



BIOLOGICAL TECHNICAL MEMORANDUM

To: Trent Sanson
DeNova Homes, Inc.
1500 Willow Pass Court
Concord CA, 94520

From: Nicholas Bonzey, Senior Project Manager
Analytical Environmental Services

Project: DeNova Homes Sonoma Highway Housing Project

Date: 6/9/2021

1.0 INTRODUCTION

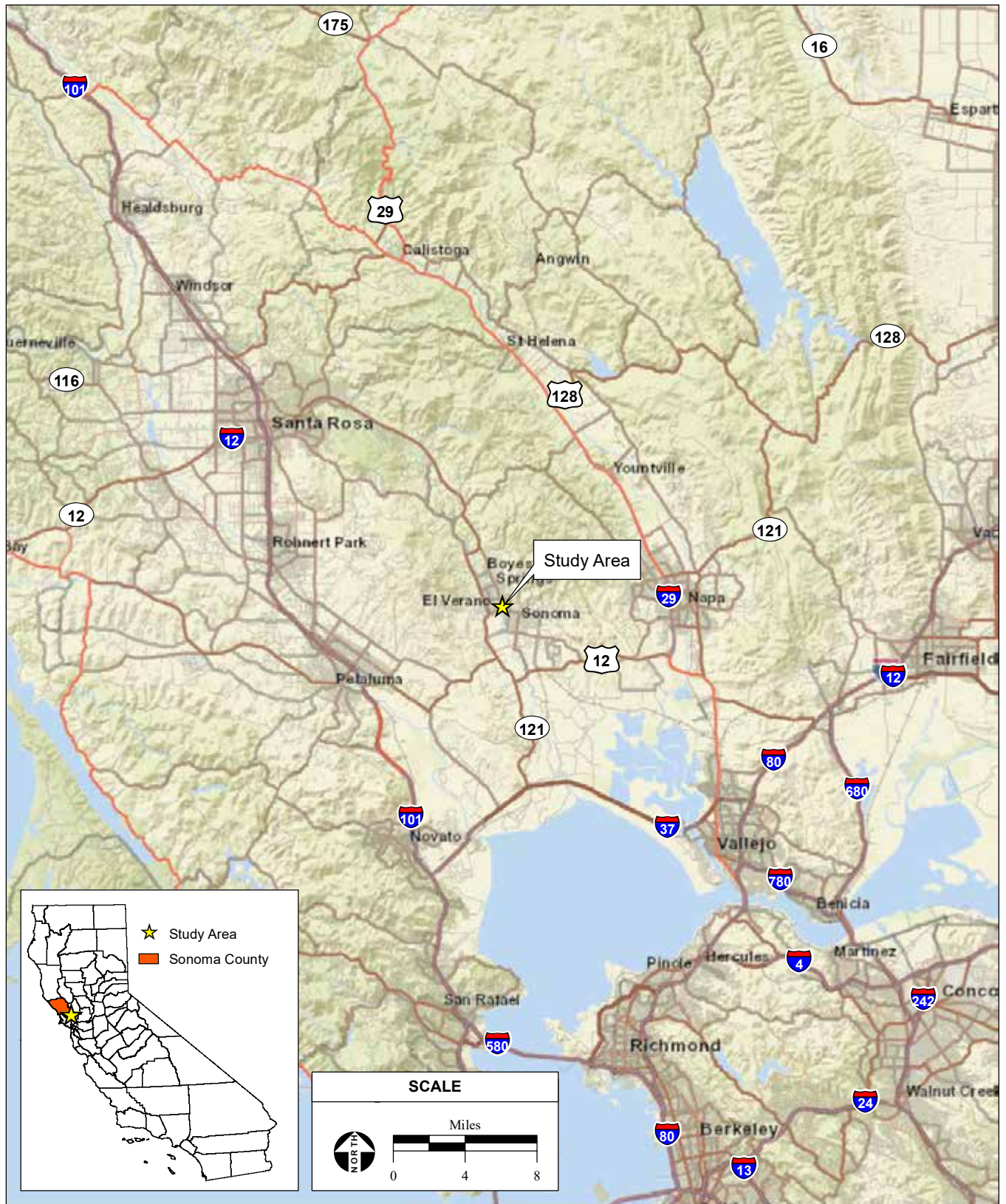
This memorandum has been prepared for the DeNova Homes Sonoma Highway Housing Project (Proposed Project) and analysis the 2.15 acre property (Study Area) located at 19320 Sonoma Highway, Sonoma, CA (APN's 127-202-006 and -007). The Study Area occurs within the USGS 7.5-minute Sonoma quadrangle (**Figures 1, 2, and 3**). On-site elevations range from 95 to 112 feet above mean sea level. The purpose of this report is to assess and identify sensitive biological resources within the Study Area that could be affected by development within the Study Area. This report documents the results of the biological resources survey conducted on the Study Area on June 3, 2021.

2.0 METHODOLOGY

The following information was obtained and reviewed:

- Aerial photographs of the Property and surrounding area;
- U.S. Fish and Wildlife Service (USFWS) query, queried June 1, 2021 (USFWS, 2021a) (**Attachment A**);
- California Natural Diversity Database (CNDDDB) query, dated June 1, 2021, of state and federally listed special-status species known to occur in the vicinity (CDFW, 2021) (**Attachment A**);
- California Native Plant Society (CNPS) list, queried June 4, 2021 (CNPS, 2021) (**Attachment A**);
- USFWS National Wetlands Inventory (NWI) map of wetland features, queried June 4, 2021 (USFWS, 2021b) (**Figure 4**); and
- Natural Resources Conservation Service (NRCS) custom soils report, queried June 4, 2021 (NRCS, 2021) (**Figure 5 and Attachment A**).

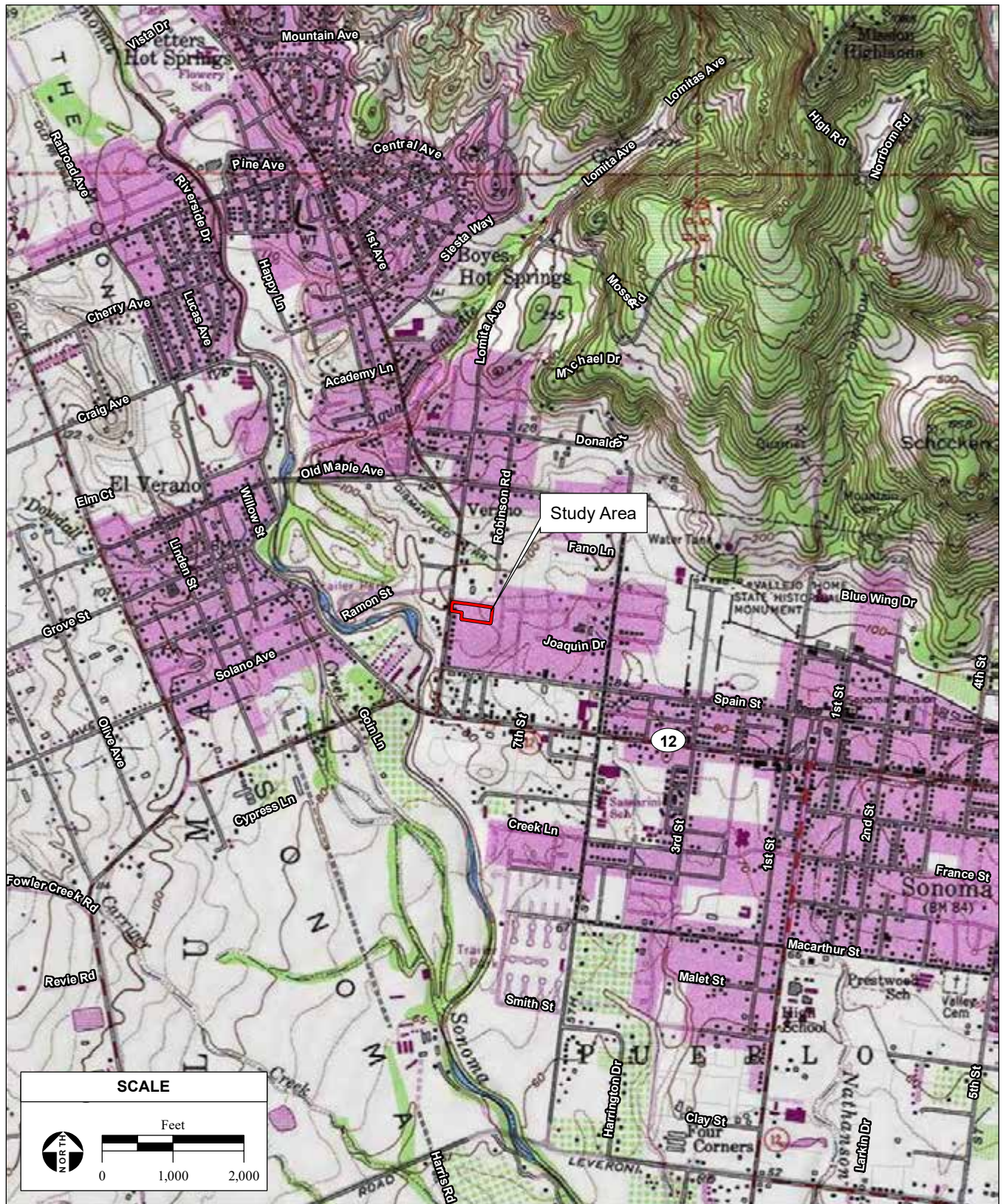
AES Biologists Joshua Goodwin and Jedidiah Dowel conducted biological resources survey of the Study Area on June 3, 2021. The survey was conducted by walking throughout the entirety of the Survey Area. The objective of the surveys was to identify habitat types on the Study Area, including potential wetlands and waters of the U.S., and to determine presence of special-status species. The field surveys consisted of walking transects throughout the Study Area. Representative areas of each habitat type were reviewed with the aid of an aerial photograph and through identification of dominant species cover within each vegetation community. Potentially jurisdictional waters of the U.S. were mapped. Data was collected via a Trimble Geo XH hand-held GPS receiver. Survey goals consisted of identifying



SOURCE: ESRI, 2021; AES, 6/8/2021

DeNova Homes - Sonoma Highway Biological Technical Memorandum / 221527 ■

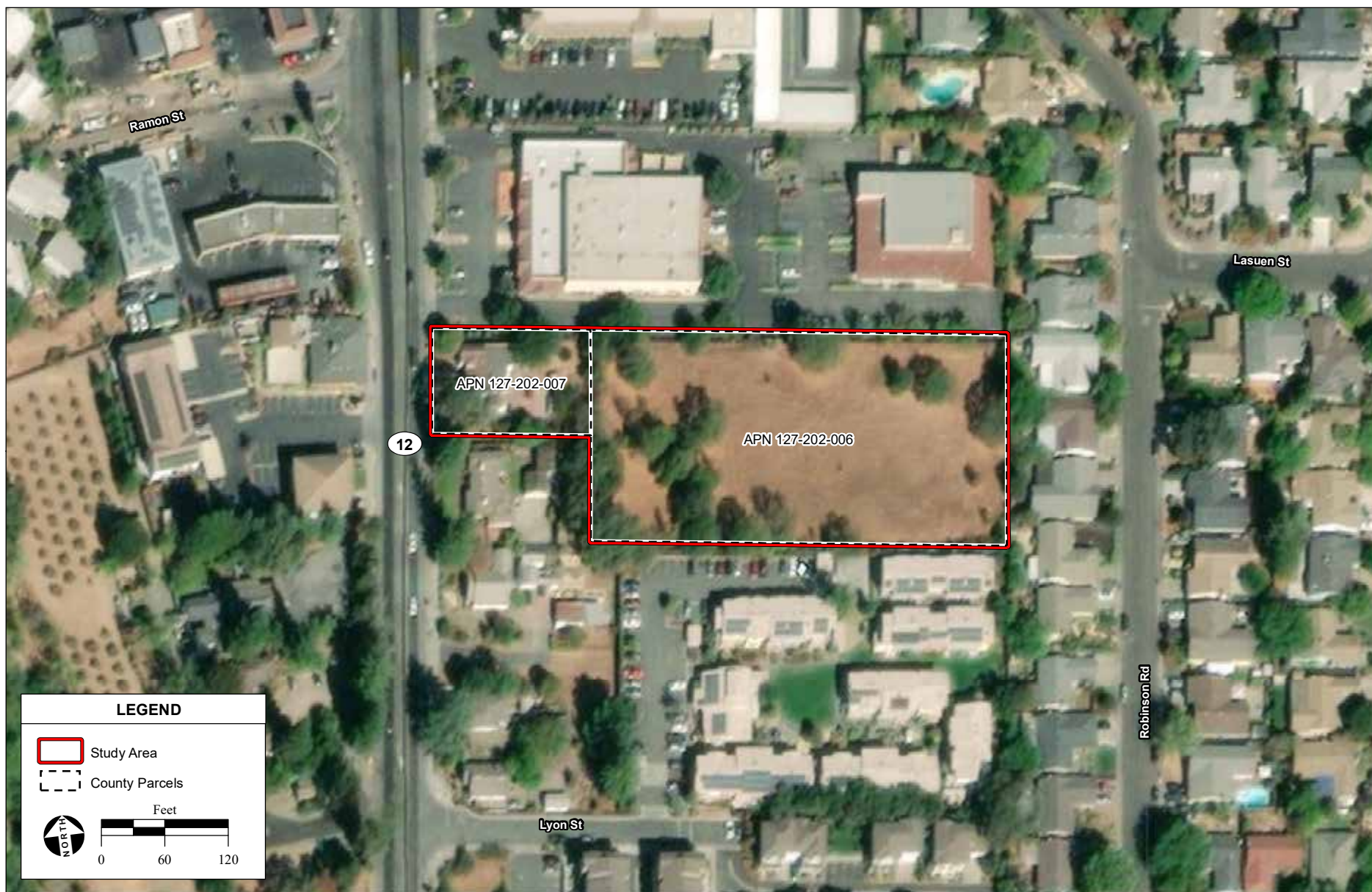
Figure 1
Regional Location



SOURCE: "Sonoma, CA" USGS 7.5 Minute Topographic Quadrangle, T5N R6W, Unsectioned Area of Sonoma, Mt Diablo Baseline & Meridian; Sonoma County parcel data; ESRI, 2021; AES, 6/8/2021

DeNova Homes - Sonoma Highway Biological Technical Memorandum / 221527 ■

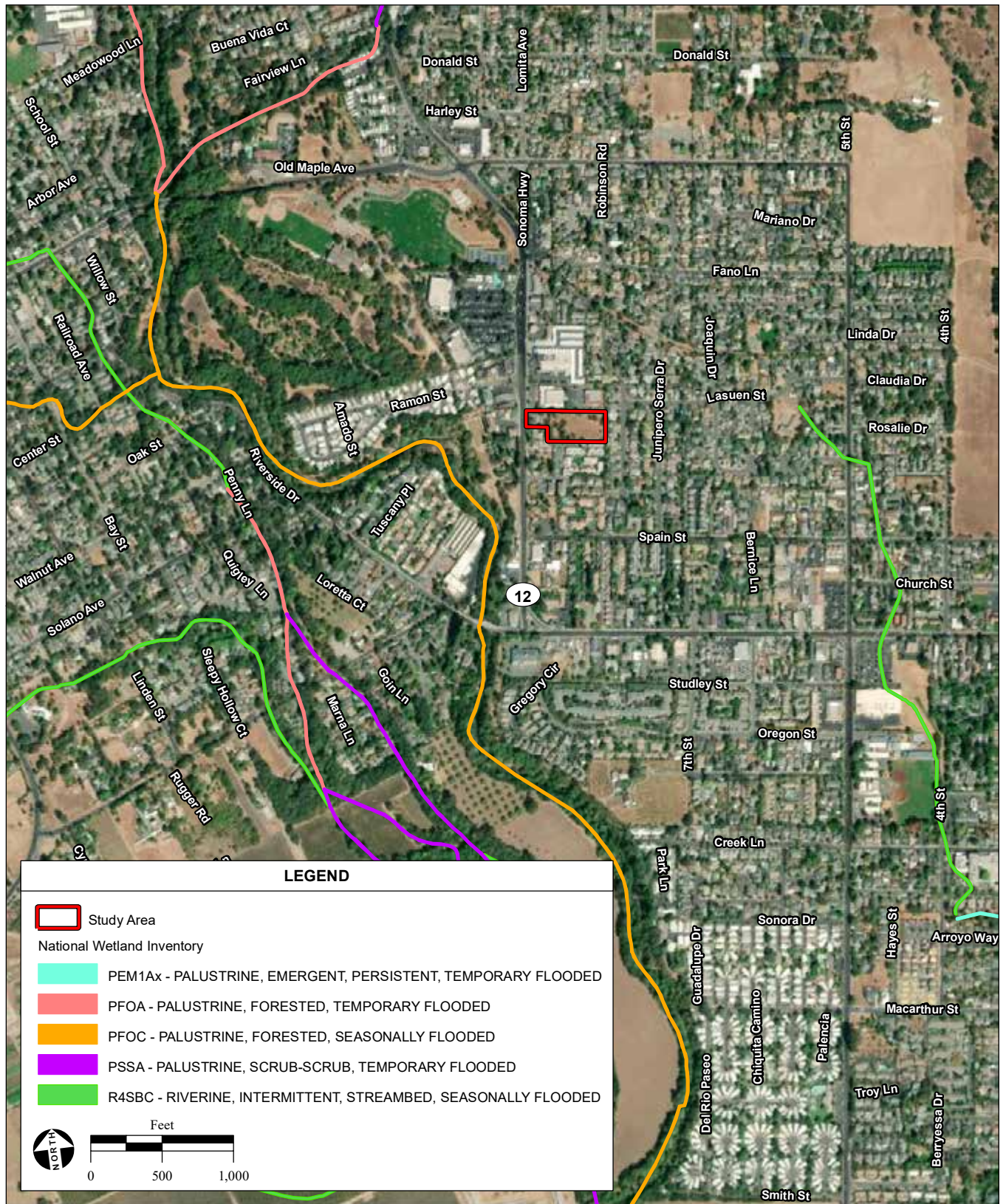
Figure 2
Site and Vicinity



SOURCE: Sonoma County parcel data; Maxar aerial photography, 10/14/2020; AES, 6/9/2021

DeNova Homes - Sonoma Highway Biological Technical Memorandum / 221527 ■

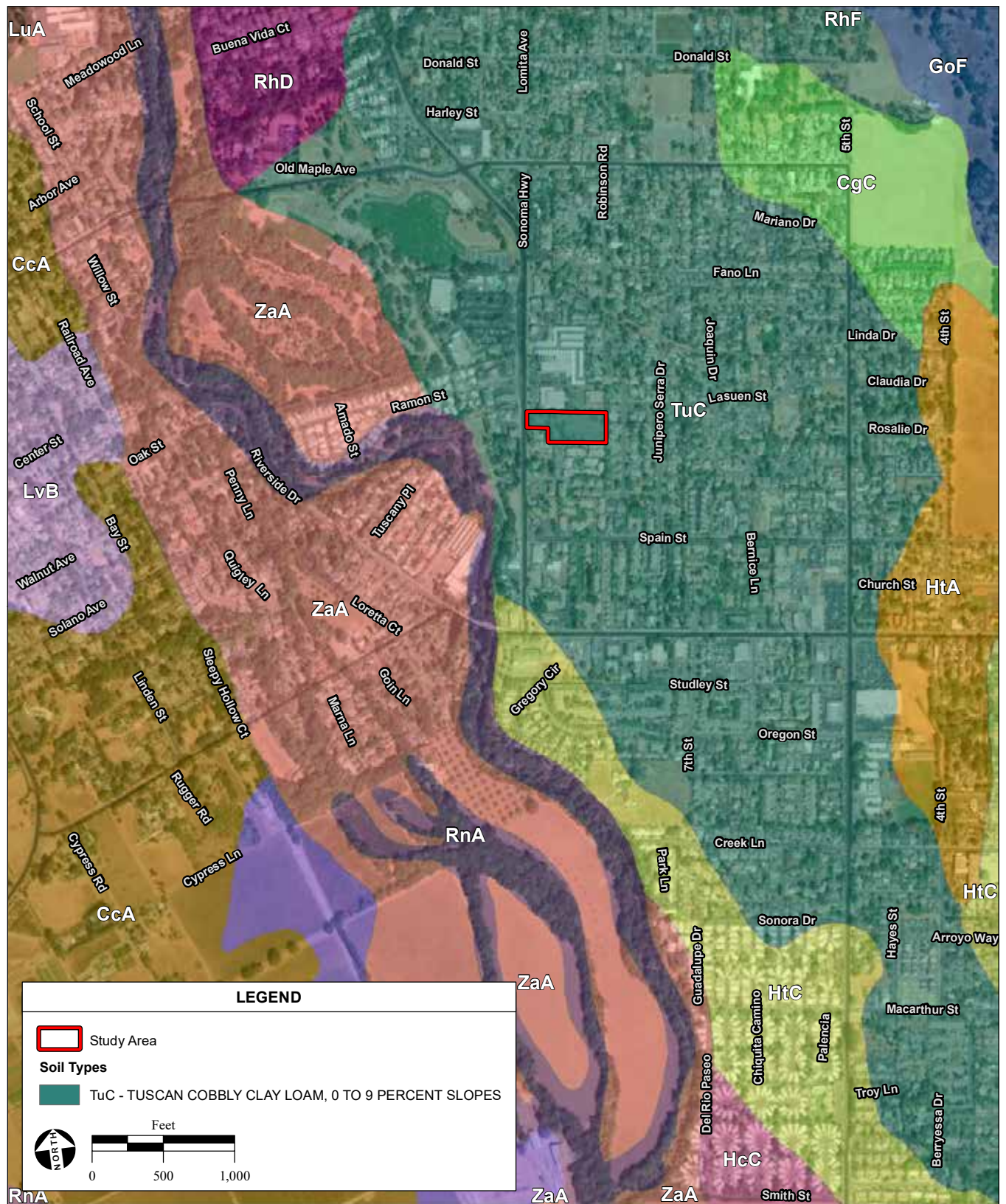
Figure 3
Aerial Photograph



SOURCE: NWI California wetland data; Sonoma County parcel data, Maxar aerial photography, 10/14/2020; ESRI, 2021; AES, 6/9/2021

DeNova Homes - Sonoma Highway Biological Technical Memorandum / 221527 ■

Figure 4
National Wetland Inventory



SOURCE: NRCS Sonoma Soil Data, 2018; Sonoma County parcel data; Maxar aerial photography, 10/14/2020; ESRI, 2021; AES, 6/9/2021

DeNova Homes - Sonoma Highway Biological Technical Memorandum / 221527 ■

Figure 5
Soil Types

habitat types, sensitive habitats, wetlands, and waters of the U.S, and special-status species. Sensitive habitats include those that are designated by CDFW, considered by local experts or municipalities to be communities of limited distribution, or likely to be waters of the U.S. or State by the appropriate state and federal regulatory agencies. Habitat requirements of special-status species were compared to habitats observed, which were determined based on aerial photographs, ground-truthing, and background data review.

3.0 ENVIRONMENTAL SETTING

3.1 SOIL TYPES

The Property is comprised of entirely Tuscan cobbly clay loam on 0 to 9 percent slopes. Tuscan cobbly clay loam is well drained and has no frequency of flooding. Tuscan cobbly clay loam has a parent material of alluvium derived from basic igneous rock and is more than 80 inches to the depth of the water table. This soil type is in hydrolic soil group D and is not considered a hydric soil. A custom soils report for the Property can be found in **Attachment A**. A soils map can be found on **Figure 5**.

3.2 HABITAT TYPES

Two habitat types were identified within the Study Area; ruderal grassland and developed (**Figure 6**). The Study Area was dominated by ruderal grassland habitat with a single residential home occurring at the west end. A query of the NWI database (**Figure 4**) did not show any previously identified aquatic features within the Study Area. Sonoma Creek occurs approximately 0.1 mile to the west of the Study Area, located west of Sonoma Highway. NWI classifies Sonoma Creek as palustrine, forested, and seasonally flooded. Habitat types on the Property are further discussed below. A list of plants observed within in the Study Area during the June 2021 survey can be found in **Attachment C**.

Ruderal Grassland

This habitat type makes up the majority of the Study Area consisting of approximately 1.81 acres. This habitat type occurs east of the developed habitat. At the time of the survey, the open areas of the site were recently mowed with grass heights ranging from approximately 3 to 6 inches. Oak trees and ornamental vegetation occurred along the borders of the ruderal grassland habitat with a few trees occurring sporadically within the open areas (refer to photo 4 of **Attachment B**). Dominant plant species observed include soft chess (*Bromus hordeaceus*), wild oat (*Avena fatua*), sweet fennel (*Foeniculum vulgare*), wild radish (*Raphanus sativus*), and English plantain (*Plantago lanceolata*). Along the margins of the ruderal grassland habitat consisted of various trees and forb species dominated by Ornamental trees, coast live oak (*Quercus agrifolia*), valley oak (*Quercus lobata*), giant reed grass (*Arundo donax*), and Himalayan blackberry (*Rubus armeniacus*). Although there were a significant number of oaks and other trees within the study area, the canopy in this habitat was not continuous and was dominated by the herbaceous vegetation layer.

Developed

This habitat type occurs west of the ruderal grassland habitat and contains a single residential home that was occupied by tenants at the time of the June 2021 survey (refer to photo 1 of **Attachment B**). This developed habitat consisted of approximately 0.34 acre surrounded primarily by ornamental vegetation. One large heritage valley oak occurred within the southwest corner of this habitat type. A shed and trampoline also occurred within this area. Most of this habitat was paved with weedy vegetation growing in areas that were not occupied frequently. Dominant vegetation consisted of ornamental trees and shrubs, various fruit trees (*Prunus* sp.), valley oak, and coast live oak.



SOURCE: Sonoma County parcel data; Maxar aerial photography, 10/14/2020; ESRI, 2021; AES, 6/9/2021

DeNova Homes - Sonoma Highway Biological Technical Memorandum / 221527 ■

Figure 6
Habitat Types

3.3 SPECIAL-STATUS SPECIES

Data review and special-status species searches list 8 special-status plant species and 12 special-status wildlife species with the potential to occur in the region of the Property (**Attachment A**). The name, regulatory status, distribution, habitat requirements, period of identification, and potential to occur for each species are listed in **Table 1**.

Based on the site-specific habitats and special-status species habitat requirements for each species that may occur within the vicinity of the Property, as shown in **Table 1**, the Property contains suitable habitat to potentially support one special-status plant species and two special-status animal species. Species with no potential to occur on the Property were ruled out based on lack of suitable habitat, soils, elevation, necessary substrate, and negative results during the survey if it coincided with the identifiable bloom period for plant species. Special-status species were not observed during the survey.

3.4 WILDLIFE MOVEMENT

Wildlife movement is currently restricted on all sides of the property by existing development. The site is located in urban Sonoma, immediately adjacent to Sonoma Highway, the largest north-south road in the City of Sonoma. Maxwell Farms Regional Park is located to the west of the property, which includes the riparian corridor of Sonoma Creek, which may provide a north-south wildlife movement corridor, but development of this site would have no impact on Sonoma Creek or the Maxwell Farms Regional Park.

3.5 CRITICAL HABITAT

No designated critical habitat (CH) occurs on the Property. The closest CH to the Study Area is for Northern Spotted Owl (3.3 miles to the northeast) and for California red-legged frog (4.4 miles to the west)

4.0 RESULTS AND RECOMENDATIONS

4.1 SENSITIVE HABITATS

Habitat types within the Property include developed and ruderal grassland, neither of which are sensitive habitats. No wetlands or other waters of the U.S. or state were located within the property. Oak trees, found throughout the property, would require mitigation if removed in the course of project activities consistent with county-level regulations and State-level requirements for Oak Preservation and mitigation

4.2 NESTING MIGRATORY BIRDS

Migratory birds and their nests are protected from “take” by the Migratory Bird Treaty Act (16 U.S.C. 703-711), which makes it unlawful to “...pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess or any part, nest, or egg of any such bird...” (50 CFR 10). Both grasslands and the scattered trees with the Study Area are potential nesting locations for protected migratory birds. Although no active bird nests were observed during the 2021 biological survey, nests could exist at the time of future development. Protective measures would need to be implemented to reduce the impacts to nesting birds, and pre-construction surveys would likely be required if construction starts during nesting bird season (February 15 through September 15).

TABLE 1 - REGIONALLY OCCURRING SPECIAL-STATUS SPECIES

SCIENTIFIC NAME COMMON NAME	FEDERAL/ STATE/CNPS STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	IDENTIFICATION PERIOD	POTENTIAL TO OCCUR ON PROPERTY
Plants					
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	--/--/1B.2	Known to occur in Mendocino, Napa, Santa Clara, San Mateo, and Sonoma counties.	Often on dry hillsides with cismontane woodland, valley and foothill grasslands. Grows in clay, volcanic, or serpentinite. Elevations range from 53-305 meters.	(April) May-July	No , the Study Area is routinely mowed and occurs outside it's know elevation range.
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	--/--/1B.2	Know to occur in Lake, Monterey, Marin, Napa, and Sonoma counties.	Found in broad-leafed upland forest (openings), chaparral, and cismontane woodland habitats. Elevations range from 0-2000 meters.	April-July	No , the Study Area lacks habitat suitable to support this species.
<i>Balsamorhiza macrolepis</i> var <i>macrolepis</i> Big-scale balsamroot	--/--/1B.2	Known to occur in Alameda, Amador, Butte, Colusa, El Dorado, Lake, Mariposa, Napa, Placer, Santa Clara, Shasta, Solano, Sonoma, Tehama, and Tuolumne counties.	Perennial herb that sometimes occurs in serpentine soils found in chaparral, cismontane woodland, and valley and foothill grassland habitats. Elevations range from: 45-1555 meters.	March-July	No , the Study Area is routinely mowed and occurs outside it's know elevation range.
<i>Blennosperma bakeri</i> Sonoma sunshine	FE/CE/1B.1	Known to occur in Mendocino and Sonoma Counties.	Annual herb found in vernal pools and wet grasslands along grassy margins of swales. Elevations: 10-110 meters.	March-May	No , the Study Area is routinely mowed and lacks habitat suitable to support this species.
<i>Brodiaea leptandra</i> Narrow-anthered California brodiaea	--/--/1B.2	Known to occur in Lake, Napa and Sonoma counties.	A perennial bulbiferous herb found in mixed-evergreen forest, broad-leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland habitats. Usually on gravelly soils. Elevations range from 40-1,220 meters.	May-July	No , the Study Area occurs outside this species know elevation range.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	--/--/1B.1	Known to occur in Lake, Mendocino, Napa, and Sonoma counties.	Found in closed-cone coniferous forest, chaparral, and cismontane woodland habitats. Found in volcanic or serpentinite soils. Elevations range from 75-1065 meters.	February-June	No , the Study Area lacks habitat and soils suitable to support this species.
<i>Ceanothus sonomensis</i> Sonoma ceanothus	--/--/1B.2	Known to occur in Napa and Sonoma counties.	Chaparral (sandy, serpentinite, or volcanic soils). Elevations from 215-800 meters.	February-April	No , the Study Area lacks habitat and soils

SCIENTIFIC NAME COMMON NAME	FEDERAL/ STATE/CNPS STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	IDENTIFICATION PERIOD	POTENTIAL TO OCCUR ON PROPERTY
					suitable to support this species.
<i>Hemizonia congesta</i> <i>ssp. congesta</i> congested-headed hayfield tarplant	--/--/1B.2	Known to occur in Lake, Mendocino, Marin, San Francisco, San Mateo and Sonoma counties.	An annual herb occurs in grassy sites, marsh edges, roadsides and valley and foothill grasslands. Elevations: 20-560 meters.	April-November	Yes , suitable habitat occurs throughout the ruderal grassland habitat.
Animals					
Amphibians					
<i>Dicamptodon ensatus</i> California giant salamander	--/CSC/--	Known to occur in Mendocino, Lake, Glenn, Sonoma, Marin, San Mateo, Santa Cruz and historically Monterey counties.	Occurs in wet coastal forests near streams and seepages.	N/A	No , habitat suitable to support this species is not present within the Study Area.
Birds					
<i>Coturnicops noveboracensis</i> yellow rail	--/CSC/--	Found in northeastern interior California during breeding season, the northern California coast during winter, and the Suisun Marsh region.	Breeds in sedge marshes and meadows with moist soil or shallow standing water. Found in wet meadows and coastal tidal marshes in winter.	May-early September (breeding) Late September- April (wintering)	No , habitat suitable to support this species is not present within the Study Area.
<i>Cypseloides niger</i> black swift	--/CSC/--	Breeds in the central and southern Sierra, the coastal cliffs and mountains of San Mateo, Santa Cruz, and Monterey counties, the San Gabriel, San Bernardino, and San Jacinto mountains of southern California, and within a small region of the Cascade Range.	Steep cliffs or ocean bluffs with ledges, cavities or cracks for nesting along ocean shore, inland deep canyons and often behind waterfalls. Forages in a wide variety of habitats including forests, canyons, valleys, and plains. Breeding elevations range from 0-2285 meters.	May-July	No , habitat suitable to support this species is not present within the Study Area.
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	--/CSC/--	Distributed in marshes around San Pablo Bay continuously from Gallinas Creek in the west, along the northern San Pablo bayshore, and throughout the extensive marshes along the Petaluma, Sonoma, and Napa rivers.	Commonly found in saltmarsh, brackish marsh, salt marsh (altered), brackish marsh (altered), and fringe areas, where marsh vegetation is limited to edges of dikes, landfills, or other margins of high ground bordering salt or brackish water areas.	All Year	No , habitat suitable to support this species is not present within the Study Area.
<i>Riparia riparia</i>	--/CT/--	About 50-60 colonies remain along the middle	Colonial nester; nests primarily in riparian scrub,	All year	No , habitat suitable

SCIENTIFIC NAME COMMON NAME	FEDERAL/ STATE/CNPS STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	IDENTIFICATION PERIOD	POTENTIAL TO OCCUR ON PROPERTY
bank swallow		Sacramento River and 15-25 colonies occur along lower Feather River where the rivers meanders still in a mostly natural state. Other colonies persist along the central coast from Monterey to San Mateo counties, and northeastern California in Shasta, Siskiyou, Lassen, Plumas, and Modoc counties.	riparian woodland, and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.		to support this species is not present within the Study Area.
<i>Coturnicops noveboracensis</i> yellow rail	--/CSC/--	Found in northeastern interior California during breeding season, the northern California coast during winter, and the Suisun Marsh region.	Breeds in sedge marshes and meadows with moist soil or shallow standing water. Found in wet meadows and coastal tidal marshes in winter.	May-early September (breeding) Late September-April (wintering)	No , habitat suitable to support this species is not present within the Study Area.
<i>Cypseloides niger</i> black swift	--/CSC/--	Breeds in the central and southern Sierra, the coastal cliffs and mountains of San Mateo, Santa Cruz, and Monterey counties, the San Gabriel, San Bernardino, and San Jacinto mountains of southern California, and within a small region of the Cascade Range.	Steep cliffs or ocean bluffs with ledges, cavities or cracks for nesting along ocean shore, inland deep canyons and often behind waterfalls. Forages in a wide variety of habitats including forests, canyons, valleys, and plains. Breeding elevations range from 0-2285 meters.	May-July	No , habitat suitable to support this species is not present within the Study Area.
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	--/CSC/--	Distributed in marshes around San Pablo Bay continuously from Gallinas Creek in the west, along the northern San Pablo bayshore, and throughout the extensive marshes along the Petaluma, Sonoma, and Napa rivers.	Commonly found in saltmarsh, brackish marsh, salt marsh (altered), brackish marsh (altered), and fringe areas, where marsh vegetation is limited to edges of dikes, landfills, or other margins of high ground bordering salt or brackish water areas.	All Year	No , habitat suitable to support this species is not present within the Study Area.
Reptiles					
<i>Emys marmorata</i> western pond turtle	--/CSC/--	Distribution ranges from Washington to northern Baja California.	Inhabit rivers, streams, lakes, ponds, reservoirs, stock ponds, and permanent wetland habitats with basking sites.	Year-round	No , habitat suitable to support this species is not present within the Study Area.
Mammals					
<i>Antrozous pallidus</i>	--/CSC/--	Locally common species at low elevations. It	Habitats occupied include grasslands, shrublands,	Year-round	Yes , suitable habitat

SCIENTIFIC NAME COMMON NAME	FEDERAL/ STATE/CNPS STATUS	DISTRIBUTION	HABITAT REQUIREMENTS	IDENTIFICATION PERIOD	POTENTIAL TO OCCUR ON PROPERTY
pallid bat		occurs throughout California except for the high Sierra Nevada from Shasta to Kern counties, and the northwestern corner of the state from Del Norte and western Siskiyou counties to northern Mendocino county.	woodlands, and forests from sea level up through mixed conifer forests, generally below 2,000 meters. The species is most common in open, dry habitats with rocky areas for roosting. Roosts also include cliffs, abandoned buildings, bird boxes, under exfoliating bark, and under bridges.		occurs within the onsite residential home that is currently occupied by tenants.
Invertebrates					
<i>Bombus occidentalis</i> western bumble bee	FC/CC/--	Known to occur along the West Coast and Mountain West of North America, including Arizona, New Mexico, Mediterranean California, the Pacific Northwest, and Alaska.	Found in open grassy areas, urban parks and gardens, chaparral and shrub areas, and mountain meadows. Found at elevations from 0-2000+ meters. Nesting occurs underground in abandoned rodent burrows or other cavities.	February- November	Yes , habitat suitable to support this species occurs throughout the Study Area.
<i>Syncaris pacifica</i> California freshwater shrimp	FE/CE/--	Known only throughout Marin, Napa, and Sonoma counties.	Small, low-gradient, perennial coastal streams. Prefers relatively shallow streams with depths of 12-36 inches, exposed live roots of trees such as alder and willow, undercut banks greater than 6 inches, overhanging woody debris or stream vegetation and vines. Elevations range from 0-116 meters.	Consult Agency	No , habitat suitable to support this species is not present within the Study Area.

SOURCE: CDFW, 2021

STATUS CODES

Federal: U.S. Fish and Wildlife Service

FE Federally Endangered

FT Federally Threatened

FC Candidate for Federal Listing

CNPS: California Native Plant Society

1A Plants Presumed Extinct in California

1B Plants Rare, Threatened, or Endangered in California and Elsewhere

2B Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

State: California Department of Fish and Game

CE California Listed Endangered

CT California Listed Threatened

CSC California Species of Special Concern

CC California Candidate for State Listing

CNPS Threat Ranks:

0.1 – Seriously Threatened in California

0.2 – Fairly Threatened in California

4.3 SPECIAL-STATUS SPECIES

One special-status plant and two special-status animal species have the potential to occur on the site. Western bumblebee, a species under review for both State and Federal listing, may forage and nest in the grassland portion of the project site. The pallid bat, a state species of special concern, may utilize the residential building in the Study Area as a potential roosting habitat. The congested-headed hayfield tarplant, a CNPS 1B.2 ranked species, may occur within the grasslands portion of the Study Area.

While none of these species were observed during the site visit, it is recommended that focused surveys take place before any development of this site to determine presence/absence and to develop appropriate mitigation and avoidance measures if any are found to exist. The field visit in 2021 overlapped with the congested-headed hayfield tarplant's listed bloom season, but 2021 was an abnormally dry year and additional surveys in subsequent years would give more evidence to suggest that this species does not occur on this property.

5.0 CONCLUSION

The Study Area contains no sensitive habitats other than existing oak trees, regulated by local level oak preservation requirements. No wetlands or other waters of the U.S. were identified. Three special status species have the potential to occur on site, and additional surveys are recommended to determine presence. None were observed during site surveys in June of 2021. If development occurs on the site, pre-construction surveys for nesting birds are recommended to ensure development does not negatively impact protected migratory birds.

6.0 REFERENCES

California Department of Fish and Wildlife (CDFW), 2021. RareFind 5, California Natural Diversity Database (CNDDDB). Available online: <https://map.dfg.ca.gov/rarefind/Login.aspx?ReturnUrl=%2frarefind%2fview%2fRareFind.aspx>. Last updated June 1, 2021.

California Native Plant Society (CNPS), 2021. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Available online at: <http://www.cnps.org/inventory>. Last updated June 4, 2021.

Natural Resources Conservation Service (NRCS), 2020. Web Soil Survey. National Cooperative Soil Survey. Available at: <http://websoilsurvey.sc.egov.usda.gov/App/Home-Page.htm> . Last updated June 4, 2021.

U.S. Fish and Wildlife Service (USFWS), 2021a. U.S. fish and Wildlife Service, IPaC Information for Planning and Consultation. Available online at: <http://ecos.fws.gov/ipac>. Last updated June 1, 2021.

USFWS, 2021b. National Wetlands Inventory, Wetlands Mapper. Available online at: <https://www.fws.gov/wetlands/data/Mapper.html>. Accessed on June 4, 2021

ATTACHMENTS

ATTACHMENT A

SPECIAL-STATUS SPECIES DATABASE RESULTS



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Sonoma (3812234))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Allium peninsulare</i> var. <i>franciscanum</i> Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G4	S3	SSC
<i>Balsamorhiza macrolepis</i> big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
<i>Blennosperma bakeri</i> Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1
<i>Bombus caliginosus</i> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
<i>Brodiaea leptandra</i> narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
<i>Ceanothus sonomensis</i> Sonoma ceanothus	PDRHA04420	None	None	G2	S2	1B.2
<i>Coturnicops noveboracensis</i> yellow rail	ABNME01010	None	None	G4	S1S2	SSC
<i>Cypseloides niger</i> black swift	ABNUA01010	None	None	G4	S2	SSC
<i>Dicamptodon ensatus</i> California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
<i>Downingia pusilla</i> dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Hemizonia congesta</i> ssp. <i>congesta</i> congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
<i>Horkelia tenuiloba</i> thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2
<i>Lupinus sericatus</i> Cobb Mountain lupine	PDFAB2B3J0	None	None	G2?	S2?	1B.2
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	ABPBXA301W	None	None	G5T2	S2	SSC
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Syncaris pacifica</i> California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
<i>Taricha rivularis</i> red-bellied newt	AAAAF02020	None	None	G2	S2	SSC
<i>Viburnum ellipticum</i> oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3

Record Count: 23

Search Results

Back


Export Results


14 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1A,1B,2A,2B], Quad is one of [3812234]

- Scientific Name
- Common Name
- Family
- Lifeform
- Blooming Period
- Fed List
- State List
- Global Rank
- State Rank
- CA Rare Plant Rank
- General Habitats
- Micro Habitats
- Lowest Elevation
- Highest Elevation
- CA Endemic
- Date Added
- Photo

Search:

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
Allium peninsulare var. franciscanum	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G5T2	S2	1B.2	No Photo Available
Amorpha californica var. napensis	Napa false indigo	Fabaceae	perennial deciduous shrub	Apr-Jul	None	None	G4T2	S2	1B.2	No Photo Available
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	 ©1998 Dean Wm. Taylor
Blennosperma bakeri	Sonoma sunshine	Asteraceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	No Photo Available
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	May-Jul	None	None	G3?	S3?	1B.2	No Photo Available
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G1	S1	1B.1	No Photo Available
Ceanothus sonomensis	Sonoma ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	1B.2	No Photo Available
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2	No Photo Available
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	None	None	G5T2	S2	1B.2	No Photo Available
Horkelia tenuiloba	thin-lobed	Rosaceae	perennial herb	May-	None	None	G2	S2	1B.2	

norkelia				Jul(Aug)						CA RARE	No Photo
▲ SCIENTIFIC				BLOOMING	FED	STATE	GLOBAL	STATE	PLANT	Available	
NAME	COMMON NAME	FAMILY	LIFEFORM	PERIOD	NSThe	NSThe	RANK	RANK	RANK	PHOTO	
Lomatium	Napa lomatium	Apiaceae	perennial herb	Mar-Jun	None	None	G3	S3	1B.2		No Photo
repostum											Available
Lupinus sericatus	Cobb Mountain lupine	Fabaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2		No Photo
											Available
Sidalcea hickmanii	Napa checkerbloom	Malvaceae	perennial herb	Apr-Jun	None	None	G3T1	S1	1B.1		No Photo
ssp. napensis											Available
Viburnum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3?	2B.3		© 2006 Tom Engstrom
ellipticum											

Showing 1 to 14 of 14 entries

CONTACT US

Send questions and comments to rareplants@cnps.org.

ABOUT THIS WEBSITE

- [About the Inventory](#)
- [Release Notes](#)
- [Advanced Search](#)
- [Glossary](#)

ABOUT CNPS

- [About the Rare Plant Program](#)
- [CNPS Home Page](#)
- [About CNPS](#)
- [Join CNPS](#)

CONTRIBUTORS

- [The Calflora Database](#)
- [The California Lichen Society](#)
- [California Natural Diversity Database](#)
- [The Jepson Flora Project](#)
- [The Consortium of California Herbaria](#)
- [CalPhotos](#)



[Log in](#)



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Phone: (916) 414-6600 Fax: (916) 414-6713



In Reply Refer To:

June 01, 2021

Consultation Code: 08ESMF00-2021-SLI-1961

Event Code: 08ESMF00-2021-E-05676

Project Name: DeNova Homes Sonoma

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

[http://](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html)

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2021-SLI-1961

Event Code: 08ESMF00-2021-E-05676

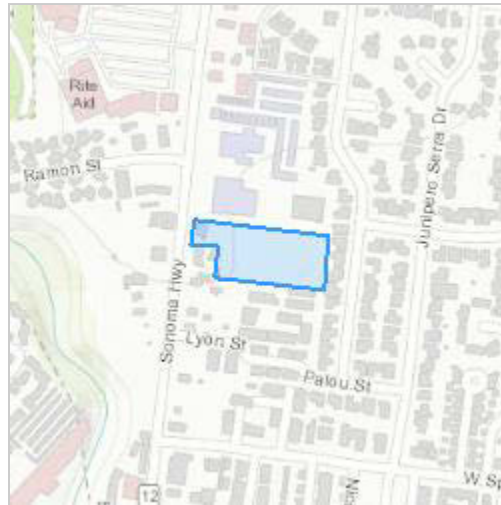
Project Name: DeNova Homes Sonoma

Project Type: ** OTHER **

Project Description: Other

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.2975066,-122.4740968,2726683,14z>



Counties: Sonoma County, California

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt <i>Hypomesus transpacificus</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
San Bruno Elfin Butterfly <i>Callophrys mossii bayensis</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3394	Endangered

Crustaceans

NAME	STATUS
California Freshwater Shrimp <i>Syncaris pacifica</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7903	Endangered

Flowering Plants

NAME	STATUS
Sonoma Sunshine <i>Blennosperma bakeri</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1260	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



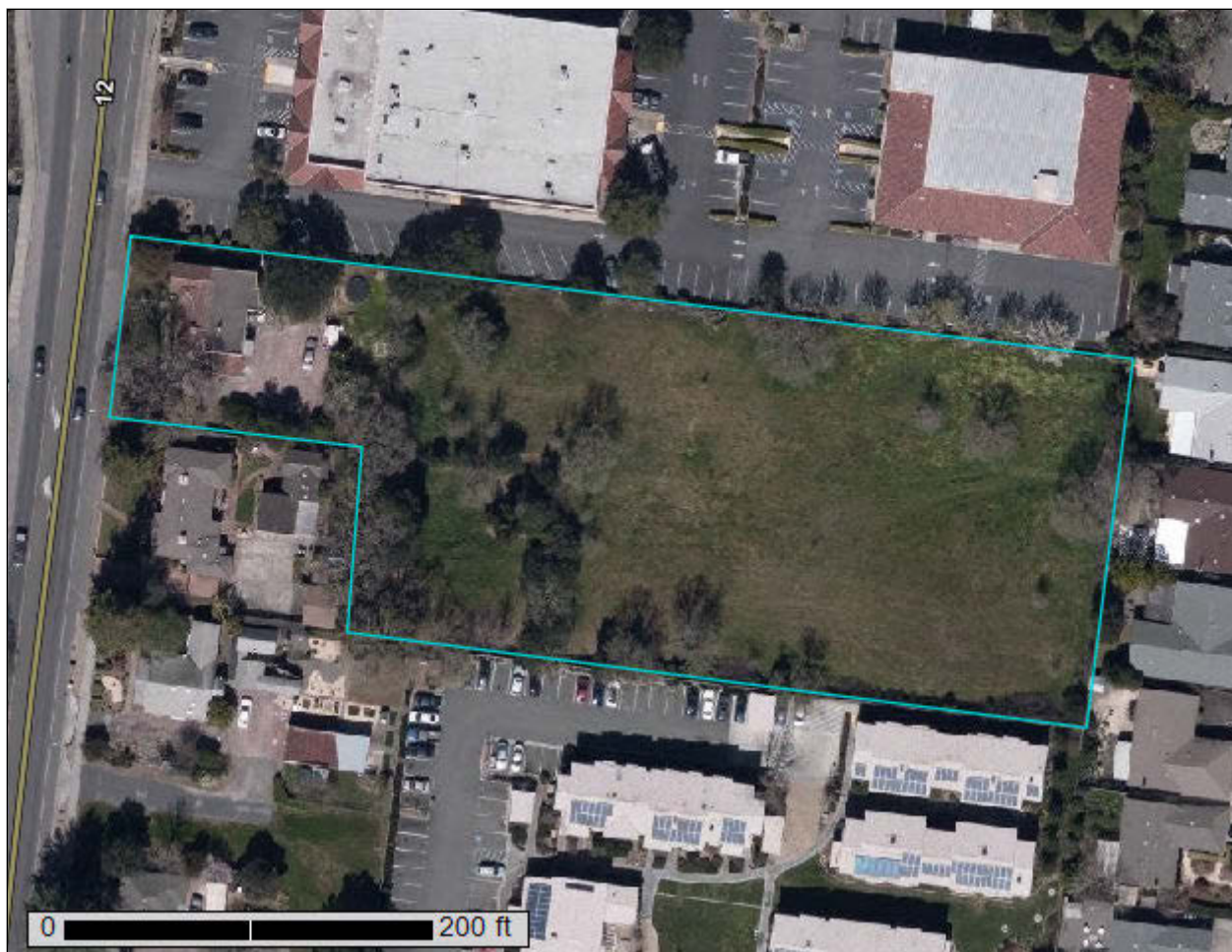
United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Sonoma County, California**



June 4, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map (DeNova Homes Housing Project).....	9
Legend.....	10
Map Unit Legend (DeNova Homes Housing Project).....	11
Map Unit Descriptions (DeNova Homes Housing Project).....	11
Sonoma County, California.....	13
TuC—Tuscan cobbly clay loam, 0 to 9 percent slopes.....	13
References	15

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map (DeNova Homes Housing Project)



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

Water Features

 Streams and Canals

Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sonoma County, California
Survey Area Data: Version 14, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 16, 2019—Apr 9, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (DeNova Homes Housing Project)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
TuC	Tuscan cobbly clay loam, 0 to 9 percent slopes	2.2	100.0%
Totals for Area of Interest		2.2	100.0%

Map Unit Descriptions (DeNova Homes Housing Project)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Sonoma County, California

TuC—Tuscan cobbly clay loam, 0 to 9 percent slopes

Map Unit Setting

National map unit symbol: hfkx

Elevation: 200 to 1,000 feet

Mean annual precipitation: 30 inches

Mean annual air temperature: 63 degrees F

Frost-free period: 225 to 250 days

Farmland classification: Not prime farmland

Map Unit Composition

Tuscan and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tuscan

Setting

Landform: Terraces

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Side slope

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Alluvium derived from basic igneous rock

Typical profile

H1 - 0 to 9 inches: cobbly clay loam

H2 - 9 to 17 inches: very gravelly clay

H3 - 17 to 21 inches: indurated

Properties and qualities

Slope: 0 to 9 percent

Depth to restrictive feature: 10 to 20 inches to duripan

Drainage class: Well drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water capacity: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: D

Ecological site: R015XD132CA - SHALLOW ROCKY

Hydric soil rating: No

Minor Components

Goulding

Percent of map unit: 4 percent

Hydric soil rating: No

Custom Soil Resource Report

Clough

Percent of map unit: 4 percent

Hydric soil rating: No

Diablo

Percent of map unit: 4 percent

Hydric soil rating: No

Clear lake

Percent of map unit: 3 percent

Landform: Depressions

Hydric soil rating: Yes

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelpdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

ATTACHMENT B

SITE PHOTOGRAPHS



PHOTO 1: Photo taken from the southwest corner of the site facing northeast, showing the residential home present on the property.



PHOTO 3: Photo taken from the northwest corner of the ruderal grassland habitat, facing southeast. Oaks are concentrated along the border of the site.



PHOTO 5: Photo taken from the southwest corner of the ruderal grassland habitat, facing in the northeast direction.



PHOTO 2: Photo taken from the middle of the western boundary of the ruderal grassland habitat, facing east.



PHOTO 4: Photo taken at the northeast corner of the ruderal grassland habitat, facing in the southwest direction.

ATTACHMENT C

LIST OF VASCULAR PLANTS OBSERVED

Attachment C: List of Vascular Plant Species Observed at DeNova Homes Housing Project on June 3, 2021.

Wetland Indicator Status were classified according to the *Arid West 2018 Regional Wetland Plant List* (Lichvar et al, 2018).

SCIENTIFIC NAME	COMMON NAME	FAMILY	ORIGIN	FORM	INDICATOR STATUS
<i>Ailanthus altissima</i>	Tree of heaven	Simaroubaceae	Non-native	Tree	FACU
<i>Arundo donax</i>	Giant reed grass	Poaceae	Non-native	Herb	FACW
<i>Avena fatua</i>	Wild oat	Poaceae	Non-native	Herb	NI
<i>Bromus diandrus</i>	Ripgut brome	Poaceae	Non-native	Herb	NI
<i>Bromus hordeaceus</i>	Soft brome	Poaceae	Non-native	Herb	FACU
<i>Convolvulus arvensis</i>	Field bindweed	Convolvulaceae	Non-native	Herb/vine	NI
<i>Eschscholzia californica</i>	California poppy	Papaveraceae	Native	Herb	NI
<i>Foeniculum vulgare</i>	Sweet fennel	Foeniculum	Non-native	Herb	NI
<i>Plantago lanceolata</i>	English plantain	Plantaginaceae	Non-native	Herb	FAC
<i>Quercus agrifolia</i>	Coast live oak	Fagaceae	Native	Tree	NI
<i>Quercus lobata</i>	Valley oak	Fagaceae	Native	Tree	FACU
<i>Raphanus sativus</i>	Wild radish	Brassicaceae	Non-native	Herb	NI
<i>Rubus armeniacus</i>	Himalayan blackberry	Rosaceae	Non-native	shrub	FAC
<i>Vicia sativa</i>	Common vetch	Fabaceae	Non-native	Herb	FACU
<i>Vinca major</i>	Vinca	Apocynaceae	Non-native	Herb	NI

Wetland Indicator Status (WIS)

OBL = Occurs in aquatic resources >99% of time
 FACW = Occurs in aquatic resources 67-99% of time
 FACU = Occurs in aquatic resources 34-66% of time
 UPL = Occurs in aquatic resources 1-33% of time
 NI = Indicator status not known In this region