layer of more than 80 inches and depth to water table of about 12 to 48 inches.

Huichica loam, ponded, 0 to 5 percent slopes and
Huichica loam, 0 to 2 percent slopes

Huichica soils occur in gently sloping, smooth to hummocky floodplains under grass and scattered oaks, at elevations of 100 to 150 feet in the coastal valleys of Napa and Sonoma Counties. They are imperfectly drained, runoff is slow, and permeability is moderately slow to very slow.

The parent material for both Huichica loam ponded, 0 to 5 % slopes and Huichica loam, 0 to 2 percent slopes is alluvium derived from igneous, metamorphic and sedimentary rock. Depth to restrictive feature is 20 to 40 inches to duripan, and these soils are moderately well-drained.

None of these soil units are restrictive, or otherwise present growing conditions that restrict plant growth, or would increase the probability to support special status plant species.

Biological Communities

Within the study area, three (3) biological communities were identified as shown in Table 1. Biological communities are illustrated in Figure 4, and representative site photos (aerial obliques and ground) are presented in Figures 5a through 5d.

Table 1
Biological Communities
within the Arata Lane Study Area

Habitat Component	Approximate Acreage
Annual Grassland	46
Developed/Disturbed	14
Foothill Woodland	2
Total	**62**

Annual Grassland

Annual grassland habitat occupies the majority of the site. The grassland is in variable states of use and disturbance. The property contains many outbuildings and infrastructure that supports farm and livestock activities. Most of the species occupying the site are common and weedy due to the ongoing disturbance. Common species in the grassland include soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), winter vetch (*Vicia villosa*), long-beaked hawkbit (*Leontodon saxatilis*), cut-leaf geranium (*Geranium dissectum*), California burclover (*Medicago polymorpha*), wall barley (*Hordeum murinum*), silver European hairgrass (*Aira caryophyllea*), English plantain (*Plantago lanceolata*), spiny-fruit buttercup (*Ranunculus muricatus*), sheep sorrel (*Rumex acetosella*), and white clover (*Trifolium repens*).



Salix consulting, inc.

N

0 200 400

Feet

Study Area (±62 acres)

Imagery: 4-20-18 Salix Consulting, Inc.

Figure 4

HABITAT MAP

Arata Lane

Town of Windsor, Sonoma County, CA

Seasonal wetlands are embedded in the annual grassland habitat (Figure 4). Corresponding flora is discussed below in the waters of the U.S. section.

Foothill Woodland

Foothill Woodland occurs in one dense band along the northern boundary in association with an intermittent stream. The primary trees include coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and California bay (*Umbellularia californica*). Shrubs in the oak woodland and scattered in other areas of the site include poison oak (*Toxicodendron diversilobum*), Himalayan blackberry (*Rubus armeniacus*), coyote brush (*Baccharis pilularis*), and California buckeye (*Aesculus californica*), and oak saplings.

Disturbed/Developed/Ruderal

Disturbed developed areas occur in the southern half of the study area including residential compounds and associated livestock areas and outbuildings. Vegetation is quite variable among these areas and is primarily weedy or ornamental. Many trees and shrubs are planted throughout including Eucalyptus (*Eucalyptus spp.*), redwood (*Sequoia sempervirens*), and white mulberry (*Morus alba*). These areas are unvegetated but support a ruderal flora of local weeds and ornamentals.

Waters of the U.S.

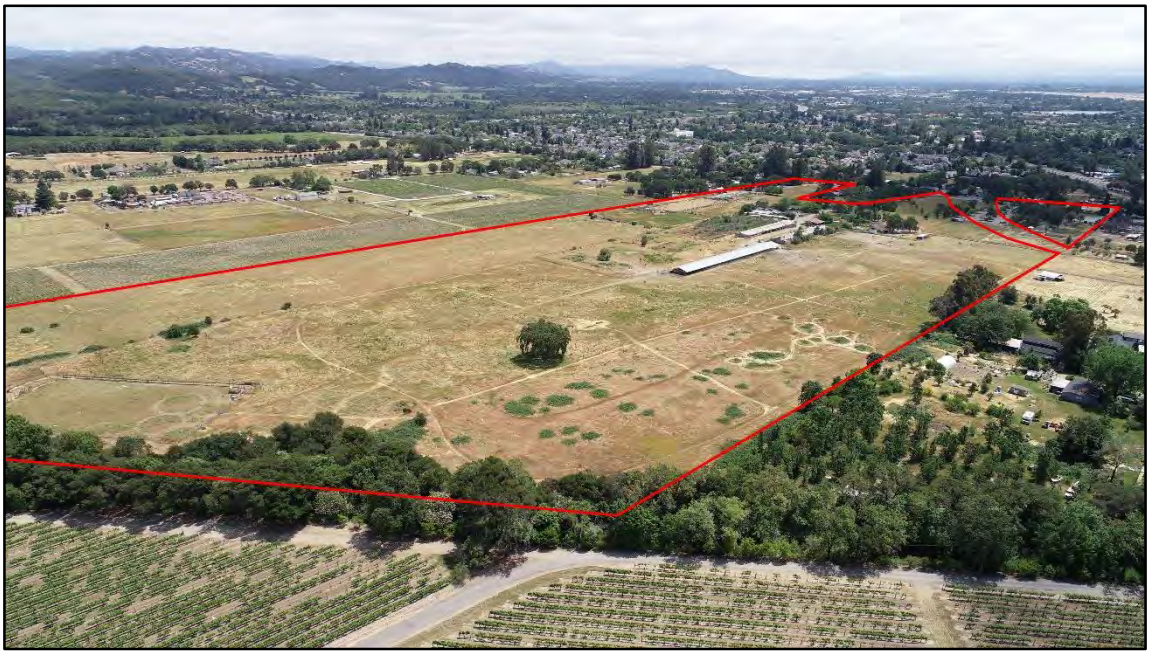
The property contains waters of the U.S. in the form of an intermittent stream, seasonal wetlands and wetland swales, and ditches (Figure 6). In general, the site is sloped from northeast to southwest and water flows through the property along this shallow gradient. Wetlands are present but are shallow.

The intermittent stream carries high velocity short seasonal flows from east to west. It is a deep scoured drainage and does not support a riparian community. The upper banks and adjacent areas support a dense stand of trees and shrubs as described in the Foothill Woodland section above.

Seasonal Wetlands occur at several locations in the property within the annual grassland habitat. These wetlands are all shallow and pond water only a few inches deep. They are not considered vernal pools due to their depth and dominant species.

Wetland swales are curvilinear drainages that meet the federal criteria as waters of the U.S. They support mostly facultative grasses.

The study area contains three ditches that meet waters of the U.S. criteria. One is located along Arata Lane, and two are located near the central portion of the study area. Both of the central ditches were excavated in relatively flat ground and contain seasonal water in a depressional landform.



5a-1: Looking southeast from northwest corner.
Photo Date 5-24-18



5a-2: Looking southwest from northeast corner.
Photo Date 5-24-18

Salix consulting, inc.

Figure 5a

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



5b-1: Looking south over southern portion of study area.
Photo Date 5-24-18



5b-2: Looking east over northeastern portion of study area.
Photo Date 5-24-18

Salix consulting, inc.

Figure 5b

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



SW-4. Shallow and dominated by *Plagiobothrys stipitatus* and *Festuca perennis*.
Photo date 4-20-18



Limnanthes douglasii subsp. *nivea*, a common meadowfoam species, in and around SW-3.
Photo date 4-20-18



SW-5 in horse corral.
Photo date 4-20-18

Salix consulting, inc.

Figure 5c

SITE PHOTOS

Arata Lane

Sonoma County, CA



Looking northwest over SW-7. Wetland is shallow and supports *Rumex crispus* and *Festuca perennis*.
Photo date 4-20-18



Looking northeast over SW-1.
Photo date 4-20-18



Looking east along Ditch 3.
Photo date 4-20-18

Salix consulting, inc.

Figure 5d

SITE PHOTOS
Arata Lane
Sonoma County, CA

Waters of the U.S.

OTHER WATERS	
Intermittent Stream (IS)	
IS-1	0.266
Total Other Waters	**0.266** acre
WETLANDS	
Drainage Ditch (DD)	
DD-1	0.008
DD-2	0.034
DD-3	0.029
	0.071 acre

WETLANDS CONT.	
Seasonal Wetland (SW)	
SW-1	0.033
SW-2	0.002
SW-3	0.018
SW-4	0.055
SW-5	0.056
SW-6	0.006
SW-7	0.041
	0.211 acre
Wetland Swale (WS)	
WS-1	0.055
Total Wetlands	**0.337** acre

Total Waters of the U.S. 0.603 acre

IS-1 WS-1 SW-1 SW-2 SW-3 SW-4 SW-5 SW-6 SW-7 DD-1 DD-2 DD-3

1 2 3 4 5 6 7 8 9 10 11 12

LOS AMIGOS RD

ARATA LANE

N

0 50 100
Feet

Study Area (±62 acres)
Upland Data Point
Waters Data Point
Wetland Data Point
Culvert
2-ft Contours (Sonoma County)

Imagery: 4-20-18 Salix Consulting, Inc.

Salix consulting, inc.

Figure 6

WETLAND DELINEATION MAP
Arata Lane
Town of Windsor, Sonoma County, CA
July 3, 2018

Potentially-occurring Special-Status Plant Species

Based on the query of the California Natural Diversity Data Base (CNDDB 2018) and the California Native Plant Society (CNPS 2018) Inventory of Rare and Endangered Plants, the following eight species were either determined to have some potential to occur within the study area due to the presence of marginal to suitable habitat or are species of concern in the SRPCS. All of these species have been reported to occur within a five-mile radius of the study area, as illustrated in Figure 3.

Sonoma sunshine (*Blennosperma bakeri)* is a small annual member of the sunflower family (Asteraceae). This species is both federally-listed and state-listed as endangered. It has CNPS Rank 1B.1. Sonoma sunshine has yellow flowers and is distinguished from the more common *B. nanum* by having dark red stigmas and upper leaves with only one to three lobes. The species is an obligate wetland plant and is found in vernal pools and other wet habitats in Sonoma County. It occurs at elevations ranging from 30 to 360 feet. Sonoma sunshine blooms between March and May.

The nearest reported occurrence of Sonoma sunshine is from 0.5 mile west of the study area between Santa Rosa and Healdsburg, on Promenade Lane, east of Herb Road, and just west of the junction of Starr Road and Old Redwood Highway, in mixed oak woodland/vernal pool complex. An eastern and a western polygon were mapped. In the western polygon, 40 plants were observed in 2006 but none by 2012. In the eastern polygon, more than 2000 plants were observed in 2006, and the population had increased to more than 266,240 plants by 2012.

It is unlikely that Sonoma sunshine occurs within the study area because the wetlands present are too shallow and provide only marginal habitat. It was not observed during the survey.

Dwarf downingia (*Downingia pusilla)* is a small annual member of the bellflower family (Campanulaceae). It has no state or federal status. It is ranked 2B.2 by CNPS. Dwarf downingia is distinguished from other members of the genus by having very small flowers that are not upside down at blooming time. The species is an obligate wetland plant that occurs primarily in vernal pools at elevations ranging from 0 to 1460 feet. It blooms from March to May, depending on the amount and distribution of winter rains.

The nearest reported occurrence of dwarf downingia is from 0.5 mile west of the study area, on both sides of Promenade Lane, west of Old Redwood Highway, about 1.25 miles north of Windsor. The location was mapped about 0.5 mile just north from where Arata Lane meets Highway 101 in vernal pools in an oak woodland. 80-100 plants were observed in 1992. Plants were seen at the southeast edge of the occurrence in 1996 and 2010.

It is unlikely that dwarf downingia occurs within the study area because the wetlands present are too shallow and provide only marginal habitat. It was not observed during the survey.

Congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta)*, an annual member of the sunflower family (Asteraceae), has no state or federal listing but is a CNPS Rank 1B.2 species. It is a very glandular, spindly, thin-stemmed herb growing erect to 10 to 80 centimeters in height. Ray flowers are white with purple-veins. It grows in grassy areas, often near marshy edges, primarily near the coast. It blooms from April to November.

The nearest reported occurrence of congested-headed hayfield tarplant is less than 0.5 mile west of the study area, between Old Redwood Highway and Highway 101, near the northern end of Starr Road, Windsor, in a shallow depression in a grassy area. 100 thinly-scattered plants were observed in 1990.

Marginal habitat is present in the pastures within the study area. It is unlikely that the species occurs, and it was not observed during the survey.

Burke's goldfields (*Lasthenia burkei*) is an annual member of the sunflower family (Asteraceae) with state and federal endangered status. It has CNPS Rank 1B.1. It is differentiated form more common species of the genus by a number of technical characteristics. The fruits of Burke's goldfields are distinctive in having one long awn and numerous short scales. Burke's goldfields grow in vernal pools and other wet habitats in Lake, Mendocino, and Sonoma Counties. It blooms between April and June.

The nearest reported occurrence of Burke's goldfields is less than 0.5 mile west of the study area, at the junction of Highway 101 and Arata Lane, extending west to Herb Road, Windsor. Prior to development, the site was characterized as "excellent." An eastern polygon was extirpated by the highway; a polygon north of Promenade Lane (the Kerry Conservation Bank) had 10,000 plants in 1990 but none in 2008.

Habitat for Burke's goldfields is marginal within the study area because the wetlands present are too shallow and unsuitable. It was not observed during the survey.

Sebastopol meadowfoam (*Limnanthes vinculans*) is an annual member of the meadowfoam family (Limnanthaceae). It has state and federal endangered status and has CNPS Rank 1B.1. Sebastopol meadowfoam has white flowers and entire leaves. It grows in vernal pools and other wet habitats in Napa and Sonoma Counties. Sebastopol meadowfoam blooms in April and May.

The nearest reported occurrence of Sebastopol meadowfoam is three (3) miles south/southwest of the study area, at the northeast corner of the Sonoma County Airport, within the Sonoma County Airport Wildflower Preserve (the Airport Business Center mitigation site) south of an artificially-created vernal pool/swale habitat. The swale is no dominated by freshwater marsh perennials; adjacent irrigation may have altered the hydrology sufficiently to convert the swale into a persistent wetland.

Suitable habitat is present along the wetland swales and seasonal wetlands of the study area for Sebastopol meadowfoam. We observed snow white meadowfoam (*Limnanthes douglasii subsp. nivea*), a common species, in the study area but this was the only species of *Limnanthes* detected. Sebastopol meadowfoam was not observed during the survey.

Many-flowered navarretia (*Navarretia leucocephala* subsp. *plieantha*) is a low, spreading annual member of the phlox family (Polemoniaceae). It has state and federal endangered status and is on the CNPS Rank 1B. Many-flowered navarretia is distinguished from other subspecies by a variety of technical characteristics, but it has blue flowers and calyx lobes that are usually entire. It grows in vernal pools and other wet habitats in Lake and Sonoma Counties where it is said to prefer volcanic soils. It blooms from May to June.

The nearest reported occurrence of many-flowered navarretia is three miles south of the study area, approximately two miles south of Windsor, south of Saunders Road, where four colonies were mapped between 1986 and1998 in vernal pools and swales.

It is unlikely that many-flowered navarretia occurs within the study area because the wetlands present are too shallow and provide only marginal habitat. It was not observed during the survey.

CONCLUSIONS

Salix Consulting conducted a rare plant survey of the Arata Lane project site located in Windsor in Sonoma County. A preliminary site assessment was conducted in March 2015 and two field surveys were conducted on April 20 and May 24, 2018. No special-status species were observed within the 62-acre study area.

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APPENDIX A

Potentially-occurring Special-status Plants in the Vicinity of the Arata Lane Study Area

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Adoxaceae				
Viburnum ellipticum Western viburnum	Fed: - State: - CNPS: Rank 2B.3	May-July	Chaparral; cismontane woodland; lower montane coniferous forest.	Unlikely. Site lacks necessary habitat components to support species.
Asteraceae (Compositae)				
Balsamorhiza macrolepis Big-scale balsam-root	Fed: - State: - CNPS: Rank 1B.2	March-June	Cismontane woodland; valley and foothill grassland; [sometimes serpentinite].	Unlikely. Site lacks necessary habitat components to support species.
Blennosperma bakeri Sonoma sunshine	Fed: FE State: CE CNPS: Rank 1B.1	February-April	Valley and foothill grassland (mesic); vernal pools.	Unikely. Wetlands onsite provide marginal habitat but are too shallow to support species.
Centromadia parryi parryi Pappose tarplant	Fed: - State: - CNPS: Rank 1B.2	May-November	Coastal prairie; meadows and seeps; marshes and swamps; vernally wet grassland (sometimes alkaline).	None. Site lacks alkaline areas and suitable wetland types.
Erigeron serpentinus Serpentine daisy	Fed: - State: - CNPS: Rank 1B.3	May-August	Chaparral (serpentinite).	None. Site lacks serpentinite soils.
Hemizonia congesta congesta Pale yellow hayfield tarplant	Fed: - State: - CNPS: Rank 1B.2	April-November	Valley and foothill grassland. 20 to 560 meters.	Unlikely. Marginal habitat in pastures.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Lasthenia burkei Burke's goldfields	Fed: FE State: CE CNPS: Rank 1B.1	April-June	Meadows (mesic); vernal pools.	Unikely. Wetlands onsite provide marginal habitat but are too shallow to support species.
Layia septentrionalis Colusa layia	Fed: - State: - CNPS: Rank 1B.2	April-May	Chaparral; cismontane woodland, valley and foothill grassland; [sandy, serpentinite].	None. Site lacks serpentinite and sandy soils.
Microseris paludosa Marsh silverpuffs	Fed: - State: - CNPS: Rank 1B.2	April-June	Closed-cone coniferous forest; cismontane woodland; coastal scrub; valley and foothill grassland. 5-300 m.	None. Site lacks necessary habitat components to support species.
Boraginaceae				
Amsinckia lunaris Bent-flowered fiddleneck	Fed: - State: - CNPS: Rank 1B.2	March-June	Coastal bluff scrub; cismontane woodland; valley and foothill grassland	None. Site lacks necessary habitat components to support species.
Campanulaceae				
Downingia pusilla Dwarf downingia	Fed: - State: - CNPS: Rank 2B.2	March-May	Vernal pools and seasonal wetlands.	Unlikely. Marginal habitat in seasonal wetlands.
Cyperaceae				
Carex comosa Bristly sedge	Fed: - State: - CNPS: Rank 2B.1	May-September	Marshes and swamps.	None. Site lacks suitable wetland habitat.

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Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Ericaceae				
Arctostaphylos bakeri sublaevis The Cedars manzanita	Fed: - State: CR CNPS: Rank 1B.	April-May	closed-cone coniferous forest; chaparral; [serpentinite seeps].	None. Site lacks serpentinite soils.
Arctostaphylos stanfordiana decumbens Rincon manzanita	Fed: - State: - CNPS: Rank 1B.1	February-April	Chaparral (rhyolitic).	None. Site lacks chaparral.
Fabaceae (Leguminosae)				
Amorpha californica napensis Napa false indigo	Fed: - State: - CNPS: Rank 1B.2	April-July	Broadleaved upland forest (openings); chaparral, cismontane woodland. 150-2000 m.	None. Site lacks chaparral.
Astragalus claranus Clara Hunt's milkvetch	Fed: FE State: CT CNPS: Rank 1B.1	March-May	Cismontane woodland; valley and foothill grassland; [serpentinite, volcanic clay].	None. Site occurs below elevational limit of species.
Lupinus sericatus Cobb Mountain lupine	Fed: - State: - CNPS: Rank 1B.2	March-June	Chaparral; cismontane woodland; lower coniferous forest.	None.Site lacks open wooded slopes.
Trifolium amoenum Showy Indian clover	Fed: FE State: - CNPS: Rank 1B.1	April-June	Coastal bluff scrub; Valley and foothill grassland (sometimes serpentinite)	Unlikely. Marginal habitat in pastures. Typically occurs on mesic sites with an affinity for serpentine.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Trifolium buckwestiorum Santa Cruz clover	Fed: - State: - CNPS: Rank 1B.2	May-July	Broadleaf upland forest; coastal prairie; [margins].	Unlikely. Marginal habitat in pastures. Typically occurs in more wooded habitats nearer the coast.
Trifolium hydrophilum Saline clover	Fed: - State: - CNPS: Rank 1B.2	April-June	Marshes and swamps; valley and foothill grassland (mesic, alkaline); vernal pools. 0-300 m.	None. Site lacks alkaline areas.
Liliaceae				
Calochortus raichei Cedars fairy lantern	Fed: - State: - CNPS: Rank 1B.	May-August	Closed-cone coniferous forest; chaparral [serpentinite].	None. Site lacks serpentinite soils.
Fritillaria liliacea Fragrant fritillary	Fed: - State: - CNPS: Rank 1B.2	February-April	Coastal prairie; coastal scrub; valley and foothill grassland; [often serpentinite].	None. Site lacks serpentinite soils and other habitat components.
Limnanthaceae				
Limnanthes vinculans Sebastopol meadowfoam	Fed: FE State: CE CNPS: Rank 1B.1	April-May	Meadows (mesic); vernal pools.	Possible. Site provides marginal habitat in seasonal wetlands,
Orobanchaceae				
Cordylanthus tenuis capillaris Pennell's bird's-beak	Fed: FE State: CR CNPS: Rank 1B.2	June-July	Closed-cone coniferous forest; chaparral; [serpentinite].	None. Site lacks serpentinite soils.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Kopsiopsis hookeri Small ground-cone	Fed: - State: - CNPS: Rank 2B.3	April-August	North coast coniferous forest.	None. Site lacks woodland habitat and suitable host plants.
Plantaginaceae				
Gratiola heterosepala Bogg's Lake hedge-hyssop	Fed: - State: CE CNPS: Rank 1B.2	April-August	Vernal pools.	Unlikely. Wetlands onsite are too shallow.
Polemoniaceae				
Leptosiphon jepsonii Jepson's leptosiphon	Fed: - State: - CNPS: Rank 1B.2	March-May	Chaparral; cismontane woodland (usually volcanic).	Unlikely. Typically occurs on slopes with woody vegetation, not present onsite.
Navarretia leucocephala bakeri Baker's navarretia	Fed: - State: - CNPS: Rank 1B.1	May-July	Cismontane woodland; lower montane coniferous forest; meadows (mesic); valley and foothill grassland; vernal pools.	Unlikely. Wetlands onsite are too shallow.
Navarretia leucocephala plieantha Many-flowered navarretia	Fed: FE State: CE CNPS: Rank 1B.2	May-June	Vernal pools (volcanic ash flow).	Unlikely. Wetlands onsite are too shallow.
Rhamnaceae				
Ceanothus confusus Rincon Ridge ceanothus	Fed: - State: - CNPS: Rank 1B.1	February-April	Closed-cone coniferous forest; chaparral; cismontane woodland; [volcanic or serpentinite].	None. Site lacks volcanic slopes and chaparral.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site
Ceanothus divergens Calistoga ceanothus	Fed: - State: - CNPS: Rank 1B.2	March-April	Chaparral (serpentinite or volcanic).	None. Site lacks volcanic or serpentinite soils and chaparral.
Ceanothus purpureus Holly-leaf ceanothus	Fed: - State: - CNPS: Rank 1B.2	February-April	Chaparral (volcanic).	None. Site lacks volcanicsoils and chaparral.
Ceanothus sonomensis Sonoma ceanothus	Fed: - State: - CNPS: Rank 1B.2	February-April	Chaparral (sandy, serpentinite, or volcanic).	None. Site lacks volcanic or serpentinite soils and chaparral.
Rosaceae				
Horkelia tenuiloba Thin-lobed horkelia	Fed: - State: - CNPS: Rank 1B.2	May-July	Chaparral (mesic openings).	None. Site lacks chaparral.
Themidaceae				
Brodiaea leptandra Narrow-flowered California brodiaea	Fed: - State: - CNPS: Rank 1B.2	May-July	Broadleaved upland forest; chaparral; lower montane coniferous forest. Volcanic.	None. Site lacks forest and chaparral and volcanic substrate.

Appendix A

Arata Lane - Potentially-occurring Special-status Plants

Family Taxon Common Name	Status*	Flowering Period	Habitat	Probability on Project Site

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FSS - Forest Service Sensitive
FSW - Forest Service Watchlist

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CSC - California Species of Special Concern

CNPS (California Native Plant Society - List.RED Code):
Rank 1A - Extinct
Rank 1B - Plants rare, threatened, or endangered in California and elsewhere
Rank 2A- Plants extinct in California, but more common elsewhere
Rank 2B - Plants rare, threatened, or endangered in California, more common elsewhere
Rank 3 - Plants about which more information is needed, a review list
Rank 4 - Plants of limited distribution, a watch list
RED Code
1 - Seriously endangered (>80% of occurrences threatened)
2 - Fairly endangered (20 to 80% of occurrences threatened)
3 - Not very endangered (<20% of occurrences threatened)

APPENDIX B

Plant Species Observed During Field Surveys in the Study Area

Appendix B

Arata Lane - Plants Observed 2015 and 2018

Angiosperms - Dicots

Adoxaceae - Muskroot Family

Sambucus nigra	Black elderberry

Amaranthaceae - Amaranth Family

**Amaranthus retroflexus*	Rough pigweed

Anacardiaceae - Cashew or Sumac Family

Toxicodendron diversilobum	Western poison-oak

Apiaceae (Umbelliferae) - Carrot Family

**Conium maculatum*	Poison hemlock
**Torilis arvensis*	Field hedgeparsley

Asteraceae (Compositae) - Sunflower Family

Achillea millefolium	Common yarrow
Achyrachaena mollis	Blow-wives
**Anthemis cotula*	Mayweed
Baccharis pilularis	Coyote brush
**Carduus pycnocephalus*	Italian thistle
**Centaurea melitensis*	Tocalote
**Centaurea solstitialis*	Yellow starthistle
Centromadia fitchii	Fitch's spikeweed
**Cichorium intybus*	Chicory
**Cirsium vulgare*	Bull thistle
**Cotula coronopifolia*	Common brass-buttons
**Dittrichia graveolens*	Stinkwort
**Helminthotheca echioides*	Bristly ox-tongue
Heterotheca grandiflora	Telegraph weed
**Hypochaeris glabra*	Smooth cat's-ear
**Lactuca serriola*	Prickly lettuce
**Leontodon saxatilis*	Long-beaked hawkbit
**Logfia gallica*	Narrowleaf cottonrose
**Matricaria discoidea*	Pineapple-weed
Microseris acuminata	Sierra foothill microseris
**Pseudognaphalium luteoalbum*	Everlasting cudweed
**Senecio vulgaris*	Common groundsel
**Silybum marianum*	Milk thistle
**Sonchus oleraceus*	Common sow-thistle
**Taraxacum officinale*	Common dandelion

Boraginaceae - Borage Family

Amsinckia menziesii	Rancher's fireweed
Nemophila menziesii	Baby blue-eyes
Plagiobothrys stipitatus var. micranthus	Great Valley popcornflower

Brassicaceae (Cruciferae) - Mustard Family

Barbarea orthoceras	American wintercress

**Brassica nigra*	Black mustard
**Brassica rapa*	Field mustard
**Capsella bursa-pastoris*	Shepherd's purse
Cardamine oligosperma	Western bitter-cress
Lepidium nitidum	Shining peppergrass
Lepidium strictum	Peppergrass
**Raphanus sativus*	Wild radish
Rorippa curvisiliqua	Western yellow cress
**Sisymbrium officinale*	Hedge mustard

Caryophyllaceae - Pink Family

**Cerastium glomeratum*	Sticky mouse-ear chickweed
Minuartia californica	California sandwort
**Spergularia rubra*	Ruby sand-spurrey
**Stellaria media*	Common chickweed

Convolvulaceae - Morning-Glory Family

**Convolvulus arvensis*	Bindweed

Euphorbiaceae - Spurge Family

Croton setiger	Turkey mullein
**Euphorbia maculata*	Spotted spurge

Fabaceae (Leguminosae) - Legume Family

Acmispon americanus	Spanish lotus
Lupinus bicolor	Miniature lupine
Lupinus nanus	Sky lupine
**Medicago polymorpha*	California burclover
**Melilotus albus*	White sweetcover
**Trifolium dubium*	Little hop clover
Trifolium fucatum	Sour clover
**Trifolium hirtum*	Rose clover
Trifolium microcephalum	Small-headed clover
**Trifolium repens*	White clover
**Trifolium subterraneum*	Subterranean clover
Trifolium variegatum	Whitetip clover
**Vicia benghalensis*	Purple vetch
**Vicia villosa*	Winter vetch

Fagaceae - Oak Family

Quercus agrifolia var. agrifolia	Coast live oak
Quercus kelloggii	California black oak
Quercus lobata	Valley oak

Gentianaceae - Gentian Family

Zeltnera muehlenbergii	June centaury

Geraniaceae - Geranium Family

**Erodium botrys*	Broad-leaf filaree
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree
**Geranium dissectum*	Cut-leaf geranium

Hypericaceae - St. John's Wort Family

**Hypericum perforatum subsp. perforatum*	Klamathweed

Juglandaceae - Walnut Family

Juglans hindsii	Northern California black walnut

Lamiaceae (Labiatae) - Mint Family

**Mentha pulegium*	Pennyroyal
Pogogyne douglasii	Douglas' mesa mint

Lauraceae - Laurel Family

Umbellularia californica	California bay

Limnanthaceae - Meadowfoam Family

Limnanthes douglasii subsp. nivea	Douglas' meadowfoam

Lythraceae - Loosestrife Family

**Lythrum hyssopifolia*	Hyssop loosestrife

Malvaceae - Mallow Family

**Malva neglecta*	Common mallow
**Malva parviflora*	Cheeseweed

Montiaceae - Miner's Lettuce Family

Calandrinia ciliata	Red maids
Claytonia perfoliata	Common miner's lettuce
Montia fontana	Blinks

Myrsinaceae - Myrsine Family

**Lysimachia arvensis*	Scarlet pimpernel

Onagraceae - Evening Primrose Family

Epilobium brachycarpum	Summer cottonweed

Orobanchaceae - Broomrape Family

Castilleja attenuata	Valley tassels
**Parentucellia viscosa*	Yellow glandweed
Triphysaria versicolor subsp. faucibarbata	Triphysaria

Papaveraceae - Poppy Family

Eschscholzia californica	California poppy

Plantaginaceae - Plantain Family

Callitriche marginata	Winged water-starwort
**Plantago coronopus*	Cut-leaf plantain
**Plantago lanceolata*	English plantain
Veronica peregrina subsp. xalapensis	Purslane speedwell

Polemoniaceae - Phlox Family

Navarretia intertexta	Needle-leaved navarretia

Polygonaceae - Buckwheat Family

**Rumex acetosella*	Sheep sorrel
**Rumex crispus*	Curly dock
**Rumex pulcher*	Fiddle dock

Portulacaceae - Purslane Family

**Portulaca oleracea*	Common purslane

Ranunculaceae - Buttercup Family

**Ranunculus muricatus*	Spiny-fruit buttercup

Rosaceae - Rose Family

Prunus sp.	Prunus
**Rubus armeniacus*	Himalayan blackberry

Rubiaceae - Madder Family

Galium aparine	Goose grass

Salicaceae - Willow Family

Salix laevigata	Red willow

Sapindaceae - Soapberry Family

Aesculus californica	California buckeye

Angiosperms -Monocots

Alliaceae - Onion Family

Allium sp.	Wild onion

Cyperaceae - Sedge Family

Cyperus eragrostis	Tall flatsedge
Eleocharis macrostachya	Creeping spikerush

Iridaceae - Iris Family

Sisyrinchium bellum	Western blue-eyed grass

Juncaceae - Rush Family

Juncus balticus subsp. ater	Baltic rush
Juncus bufonius	Toad rush

Poaceae (Gramineae) - Grass Family

**Aira caryophyllea*	Silver European hairgrass
**Avena fatua*	Wild oat
**Brachypodium distachyon*	Purple falsebrome
**Briza maxima*	Rattlesnake grass
**Briza minor*	Small quaking grass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus madritensis*	Foxtail brome
**Bromus madritensis subsp. rubens*	Red brome
**Cynodon dactylon*	Bermudagrass
**Cynosurus echinatus*	Hedgehog dogtail
**Dactylis glomerata*	Orchard grass
**Elymus caput-medusae*	Medusahead
**Festuca bromoides*	Brome fescue
**Festuca myuros*	Rattail sixweeks grass
**Festuca perennis*	Italian ryegrass
**Glyceria declinata*	Low mannagrass
Hordeum brachyantherum	Meadow barley
**Hordeum marinum subsp. gussoneanum*	Mediterranean barley
**Hordeum murinum*	Wall barley
Panicum capillare	Witchgrass
**Phalaris aquatica*	Harding grass
Pleuropogon californicus var. californicus	Annual semaphore grass
**Poa annua*	Annual bluegrass
**Polypogon monspeliensis*	Annual beard grass

AQUATIC RESOURCES DELINEATION
FOR THE

±62-ACRE ARATA LANE STUDY AREA

TOWN OF WINDSOR, SONOMA COUNTY, CALIFORNIA



Prepared for:

Arata Properties, LLC
P.O. Box 2357
Healdsburg, CA 95448

Prepared by:

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AQUATIC RESOURCES DELINEATION FOR THE ±62-ACRE ARATA LANE STUDY AREA

INTRODUCTION

Location and Setting

Salix Consulting, Inc. (Salix) prepared an aquatic resources delineation for the ±62-acre Arata Lane Study Area located just outside the northern boundary of the Town of Windsor, in central Sonoma County, California. The study area is located north of Arata Lane and near the intersection of U.S. Route 101. It is situated in Section 2, Township 8 North and Range 8 West on the Healdsburg, California 7.5-minute USGS topographic quadrangle (Figure 1). The approximate coordinates for the property are: 38° 33' 44.92" N and 122°49' 12.26" W.

The site is located in the Russian River Valley, approximately two miles from the Russian River, at elevations ranging from approximately 140 feet in the southwest corner of the study area to 160 feet in the northeast corner. The study area is primarily pasture and ruderal grassland, used mostly for horse grazing. Adjacent land uses include single-family residential development to the south, rural residential and agricultural uses to the west and east, and to the north by agricultural land (grapes) (Figure 2).

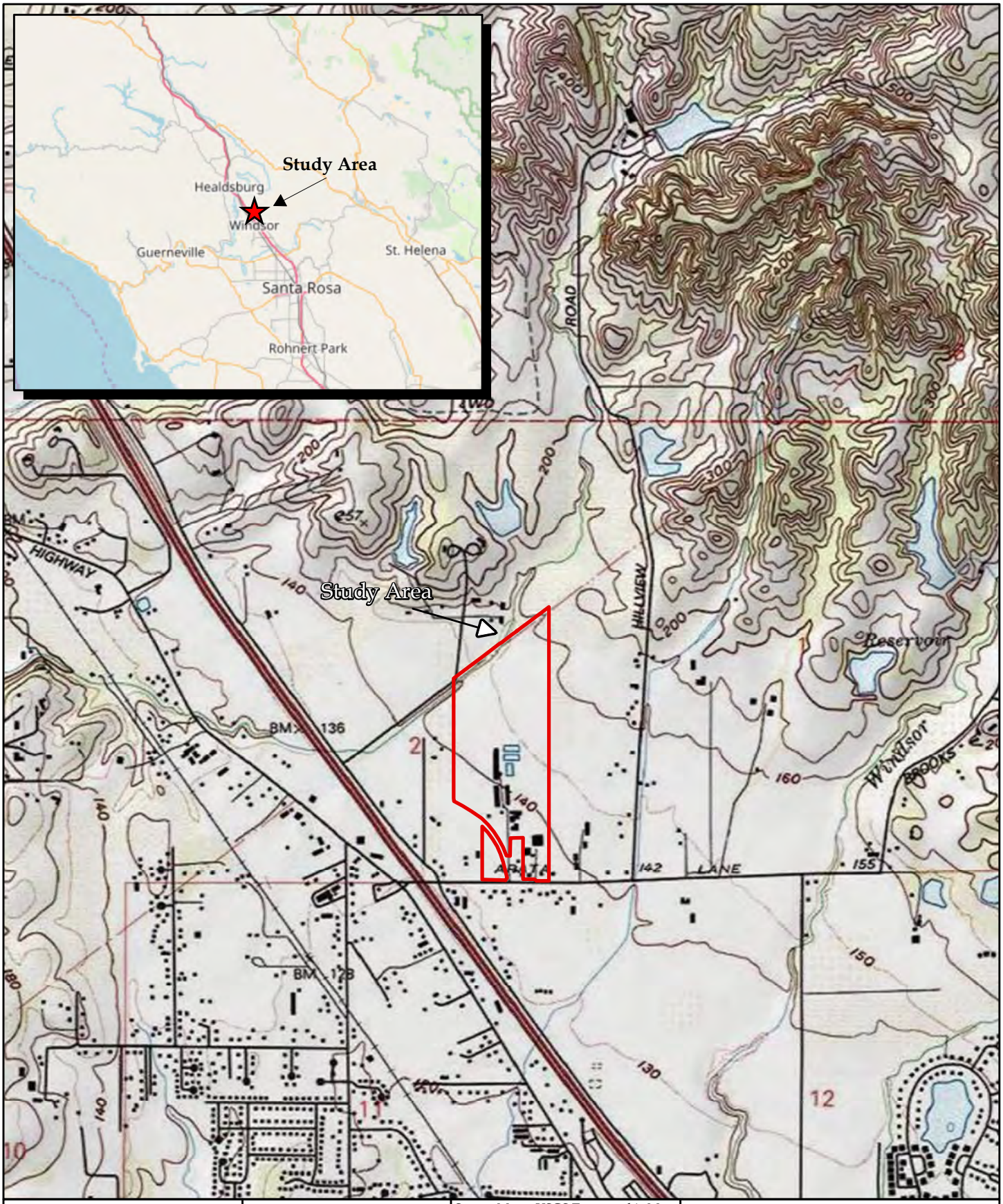
CONTACT INFORMATION

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Contact: Ben van Zutphen

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Phone: (530) 888-0130
Contact: Jeff Glazner

METHODOLOGY

Salix assessed and mapped aquatic resources within the study area on several occasions between March of 2015 and April/May of 2018. This aquatic resources delineation was conducted May 6, 2021 by Jeff Glazner according to the 1987 Corps Manual (Environmental Laboratory 1987) as amended by the Arid West Regional Supplement (U.S. Army Corps of Engineers 2008). The delineation was conducted using standard techniques as outlined in the Corps manual.



Salix consulting, inc.

N

0 1,000 2,000

Feet

Source Maps: USGS Topographic Map
Healdsburg Quad 1:24,000
S02 T08N R09W

Figure 1

SITE AND VICINITY MAP

Arata Lane

Town of Windsor, Sonoma County, CA



Salix consulting, inc.

N

0 200 400

Feet

Study Area
(±62 acres)

Imagery: 5-6-21 Salix Consulting, Inc.

Figure 2

AERIAL MAP

Arata Lane

Town of Windsor, Sonoma County, CA

The property was examined by aerial photo interpretation and by several passes on foot and ATV to assess all the ground in the study area. An Unmanned Aerial Vehicle (UAV) was utilized to generate an aerial basemap of the study area and two-foot contour interval topographic mapping was obtained through Sonoma County. For areas exhibiting aquatic features, close examination was conducted, and fourteen three-parameter data forms were filled out detailing vegetation, soils, and hydrology (Appendix A). Potential aquatic resources were mapped using a Trimble GeoXT 6000 GPS (submeter).

Information on soils of the study area was obtained from the U.S. Department of Agriculture National Resource Conservation Service's online Web Soil Survey (NRCS 2021). In the field, a Munsell Color (2015) chart was used to determine moist soil colors. Appendix B is a list of plants observed during the delineation, along with the scientific name and wetland status of each species. Where a plant species observed has a wetland indicator status (not UPL), plant nomenclature follows the National Wetland Plant List, version 3.4 (USACE 2018). Otherwise, species names are according to *The Jepson Flora Project (Jepson eflora)* or more recent publications if the nomenclature for any species has changed.

FINDINGS

Climate

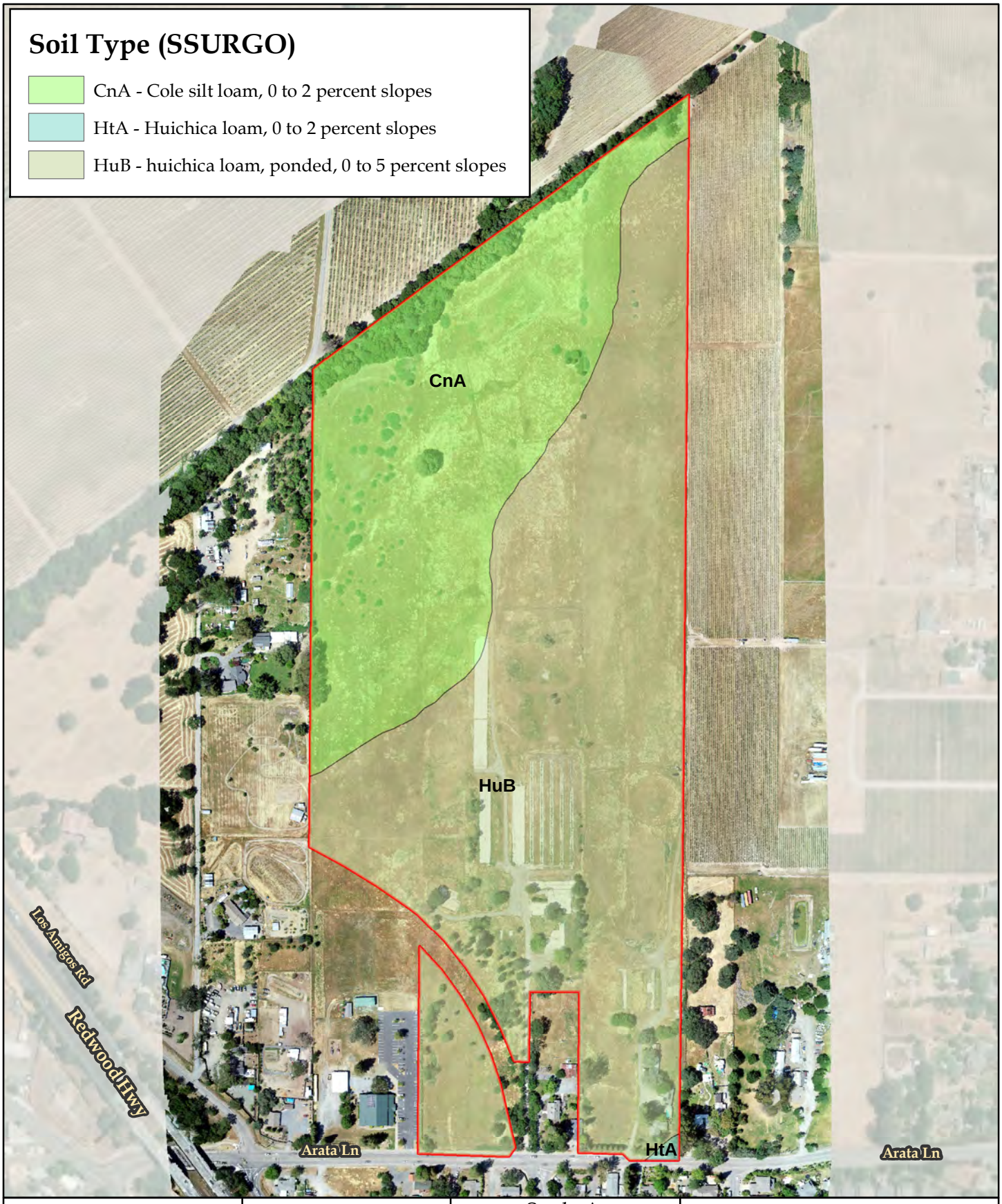
Windsor has a Mediterranean climate with cool, wet winters and warm, dry summers. The hottest month is July, averaging 85°, and the coolest month is January, averaging a low of 38°. Annual precipitation averages 41", nearly all of which occurs as rainfall between November and April. The wettest months of the year are December through February, with an average rainfall around 6 inches **in February**.

Soils

Three soil units have been mapped within the study area (Figure 3) and include the following (NRCS 2021):

Cole silt loam, 0 to 2 percent slopes

The Cole series consists of very deep, somewhat poorly-drained soils that formed in alluvium from mixed sources. They display poor runoff and slow permeability. Cole soils are on river terraces, basins flood plains, or on alluvial fans with slopes of 0 to 5 percent. Mean annual precipitation is 25 to 50 inches, and elevations are 50 to 1,500 feet. Cole soils are used mostly for production of



Salix consulting, inc.

N

0 200 400

Feet

Study Area (±62 acres)

Imagery: 5-6-21 Salix Consulting, Inc.

Figure 3

SOIL COMPONENTS

Arata Lane

Town of Windsor, Sonoma County, CA

orchards, vineyards, truck crops, and irrigated pasture. Uncultivated areas have oak-grass vegetation with some shrubs and forbs.

Cole silt loam, 0-2 percent slopes have a depth to restrictive layer of more than 80 inches and depth to water table of about 12 to 48 inches.

Huichica loam, ponded, 0 to 5 percent slopes

Huichica loam, 0 to 2 percent slopes

Huichica soils occur in gently sloping, smooth to hummocky floodplains under grass and scattered oaks, at elevations of 100 to 150 feet in the coastal valleys of Napa and Sonoma Counties. They are imperfectly drained, runoff is slow, and permeability is moderately slow to very slow.

The parent material for both Huichica loam ponded, 0 to 5 % slopes and Huichica loam, 0 to 2 percent slopes is alluvium derived from igneous, metamorphic and sedimentary rock. Depth to restrictive feature is 20 to 40 inches to duripan, and these soils are moderately well-drained.

Hydrology

The study area straddles two HUC12s. Porter Creek – Russian River (Hydrologic Unit Code 180101100902) at the northern end of the site, and Windsor Creek (Hydrologic Unit Code 180101100705) to the south, both of which are part of the greater Russian River watershed (Hydrologic Unit Code 18010110). One unnamed tributary to the Russian River occurs along the northern boundary of the study area. This drainage flows in a south-westerly direction and leaves the study area at the intersection of the northern and western study area boundaries. The drainage flows west under US Highway 101 and into the Russian River less than 2 miles west of the site.

Vegetation

Annual Grassland

The annual grassland habitat occupies the majority of the site. The grassland is in variable states of use and disturbance. The property contains many outbuildings and infrastructure that support farm and livestock activities. Most of the species occupying the site are common and weedy due to the ongoing disturbance. Common species in the grassland include wild oat (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), winter vetch (*Vicia villosa*), cut-leaf geranium (*Geranium dissectum*), wall barley (*Hordeum murinum*), English plantain (*Plantago lanceolata*), sheep sorrel (*Rumex acetosella*), and white clover (*Trifolium repens*).

The grasslands contain a small amount of wetlands and corresponding flora (discussed in the **Aquatic Resources** section below).

Oak Woodland

Oak Woodland occurs in one band along the northern boundary in association with the intermittent stream (Figure 4a). The intermittent stream flows only during the wet season, and the channel is dry for the majority of the year. This habitat is mapped as oak woodland because the corridor is not wet enough to support a continuous band of riparian vegetation. The primary trees include coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), and California bay (*Umbellularia californica*). Shrubs in the oak woodland and scattered in other areas of the site include poison oak (*Toxicodendron diversilobum*), oak saplings, and Himalayan blackberry (*Rubus armeniacus*). Another area of oaks occurs in the southern area of the site, but these trees are scattered among residences, old building pads and driveways, and the oak woodland is fragmented by these anthropogenic influences.

Disturbed/Developed/Ruderal

Disturbed and developed areas occur in the southern half of the study area. This area contains former ranch structures and old building pads that no longer support structures, driveways, and an active residence.

Aquatic Resources

Three categories of aquatic resources have been mapped within the study area and are summarized in Table 1: Intermittent Stream, Seasonal Wetland, and Drainage Ditch.

Table 1.
Aquatic Resources in the Study Area

Aquatic Resources **Type**	**Acreage**
Intermittent Stream	0.266
Seasonal Wetland	0.137
Drainage Ditch	0.008
Total	**0.411**

Figures 4a – 4b show representative aerial photographs of the study area. Representative site photographs of each of the mapped aquatic resources are presented in Figures 4c – 4g, and the aquatic resources map is presented in Figure 5.

Seasonal Wetland

Seven seasonal wetlands are mapped in the central portion of the study area (Figure 5). Five of the seasonal wetlands are shallow depressional features, and two of the seasonal wetlands are remnants of a former drainage ditch, now cutoff and short-linear. Most of these features support a mix of facultative grasses including Italian ryegrass (*Festuca perennis),* Mediterranean barley (*Hordeum marinum),* and Kentucky bluegrass *(Poa annua*) and non-grass species including curly dock (*Rumex crispus*), hyssop loosestrife (*Lythrum hyssopifolia*), pennyroyal (*Mentha pulgium*), and rabbitsfoot grass (*Polypogon monspeliensis*). Site photos of each mapped seasonal wetland are included in Figures 4d-4g.

Drainage Ditch

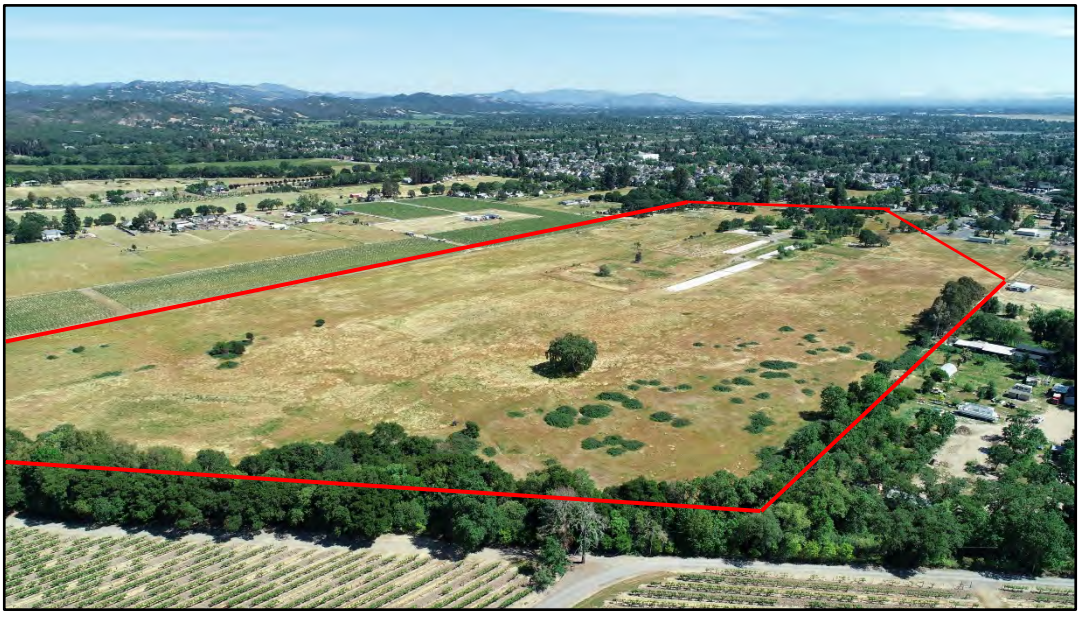
One drainage ditch is mapped in the study area. Drainage Ditch 1 flows parallel to Arata Lane along a portion of the southern boundary (Figure 4c). This ditch has a rocky bottom with sparse vegetation containing curly dock and Italian ryegrass with a portion lined with Himalayan blackberry. It carries water from Arata Lane and the local residential area and flows through a culvert under Arata Lane to the south.

Intermittent Stream

One intermittent stream, an unnamed tributary to the Russian River, flows from northeast to southwest along the northern property line. This feature carries seasonal storm flows but does not sustain wetness long enough to support a riparian plant community (Figure 4c). Trees along the drainage are primarily coast live oak, valley oak, and California bay.



Looking southwest over study area. Photo date 5-6-21



Looking southeast over study area. Photo date 5-6-21

Salix consulting, inc.

Study Area

Figure 4a

AERIAL SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Looking north over northern portion of study area. Photo date 5-6-21



Looking south over southern portion of study area. Photo date 5-6-21

Salix consulting, inc.

Study Area

Figure 4b

AERIAL SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Intermittent stream along northern property line. Flows in this channel only occur during the wet season.
Photo date 5-6-21



Box culvert under Arata Lane. Water drains from roadside ditch through this culvert.
Photo date 5-6-21

Salix consulting, inc.

Figure 4c

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Seasonal Wetland 1
Photo date 5-6-21



Seasonal Wetland 2
Photo date 5-6-21

Salix consulting, inc.

Figure 4d

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Seasonal Wetland 3
Photo date 5-6-21



Seasonal Wetland 4
Photo date 5-6-21

Salix consulting, inc.

Figure 4e

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Seasonal Wetland 5
Photo date 5-6-21



Seasonal Wetland 6
Photo date 5-6-21

Salix consulting, inc.

Figure 4f

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Seasonal Wetland 7
Photo date 5-6-21

Salix consulting, inc.

Figure 4g

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA

Aquatic Resources

OTHER WATERS	
Intermittent Stream (IS)	Acreage
IS-1	0.266
Total Other Waters	**0.266**

WETLANDS	
Drainage Ditch (DD)	
DD-1	0.008
Subtotal:	**0.008**

WETLANDS CONT.	
Seasonal Wetland (SW)	Acreage
SW-1	0.038
SW-2	0.014
SW-3	0.007
SW-4	0.041
SW-5	0.007
SW-6	0.009
SW-7	0.022
Subtotal:	**0.137**
Total Wetlands	**0.145**

Total Aquatic Resources 0.411 acre

LOS AMIGOS RD

ARATA LANE

N

0 50 100

Feet

Study Area (±62 acres)

Culvert

2-ft Contours (Sonoma County)

Upland Data Point

Waters Data Point

Wetland Data Point

Imagery: 5-6-21 Salix Consulting, Inc.

Salix consulting, inc.

Figure 5

AQUATIC RESOURCE DELINEATION

Arata Lane

Town of Windsor, Sonoma County, CA

June 16, 2021

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Appendix A.
Arata Lane Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 01

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5618838 Long: -122.8199616 Datum: WGS 84

Soil Map Unit Name: HuB - Huichia loam, ponded, 0 to 5 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

In a nearly flat roadside ditch (drainage ditch). 2' wide flowing from west to east. Steep sides, vegetated bottom.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Festuca perennis	70	X	FAC
2. Rumex crispus	10		FAC
3.			
4.			
5.			
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Channel contains mostly Italian ryegrass.

SOIL

Sampling Point: 01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-10	10YR 4/2	95	7.5YR 4/6	5	C	M	loam	gravelly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Gravelly bed, but soils show redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Dry on 3/27/15 and on 5/6/21. Evidence that water lingers in channel for extended periods during wet season.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 02

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5651364 Long: -122.8215238 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks:

Seasonal wetland. Shallow depression within pasture supporting a mix of wetland species. Wetland supports fewer vernal pool species since grazing has ceased.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Plagiobothrys stipitatus	10		FACW
2. Pleuropogon californicus	10		OBL
3. Rumex crispus	5		FAC
4. Leontodon saxatilis	5		FACU
5. Hordeum marinum	35	X	FAC
6. Festuca perennis	20	X	FAC
7. Lepidium nitidum	5		FAC
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Wetland supports a dominance of seasonal wetland grasses with a minor component of vernal pool species.

SOIL

Sampling Point: 02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
3-12	7.5YR 4/1	85	5YR 4/6	15	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Strong redox below 3".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Shallow depression shows evidence of prolonged seasonal saturation.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 03

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5650822 Long: -122.8214952 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Upland comparison to data point 02. On a hillslope outside of basin.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Parentucellia viscosa	10		FAC
2. Lupinus nanus	10		UPL
3. Lepidium nitidum	15		FAC
4. Festuca myuros	25	X	FACU
5. Lolium perenne	15		FAC
6. Trifolium repens	20	X	FACU
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	45	x 4 =	180
UPL species	10	x 5 =	50
Column Totals:	95 (A)		350 (B)

Prevalence Index = B/A = 3.68

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Typical upland pasture species outside of wetland.

SOIL

Sampling Point: 03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	7.5YR 4/3	95	7.5YR 4/6	5	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Redox in soils, but high chroma and clearly outside of wetland basin.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Just upslope of shallow basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 04

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5659622 Long: -122.8213509 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

Broad drainageway. Lacks evidence of prolonged saturation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: ____)			
1. Rumex crispus	20	X	FAC
2. Trifolium repens	30	X	FACU
3. Stellaria media	10		FACU
4. Lepidium nitidum	10		FAC
5. Allium sp.	5		FACU
6. Festuca myuros	5		FACU
7. Erodium cicutarium	10		UPL
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	30	x 3 =	90
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column Totals:	90 (A)		340 (B)

Prevalence Index = B/A = 3.78

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Pasture/weedy.

SOIL

Sampling Point: 04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	7.5YR 4/3	95	7.5YR 4/6	5	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Redox is present in many upland landscape positions in this pasture.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Lacks evidence of wetland hydrology. Water sheet flows through this area but saturation is short.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 05

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5669141 Long: -122.8210768 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No _____

Hydric Soil Present? Yes _____ No ✓

Wetland Hydrology Present? Yes _____ No ✓

Is the Sampled Area within a Wetland? Yes _____ No ✓

Remarks:

Suspect area. Supporting marginal wetland plant community. Soils lack redox and evidence of wetland hydrology.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Festuca perennis	20	x	FAC
2. Rumex crispus	20	x	FAC
3. Dittrichia graveolens	10		UPL
4. Allium sp.	2		FACU
5. Hordeum marinum	15		FAC
6. Hordeum brachyantherum	10		FACW
7. Lythrum hyssopifolium	5		OBL
8.			
	82 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:
OBL species	5	x 1 = 5
FACW species	10	x 2 = 20
FAC species	55	x 3 = 165
FACU species	2	x 4 = 8
UPL species	10	x 5 = 50
Column Totals:	82 (A)	248 (B)

Prevalence Index = B/A = 3.02

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Mix of upland/wetland species.

SOIL

Sampling Point: 05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
3-12	10YR 3/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

No redox below hoof pan.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Area lacks evidence of wetland hydrology. Hillslope drains to the southwest.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 06

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Mediterranean California (LRR C) Lat: 38° 33' 44.92" Long: -122° 49' 12.25" Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

Shallow seasonal wetland depression in upland drainage swale.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Plagiobothrys stipitatus	40	X	FACW
2. Pleuropogon californicus	5		OBL
3. Rumex crispus	10		FAC
4. Ranunculus muricatus	5		FACW
5. Lythrum hyssopifolium	5		OBL
6. Festuca perennis	25		FAC
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Mix of vernal pool and seasonal wetland flora. Basin very shallow.

SOIL

Sampling Point: 06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	7.5YR 5/2	90	5YR 4/6	10	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Loamy soils, moderate redox throughout.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres along Living Roots (C3)
- ✓ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of seasonal prolonged saturation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 3-27-15 and 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 07

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5682217 Long: -122.8197500 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

Upland comparison to sampling point to 6. Located just outside of shallow depression.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Festuca perennis	30	x	FAC
2. Erodium cicutarium	10		UPL
3. Trifolium repens	10		FACU
4. Bromus hordeaceus	40	X	FACU
5. Rumex crispus	1		FAC
6.			
7.			
8.			
	91 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	31	x 3 =	93
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column Totals:	91 (A)		343 (B)

Prevalence Index = B/A = 3.77

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

Grassy hillslope adjacent to shallow basin.

SOIL

Sampling Point: 07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	10YR 4/3	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Loam.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Upland landscape position adjacent to shallow basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 08

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5682845 Long: -122.8197956 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

Broad meandering drainage swale. Redox present but lacks evidence of prolonged saturation.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Festuca perennis	35	X	FAC
2. Rumex crispus	10		FAC
3. Trifolium repens	20	X	FACU
4. Poa annua	10		FACU
5. Bromus hordeaceus	10		FACU
6. Ranunculus muricatus	10		FACW
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	45	x 3 =	135
FACU species	40	x 4 =	160
UPL species	_____	x 5 =	_____
Column Totals:	95 (A)		315 (B)

Prevalence Index = B/A = 3.32

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:

Grassy swale with wetland and upland flora.

SOIL

Sampling Point: 08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	7.5YR 5/2	90	5YR 4/6	10	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Redox present in swale but appears to be relict.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Swale has suspect wetland hydrology but does not exhibit evidence of prolonged seasonal saturation.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 09

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): ditch Local relief (concave, convex, none): concave Slope (%): 0-1

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5663787 Long: -122.8190533 Datum: WGS 84

Soil Map Unit Name: HuB - Huichia loam, ponded, 0 to 5 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No _____

Hydric Soil Present? Yes ✓ No _____

Wetland Hydrology Present? Yes ✓ No _____

Is the Sampled Area within a Wetland? Yes ✓ No _____

Remarks:

Constructed ditch, but cut off and now is a linear seasonal wetland. Drains to the west.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Rumex crispus	20	X	FAC
2. Polypogon monspeliensis	10		FACW
3. Festuca perennis	30	X	FAC
4. Lythrum hyssopifolium	5		OBL
5. Poa annua	5		FACU
6. Pleuropogon californicus	10		OBL
7. Juncus bufonius	5		FACW
8.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Seasonal wetland flora.

SOIL

Sampling Point: 09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3								mostly gravel
3-12	7.5YR 4/1	90	7.5YR 4/6	10	C	M	silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Debris in soil. Broken concrete and rocks, but soil indicates hydric.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ✓ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 6"

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of surface ponding noted by presence of algal matting.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 3-27-15 and 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 10

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): basin Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5665211 Long: -122.8199927 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ____

Hydric Soil Present? Yes ✓ No ____

Wetland Hydrology Present? Yes ✓ No ____

Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks:

Shallow seasonal wetland.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Plagiobothrys stipitatus	30	X	FACW
2. Rumex crispus	5		FAC
3. Ranunculus muricatus	5		FACW
4. Pleuropogon californicus	10		OBL
5. Lythrum hyssopifolium	5		OBL
6. Hordeum marinum	20	X	FAC
7. Festuca perennis	10		FAC
8. Lepidium nitidum	5		FAC
	90 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Wetland species in shallow basin.

SOIL

Sampling Point: 10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	7.5YR 5/1	90	5YR 4/6	10	C	M	silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Strong redox in this basin.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of seasonal saturation in this shallow basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

3-27-15 and

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 11

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.5676800 Long: -122.8204699 Datum: WGS 84

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No _____

Hydric Soil Present? Yes _____ No ✓

Wetland Hydrology Present? Yes _____ No ✓

Is the Sampled Area within a Wetland? Yes _____ No ✓

Remarks:

Suspect area. Swale below SW-1 near large valley oak tree. Lacks hydric indicators.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1. Festuca perennis	70	X	FAC
2. Poa annua	10		FAC
3. Ranunculus muricatus	5		FACW
4. Convolvulus arvensis	5		UPL
5.			
6.			
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 15 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	5	x 5 =	25
Column Totals:	90 (A)		275 (B)

Prevalence Index = B/A = 3.06

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Grassy swale

SOIL

Sampling Point: 11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	7.5YR 4/3	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Soils lacking hydric indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Lacks evidence of prolonged saturation.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 12

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.56929805 Long: -122.8198689 Datum: NAD83

Soil Map Unit Name: CnA - Cole silt loam, 0 to 2 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes _____ No _____	
Wetland Hydrology Present?	Yes _____ No _____	

Remarks:

Feature is an Intermittent Stream. It is a well-defined and deeply incised channel along the northern study area boundary. Flows occur only during the wet season.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:

Very little vegetation in channel bottom. Upper slopes and ground near top of bank support Quercus agrifolia, Q. lobata, Aesculus californica, Unbellularia californica, Toxicodendron diversilobum, and other upland woody species.

SOIL

Sampling Point: 12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** _____

Remarks:

No soil data taken. Channel bottom is gravelly and cobbley.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Intermittent stream; flows only during wet season. Appears to at least periodically carry high scouring flows.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 13

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.565784 Long: -122.819187 Datum: NAD83

Soil Map Unit Name: HuB - huichica loam, ponded, 0 to 5 percent slopes NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

Shallow seasonal wetland in former horse pasture.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Plagiobothrys stipitatus	10		FACW
2. Festuca perennis	5		FAC
3. Hordeum marinum	10		FAC
4. Anthemis cotula	10		FACU
5. Polypogon monspeliensis	20	X	FACW
6. Mentha pulegium	20	X	OBL
7.			
8.			
	75 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 5

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Weedy wetland flora

SOIL

Sampling Point: 13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	10YR 4/2	90	7.5yr 4/6	5	C	M	silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Redox present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ✓ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ✓ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): _____

Water Table Present? Yes ___ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Evidence of seasonal saturation in this shallow depression. Area abundant with geese prints in the bare muddy areas.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Arata Lane City/County: Windsor/Sonoma County Sampling Date: 5-6-21

Applicant/Owner: Redwood Equities State: CA Sampling Point: 14

Investigator(s): Jeff Glazner Section, Township, Range: Section 2, Township 8N, Range 8W

Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 0-1

Subregion (LRR): Mediterranean California (LRR C) Lat: 38.565747 Long: -122.819215 Datum: NAD83

Soil Map Unit Name: HuB - huichica loam, ponded, 0 to 5 percent slopes NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____ No ✓	
Wetland Hydrology Present?	Yes _____ No ✓	

Remarks:

Upland, adjacent to SW4 and data point 13.

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: _____)			
1. Festuca perennis	30	X	FAC
2. Bromus hordeaceus	15		FACU
3. Poa annua	15		FAC
4. Medicago polymorpha	10		FACU
5. Trifolium repens	10		FACU
6.			
7.			
8.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks:

Weedy annual vegetation.

SOIL

Sampling Point: 14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
2-12	10YR 4/3	100					silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Lacks redox.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Outside of shallow basin and in upland landscape position.

Appendix B.
Plant Species Observed on the Arata Lane Study Area

Appendix B-Arata Lane Plants Observed 5/2018 & 5/2021 with Wetland Status

Taxon	Common Name	Wetland Status
Achillea millefolium	Common yarrow	FACU
Achyrachaena mollis	Blow-wives	FAC
Acmispon americanus	Spanish lotus	UPL
Aesculus californica	California buckeye	UPL
Aira caryophyllea	Silver European hairgrass	FACU
Allium sp.	Wild onion	VARIES
Amaranthus retroflexus	Rough pigweed	FACU
Amsinckia menziesii	Rancher's fireweed	UPL
Anthemis cotula	Mayweed	FACU
Avena fatua	Wild oat	UPL
Baccharis pilularis	Coyote brush	UPL
Barbarea orthoceras	American wintercress	FACW
Brachypodium distachyon	Purple falsebrome	UPL
Brassica nigra	Black mustard	UPL
Brassica rapa	Field mustard	FACU
Briza maxima	Rattlesnake grass	FAC
Briza minor	Small quaking grass	FAC
Bromus diandrus	Ripgut grass	UPL
Bromus hordeaceus	Soft chess	FACU
Bromus madritensis	Foxtail brome	UPL
Bromus madritensis subsp. rubens	Red brome	UPL
Calandrinia menziesii	Red maids	FACU
Callitriche marginata	Winged water-starwort	OBL
Capsella bursa-pastoris	Shepherd's purse	FACU
Cardamine oligosperma	Western bitter-cress	FAC
Carduus pycnocephalus	Italian thistle	UPL
Castilleja attenuata	Valley tassels	UPL
Centaurea melitensis	Tocalote	UPL
Centaurea solstitialis	Yellow starthistle	UPL
Centromadia fitchii	Fitch's spikeweed	FACU
Cerastium glomeratum	Sticky mouse-ear chickweed	UPL
Cichorium intybus	Chicory	FACU
Cirsium vulgare	Bull thistle	FACU
Claytonia perfoliata	Common miner's lettuce	FAC
Conium maculatum	Poison hemlock	FACW
Convolvulus arvensis	Bindweed	UPL
Cotula coronopifolia	Common brass-buttons	OBL
Croton setiger	Turkey mullein	UPL

Taxon	Common Name	Wetland Status
Cynodon dactylon	Bermudagrass	FACU
Cynosurus echinatus	Hedgehog dogtail	UPL
Cyperus eragrostis	Tall flatsedge	FACW
Dactylis glomerata	Orchard grass	FACU
Dittrichia graveolens	Stinkwort	UPL
Eleocharis macrostachya	Creeping spikerush	OBL
Elymus caput-medusae	Medusahead	UPL
Epilobium brachycarpum	Summer cottonweed	UPL
Erodium botrys	Broad-leaf filaree	FACU
Erodium cicutarium	Red-stem filaree	UPL
Erodium moschatum	White-stem filaree	UPL
Eschscholzia californica	California poppy	UPL
Euphorbia maculata	Spotted spurge	UPL
Festuca bromoides	Brome fescue	FAC
Festuca myuros	Rattail sixweeks grass	FACU
Festuca perennis	Italian ryegrass	FAC
Galium aparine	Goose grass	FACU
Geranium dissectum	Cut-leaf geranium	UPL
Glyceria declinata	Low mannagrass	FACW
Helminthotheca echioides	Bristly ox-tongue	FAC
Heterotheca grandiflora	Telegraph weed	UPL
Hordeum brachyantherum	Meadow barley	FACW
Hordeum marinum subsp. gussoneanum	Mediterranean barley	FAC
Hordeum murinum	Wall barley	FACU
Hypericum perforatum subsp. perforatum	Klamathweed	FACU
Hypochaeris glabra	Smooth cat's-ear	UPL
Juglans hindsii	Northern California black walnut	FAC
Juncus balticus subsp. ater	Baltic rush	FACW
Juncus bufonius	Toad rush	FACW
Lactuca serriola	Prickly lettuce	FACU
Leontodon saxatilis	Long-beaked hawkbit	FACU
Lepidium nitidum	Shining peppergrass	FAC
Lepidium strictum	Peppergrass	UPL
Limnanthes douglasii subsp. nivea	Douglas' meadowfoam	OBL
Logfia gallica	Narrowleaf cottonrose	UPL
Lupinus bicolor	Miniature lupine	UPL
Lupinus nanus	Sky lupine	UPL
Lysimachia arvensis	Scarlet pimpernel	FAC
Lythrum hyssopifolia	Hyssop loosestrife	OBL
Malva neglecta	Common mallow	UPL

Taxon	Common Name	Wetland Status
Malva parviflora	Cheeseweed	UPL
Matricaria discoidea	Pineapple-weed	FACU
Medicago polymorpha	California burclover	FACU
Melilotus albus	White sweetcover	UPL
Mentha pulegium	Pennyroyal	OBL
Microseris acuminata	Sierra foothill microseris	UPL
Minuartia californica	California sandwort	FACU
Montia fontana	Blinks	OBL
Navarretia intertexta	Needle-leaved navarretia	FACW
Nemophila menziesii	Baby blue-eyes	UPL
Panicum capillare	Witchgrass	FACU
Parentucellia viscosa	Yellow glandweed	FAC
Phalaris aquatica	Harding grass	FACU
Plagiobothrys stipitatus var. micranthus	Great Valley popcornflower	FACW
Plantago coronopus	Cut-leaf plantain	FAC
Plantago lanceolata	English plantain	FAC
Pleuropogon californicus var. californicus	Annual semaphore grass	OBL
Poa annua	Annual bluegrass	FAC
Pogogyne douglasii	Douglas' mesa mint	OBL
Polypogon monspeliensis	Annual beard grass	FACW
Portulaca oleracea	Common purslane	FAC
Prunus sp.	Prunus	UPL
Pseudognaphalium luteoalbum	Everlasting cudweed	FAC
Quercus agrifolia var. agrifolia	Coast live oak	UPL
Quercus douglasii	Blue oak	UPL
Quercus garryana var. garryana	Garry oak	UPL
Quercus lobata	Valley oak	FACU
Ranunculus muricatus	Spiny-fruit buttercup	FACU
Raphanus sativus	Wild radish	UPL
Rorippa curvisiliqua	Western yellow cress	OBL
Rubus armeniacus	Himalayan blackberry	FAC
Rumex acetosella	Sheep sorrel	FACU
Rumex crispus	Curly dock	FAC
Rumex pulcher	Fiddle dock	FAC
Salix laevigata	Red willow	FACW
Sambucus nigra	Black elderberry	FAC
Senecio vulgaris	Common groundsel	FACU
Silybum marianum	Milk thistle	UPL
Sisymbrium officinale	Hedge mustard	UPL
Sisyrinchium bellum	Western blue-eyed grass	FACW

Taxon	Common Name	Wetland Status
Sonchus oleraceus	Common sow-thistle	UPL
Spergularia rubra	Ruby sand-spurrey	FAC
Stellaria media	Common chickweed	FACU
Taraxacum officinale	Common dandelion	FACU
Torilis arvensis	Field hedgeparsley	UPL
Toxicodendron diversilobum	Western poison-oak	FACU
Trifolium dubium	Little hop clover	UPL
Trifolium fucatum	Sour clover	FACU
Trifolium hirtum	Rose clover	UPL
Trifolium microcephalum	Small-headed clover	FAC
Trifolium repens	White clover	FACU
Trifolium subterraneum	Subterranean clover	UPL
Trifolium variegatum	Whitetip clover	FAC
Triphysaria versicolor subsp. faucibarbata	Triphysaria	UPL
Umbellularia californica	California bay	FAC
Veronica peregrina subsp. xalapensis	Purslane speedwell	OBL
Vicia benghalensis	Purple vetch	UPL
Vicia villosa	Winter vetch	UPL
Xanthium strumarium	Cocklebur	FAC
Zeltnera muehlenbergii	June centaury	FAC

Appendix C.
USACOE Aquatic Resources Spreadsheet

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
DD-1	CALIFORNIA	PEM2	SLOPE	Area	0.008345491	ACRE	DELINEATE	38.5619327	-122.8199107	Russian River
IS-1	CALIFORNIA	R2RB	RIVERINE	Area	0.26589533	ACRE	DELINEATE	38.568878	-122.8205725	Russian River
SW-1	CALIFORNIA	PEM2	DEPRESS	Area	0.037807409	ACRE	DELINEATE	38.5681781	-122.8197311	Russian River
SW-2	CALIFORNIA	PEM2	DEPRESS	Area	0.013737499	ACRE	DELINEATE	38.5665006	-122.8199352	Russian River
SW-3	CALIFORNIA	PEM2	DEPRESS	Area	0.006666942	ACRE	DELINEATE	38.5663741	-122.8190377	Russian River
SW-4	CALIFORNIA	PEM2	DEPRESS	Area	0.040753542	ACRE	DELINEATE	38.5658143	-122.8191894	Russian River
SW-5	CALIFORNIA	PEM2	DEPRESS	Area	0.00739516	ACRE	DELINEATE	38.5657781	-122.818953	Russian River
SW-6	CALIFORNIA	PEM2	DEPRESS	Area	0.008746971	ACRE	DELINEATE	38.5650466	-122.8194153	Russian River
SW-7	CALIFORNIA	PEM2	DEPRESS	Area	0.022094384	ACRE	DELINEATE	38.5651418	-122.8215457	Russian River

March 16, 2022

Ben vanZutphen
Willow Glen Homes
P.O. Box 2357
Healdsburg, CA 95448

Subject: Biological Resources Addendum, 62-acre Arata Lane Parcel, Town of Windsor, Sonoma County, California

Dear Mr. vanZutphen:

At your request, Salix Consulting, Inc. (Salix) has prepared this report, which provides additional information regarding the biological resources present on your ±62-acre Arata Lane parcel, located just outside the northern boundary of the Town of Windsor, in central Sonoma County, California (Figures 1 and 2). In a letter to you dated November 17, 2021, the Town stated the following regarding biological reports:

> The reports submitted due not include a Biological Assessment. Reports prepared by Salix were submitted for aquatic resources, wetlands, and plants. However, no report regarding fauna that could occur on the site were submitted and the reports submitted due not include any recommendations, even though wetlands and other waters were identified on the site, as was the potential for the site to include habitat for a protected plant species.

The Salix reports referenced in the Town comments include the *Special-Status Plant Report ±62-Acre Arata Lane Study Area, Town of Windsor, Sonoma County, CA*, dated June 2018, and the *Aquatic Resources Delineation for the ±62-acre Arata Lane study area,* dated June 2021. It is assumed that the Town has these reports and can reference them if necessary.

This letter report is intended to provide the following:

- information regarding fauna that occur or could occur on the site
- information regarding potential occurrence of special-status animals on the site
- recommendations regarding special-status animals
- recommendations regarding aquatic resources
- recommendations regarding special-status plants that may potentially occur on the site

Wildlife Occurrence and Usage on the Arata Lane Parcel

As described in the 2018 Rare Plant Survey and the 2021 Aquatic Resources Delineation, three (3) biological communities were identified within the study area,: annual grassland, which occupies the majority of the site, foothill woodland, which occurs in one dense band along the northern boundary in association with an intermittent stream, and developed/disturbed, which occurrs in the southern half of the study area and included residential compounds and associated livestock areas and outbuildings. Many of these buildings had been removed by the time of the 2021 aquatic resources delineation. Since the site has remained unchanged since that report was completed, please refer to the site photos that are included in the 2021 delineation report, if necessary.

Wildlife were observed on the project site within the various habitats during the 2018 Rare Plant surveys and the 2021 aquatic resources delineation survey. The site is open and provides quality habitat for foraging and temporary refugia. Animals can linger while passing through the area. The lack of water is a limiting factor for species that might otherwise reside there. Large oak trees line the northern boundary and are scattered in the southern area of the site, and one very large valley oak is present in the northern area of the property. These trees provide roosting and nesting habitat for birds. The seasonal wetlands on the property are wet in the winter and into early spring and then are dry. There is essentially no water on the site from mid-spring until the winter rains. The intermittent stream corridor along the northern boundary is a deeply incised channel that carries winter runoff. It does not flow most of the year and therefore, its aquatic function is limited. A list of wildlife species observed is presented in Appendix A.

Potential for Occurrence of Special-status animals on the Arata Lane Parcel

Salix queried the California Natural Diversity Data Base (CNDDB 2022) for reported occurrences of special-status fish and wildlife in the region surrounding the study area. The five-quadrangle search area included the Healdsburg, Geyserville, Santa Rosa, Mark West Springs, and Guerneville USGS quadrangles. For the purposes of this report, special-status species are those that fall into one or more of the following categories, including those

- Listed as endangered or threatened under the federal Endangered Species Act (or candidate species, or formally proposed for listing);
- Listed as endangered or threatened under the California Endangered Species Act (or proposed for listing);
- Designated as rare, protected, or fully protected pursuant to California Fish and Game Code;
- Designated a Species of Special Concern by the California Department of Fish and Wildlife

The CNDDB query provided a list of regionally-occurring special-status animal species and was used to determine which species have some potential to occur within or near the study area. Appendix B lists regionally-occurring special-status animals. The field surveys that have been conducted for other biological studies and the best professional judgment of Salix biologists were used to further refine the list.

Of the 18 potentially-occurring animal species listed in Appendix B, twelve (12) species were identified as occurring within or near a 5-mile radius of the study area, as shown in Figure 3 and are marked with an asterisk (*) in the lists below.

As described in Appendix B, 15 of the 18 potentially-occurring species were determined to have no potential to occur within the study area due to the absence of suitable habitats. Ten (10) of these species have no potential to occur due to the absence of suitable, supporting aquatic habitats, including

- California freshwater shrimp (*Syncaris pacifica*)
- Coho salmon - Central California Coast ESU (*Onchorhynchus kisutch*)*
- Steelhead - Central California Coast ESU (*Oncorhynchus mykiss irideus*)*
- Northern coastal roach (*Hesperoleucus venustus navarroensis*)*
- Russian River tule perch (*Hysterocarpus traski pomo*)*
- California tiger salamander (*Ambystoma californiense*)
- California giant salamander *(Dicamptodon ensatus*)*
- California red-legged frog (*Rana draytonii*)
- Western pond turtle (*Actinemys marmorata*)*
- Yellow rail (Coturnicops noveboracensis)

Five (5) of these species have no potential to occur due to the absence of other types of suitable, supporting habitats such as shaded forests, appropriate roosting sites or specific species of tree, or the site is too urbanized. These species include

- Red-bellied newt (*Taricha rivularis*)*
- Townsend's big-eared bat (*Corynorhinus townsendii townsendii*)*
- Pallid bat (*Antrozous pallidus*)*
- Red (Sonoma) tree vole (Arborimus pomo)
- American badger (Taxidea taxus)

The 15 species with no potential to occur within the study area have been dismissed from further consideration.

It was determined that the following three (3) species may have some potential to occur within the study area (see Appendix B).

Special-Status Animal Species Known from the Arata Lane Region with Some Potential to Occur

Species	Status* Federal	Status* State	Habitat	Potential for Occurrence Within Study Area**
Amphibians				
Foothill yellow-legged frog * *Rana boylii*	-	CE SSC	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation..	Unlikely. Stream along northern boundary likely does not flow long enough to support species. Not observed during multiple field surveys over several years.

Species	Status* Federal	State	Habitat	Potential for Occurrence Within Study Area**
Birds				
White-tailed kite* *Elanus leucurus*	-	CFP	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Possible. May nest in large trees in study area. Not observed during multiple field surveys over several years.
Burrowing owl* *Athene cunicularia*	-	SSC	Found in annual grasslands. Nests in burrows dug by small mammals, primarily ground squirrels..	Possible. Suitable habitat occurs in study area. Not observed during multiple field surveys over several years.

*Status Codes:

State

CE California Endangered
CT California Threatened
CFP California Fully Protected
CCT California Candidate
SSC California Species of Concern

**Definitions for the Potential to Occur:

- **None.** Habitat does not occur.
- **Unlikely.** Some habitat may occur, but disturbance or other activities may restrict or eliminate the possibility of the species occurring. Habitat may be very marginal, or the study area may be outside the range of the species.
- **Possible.** Marginal to suitable habitat occurs, and the study area occurs within the range of the species.
- **Likely.** Good habitat occurs, but the species was not observed during surveys.
- **Occurs:** Species was observed during surveys.

Foothill yellow-legged frog (*Rana boylii*) (FYLF), has no federal status but is California Endangered species and California Species of Special Concern. Foothill yellow-legged frog occupies rocky streams in valley-foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, ponderosa pine, mixed conifer, coastal scrub, mixed chaparral, and wet meadow habitat types from sea level to 6,370 feet. It is nearly always found within a few feet of water. Foothill yellow-legged frog is frequently found in moving but not swiftly flowing water. The species is most common along streams with rocky bottoms but has also been found along streams with mud bottoms. Foothill yellow legged frog requires permanent streams or, at a minimum, streams where pools persist through the dry season.

FYLF appeared in the CNDDB query and on the five-mail radius map. The nearest reported occurrence of FYLF is 3.5 miles northwest of the study area, at Felta Creek, a tributary to Mill Creek, southwest of Healdburg in 2018. It is unlikely that FYLF would occur in in the stream on the study area northern property boundary because the stream is not likely to flow long enough to support the species. It was not observed during any of the field assessments completed over multiple years.

White-tailed kite (*Elanus leucurus)*, a California fully-protected species, occurs primarily at lower elevations near agricultural areas but may occasionally nest in foothill locations. It preys mostly on voles and other small, diurnal mammals, occasionally on birds, insects, reptiles, and amphibians and forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands. White-tailed kite uses trees with dense canopies for cover. Makes a nest of loosely

piled sticks and twigs and lined with grass, straw, or rootlets. Nest placed near top of dense oak, willow, or other tree stand; usually 20-100 feet above ground, near foraging area.

White-tailed kite appeared in the CNDDB query and on the five-mail radius map. The nearest reported occurrence of the species is 4 miles northwest of the study area, 0.4 mile southwest of the Russian River, northeast of Healdsburg (undisclosed date). White-tailed kite was not observed during spring surveys of this site. However, it is possible for white-tailed kite to nest in the large trees within the study area.

Burrowing owl (*Athene cunicularia*), an SSC species, occurs in association with open, dry grasslands, deserts, agricultural areas, and rangeland. They often occur where numerous burrowing mammals are present and frequently occupy California ground squirrel burrows (Shuford and Gardali 2008). Burrowing owls may also use man-made structures such as debris piles, culverts, and cement piles for cover. Circumstantial evidence of burrowing owl occurrence typically consists of the presence of molted feathers, cast pellets, prey remains, or excrement near a burrow entrance. Breeding of burrowing owl occurs from March to late August and incubation lasts between 28 to 30 days. Young are fledged at about 44 days but remain near the burrow and join the adults to forage at dusk.

Burrowing owl appeared in the CNDDB query and on the five-mail radius map. The nearest reported occurrence of burrowing owl is 3 miles south of the study area, just north of the Sonoma County airport, about 0.3 mile southwest of Windsor Road at Sanders Road, in a culvert in rock riprap along Airport Creek, adjacent to an active runway, in 2017. It ws presumed to be overwintering at this site. It was not observed during any of the field assessments of the study area completed over multiple years. However, it is possible for burrowing owl to occur in the grassland habitat in the study area.

Recommendations regarding the potential occurrence of special-status animals

Foothill yellow legged frog requires permanent streams or, at a minimum, streams where pools persist through the dry season. It is unlikely that FYLF would occur in in the stream on the northern property boundary because the stream does not flow long enough to support the species. However, the duration of flow should be more quantitively determined to verify the lack of habitat.

Burrowing owl occurs in association with open, dry grasslands, agricultural areas, and rangeland. They often occur where numerous burrowing mammals are present and frequently occupy California ground squirrel burrows or certain man-made structures. While we have not observed burrowing owl within the study area, suitable habitat is present. It is recommended that according to the CDFW *Burrowing Owl Survey Protocol and Mitigation Guidelines*, a preconstruction survey should be conducted no more than 30 days prior to ground disturbing activity to look for presence/signs of burrowing owls, and if present, report and map all evidence of burrowing owls and activity to the Town of Windsor. The Town may opt for the Californian Department of Fish and Wildlife to be informed to determine appropriate mitigation mearures.

White-tailed kite has not been observed nesting during our various surveys of this site. However, it is possible for white-tailed kite to nest in the large trees within the study area.

Additionally, it is possible that the trees provide potential nesting habitat for some common raptors known from the region, and for other birds protected by the Migratory Bird Treaty Act.

Take of any active raptor nest is prohibited under California Fish and Game Code sections 3503, 3503.5, and 3513. If tree removal or other ground disturbance takes place during the breeding/nesting season (February 1 through August 31), disturbance of nesting activities could occur. To avoid impacts to nesting birds, disturbance should occur outside of the typical nesting season. If disturbance occurs at any time during the nesting season, a pre-construction survey should be conducted by a qualified biologist within two weeks prior to initiation of proposed development activities. If active nests are found during the pre-construction survey, buffer zones will be established around any identified nests, and the nests will be monitored by a qualified biologist until the offspring have fledged. If the nesting bird is a bird of prey, consultation with the Town of Windsor and California Department of Fish and Wildlife (CDFW) may be warranted.

Recommendations regarding aquatic resources

The Aquatic Resources Delineation prepared by Salix Consulting (June 2021) identified and mapped three categories of aquatic resources within the study area: Intermittent Stream, Seasonal Wetland, and Drainage Ditch. Maps and photographs are included in the delineation report. The delineation has not been submitted to the Corps of Engineers for a Jurisdictional Determination (verification) as of March 2022.

The intermittent stream, which flows from northeast to southwest along the northern property line, is an unnamed tributary to the Russian River. This feature carries seasonal storm flows but does not sustain wetness long enough to support a riparian plant community. Seven seasonal wetlands were mapped in the central portion of the study area. Five of the seasonal wetlands are shallow depressional features, and two of the seasonal wetlands are remnants of a former drainage ditch, now cutoff and short-linear. One drainage ditch was mapped in the study area. It flows parallel to Arata Lane along a portion of the southern boundary. This ditch has a rocky bottom with sparse vegetation, and it carries water from Arata Lane and the local residential area and flows through a culvert under Arata Lane to the south.

Recommendation:

Some or all of the mapped aquatic resources may be subject to the jurisdiction of the U.S. Army Corps of Engineers (Corps) (federal) and the California Regional Water Quality Control Board (RWQCB) (state) under the federal Clean Water Act (Sections 404 and 401, respectively). To make the determination regarding federal jurisdiction, the delineation report and map should be submitted to the Corps of Engineers with a request for a determination. (Note that the Corps may prefer the delineation be submitted along with an application for a Clean Water Act Section 404 permit.) Activities that place fill in these areas would require a permit. The RWQCB will take jurisdiction over all of the aquatic features on the site as "waters of the State," and the applicant will need to obtain a Water Quality Certification, commonly referred to as a "401 Certification" from that agency.

Impacts to the bed, bank, or channel of streams or ponds require a Streambed Alteration Agreement with the California Department of Fish and Wildlife (CDFW).

Recommendations regarding special-status plants that may potentially occur on the site

The Special-Status Plant Survey and Report (June 2018) was prepared in conformance with Santa Rosa Plain Conservation Strategy (SRPCS) guidelines due to its proximity to the the "Windsor Listed Plant Conservation Area." Maps and photographs are included in the report.

The listed plants of concern in the SRPCS include Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blennosperma bakeri*), and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*). It was determined that these three plants, as well as congested-headed hayfield tarplant (*Hemizonia congesta, ssp. congesta)* and dwarf downingia (*Downingia pusilla)* were unlikely to occur within the study area because the wetland habitat was marginal (not vernal pools), and in some cases, too shallow to support the species. It was determined that it was possible for Sebastopol meadowfoam (*Limnanthes vinculans*), a listed plant of concern in the SRPCS, to occur within the study area because suitable habitat is present. However, none of these six species was observed during the 2018 Special-Status Plant Survey or the 2021 Aquatic Resources Delineation.

Recommendation:

While it was determined that it was possible for Sebastopol meadowfoam to occur on the site, the species not observed during the 2018 or 2021 surveys, and no further rare plant surveys are recommended.

Thank you for the opportunity to provide the information requested by the Town of Windsor. Please do not hesitate to contact me with any questions or comments.

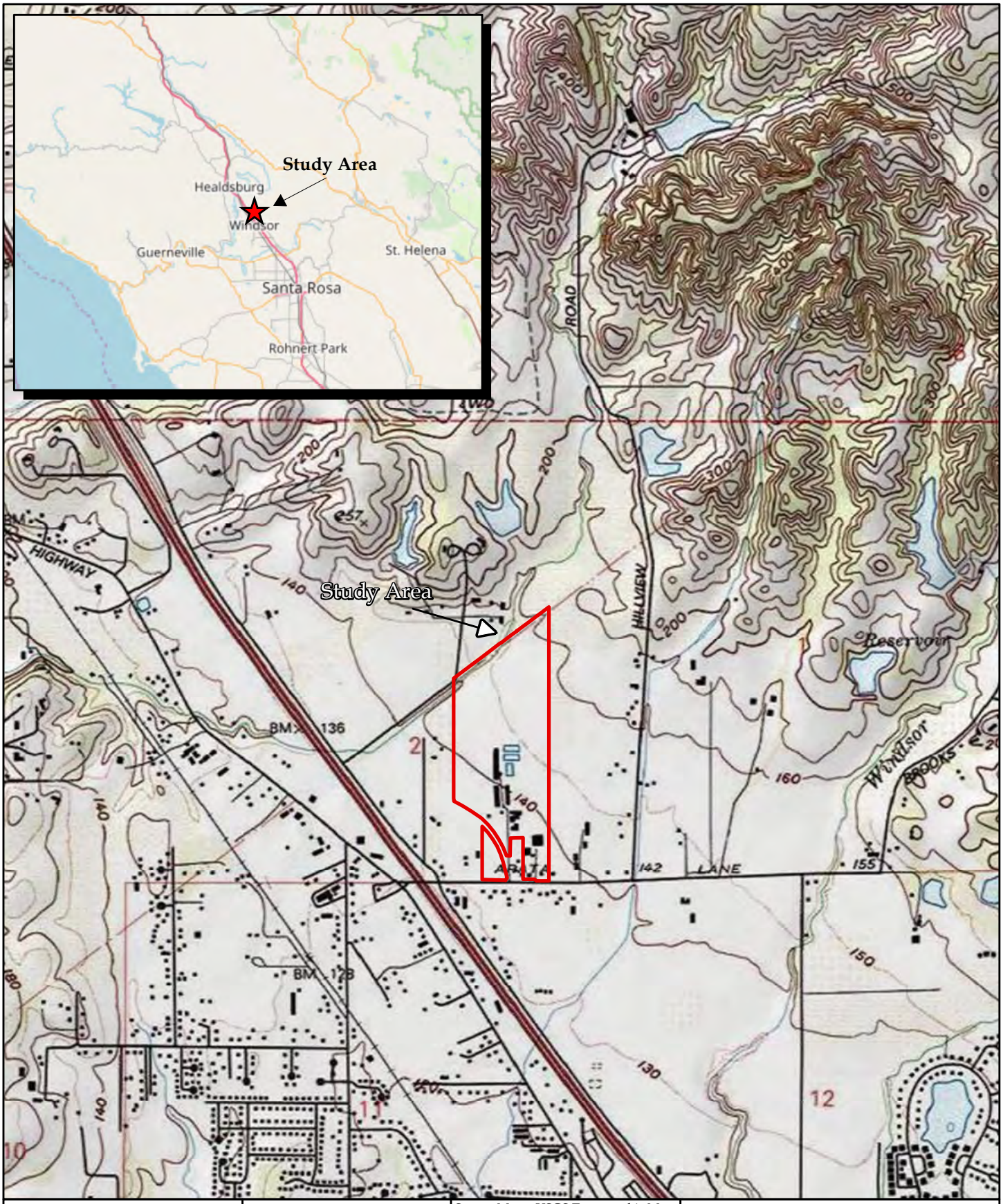
Sincerely,



Jeff Glazner
Principal Biologist

Attachments:

- Figure 1. Site and Vicinity
- Figure 2. Aerial Photo
- Figure 3. CNDDB Special-status Animal Occurrence Map
- Appendix A. Wildlife Observed on the Arata Lane Parcel
- Appendix B. Potentially-occurring Special-status Animals



Salix consulting, inc.

N

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Feet

Source Maps: USGS Topographic Map
Healdsburg Quad 1:24,000
S02 T08N R09W

Figure 1

SITE AND VICINITY MAP

Arata Lane

Town of Windsor, Sonoma County, CA



Salix consulting, inc.

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Study Area
(±62 acres)

Imagery: 5-6-21 Salix Consulting, Inc.

Figure 2

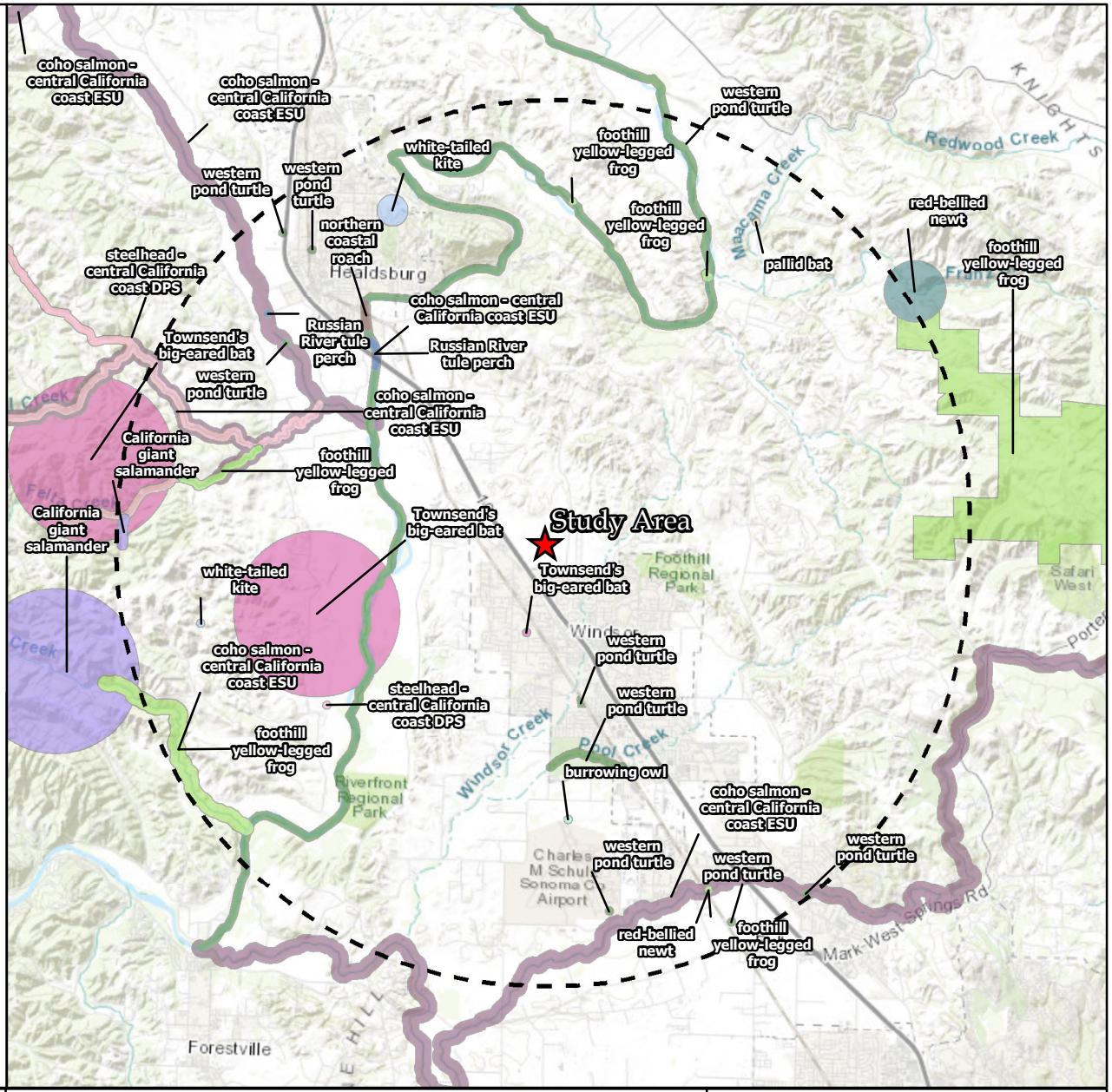
AERIAL MAP

Arata Lane

Town of Windsor, Sonoma County, CA

CNDDB Special-Status Species

- California giant salamander
- Russian River tule perch
- Townsend's big-eared bat
- burrowing owl
- coho salmon - central California coast ESU
- foothill yellow-legged frog
- northern coastal roach
- pallid bat
- red-bellied newt
- steelhead - central California coast DPS
- western pond turtle
- white-tailed kite



Salix consulting, inc.

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★ Site ⬭ 5-Mile Buffer

Figure 3

CNDDB OCCURRENCES MAP

Arata Lane

Town of Windsor, Sonoma County, CA

Appendix A

Arata Lane - Wildlife Observed - Spring 2018 and June 2021

Amphibians	
Pacific chorus frog	*Pseudacris regilla*
Reptiles	
Western fence lizard	*Sceloporus occidentalis*
Northern alligator lizard	*Elgaria coerulea*
Birds	
Turkey vulture	*Cathartes aura*
Canada goose	*Branta canadensis*
Red-tailed hawk	*Buteo jamaicensis*
American kestrel	*Falco sparverius*
California quail	*Callipepla californica*
Anna's hummingbird	*Calypte anna*
Black phoebe	*Sayornis nigricans*
Western scrub-jay	*Aphelocoma californica*
American crow	*Corvus brachyrhynchos*
Common raven	*Corvus corax*
Bushtit	*Psaltriparus minimus*
European starling	*Sturnus vulgaris*
California towhee	*Melozone crissalis*
Western meadowlark	*Sturnella neglecta*
Lesser goldfinch	*Spinus psaltria*
House sparrow	*Passer domesticus*
Mammals	
Western gray squirrel	*Sciurus griseus*
Black-tailed jackrabbit	*Lepus californicus*
Coyote	*Canis latrans*

Appendix B
Arata Lane - Potentially-occurring Special-status Animals

	Status*	Habitat	Probability on Project Site
Invertebrates			
California freshwater shrimp *Syncaris pacifica*	Fed: FE State: CE Other: -	Endemic to Marin, Napa, and Sonoma counties in low gradient streams with moderate to heavy riparian canopy. Needs shallow pools away from the main stream flow. Prefers undercut banks with exposed roots.	None. Site lacks suitable stream parameters.
Fish			
Coho salmon - Central California Coast ESU *Onchorhynchus kisutch*	Fed: FE State: CE Other: -	One of six distinct groups, Evolutionarily Significant Units (ESUs). Found in short, coastal drainages from Punta Gorda, CA south to Monterey Bay. Spawning habitat is small streams with stable gravel substrates.	None. Stream along northern boundary is short seasonal and does not support fish.
Steelhead - Central California Coast ESU *Oncorhynchus mykiss irideus*	Fed: FT State: - Other: -	Central coastal basins from the Russian River, south to Soquel Creek, including San Francisco and San Pablo Bay basins, but excludes the Sacramento-San Joaquin River basins.	None. Stream along northern boundary is short seasonal and does not support fish.
Northern coastal roach *Hesperoleucus venustus navarroensis*	Fed: - State: - Other: SSC	Found in a wide variety of habitats in the Russian River, including the main river where there is cover. In tributaries with clear well oxygenated, water, dominant substrates of cobble and boulder,and shallow depths.	None. Stream along northern boundary is short seasonal and does not support fish.
Russian River tule perch *Hysterocarpus traski pomo*	Fed: - State: - Other: SSC	Subspecies is confined to the Russian River and its tributaries in Sonoma and Mendocino Counties, CA. Requires clear, flowing water and abundant cover, such as beds of aquatic macrophytes, submerged tree branches, overhanging plants.	None. Stream along northern boundary is short seasonal and does not support fish.
Amphibians			
California tiger salamander *Ambystoma californiense*	Fed: FE State: CT Other: -	Occurs in annual grassland habitat (<1500 feet) and occasionally in grassy understory of valley-foothill hardwood habitats where lowland aquatic sites are available for breeding. Breeds primarily in vernal pools.	None. No vernal pools or other aquatic features suitable for breeding.
California giant salamander *Dicamptodon ensatus*	Fed: - State: - Other: SSC	Occurs in wet coastal forests in or near clear, cold permanent and semi-permanent streams and seepages in Mendocino, Lake, Glenn, Sonoma, Marin, and San Mateo to Santa Cruz counties.	None. Site lacks suitable aquatic features.

Attachment ??

Arata Lane - Potentially-occurring Special-status Animals

	Status*	Habitat	Probability on Project Site
Red-bellied newt *Taricha rivularis*	Fed: - State: - Other: SSC	Found in California along the coast from Bodega in Sonoma County, inland to Lower Lake, and north to Honeydew, Humboldt County. It lives in coastal woodlands, especially in redwood forests.	None. Site generally too distant from coast and lacks shaded redwood forest habitat.
California red-legged frog *Rana draytonii*	Fed: FT State: - Other: SSC	Occurs in lowlands and foothills in deeper pools and slow-moving streams, usually with emergent wetland vegetation. Requires 11-20 weeks of permanent water for larval development.	None. Site lacks ponds and long-term water feature.
Foothill yellow-legged frog *Rana boylii*	Fed: - State: CE Other: SSC	Found in partially shaded, shallow streams with rocky substrates. Needs some cobble-sized rocks as a substrate for egg laying. Requires water for 15 weeks for larval transformation.	Unlikely. Stream along northern boundary likely does not flow long enough to support species.
Reptiles			
Western pond turtle *Actinemys marmorata*	Fed: - State: - Other: SSC	Inhabits ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Needs suitable basking sites and upland habitat for egg laying.	None. Site lacks ponds.
Birds			
White-tailed kite *Elanus leucurus*	Fed: - State: - Other: CFP	Found in lower foothills and valley margins with scattered oaks and along river bottomlands or marshes adjacent to oak woodlands. Nests in trees with dense tops.	Possible. May nest in large trees in study area.
Yellow rail *Coturnicops noveboracensis*	Fed: - State: - Other: SSC	Highly secretive marsh bird. Grassy marshes, meadows. In summer, favors large wet meadows or shallow marshes dominated by sedges and grasses. Typically in fresh or brackish marsh. Winters mostly in coastal salt marsh.	None. Site lacks suitable aquatic habitat.
Burrowing owl *Athene cunicularia*	Fed: - State: - Other: SSC	Found in annual grasslands. Nests in burrows dug by small mammals, primarily ground squirrels.	Possible. Suitable habitat occurs in study area. Not observed during multiple field surveys over several years.

Attachment ??

Arata Lane - Potentially-occurring Special-status Animals

	Status*	Habitat	Probability on Project Site
Mammals			
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	Fed: - State: - Other: SSC	Found in a variety of habitats. Most common in mesic sites with forest or woodland component. Roosting and maternity sites in caves, mines, lava tubes, tunnels, and buildings. Gleans insects from brush or trees and feeds along habitat edges.	None. Site lacks suitable roosting habitat.
Pallid bat *Antrozous pallidus*	Fed: - State: - Other: SSC	Occurs in grasslands, woodlands, deserts & urban habitats; open habitat required for foraging. Common in dry habitats with rocky outcrops, cliffs, and crevices for roosting. Roosts include caves, mines, bridges & occasionally hollow trees, buildings.	None. Site lacks suitable roosting habitat.
Red tree vole *Arborimus pomo*	Fed: - State: - Other: SSC	Inhabits the north coast fog belt from Oregon to Sonoma County. Feeds almost exclusively on Douglas-fir needles.	None. Site lacks Douglas fir. (aka Sonoma tree vole)
American badger *Taxidea taxus*	Fed: - State: - Other: SSC	Occurs in dry, open soils in herbaceous, shrub, and forest habitats. Needs friable, uncultivated soil. Preys on rodents.	None. Site too urbanized for denning.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate
FPD - Federal Proposed for Delisting

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CFP - California Fully Protected
CSC - California Species of Special Concern

Other:
Some species have protection under the other designations, such as the California Department of Forestry Sensitive Species, Bureau of Land Management Sensitive Species, U.S.D.A. Forest Service Sensitive Species, and the Migratory Bird Treaty Act. Raptors and their nests are protected by provisions of the California Fish and Game Code. Certain areas, such as wintering areas of the monarch butterfly, may be protected by policies of the California Department of Fish and Game.
WL - CDFG Watch List

June 20, 2022

Ben vanZutphen
Willow Glen Homes
P.O. Box 2357
Healdsburg, CA 95448

Subject: Biological Resources Addendum, Los Amigos Connector Corridor, Town of Windsor, Sonoma County, California

Dear Mr. vanZutphen:

At your request, Salix Consulting, Inc. (Salix) has prepared this addendum letter report, which addresses biological and aquatic resources along the ±5-acre road connector corridor that connects Arata Lane to the Redwood Highway (Figures 1 and 2). Biological and aquatic resources have been previously addressed for the ±62-acre Arata Lane study area but this corridor had not been evaluated until now.

To assess this corridor, the study area footprint was examined from aerial photography, soil mapping (Figure 3), CNDDB and USFWS (IPaC) database queries, and a field examination conducted on May 13, 2022.

The study area begins at Arata Lane at the southern end of the proposed Arata Lane project. It is oriented northwest and then westerly before merging with the Redwood Highway. The corridor passes through primarily open grassland but also along and through several oak trees.

The corridor was walked on May 13, 2022. Plant species were recorded, wildlife observations were made, habitats/landcover was mapped, and an aquatic resource evaluation was conducted. The timing of the survey was appropriate to determine if any special status plants were present as well.

This letter addresses the landcover/habitats of the corridor (Figure 4) and observed species (Appendix A) and potential for sensitive resources. It is an addendum to the larger report so we are not duplicating all the background unless requires updating.

Findings

Vegetative cover in the corridor is primarily herbaceous and most is annually manipulated by mowing or plowing. Common species observed include long-beaked hawkbit (*Leontodon saxatilis*), soft chess (*Bromus hordeaceus*), Italian ryegrass (*Festuca perennis*), broad-leaved filaree (*Erodium botrys*), cut-leaf geranium (*Geranium dissectum*), winter vetch (*Vicia villosa*), Spanish lotus (*Acmispon americanus*), yellow glandweed (*Parentucellia viscosa*), Mediterranean barley (*Hordeum murinum*), and California burclover (*Medicago polymorpha*). Oak trees within the corridor include coast live oak (*Quercus agrifolia*) and Valley oak (*Quercus lobata*). Aerial and ground site photos are presented in Figures 5a-5c.

Wildlife usage is similar to the larger study area but does not include aquatic species and therefore, is less diverse.

Aquatic Resources

The corridor was examined for Aquatic Resources by visual field examination. No areas of aquatic resources were detected.

Special Status Species

Special status species information for the larger project was reviewed and each species was reevaluated for the potential to occur in the road corridor. Five mile radius maps were produced for animals (Figure 6a) and plants (Figure 6b) depicting all species in the database that occur in the project vicinity. Townsend's big-eared bat is shown to occur a few miles south of the property and is the nearest special status wildlife species recorded from the area.

Special status plants recorded from the nearby area include Baker's navarretia (*Navarretia leucocephala ssp. bakeri*), Sonoma sunshine (*Blennosperma bakeri*), and Burke's goldfields (*Lasthenia burkei*), all of which occur in vernal pools. Narrow-flowered california brodiaea (*Brodiaea leptandra*) occurs in coniferous forest and chaparral on gravely soils. None of these habitat types are present in the study study corridor.

Except for nesting birds, most of which are regulated by the Migratory Bird Treaty Act, it is highly unlikely that any of the regionally occurring special status species would occur in the road corridor. This is primarily because of the lack of aquatic resources and habitat stability. Many of the species require wetlands for all or a part of their life cycles and much of this land is regualry maintained through disking, mowing, or high human activity (roads, road noise, equipment, etc).

Is summary, the Los Amigos Road connector road corridor does not contain any aquatic resources and due to lack of habitat suitability, is highly unlilkely to support speciat status plants or animals.

Thank you for the opportunity to provide the information requested by the Town of Windsor. Please do not hesitate to contact me with any questions or comments.

Sincerely,

Jeff Glazner
Principal Biologist

Attachments:

- Figure 1. Site and Vicinity Map
- Figure 2. Aerial Photo
- Figure 3. Soil Components
- Figure 4. Habitat Map

- Figure 5a. Aerial Site Photos
- Figure 5b-c. Site Photos
- Figure 6a. CNDDB Special-status Animal Occurrence Map
- Figure 6b. CNDDB Special-status Animal Occurrence Map
- Appendix A. Plant Species Observed



Salix consulting, inc.

Source Maps: USGS Topographic Map
Healdsburg Quad 1:24,000
S02 T08N R09W

Figure 1

SITE AND VICINITY MAP

Arata Lane

Town of Windsor, Sonoma County, CA



Salix consulting, inc.

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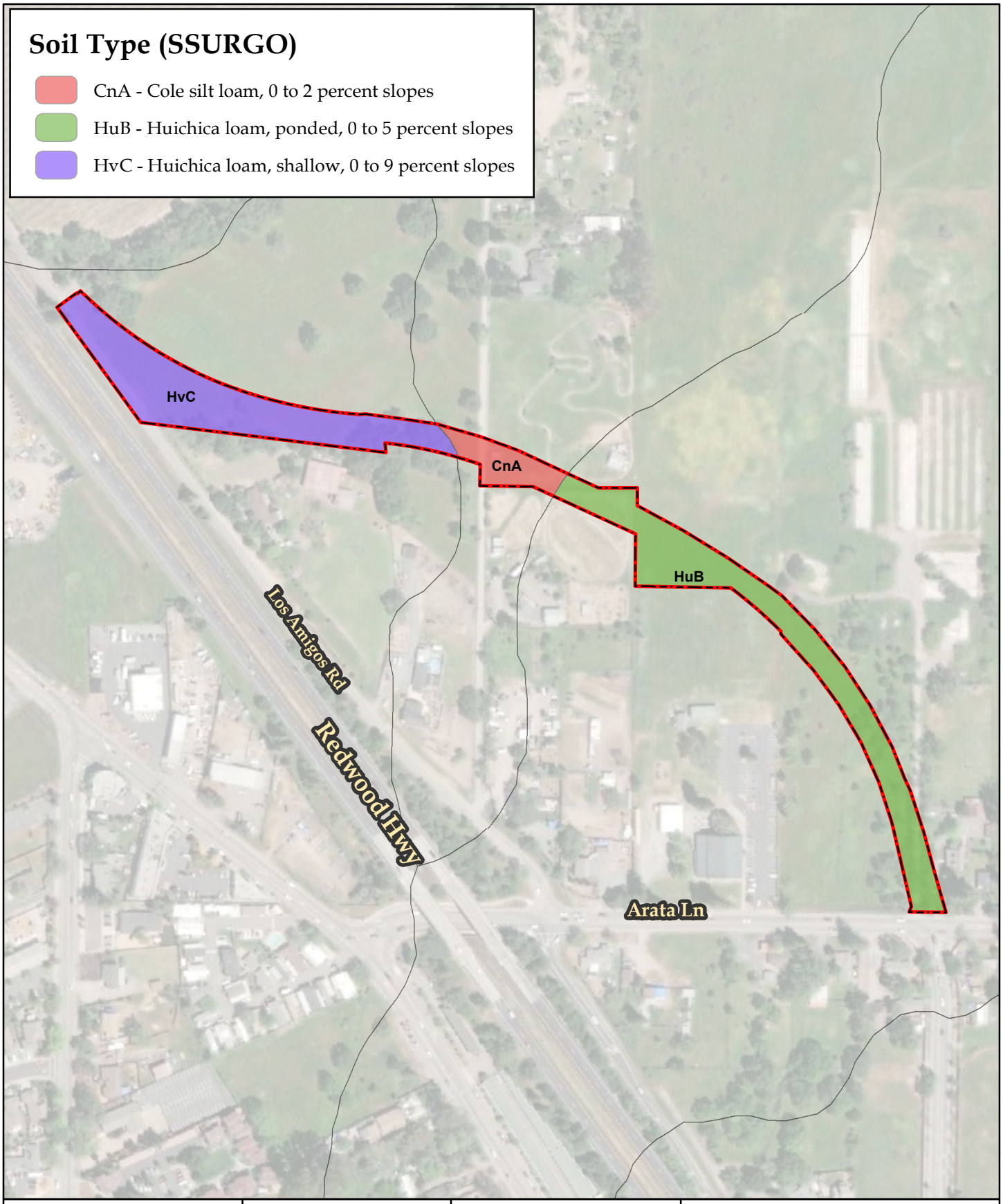
Study Area (±5 acres)

Figure 2

AERIAL MAP

Arata Lane

Town of Windsor, Sonoma County, CA



Salix consulting, inc.

N

0 150 300

Feet

Study Area

Figure 3

SOIL COMPONENTS

Arata Lane

Town of Windsor, Sonoma County, CA



Salix consulting, inc.

N

0 150 300

Feet

Study Area (±5 acres)

Figure 4

HABITAT MAP

Arata Lane

Town of Windsor, Sonoma County, CA



Looking northwest over western portion of alignment. Redwood Highway in background. *Photo date 5-6-21*



Looking south over southern portion of alignment. Corridor connects with Arata Lane. *Photo date 5-6-21*

Salix consulting, inc.

Study Area

Figure 5a

AERIAL SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Looking northwest along road corridor towards Redwood Highway. *Photo date 5-13-22*



Looking southeast along road corridor. Photo date *5-13-22*

Salix consulting, inc.

Figure 5b

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



Looking northwest along the proposed Los Amigos corridor across gravel road near center of alignment. *Photo date 5-13-22*



Looking southeast along the proposed Los Amigos corridor. *Photo date 5-13-22*

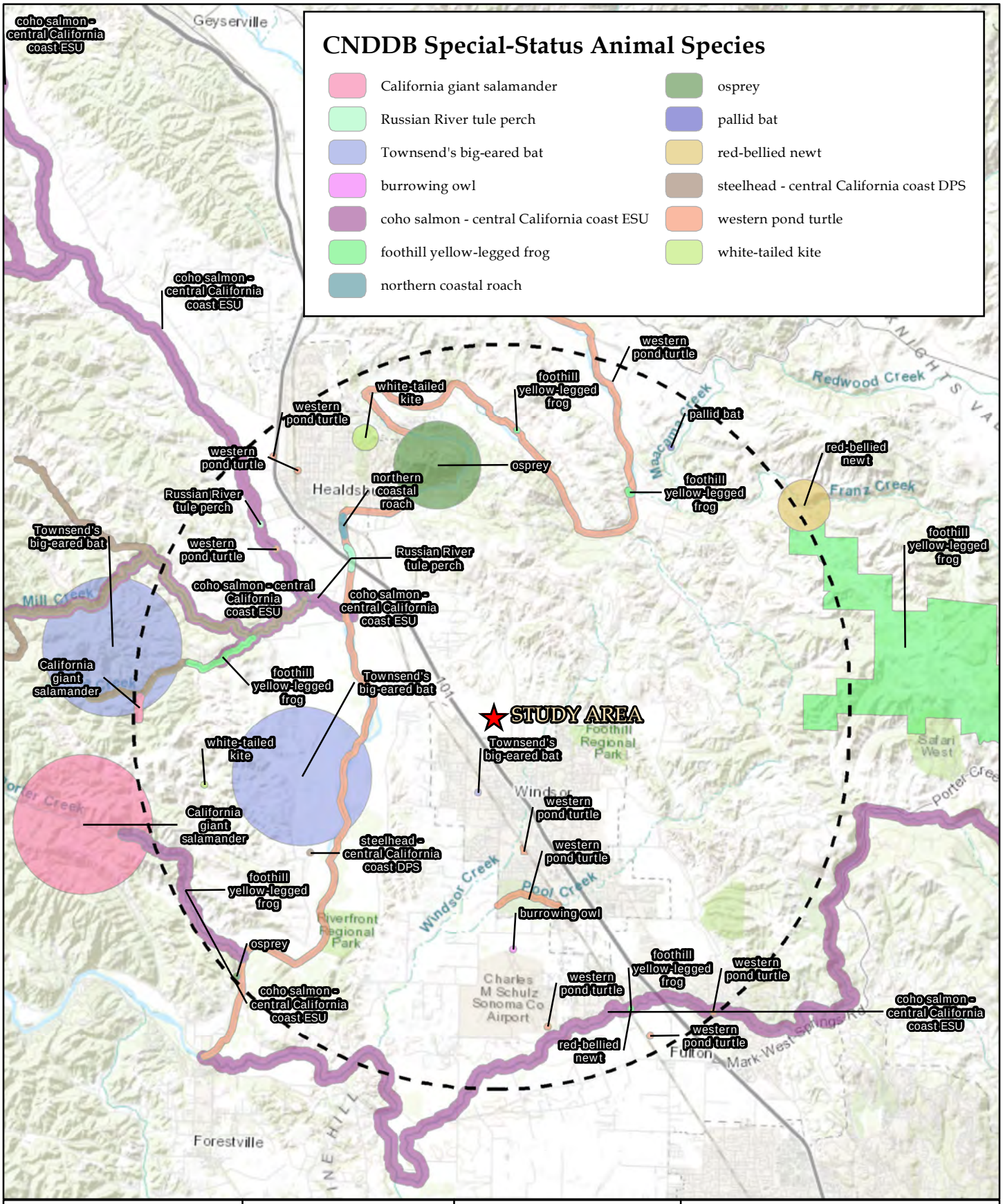
Salix consulting, inc.

Figure 5c

SITE PHOTOS

Arata Lane

Town of Windsor, Sonoma County, CA



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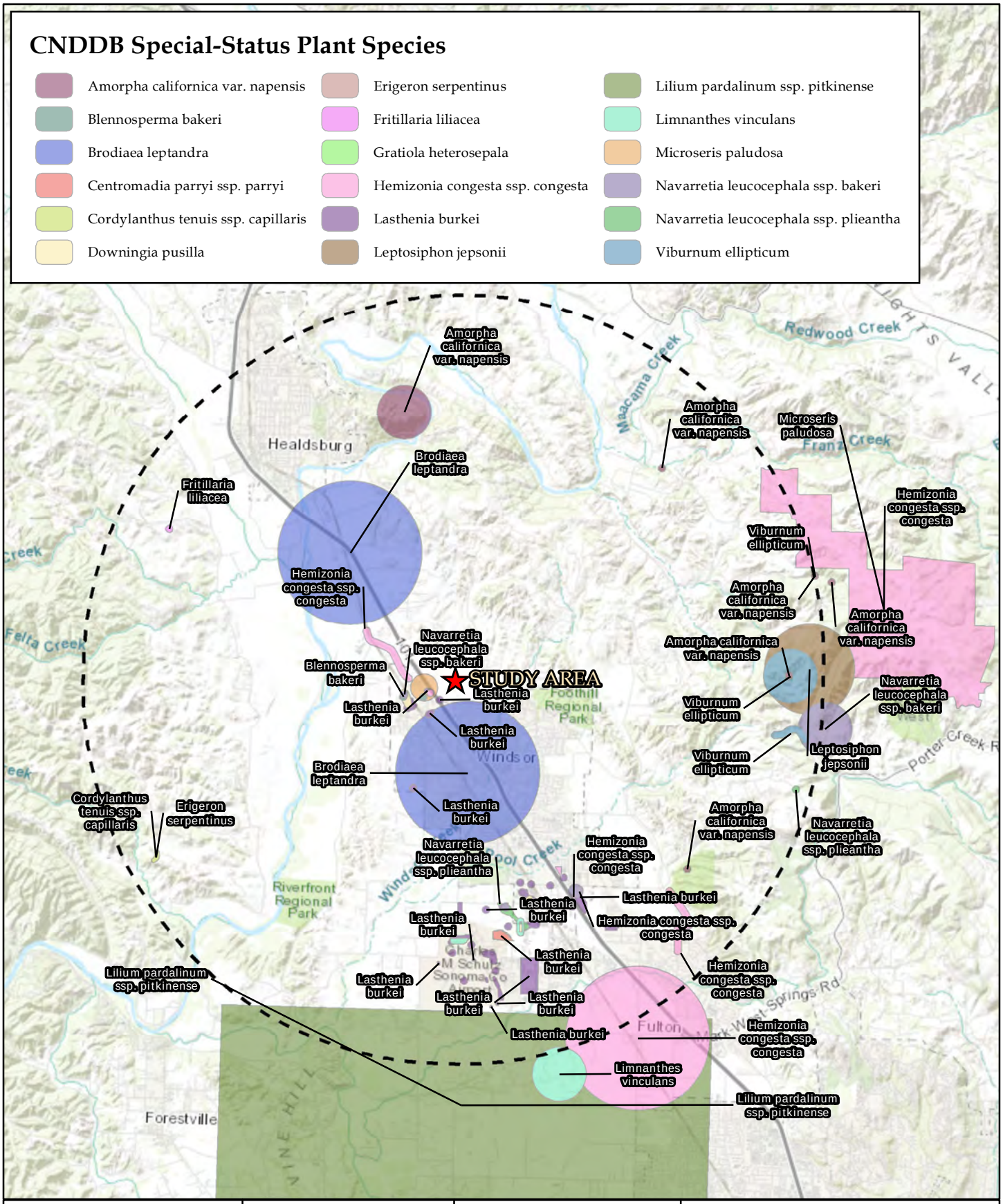
Salix consulting, inc.

Figure 6a

CNDDB OCCURRENCES MAP

Arata Lane

Town of Windsor, Sonoma County, CA



Salix consulting, inc.

Figure 6b

CNDDB OCCURRENCES MAP

Arata Lane

Town of Windsor, Sonoma County, CA

Appendix A

Arata Lane/Los Amigos Corridor - Plants Observed May 13, 2022

Angiosperms - Dicots

Anacardiaceae - Cashew or Sumac Family

Toxicodendron diversilobum	Western poison-oak

Apiaceae (Umbelliferae) - Carrot Family

**Torilis arvensis*	Field hedgeparsley

Asteraceae (Compositae) - Sunflower Family

Achillea millefolium	Common yarrow
Achyrachaena mollis	Blow-wives
**Carduus pycnocephalus*	Italian thistle
**Centaurea melitensis*	Tocalote
**Centaurea solstitialis*	Yellow starthistle
**Cichorium intybus*	Chicory
**Dittrichia graveolens*	Stinkwort
**Hypochaeris glabra*	Smooth cat's-ear
**Lactuca serriola*	Prickly lettuce
**Leontodon saxatilis*	Long-beaked hawkbit
**Logfia gallica*	Narrowleaf cottonrose
**Matricaria discoidea*	Pineapple-weed
**Sonchus oleraceus*	Common sow-thistle

Brassicaceae (Cruciferae) - Mustard Family

**Raphanus sativus*	Wild radish

Caryophyllaceae - Pink Family

**Spergularia rubra*	Ruby sand-spurrey

Fabaceae (Leguminosae) - Legume Family

Acmispon americanus	Spanish lotus
Lupinus bicolor	Miniature lupine
Lupinus nanus	Sky lupine
**Medicago polymorpha*	California burclover
**Trifolium hirtum*	Rose clover
**Vicia benghalensis*	Purple vetch
**Vicia villosa*	Winter vetch

Fagaceae - Oak Family

Quercus agrifolia var. agrifolia	Coast live oak
Quercus lobata	Valley oak

Geraniaceae - Geranium Family

**Erodium botrys*	Broad-leaf filaree
**Geranium dissectum*	Cut-leaf geranium

Myrsinaceae - Myrsine Family

**Lysimachia arvensis*	Scarlet pimpernel

* Indicates a non-native species

Onagraceae - Evening Primrose Family

Epilobium brachycarpum	Summer cottonweed

Orobanchaceae - Broomrape Family

**Parentucellia viscosa*	Yellow glandweed

Plantaginaceae - Plantain Family

**Plantago lanceolata*	English plantain

Polygonaceae - Buckwheat Family

**Rumex crispus*	Curly dock

Rosaceae - Rose Family

Rosa californica	California rose
**Rubus armeniacus*	Himalayan blackberry

Angiosperms -Monocots

Poaceae (Gramineae) - Grass Family

**Aira caryophyllea*	Silver European hairgrass
**Avena fatua*	Wild oat
**Briza minor*	Small quaking grass
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Cynodon dactylon*	Bermudagrass
**Cynosurus echinatus*	Hedgehog dogtail
**Festuca myuros*	Rattail sixweeks grass
**Festuca perennis*	Italian ryegrass
**Hordeum murinum*	Wall barley
**Phalaris aquatica*	Harding grass
**Poa annua*	Annual bluegrass

February 27, 2024

Ben vanZutphen
Arata Properties, LLC
P.O. Box 2357
Healdsburg, CA 95448

Subject: Aquatic Resource Permitting for the Quail Acres Project, Town of Windsor, Sonoma County, CA

Dear Ben:

This letter outlines the proposed permitting scenario for the Quail Acres project located north of Arata Lane and near the intersection of U.S. Route 101. The property is located in Section 2, Township 8 North and Range 8 West on the Healdsburg, California 7.5-minute U.S. Geological Survey topographic quadrangle map.

I originally conducted an Aquatic Resources Delineation in 2016 and updated the document in 2018 and again in 2021. The document has not been submitted to the U.S. Army Corps of Engineers (Corps) for verification yet.

The property contains 0.411-acre of aquatic resources including:

- Intermittent Stream (0.266 ac)
- Drainage Ditch (along Arata Ln) (0.008 ac)
- Seasonal Wetlands (seven features, 0.138 ac)

The project development plan is to utilize the entire interior of the property for development of the site and grade all of it. The seasonal wetlands scattered in seven locations over the property will be filled to accommodate the project. These wetlands are shallow basins and generally dominated by wetland grasses. The roadside drainage ditch (0.008 ac) will also be impacted. The intermittent stream along the northern boundary would be avoided. A Rare Plant Survey was conducted in 2018 and no rare plants were found.

The attached exhibit shows the existing aquatic resources and those proposed to be filled for this project. Under the assumption that the seasonal wetlands and drainage ditch are filled as part of future development, I would estimate the mitigation ratio/requirement would be as low as 1:1 through the purchase of compensatory mitigation credits from an agency-approved wetland mitigation bank. However, it won't be possible to know the actual mitigation requirement until the permit is issued.

Federal Wetland Permitting (Federal Clean Water Act Section 404)

<u>Scenario 1 - Corps takes jurisdiction over seasonal wetlands and/or drainage ditch</u>

If the Corps takes jurisdiction over the seasonal wetlands, they will require a Section 404 Permit to fill them. In this case, the permit would be a Nationwide Permit 29 - Residential Developments. The Corps requires Endangered Species and Cultural Resources reviews to process a 404 Permit.

Scenario 2 - Corps does not take jurisdiction over seasonal wetlands and/or drainage ditch

If the Corps does not exercise jurisdiction over seasonal wetlands, then there is no Corps permit needed.

State Wetland Permitting (Federal Clean Water Act Section 401 or State Porter-Cologne Water Quality Control Act)

Waters of the U.S. and waters of the State are generally the same. With that assumption, the wetland delineation map would be used for both Federal and State permitting governed by the Federal Clean Water Act. However, there are circumstances where the Corps does not take jurisdiction. When this occurs, the State has a separate permitting program for wetlands that are authorized under the California Porter-Cologne Water Quality Control Act. For Sonoma County, the State agency that regulates the discharge of fill into wetlands is the North Coast Regional Water Quality Control Board.

Scenario 1- Corps takes jurisdiction over seasonal wetlands and/or drainage ditch

The requirement of the State is to obtain a Section 401 Water Quality Certification. A 401 Certification is a condition of a 404 Permit and satisfies the State's requirements for the fill of wetlands.

Scenario 2- Corps does not take jurisdiction over seasonal wetlands and/or drainage ditch

If the Corps does not take jurisdiction over seasonal wetlands, then the State has independent discretion to issue a permit that allows the fill of a wetland. In this case, the permit is called a Waste Discharge Requirement (WDR).

Other

The California Department of Fish and Wildlife gets involved in wetland permitting if streams, lakes (or ponds), or riparian vegetation are impacted. That permit is a Lake and Streambed Alteration Agreement (LSAA or 1602). If the intermittent stream along the northern boundary is avoided, then a 1602 Permit will not be needed from CDFW.

Recommendations

Submit the Aquatic Resources Delineation to the Corps with a request for an Approved Jurisdictional Determination (AJD). Once the AJD is issued, and the determination of state and federal jurisdiction is made, prepare, and submit necessary permits for processing. A compensatory mitigation requirement will need to be met prior to ground disturbance (e.g., 1:1 credit purchase for the use of a mitigation bank or in lieu fee program if one is available or a higher ratio for a permittee-responsible mitigation plan).

If further information is needed, please contact me.

Sincerely,

Jeff Glazner
Principal Biologist

Attachment: Aquatic Resources Impacts Map

Aquatic Resources

OTHER WATERS

Intermittent Stream (IS)	Acreage
IS-1	0.266
Total Other Waters	**0.266**

WETLANDS

Drainage Ditch (DD)	
DD-1	0.008
Subtotal:	**0.008**

WETLANDS CONT.

Seasonal Wetland (SW)	Acreage
SW-1	0.038
SW-2	0.014
SW-3	0.007
SW-4	0.041
SW-5	0.007
SW-6	0.009
SW-7	0.022
Subtotal:	**0.138**
Total Wetlands	**0.145**

Total Aquatic Resources 0.411 acre

Impacts to Aquatic Resources

Seasonal Wetland	Acreage
SW-1	0.038
SW-2	0.014
SW-3	0.007
SW-4	0.041
SW-5	0.007
SW-6	0.009
SW-7	0.022
Total	**0.138**

IS-1
SW-1
SW-2
SW-3
SW-4
SW-5
SW-6
SW-7
DD-1
LOS AMIGOS RD
ARATA LANE
Source: Esri, Maxar, Earthstar Geographic

Salix consulting, inc.

N

0 50 100
Feet

Study Area (±62 acres)

Permanent Wetland Impacts (±0.138) acre

Imagery: 2-20-2021 Maxar

AQUATIC RESOURCES IMPACT MAP

Quail Acres

Town of Windsor, Sonoma County, CA

February 07, 2024

HORTICULTURAL
Associates

Consultants in Horticulture and Arboriculture

ARBORIST REPORT

Los Amigos Cottages
Windsor, CA

Prepared for:

Arata Properties, LLC
P.O. Box 2357
Healdsburg, CA 95448

Prepared by:

John C. Meserve
ISA Certified Arborist, WE #0478A
ISA Qualified Tree Risk Assessor/TRAQ
ASCA Qualified Tree and Plant Appraiser/TPAQ

March 25, 2024
(Revised October 25, 2024)

HORTICULTURAL Associates
Consultants in Horticulture and Arboriculture
P.O Box 1261, Glen Ellen, CA 95442

March 25, 2024
(Revised October 25, 2024)

Dennis Dalby
Civil Design Consultants, Inc.
2200 Range Ave Suite 204
Santa Rosa, CA, 95403

Re: Completed *Arborist Report*, Los Amigos Cottages, Windsor, California

Dennis,

Attached you will find our completed *Arborist Report* for the above noted site in Windsor. A total of 39 trees were evaluated and this includes all trees that are present which are 6 inches or greater in trunk diameter and located within the designated project boundaries.

All trees in this report were evaluated and documented for species, size, health, and structural condition. The *Tree Inventory Chart* provides information about the expected impacts of development. A *Tree Location Plan* shows the location and numbering sequence of all trees.

This report is intended to be a basic inventory of trees present at this site, which includes a general review of tree health and structural condition. No in-depth evaluation has occurred on any tree, and assessment has included only external visual examination without probing, drilling, coring, root collar examination, root excavation, or dissecting any tree part. Failures, deficiencies, and problems may occur in these trees in the future, and this inventory in no way guarantees or provides a warranty for their condition. No other trees are included in this report. If other trees need to be included it is the responsibility of the client to provide that direction.

EXISTING TREE SUMMARY

Species that are native to the site include Valley Oak, Coast Live Oak, Blue Oak, Cork Oak, and Black Walnut.

No ornamental species were found.

~ Voice 707-935-3911 Fax 707-935-7103 ~

CONSTRUCTION IMPACT SUMMARY

All trees located at this site will require removal based on the plan reviewed.

Please feel free to contact me if you have questions regarding this report, or if further review would be helpful.

Regards,

John C. Meserve
ISA Certified Arborist, WE #0478A
ISA Qualified Tree Risk Assessor/TRAQ
ASCA Qualified Tree and Plant Appraiser/TPAQ



TREE INVENTORY CHART

TREE INVENTORY
Los Amigos Cottages
Windsor, CA

Tree #	Species	Common Name	Protected Species?	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Comments	Expected Development Impacts	Recommendations
107	*Quercus lobata*	Valley Oak	Yes	8+7	28	16	3	3		3	2
108	*Quercus lobata*	Valley Oak	Yes	8	28	14	3	3		3	2
109	*Quercus lobata*	Valley Oak	Yes	6	20	8	3	3		3	2
110	*Quercus douglasii*	Blue Oak	Yes	8	18	9	3	3		3	2
111	*Quercus lobata*	Valley Oak	Yes	6	20	8	3	3		3	2
112	*Quercus lobata*	Valley Oak	Yes	7	20	12	3	3		3	2
114	*Quercus lobata*	Valley Oak	Yes	6.5+5	25	12	3	3		3	2
115	*Quercus lobata*	Valley Oak	Yes	6	25	12	3	3		3	2
116	*Quercus agrifolia*	Coast Live Oak	Yes	6	20	12	3	3		3	2
125	*Quercus lobata*	Valley Oak	Yes	7+8+6+6	30	16	3	3		3	2
126	*Quercus lobata*	Valley Oak	Yes	6+6+4	30	14	3	3		3	2
127	*Quercus lobata*	Valley Oak	Yes	13.5	30	16	3	3		3	2
129	*Quercus douglasii*	Blue Oak	Yes	6	20	12	3	3		3	2
131	*Quercus douglasii*	Blue Oak	Yes	9	35	14	3	3		3	2

TREE INVENTORY
Los Amigos Cottages
Windsor, CA

Tree #	Species	Common Name	Protected Species?	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Comments	Expected Development Impacts	Recommendations
132	*Quercus agrifolia*	Coast Live Oak	Yes	6+multi	18	14	3	3		3	2
133	*Quercus douglasii*	Blue Oak	Yes	9.5	35	16	3	3		3	2
134	*Quercus lobata*	Valley Oak	Yes	14	38	18	3	3		3	2
135	*Quercus douglasii*	Blue Oak	Yes	10	30	18	4	3		3	2
136	*Quercus agrifolia*	Coast Live Oak	Yes	7.5+7+7+11	30	18	4	3		3	2
137	*Quercus lobata*	Valley Oak	Yes	7	25	12	3	3		3	2
138	*Juglans nigra*	Black Walnut	No	8+multi	35	18	3	2		3	2
139	*Quercus lobata*	Valley Oak	Yes	11.5	35	16	3	3		3	2
141	*Quercus lobata*	Valley Oak	Yes	7	38	12	3	3		3	2
142	*Quercus lobata*	Valley Oak	Yes	9+7.5+8.5	35	20	3	3		3	2
143	*Quercus lobata*	Valley Oak	Yes	8.5	30	18	3	3		3	2
144	*Quercus suber*	Cork Oak	No	±12+8+14	28	16	4	3		3	2
145	*Quercus lobata*	Valley Oak	Yes	9	25	14	3	3		3	2
146	*Quercus lobata*	Valley Oak	Yes	9.5+11.5	35	16	3	3		3	2

Tree #	Species	Common Name	Protected Species?	Trunk (dbh ± inches)	Height (± feet)	Radius (± feet)	Health 1 - 5	Structure 1 - 4	Comments	Expected Development Impacts	Recommendations
147	*Quercus lobata*	Valley Oak	Yes	7+7	25	12	3	3		**3**	2
148	*Quercus lobata*	Valley Oak	Yes	12	30	14	3	3		**3**	2
149	*Quercus lobata*	Valley Oak	Yes	7+6	25	12	3	3		**3**	2
150	*Quercus lobata*	Valley Oak	Yes	11.5+7+12	35	14	3	3		**3**	2
152	*Quercus lobata*	Valley Oak	Yes	7+12.5	35	14	3	3		**3**	2
154	*Quercus lobata*	Valley Oak	Yes	13	30	12	3	3		**3**	2
155	*Quercus lobata*	Valley Oak	Yes	12+5.5	30	12	3	3		**3**	2
156	*Quercus lobata*	Valley Oak	Yes	6	22	10	3	3		**3**	2
157	*Quercus lobata*	Valley Oak	Yes	9.5+5.5	20	12	3	3		**3**	2
301	Quercus lobata	Valley Oak	Yes	17	35	22	3	3		1	1, 6, 7, 8, 9, 11
302	Quercus lobata	Valley Oak	Yes	12	20	16	4	3		1	1, 6, 7, 8, 9, 11

KEY TO TREE INVENTORY CHART

KEY TO TREE INVENTORY CHART
Los Amigos Cottages
Windsor, CA

Tree Number

Each tree has been identified in the field with an aluminum tag and reference number. Tags are attached to the trunk at approximately eye level. The *Tree Location Plan* illustrates the location of each numbered tree.

Species

Each tree has been identified by genus, species and common name. Many species have more than one common name.

Trunk

Each trunk has been measured in inches to document its diameter at 54" above adjacent grade. Trunk diameter is a good indicator of age, and is commonly used to determine mitigation replacement requirements.

Height

Height is estimated in feet, using visual assessment.

Radius

Radius is estimated in feet, using visual assessment. Since many canopies are asymmetrical, it is not uncommon for a radius estimate to be an average of the canopy size.

Health

The following descriptions are used to rate the health of a tree. Trees with a rating of 4 or 5 are very good candidates for preservation and will tolerate more construction impacts than trees in poorer condition. Trees with a rating of 3 may or may not be good candidates for preservation, depending on the species and expected construction impacts. Trees with a rating of 1 or 2 are generally poor candidates for preservation.

(5) Excellent - health and vigor are exceptional, no pest, disease, or distress symptoms.

(4) Good - health and vigor are average, no significant or specific distress symptoms, no significant pest or disease.

(3) Fair - health and vigor are somewhat compromised, distress is visible, pest or disease may be present and affecting health, problems are generally correctable.

(2) Marginal - health and vigor are significantly compromised, distress is highly visible and present to the degree that survivability is in question.

(1) Poor - decline has progressed beyond the point of being able to return to a healthy condition again. Long-term survival is not expected. This designation includes dead trees.

Structure

The following descriptions are used to rate the structural integrity of a tree. Trees with a rating of 3 or 4 are generally stable, sound trees which do not require significant pruning, although cleaning, thinning, or raising the canopy might be desirable. Trees with a rating of 2 are generally poor candidates for preservation unless they are preserved well away from improvements or active use areas. Significant time and effort would be required to reconstruct the canopy and improve structural integrity. Trees with a rating of 1 are hazardous and should be removed.

(4) Good structure - minor structural problems may be present which do not require corrective action.

(3) Moderate structure - normal, typical structural issues which can be corrected with pruning.

(2) Marginal structure - serious structural problems are present which may or may not be correctable with pruning, cabling, bracing, etc.

(1) Poor structure - hazardous structural condition which cannot be effectively corrected with pruning or other measures, may require removal depending on location and the presence of targets.

Construction Impacts

Considering the proximity of construction activities, type of activities, tree species, and tree condition - the following ratings are used to estimate the amount of impact on tree health and stability. Most trees will tolerate a (1) rating, many trees could tolerate a (2) rating with careful consideration and mitigation, but trees with a (3) rating are poor candidates for preservation.

(3) A significant impact on long term tree integrity can be expected as a result of proposed development.

(2) A moderate impact on long term tree integrity can be expected as a result of proposed development.

(1) A minor impact on long term tree integrity can be expected as a result of proposed development.

(0) No impacts are expected

Recommendations

Recommendations are provided for removal or preservation. For those being preserved, protection measures and mitigation procedures to offset impacts and improve tree health are provided.

(0) No action required

(1) Preservation appears to be possible.

(2) Removal is required due to significant development impacts.

(3) Removal is required due to poor health or hazardous structure.

(4) Removal is required due to significant development impacts and poor existing condition.

(5) Removal is recommended due to poor species characteristics.

(6) Install temporary protective fencing at the edge of the dripline, or edge of approved construction, prior to beginning grading or construction. Maintain fencing in place for duration of all construction activity in the area.

(7) Maintain existing grade within the fenced portion of the dripline. Route drainage swales and all underground work outside the dripline.

(8) Place a 4" layer of chipped bark mulch over the soil surface within the fenced dripline prior to installing temporary fencing. Maintain this layer of mulch throughout construction.

(9) Prune to clean and reduce end weights on long laterals on the project side of each canopy, per International Society of Arboriculture pruning standards.

(10) This trunk could be located off site, but the canopy overhangs the project site.

(11) Excavation may be required within the TPZ and the dripline for development. Excavation within the TPZ of any type must adhere to the following guidelines:

All roots encountered that are 2 inches or larger in diameter must be cleanly cut as they are encountered by excavating equipment.

Roots may not be ripped from the ground and then trimmed. They must be trimmed as encountered and this will require the use of a ground man working with a suitable power tool.

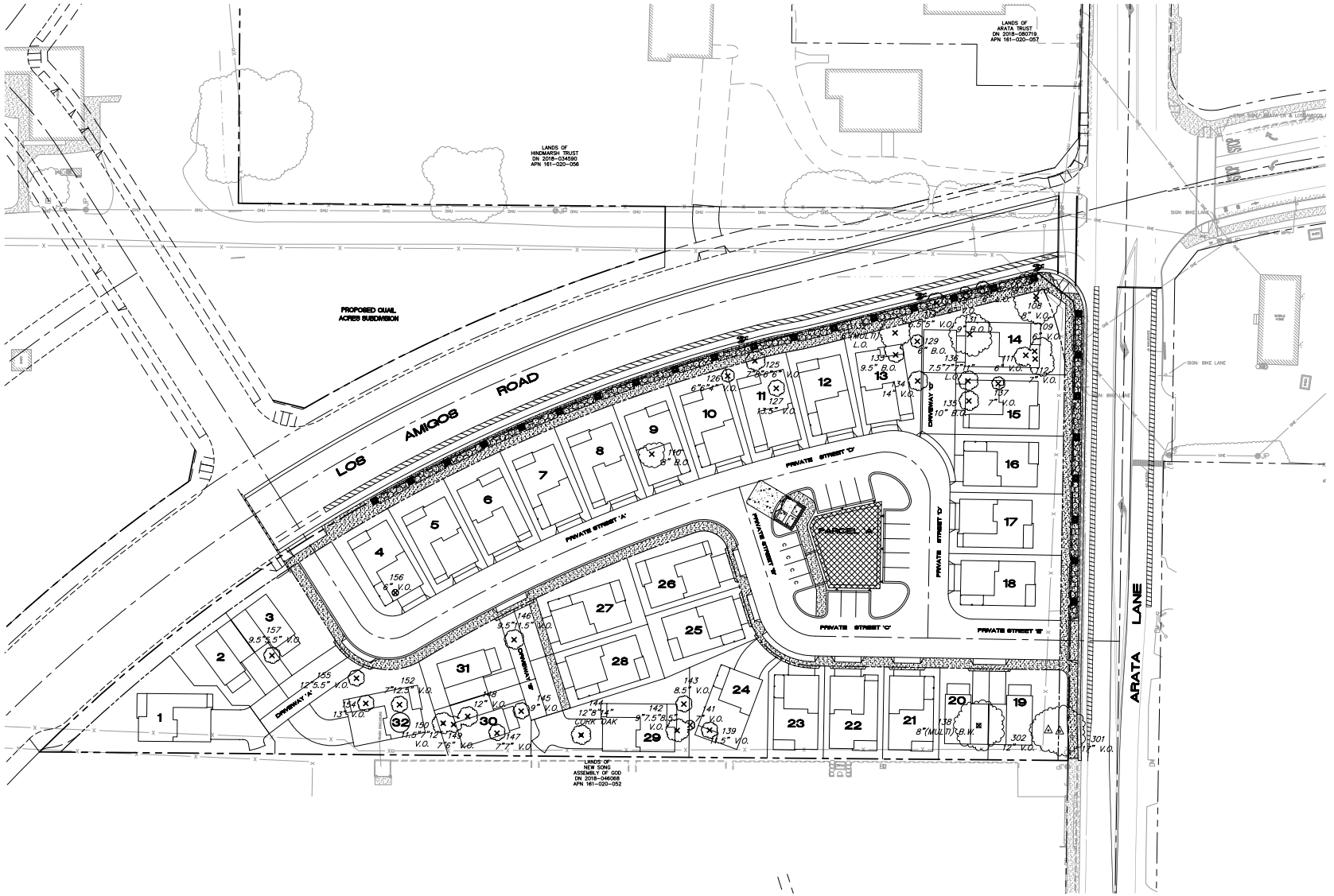
Pruned and exposed roots greater than 2 inches in diameter must be protected from desiccation if left exposed for more than 24 hours. Cover cut roots with heavy cloth, burlap, used carpeting, or similar material that has been soaked in water, until trench or excavation has been backfilled.

If excavation impacts more than 20% of the defined TPZ then supplemental irrigation may be required to offset loss of roots. Excavation in this case should be directed by the project arborist who will determine whether mitigation is required, when, and how.

Any excavation within the defined TPZ will require that the tree be monitored on a monthly basis by the project arborist for the duration of construction and for one year beyond completion of construction. Monitoring may determine other mitigation measures that may be required to offset root loss or damage.

(12) This palm cannot be preserved in its current location, but can be successfully transplanted to another location at the site

TREE LOCATION PLAN



LEGEND

TREE # 113
TREE DIA. 9" B.O.

TREE LABEL

TREE TRUNK LOCATION

TREE TO BE REMOVED

TREE TO BE SAVED

PROFESSIONAL ENGINEER * CALIFORNIA * REGISTERED * CIVIL * MATTHEW P. LAWTON No. 087765 * STATE OF CALIFORNIA

DATE

MATTHEW LAWTON
RCE 087765

CML DESIGN CONSULTANTS, INC.
2200 Range Avenue, Suite 204
Santa Rosa, CA 95403
(707) 542-4820

TREE REMOVAL PLAN

LOS AMIGOS COTTAGES

263 ARATA LANE
WINDSOR, CALIFORNIA

APN 161-020-049

OCTOBER 2024

JOB NO.
23-110

SHEET NO.
TR1

OF 1 SHEETS