
Memorandum

To: Ross Edwards
Caymus Builders
281 Second Street East
Sonoma, CA 95476

From: Benjamin Saragusa
WRA, Inc.
2169-G East Francisco Blvd.
San Rafael, CA 94901

Cc:

Date: June 30, 2017

Subject: Results of Rare Plant Surveys at 95 Brazil Street Parcels

The following summarizes the results of a rare plant survey conducted April 21, and June 20, 2017 within the proposed project on three parcels (APN 018-051-012, 018-091-018, 018-051-007) at 95 Brazil Street, Sonoma, Sonoma County, California (Project Area).

An early season survey was conducted on April 21, 2017 by Cara Witte. A late season survey was conducted on June 20, 2017 by Benjamin Saragusa. The Project Area is gently to moderately sloped, and elevations range from approximately 160 to 350 feet above sea level. The site is underlain by one soil type, a complex of equal parts Goulding series and Toomes series soils, which are both well-drained, non-hydric soils; derived from metavolcanics and igneous rocks, respectively¹. These soils underlay areas of open grassland and small patches of oak woodland, and isolated rock outcrops are common and frequent.

Currently, the Project Area consists of a mosaic of the three habitat types described above, with open grassland being the dominant. Three sites are proposed for one house each, to be built primarily in open grassland, with a design aim to avoid trees and rocky outcrops to the greatest extent feasible.

The grasslands are dominated by annual non-native, and often invasive grasses such as: slim oats (*Avena barbata*), wild oats (*Avena fatua*), rattlesnake grass (*Briza maxima*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), Italian rye grass (*Festuca perennis*), and foxtail barley (*Hordeum murinum*).

The rocky outcrops and small oak woodland patches support a mix of shrubs, herbs, and trees. Aside from the dominant oaks such as coast live oak (*Quercus agrifolia*) and blue oak (*Quercus douglasii*), other trees such as buckeye (*Aesculus californica*), and California bay (*Umbellularia californica*) are intermingled in the stands, creating a relatively-dense canopy, and decreasing the cover of understory plants. In these areas, it is common to see shrubs and herbs such as Italian thistle (*Carduus pycnocephalus* ssp. *pycnocephalus*), cleavers (*Galium aparine*), poison

¹ California Soil Resource Lab. 2017. SoilWeb: An Online Soil Survey Browser. University of California, Davis. Most recently accessed: June 2017.

oak (*Toxicodendron diversilobum*), sticky monkeyflower (*Mimulus aurantiacus*), and toyon (*Heteromeles arbutifolia*).

Rare Plant Survey

Background Literature Search

Prior to the first rare plant survey, Cara Witte conducted a database query of the California Natural Diversity Database (CNDDDB)² and the California Native Plant Society (CNPS) Electronic Inventory³ of the Sonoma 7.5-minute USGS quadrangle to assess special-status plant species that may have the potential to occur in the Project Area. Twenty-one special-status plant species have been documented from the Sonoma quadrangle. Based on pre-survey understanding of site habitats, seven species have moderate or high potential to occur in the Project Area including Franciscan onion (*Allium peninsulare* var. *franciscanum*, CNPS Rank 1B.2), Napa false indigo (*Amorpha californica* var. *napensis*, CNPS Rank 1B.2), big-scale balsamroot (*Balsamorhiza macrolepis*, CNPS Rank 1B.2), narrow-anthered Brodiaea (*Brodiaea leptandra*, CNPS Rank 1B.2), streamside daisy (*Erigeron biolettii*, CNPS Rank 3), green monardella (*Monardella viridis*, CNPS Rank 4.3), and dark-mouthed Tritoleia (*Triteleia lugens*, CNPS Rank 4.3).

Field Survey Method

Cara Witte and Benjamin Saragusa performed on-site special-status plant assessments and complete floristic surveys on April 21 and June 20, 2017, respectively. The field visits were timed in this manner to best align with the bloom period for the special-status species with potential to occur on the site. The WRA biologists traversed the entire Project Area, and recorded all observed plant species, which were identified with Jepson eFlora⁴, to a taxonomic level sufficient to determine rarity (Attachment A).

Site Assessment and Survey Results

Of the 21 special-status plant species identified in the database search, 14 are unlikely or have no potential to occur within the Project Area.

The absence of serpentine and sandy soil conditions, the absence of aquatic features such as vernal pools or wetlands, the prevalence of non-native, invasive annual or perennial grasses throughout the grassland areas, and the relatively low elevation of the Project Area does not provide suitable habitat for many of the special-status plant species identified as occurring within the greater regional vicinity of the Project Area. Several of the special-status plant species are unlikely or have no potential to occur within the Project Area because of one or more of the following reasons:

2 California Department of Fish and Wildlife (CDFW). 2017. California Natural Diversity Database (CNDDDB), Wildlife and Habitat Data Analysis Branch, Sacramento, CA. Accessed: April 2017

3 California Native Plant Society (CNPS). 2017. Electronic Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society, Sacramento, CA. Available at: <http://www.cnps.org/inventory>. Accessed: April 2017.

4 Jepson Flora Project (eds.). 2017. Jepson eFlora. Online at: <http://ucjeps.berkeley.edu/IJM.html>; accessed June 2017.

- Hydrologic conditions (e.g. mesic, vernal pool habitat) necessary to support the special-status plants do not exist on site;
- Edaphic (soil) conditions (e.g. serpentine, sandy) necessary to support the special-status plants do not exist on site;
- Topographic conditions (e.g. mountainous) necessary to support the special-status plants do not exist on site;
- Associated vegetation communities (e.g. montane coniferous forest) necessary to support the special-status plants do not exist on site.

No special-status plant species were observed within the Project Area. Seventy-eight plant species (not including some ornamental, landscape species) were observed within the Project Area, of which 42 are considered not native to California (Attachment A).

Summary and Recommendations

Two focused rare plant surveys were conducted on April 21 and June 20, 2017 within the Project Area to determine the absence or presence of Franciscan onion, Napa false indigo, big-scale balsamroot, narrow-anthered Brodiaea, streamside daisy, green monardella, and dark-mouthed Triteleia and assess the potential to support other special-status plant species. The survey resulted in negative findings for all special-status plant species. Additionally, the Project Area does not have the potential to support other special-status plant species. Therefore, Project activities will not impact special-status plant species.

Should you have any questions or concerns, please feel free to contact me.

Sincerely,

Benjamin Saragusa

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Attachment A – Plant Species Observed in the Project Area, April 21 and June 20, 2017

Scientific Name	Common Name	Origin	Form	CAL-IPC Status
<i>Acacia dealbata</i>	Silver wattle	non-native (invasive)	tree, shrub	Moderate
<i>Aesculus californica</i>	Buckeye	native	tree	-
<i>Arbutus menziesii</i>	Madrono	native	tree	-
<i>Artemisia californica</i>	Coastal sage brush	native	shrub	-
<i>Avena barbata</i>	Slim oat	non-native (invasive)	annual, perennial grass	Moderate
<i>Avena fatua</i>	Wildoats	non-native (invasive)	annual grass	Moderate
<i>Baccharis pilularis</i>	Coyote brush	native	shrub	-
<i>Bellardia trixago</i>	Mediterranean linseed	non-native	annual forb	Limited
<i>Briza maxima</i>	Rattlesnake grass	non-native (invasive)	annual grass	Limited
<i>Briza minor</i>	Little rattlesnake grass	non-native	annual grass	-
<i>Brodiaea elegans ssp. elegans</i>	Harvest brodiaea	native	perennial herb	-
<i>Bromus diandrus</i>	Ripgut brome	non-native (invasive)	annual grass	Moderate
<i>Bromus hordeaceus</i>	Soft chess	non-native (invasive)	annual grass	Limited
<i>Bromus sterilis</i>	Sterile brome	non-native	annual grass	-
<i>Calendula arvensis</i>	Field marigold	non-native	annual herb	-
<i>Carduus pycnocephalus ssp. pycnocephalus</i>	Italian thistle	non-native (invasive)	annual herb	Moderate
<i>Castilleja attenuata</i>	Narrow leaved owl's clover	native	annual herb	-
<i>Centaurea solstitialis</i>	Yellow starthistle	non-native (invasive)	annual herb	High
<i>Cerastium fontanum ssp. vulgare</i>	Common chickweed	non-native	perennial herb	-
<i>Chlorogalum pomeridianum var. divaricatum</i>	Soap plant	native	perennial herb	-
<i>Claytonia perfoliata</i>	Miner's lettuce	native	annual herb	-
<i>Convolvulus arvensis</i>	Field bindweed	non-native (invasive)	perennial herb, vine	-
<i>Croton setiger</i>	Turkey-mullein	native	perennial herb	-
<i>Cyperus eragrostis</i>	Tall cyperus	native	perennial grasslike herb	-
<i>Delphinium decorum</i>	Larkspur	native	perennial herb	-
<i>Dichelostemma capitatum</i>	Blue dicks	native	perennial herb	-
<i>Elaeagnus sp.</i>	-	-	-	-
<i>Elymus caput-medusae</i>	Medusa head	non-native	annual grass	-

Scientific Name	Common Name	Origin	Form	CAL-IPC Status
<i>Elymus sp.</i>	-	-	-	-
<i>Erodium cicutarium</i>	Coastal heron's bill	non-native (invasive)	annual herb	Limited
<i>Eschscholzia californica</i>	California poppy	native	annual, perennial herb	-
<i>Euphorbia peplus</i>	Petty spurge	non-native	annual herb	-
<i>Festuca myuros</i>	Rattail sixweeks grass	non-native (invasive)	annual grass	-
<i>Festuca perennis</i>	Italian rye grass	non-native	annual, perennial grass	-
<i>Frangula californica</i>	California coffeeberry	native	shrub	-
<i>Galium aparine</i>	Cleavers	native	annual herb	-
<i>Geranium dissectum</i>	Wild geranium	non-native (invasive)	annual herb	Limited
<i>Geranium molle</i>	Crane's bill geranium	non-native (invasive)	annual, perennial herb	-
<i>Hedera helix</i>	English ivy	non-native (invasive)	vine, shrub	-
<i>Helminthotheca echioides</i>	Bristly ox-tongue	non-native (invasive)	annual, perennial herb	Limited
<i>Heteromeles arbutifolia</i>	Toyon	native	shrub	-
<i>Holcus lanatus</i>	Common velvetgrass	non-native (invasive)	perennial grass	Moderate
<i>Hordeum marinum ssp. gussoneanum</i>	Barley	non-native (invasive)	annual grass	Moderate
<i>Hordeum murinum</i>	Foxtail barley	non-native (invasive)	annual grass	Moderate
<i>Hypochaeris glabra</i>	Smooth cats ear	non-native (invasive)	annual herb	Limited
<i>Hypochaeris radicata</i>	Hairy cats ear	non-native (invasive)	perennial herb	Moderate
<i>Juncus bufonius</i>	Common toad rush	native	annual grasslike herb	-
<i>Kickxia sp.</i>	-	-	-	-
<i>Lactuca serriola</i>	Prickly lettuce	non-native (invasive)	annual herb	-
<i>Lathyrus vestitus</i>	Common pacific pea	native	perennial herb	-
<i>Lysimachia arvensis</i>	Scarlet pimpernel	non-native	annual herb	-
<i>Lythrum sp.</i>	-	-	-	-
<i>Medicago arabica</i>	Spotted burclover	non-native	annual herb	-
<i>Mimulus aurantiacus</i>	Sticky monkeyflower	native	shrub	-
<i>Monardella villosa ssp. villosa</i>	Coyote mint	native	perennial herb	-
<i>Pellaea andromedifolia</i>	Coffee fern	native	fern	-

Scientific Name	Common Name	Origin	Form	CAL-IPC Status
<i>Petrorhagia prolifera</i>	Pink grass	non-native	annual herb	-
<i>Plantago erecta</i>	California plantain	native	annual herb	-
<i>Plantago lanceolata</i>	Ribwort	non-native (invasive)	perennial herb	Limited
<i>Quercus agrifolia</i>	Coast live oak	native	tree	-
<i>Quercus douglasii</i>	Blue oak	native	tree	-
<i>Ranunculus californicus</i>	Common buttercup	native	perennial herb	-
<i>Ranunculus muricatus</i>	Buttercup	non-native	annual, perennial herb	-
<i>Raphanus sativus</i>	Jointed charlock	non-native (invasive)	annual, biennial herb	Limited
<i>Rubus armeniacus</i>	Himalayan blackberry	non-native (invasive)	shrub	High
<i>Sanicula crassicaulis</i>	Pacific sanicle	native	perennial herb	-
<i>Stachys rigida</i>	Rough hedgenettle	native	perennial herb	-
<i>Stellaria media</i>	Chickweed	non-native	annual herb	-
<i>Stipa pulchra</i>	Purple needle grass	native	perennial grass	-
<i>Torilis arvensis</i>	Field hedge parsley	non-native (invasive)	annual herb	Moderate
<i>Toxicodendron diversilobum</i>	Poison oak	native	vine, shrub	-
<i>Trifolium dubium</i>	Shamrock	non-native	annual herb	-
<i>Trifolium hirtum</i>	Rose clover	non-native (invasive)	annual herb	Limited
<i>Trifolium subterraneum</i>	Subterranean clover	non-native	annual herb	-
<i>Trifolium tomentosum</i>	Woolly clover	non-native	annual herb	-
<i>Umbellularia californica</i>	California bay	native	tree	-
<i>Vicia hirsuta</i>	Hairy vetch	non-native	annual herb, vine	-
<i>Zeltnera venusta</i>	Charming centaury	native	annual herb	-