

## **Appendix B: Biological Resources Supporting Information**

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## Selected Elements by Scientific Name

### California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad</span> IS </span>(Healdsburg (3812257)</span> OR </span>Guerneville (3812258)</span> OR </span>Geyserville (3812268)</span> OR </span>Jintown (3812267)</span> OR </span>Mark West Springs (3812256)</span> OR </span>Santa Rosa (3812246)</span> OR </span>Sebastopol (3812247)</span> OR </span>Camp Meeker (3812248))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Accipiter cooperii</i></b> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<b><i>Agelaius tricolor</i></b> tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
<b><i>Alopecurus aequalis</i> var. <i>sonomensis</i></b> Sonoma alopecurus	PMPOA07012	Endangered	None	G5T1	S1	1B.1
<b><i>Ambystoma californiense</i> pop. 3</b> California tiger salamander - Sonoma County DPS	AAAAA01183	Endangered	Threatened	G2G3T2	S2	WL
<b><i>Amorpha californica</i> var. <i>napensis</i></b> Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
<b><i>Amsinckia lunaris</i></b> bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
<b><i>Andrena blennospermatis</i></b> Blennosperma vernal pool andrenid bee	IIHYM35030	None	None	G2	S2	
<b><i>Anomobryum julaceum</i></b> slender silver moss	NBMUS80010	None	None	G5?	S2	4.2
<b><i>Antrozous pallidus</i></b> pallid bat	AMACC10010	None	None	G4	S3	SSC
<b><i>Arboremus pomo</i></b> Sonoma tree vole	AMAFF23030	None	None	G3	S3	SSC
<b><i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i></b> Baker's manzanita	PDERI04221	None	Rare	G2T1	S1	1B.1
<b><i>Arctostaphylos bakeri</i> ssp. <i>sublaevis</i></b> Cedars manzanita	PDERI04222	None	Rare	G2T2	S2	1B.2
<b><i>Arctostaphylos densiflora</i></b> Vine Hill manzanita	PDERI040C0	None	Endangered	G1	S1	1B.1
<b><i>Arctostaphylos stanfordiana</i> ssp. <i>decumbens</i></b> Rincon Ridge manzanita	PDERI041G4	None	None	G3T1	S1	1B.1
<b><i>Ardea herodias</i></b> great blue heron	ABNGA04010	None	None	G5	S4	
<b><i>Astragalus claranus</i></b> Clara Hunt's milk-vetch	PDFAB0F240	Endangered	Endangered	G1	S1	1B.1
<b><i>Athene cunicularia</i></b> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<b><i>Balsamorhiza macrolepis</i></b> big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
<b><i>Blennosperma bakeri</i></b> Sonoma sunshine	PDAST1A010	Endangered	Endangered	G1	S1	1B.1



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California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Bombus caliginosus</i></b> obscure bumble bee	IIHYM24380	None	None	G2G3	S1S2	
<b><i>Bombus occidentalis</i></b> western bumble bee	IIHYM24250	None	None	G2G3	S1	
<b><i>Brodiaea leptandra</i></b> narrow-anthered brodiaea	PMLIL0C022	None	None	G3?	S3?	1B.2
<b><i>Calamagrostis crassiglumis</i></b> Thurber's reed grass	PMPOA17070	None	None	G3Q	S2	2B.1
<b><i>Calochortus raichei</i></b> Cedars fairy-lantern	PMLIL0D1L0	None	None	G2	S2	1B.2
<b><i>Calystegia collina ssp. oxyphylla</i></b> Mt. Saint Helena morning-glory	PDCON04032	None	None	G4T3	S3	4.2
<b><i>Campanula californica</i></b> swamp harebell	PDCAM02060	None	None	G3	S3	1B.2
<b><i>Carex comosa</i></b> bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
<b><i>Castilleja uliginosa</i></b> Pitkin Marsh paintbrush	PDSCR0D380	None	Endangered	GXQ	SX	1A
<b><i>Ceanothus confusus</i></b> Rincon Ridge ceanothus	PDRHA04220	None	None	G1	S1	1B.1
<b><i>Ceanothus divergens</i></b> Calistoga ceanothus	PDRHA04240	None	None	G2	S2	1B.2
<b><i>Ceanothus foliosus var. vineatus</i></b> Vine Hill ceanothus	PDRHA040D6	None	None	G3T1	S1	1B.1
<b><i>Ceanothus purpureus</i></b> holly-leaved ceanothus	PDRHA04160	None	None	G2	S2	1B.2
<b><i>Ceanothus sonomensis</i></b> Sonoma ceanothus	PDRHA04420	None	None	G2	S2	1B.2
<b><i>Centromadia parryi ssp. parryi</i></b> pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
<b><i>Chorizanthe valida</i></b> Sonoma spineflower	PDPGN040V0	Endangered	Endangered	G1	S1	1B.1
<b><i>Clarkia imbricata</i></b> Vine Hill clarkia	PDONA050K0	Endangered	Endangered	G1	S1	1B.1
<b><i>Coastal and Valley Freshwater Marsh</i></b> Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	G3	S2.1	
<b><i>Cordylanthus tenuis ssp. capillaris</i></b> Pennell's bird's-beak	PDSCR0J0S2	Endangered	Rare	G4G5T1	S1	1B.2
<b><i>Corynorhinus townsendii</i></b> Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
<b><i>Coturnicops noveboracensis</i></b> yellow rail	ABNME01010	None	None	G4	S1S2	SSC





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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Cryptantha dissita</i></b> serpentine cryptantha	PDBOR0A0H2	None	None	G3	S3	1B.2
<b><i>Cuscuta obtusiflora</i> var. <i>glandulosa</i></b> Peruvian dodder	PDCUS01111	None	None	G5T4?	SH	2B.2
<b><i>Delphinium bakeri</i></b> Baker's larkspur	PDRAN0B050	Endangered	Endangered	G1	S1	1B.1
<b><i>Delphinium luteum</i></b> golden larkspur	PDRAN0B0Z0	Endangered	Rare	G1	S1	1B.1
<b><i>Dicamptodon ensatus</i></b> California giant salamander	AAAAH01020	None	None	G2G3	S2S3	SSC
<b><i>Downingia pusilla</i></b> dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
<b><i>Dubiraphia giulianii</i></b> Giuliani's dubiraphian riffle beetle	IICOL5A020	None	None	G1G3	S1S3	
<b><i>Elanus leucurus</i></b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<b><i>Emys marmorata</i></b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b><i>Erethizon dorsatum</i></b> North American porcupine	AMAFJ01010	None	None	G5	S3	
<b><i>Erigeron greenei</i></b> Greene's narrow-leaved daisy	PDAST3M5G0	None	None	G3	S3	1B.2
<b><i>Erigeron serpentinus</i></b> serpentine daisy	PDAST3M5M0	None	None	G2	S2	1B.3
<b><i>Fritillaria liliacea</i></b> fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
<b><i>Gilia capitata</i> ssp. <i>tomentosa</i></b> woolly-headed gilia	PDPLM040B9	None	None	G5T2	S2	1B.1
<b><i>Gonidea angulata</i></b> western ridged mussel	IMBIV19010	None	None	G3	S1S2	
<b><i>Gratiola heterosepala</i></b> Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	G2	S2	1B.2
<b><i>Hemizonia congesta</i> ssp. <i>congesta</i></b> congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
<b><i>Hesperoleucus venustus navarroensis</i></b> northern coastal roach	AFCJB19031	None	None	GNRT3	S3	SSC
<b><i>Horkelia tenuiloba</i></b> thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2
<b><i>Hysterocarpus traskii</i> pomo</b> Russian River tule perch	AFCQK02011	None	None	G5T4	S4	SSC
<b><i>Kopsiopsis hookeri</i></b> small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Lasiurus blossevillei</i></b> western red bat	AMACC05060	None	None	G4	S3	SSC
<b><i>Lasiurus cinereus</i></b> hoary bat	AMACC05030	None	None	G3G4	S4	
<b><i>Lasthenia burkei</i></b> Burke's goldfields	PDAST5L010	Endangered	Endangered	G1	S1	1B.1
<b><i>Lasthenia californica ssp. bakeri</i></b> Baker's goldfields	PDAST5L0C4	None	None	G3T1	S1	1B.2
<b><i>Layia septentrionalis</i></b> Colusa layia	PDAST5N0F0	None	None	G2	S2	1B.2
<b><i>Legenere limosa</i></b> legenere	PDCAM0C010	None	None	G2	S2	1B.1
<b><i>Leptosiphon jepsonii</i></b> Jepson's leptosiphon	PDPLM09140	None	None	G2G3	S2S3	1B.2
<b><i>Lessingia arachnoidea</i></b> Crystal Springs lessingia	PDAST5S0C0	None	None	G2	S2	1B.2
<b><i>Lilium pardalinum ssp. pitkinense</i></b> Pitkin Marsh lily	PMLIL1A0H3	Endangered	Endangered	G5T1	S1	1B.1
<b><i>Limnanthes vinculans</i></b> Sebastopol meadowfoam	PDLIM02090	Endangered	Endangered	G1	S1	1B.1
<b><i>Lindleriella occidentalis</i></b> California lindleriella	ICBRA06010	None	None	G2G3	S2S3	
<b><i>Lupinus sericatus</i></b> Cobb Mountain lupine	PDFAB2B3J0	None	None	G2?	S2?	1B.2
<b><i>Microseris paludosa</i></b> marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
<b><i>Mylopharodon conocephalus</i></b> hardhead	AFCJB25010	None	None	G3	S3	SSC
<b><i>Myotis thysanodes</i></b> fringed myotis	AMACC01090	None	None	G4	S3	
<b><i>Navarretia leucocephala ssp. bakeri</i></b> Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
<b><i>Navarretia leucocephala ssp. plieantha</i></b> many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	G4T1	S1	1B.2
<b><i>Northern Hardpan Vernal Pool</i></b> Northern Hardpan Vernal Pool	CTT44110CA	None	None	G3	S3.1	
<b><i>Northern Vernal Pool</i></b> Northern Vernal Pool	CTT44100CA	None	None	G2	S2.1	
<b><i>Oncorhynchus kisutch pop. 4</i></b> coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G5T2Q	S2	
<b><i>Oncorhynchus mykiss irideus pop. 8</i></b> steelhead - central California coast DPS	AFCHA0209G	Threatened	None	G5T2T3Q	S2S3	



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Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Pandion haliaetus</i></b> osprey	ABNKC01010	None	None	G5	S4	WL
<b><i>Piperia candida</i></b> white-flowered rein orchid	PMORC1X050	None	None	G3	S3	1B.2
<b><i>Pleuropogon hooverianus</i></b> North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
<b><i>Rana boylei</i></b> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<b><i>Rana draytonii</i></b> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<b><i>Rhynchospora alba</i></b> white beaked-rush	PMCYP0N010	None	None	G5	S2	2B.2
<b><i>Rhynchospora californica</i></b> California beaked-rush	PMCYP0N060	None	None	G1	S1	1B.1
<b><i>Rhynchospora capitellata</i></b> brownish beaked-rush	PMCYP0N080	None	None	G5	S1	2B.2
<b><i>Rhynchospora globularis</i></b> round-headed beaked-rush	PMCYP0N0W0	None	None	G4	S1	2B.1
<b><i>Streptanthus brachiatus ssp. hoffmanii</i></b> Freed's jewelflower	PDBRA2G071	None	None	G2T2	S2	1B.2
<b><i>Streptanthus glandulosus ssp. hoffmanii</i></b> Hoffman's bristly jewelflower	PDBRA2G0J4	None	None	G4T2	S2	1B.3
<b><i>Syncaris pacifica</i></b> California freshwater shrimp	ICMAL27010	Endangered	Endangered	G2	S2	
<b><i>Taricha rivularis</i></b> red-bellied newt	AAAAF02020	None	None	G2	S2	SSC
<b><i>Taxidea taxus</i></b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b><i>Trifolium amoenum</i></b> two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
<b><i>Trifolium buckwestiorum</i></b> Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
<b><i>Trifolium hydrophilum</i></b> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<b><i>Triquetrella californica</i></b> coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
<b><i>Usnea longissima</i></b> Methuselah's beard lichen	NLLEC5P420	None	None	G4	S4	4.2
<b>Valley Needlegrass Grassland</b> Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
<b><i>Viburnum ellipticum</i></b> oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3





Record Count: 103







Search Results

20 matches found. Click on scientific name for details

Search Criteria: CRPR is one of [1A:1B:2A:2B] Fed List is one of [FE:FT:FC] or State List is one of [CE:CT:CR:CE:CT] , 9-Quad include [3812266:3812247:3812256:3812246:3812258:3812267:3812268:3812248:3812257]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
<a href="#">Alopecurus aequalis var. sonomensis</a>	Sonoma alopecurus	Poaceae	perennial herb	May-Jul	FE	None	G5T1	S1	1B.1	<div><div>© 2010 Robert Steers</div></div>
<a href="#">Arctostaphylos bakeri ssp. bakeri</a>	Baker's manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	None	CR	G2T1	S1	1B.1	<div><div>© 2004 David Graber</div></div>
<a href="#">Arctostaphylos bakeri ssp. sublaevis</a>	Cedars manzanita	Ericaceae	perennial evergreen shrub	Feb-May	None	CR	G2T2	S2	1B.2	<div><div>© 2012 John Game</div></div>
<a href="#">Arctostaphylos densiflora</a>	Vine Hill manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	None	CE	G1	S1	1B.1	<div><div>© 2006 Steve Matson</div></div>
<a href="#">Astragalus claranus</a>	Clara Hunt's milk-vetch	Fabaceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	No Photo Available
<a href="#">Blennosperma bakeri</a>	Sonoma sunshine	Asteraceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1	No Photo Available
<a href="#">Castilleja uliginosa</a>	Pitkin Marsh paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Jun-Jul	None	CE	GXQ	SX	1A	No Photo Available
<a href="#">Chorizanthe valida</a>	Sonoma spineflower	Polygonaceae	annual herb	Jun-Aug	FE	CE	G1	S1	1B.1	No Photo Available
<a href="#">Clarkia imbricata</a>	Vine Hill clarkia	Onagraceae	annual herb	Jun-Aug	FE	CE	G1	S1	1B.1	No Photo Available
<a href="#">Cordylanthus tenuis ssp. capillaris</a>	Pennell's bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	FE	CR	G4G5T1	S1	1B.2	No Photo Available
<a href="#">Delphinium bakeri</a>	Baker's larkspur	Ranunculaceae	perennial herb	Mar-May	FE	CE	G1	S1	1B.1	No Photo

											Available
<a href="#"><u>Delphinium luteum</u></a>	golden larkspur	Ranunculaceae	perennial herb	Mar-May	FE	CR	G1	S1	1B.1		No Photo Available
<a href="#"><u>Gratiola heterosepala</u></a>	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	None	CE	G2	S2	1B.2		©2004 Carol W. Witham
<a href="#"><u>Lasthenia burkei</u></a>	Burke's goldfields	Asteraceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1		© 2015 Neal Kramer
<a href="#"><u>Lilium pardalinum ssp. pitkinense</u></a>	Pitkin Marsh lily	Liliaceae	perennial bulbiferous herb	Jun-Jul	FE	CE	G5T1	S1	1B.1		© 2020 Jason Matthias Mills
<a href="#"><u>Limnanthes vinculans</u></a>	Sebastopol meadowfoam	Limnanthaceae	annual herb	Apr-May	FE	CE	G1	S1	1B.1		© 2015 Vernon Smith
<a href="#"><u>Navarretia leucocephala ssp. plieantha</u></a>	many-flowered navarretia	Polemoniaceae	annual herb	May-Jun	FE	CE	G4T1	S1	1B.2		No Photo Available
<a href="#"><u>Pleuropogon hooverianus</u></a>	North Coast semaphore grass	Poaceae	perennial rhizomatous herb	Apr-Jun	None	CT	G2	S2	1B.1		No Photo Available
<a href="#"><u>Sidalcea oregana ssp. valida</u></a>	Kenwood Marsh checkerbloom	Malvaceae	perennial rhizomatous herb	Jun-Sep	FE	CE	G5T1	S1	1B.1		No Photo Available
<a href="#"><u>Trifolium amoenum</u></a>	two-fork clover	Fabaceae	annual herb	Apr-Jun	FE	None	G1	S1	1B.1		No Photo Available

Showing 1 to 20 of 20 entries

Suggested Citation:

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CONTACT US

Send questions and comments to [rareplants@cnps.org](mailto:rareplants@cnps.org).

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**Bole & Associates**  
***An Environmental Consulting Firm***

March 18, 2021

Integrated Comity Development  
Attn: Mr. Justin Hardt, Senior Vice President  
20750 Ventura Boulevard, Suite 155  
Ventura, CA 91364

**BIOLOGICAL ASSESSMENT AND WETLAND DETERMINATION FOR THE  
SHILOH CRSSING PROJECT, APN 161-171-039, 295 SHILOH ROAD, WINDSOR,  
SONOMA COUNTY, CA 95492. B&A FILE 0216-2021-2045.**

## **1.0 INTRODUCTION**

During the time period February 26, 2021 to March 18, 2021, a NEPA/CEQA-level Biological Assessment and Wetland Determination was conducted on a  $\pm 5.92$ -acre property (Action Area) of vacant/undeveloped land located at 295 Shiloh Road, Windsor, Sonoma County, CA 95492. The Action Area is located on the U.S. Geological survey (USGS) Olivehurst 7.5-minute topographic quadrangle, Section 17, Township 14 North, Range 4 East. The center of the Action Area is approximately 38.526697N, -122.784890W. The terrain elevation within the Action Area is relatively flat, with an approximate elevation of 125 feet above mean sea level (msl). Currently the Action Area is fallow land. The site is adjoined to the north by a multiple-tenant business park development; to the east by single-family residences; to the south by undeveloped/agricultural land; and to the west by a gasoline station and a Home Depot.

## **2.0 METHODOLOGY**

Field surveys of biological resources included a reconnaissance-level inventory of plants and wildlife observed in the Action Area, habitat assessments for special status species, and a determination of wetland habitats within the Action Area. Biological and botanical surveys were conducted based on the California Department of Fish and Wildlife's (CDFW) Natural Diversity Database (CNDDB, March 2021), the United States Fish & Wildlife Service's (USFWS) IPaC Resource List, and the California Native Plant Society's (CNPS) list of rare and endangered plants. All species lists were derived from the United States Geological Survey (USGS) Healdsburg, Geyserville, Jintown, Mt. St. Helena, Guerneville, Mark West Springs, Camp Meeker, Sebastopol, and Santa Rosa 7.5-minute quadrangles, and Sonoma County. Based on the results of the species lists, appropriate biological and botanical surveys were conducted. Species habitat surveys were conducted during March 2021, by Bole & Associates (BA) senior wildlife biologist David H. Bole. The species habitat surveys were conducted by walking all areas of the Action Area (and surrounding 500 foot buffer) and evaluating potential habitat for special-status species based on vegetation composition and structure, surrounding area, presence of predatory species, microclimate and available resources (e.g. prey items, nesting burrows, etc.). A general botanical survey and habitat evaluation for rare plant botanical species was conducted during

March, 2021 by David H. Bole. The general botanical survey and habitat evaluation for rare plant botanical species was conducted by walking all areas of the Action Area while taking inventory of general botanical species and searching for special-status plant species and their habitats. A determination of Waters of the U.S. was also conducted on March 17, 2021 by David H. Bole and was conducted under the guidelines of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (2008).

## **2.1 Regulatory Requirements**

The following describes federal, state, and local environmental laws and policies that are relevant to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) review process.

### **Federal**

#### Federal Endangered Species Act

The United States Congress passed the Federal Endangered Species Act (ESA) in 1973 to protect species that are endangered or threatened with extinction. The ESA is intended to operate in conjunction with the National Environmental Policy Act (NEPA) to help protect the ecosystems upon which endangered and threatened species depend. The ESA makes it unlawful to “take” a listed animal without a permit. Take is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct”. Through regulations, the term “harm” is defined as “an act which actually kills or injures wildlife”. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

#### Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC §703) prohibits the killing of migratory birds or the destruction of their occupied nests and eggs except in accordance with regulations prescribed by the USFWS. The bird species covered by the MBTA includes nearly all of those that breed in North America, excluding introduced (i.e. exotic) species (50 Code of Federal Regulations §10.13). Activities that involve the removal of vegetation including trees, shrubs, grasses, and forbs or ground disturbance has the potential to affect bird species protected by the MBTA.

#### Waters of the United States, Clean Water Act, Section 404

The US Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged or fill material into jurisdictional waters of the United States, under the Clean Water Act (§404). The term “waters of the United States” is an encompassing term that includes “wetlands” and “other waters”. Wetlands have been defined for regulatory purposes as follows: “those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil



conditions (33 CFR 328.3, 40 CFR 230.3). Wetlands generally include swamps, marshes, bogs, and similar areas.” Other Waters of the United States (OWUS) are seasonal or perennial water bodies, including lakes, stream channels, drainages, ponds, and other surface water features, that exhibit an ordinary high-water mark but lack positive indicators for one or more of the three wetland parameters (i.e., hydrophytic vegetation, hydric soil, and wetland hydrology) (33 CFR 328.4). The USACE may issue either individual permits on a case-by-case basis or general permits on a program level. General permits are pre-authorized and are issued to cover similar activities that are expected to cause only minimal adverse environmental effects. Nationwide permits are general permits issued to cover particular fill activities. All nationwide permits have general conditions that must be met for permits issued for a particular project, as well as specific regional conditions that apply to each nationwide permit.

### Clean Water Act, Section 401

The Clean Water Act (§401) requires water quality certification and authorization for placement of dredged or fill material in wetlands and OWUS. In accordance with the Clean Water Act (§401), criteria for allowable discharges into surface waters have been developed by the State Water Resources Control Board, Division of Water Quality. The resulting requirements are used as criteria in granting National Pollutant Discharge Elimination System (NPDES) permits or waivers, which are obtained through the Regional Water Quality Control Board (RWQCB) per the Clean Water Act (§402). Any activity or facility that will discharge waste (such as soils from construction) into surface waters, or from which waste may be discharged, must obtain an NPDES permit or waiver from the RWQCB. The RWQCB evaluates an NPDES permit application to determine whether the proposed discharge is consistent with the adopted water quality objectives of the basin plan.

### **State of California**

#### California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the ESA, but pertains to state-listed endangered and threatened species. The CESA requires state agencies to consult with the CDFW when preparing documents to comply with the CEQA. The purpose is to ensure that the actions of the lead agency do not jeopardize the continued existence of a listed species or result in the destruction, or adverse modification of habitat essential to the continued existence of those species. In addition to formal listing under the federal and state endangered species acts, “species of special concern” receive consideration by CDFW. Species of special concern are those whose numbers, reproductive success, or habitat may be threatened.

#### California Fish and Wildlife Code

The California Fish and Game Code (CFWC) (§3503.5) states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes (hawks, eagles, and falcons) or Strigiformes (all owls except barn owls) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto”. Take includes the disturbance of an active nest resulting in the abandonment or loss of young. The CFWC (§3503) also states that “it is unlawful to take, possess, or needlessly destroy the nest

or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto”.

### Rare and Endangered Plants

The CNPS maintains a list of plant species native to California with low population numbers, limited distribution, or otherwise threatened with extinction. This information is published in the Inventory of Rare and Endangered Vascular Plants of California. Potential impacts to populations of CNPS-ranked plants receive consideration under CEQA review. The CNPS California Rare Plant Rank (CRPR) categorizes plants as the following:

- Rank 1A: Plants presumed extinct in California;
- Rank 1B: Plants rare, threatened, or endangered in California or elsewhere;
- Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere;
- Rank 3: Plants about which we need more information; and
- Rank 4: Plants of limited distribution.

The California Native Plant Protection Act (CFGF §1900-1913) prohibits the taking, possessing, or sale within the state of any plants with a state designation of rare, threatened, or endangered as defined by CDFW. An exception to this prohibition allows landowners, under specific circumstances, to take listed plant species, provided that the owners first notify CDFW and give the agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed. Fish and Wildlife Code §1913 exempts from the ‘take’ prohibition ‘the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, or other right of way”.

### California Environmental Quality Act Guidelines §15380

Although threatened and endangered species are protected by specific federal and state statutes, CEQA Guidelines §15380(d) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain specified criteria. These criteria have been modeled based on the definition in the ESA and the section of the CFGF dealing with rare, threatened, and endangered plants and animals. The CEQA Guidelines (§15380) allows a public agency to undertake a review to determine if a significant effect on species that have not yet been listed by either the USFWS or CDFW (e.g. candidate species, species of concern) would occur. Thus, CEQA provides an agency with the ability to protect a species from a project’s potential impacts until the respective government agencies have an opportunity to designate the species as protected, if warranted.

## **3.0 SETTING**

Regionally, the Action Area is located with the northern portion of Sonoma County, within the City of Windsor. The Action Area is located within the Russian River Valley where elevation averages approximately 100 feet above sea level. Mean annual precipitation is approximately 41 inches. Mean annual temperature ranges from 38 to 85 degrees Fahrenheit. The vegetative community descriptions and nomenclature described in this section generally follow the classification of “former agriculture land” and “non-native grassland.” The subject property

formerly was developed with a trucking company prior to 2005; the buildings were demolished in approximately 2006 and the site has remained undeveloped/vacant through to the present day.

## **4.0 RESULTS**

### **4.1 Description of the Existing Biological and Physical Conditions**

The Action Area is located northwest of the intersection of Shiloh Road and Business Park Court in the City of Windsor, Sonoma County, California. The following describes the biological and physical conditions within the property and within the surrounding area.

#### **4.1.1 Action Area**

The Action Area is a  $\pm 5.92$ -acre parcel of undeveloped land. Historically the site contained several warehouse buildings as part of an agricultural trucking facility. The buildings were all demolished in 2006 and the site has remained undeveloped/vacant land through to the present day. The site consists primarily of undeveloped/vacant land. The site contains an approximately 0.2-acre man-made storm water detention basin located along the eastern perimeter of the site, approximately 200 feet north of Shiloh Road. The site is located in a mixed residential/commercial corridor of Windsor and is adjoined to the north by a multiple-tenant business park development; to the east by single-family residences; to the south by undeveloped/agricultural land; and to the west by a gasoline station and a Home Depot.

#### **4.1.2 Physical & Biological Conditions**

Vegetation within the Action Area consists of a mix of non-native ruderal grasses and forbs. Trees on the Action Area are limited to cultivated ornamental varieties noted in the northwestern corner of the property and several willows noted in the man-made storm water detention basin.

##### **Non-Native Ruderal Grasses and Forbs**

The Action Area has been out of agricultural production for over thirty years. The area is fallow land. As such, the area has reverted to supporting only non-native grasses and forbs. Ruderal grasses and forbs are generally found throughout the Action Areas and are characteristic of former agricultural lands throughout the Sonoma County area. Ruderal grasses and forbs typically occur on soils consisting of fine-textured loams or clays that are somewhat poorly drained. This vegetation type is dominated by grasses including wild oats (*Avena fatua*), yellow star-thistle (*Centaurea solstitialis*), and weedy annuals and perennial forbs, primarily of Mediterranean origin, that have replaced native grasses as a result of past agricultural practices. Within the Action Area a sparse weedy flora is present consisting of wild oats, yellow-star thistle, filaree (*Erodium cicutarium*), field bindweed (*Convolvulus arvensis*), fiddle dock (*Rumex pulcher*), medusahead (*Taeniatherum caput-medusae*), Mediterranean barley (*Hordeum marinum*), radish (*Raphanus sativus*), Italian ryegrass (*Lolium multiflorum*), and trefoil (*Lotus corniculatus*) among others.

Native and introduced wildlife species are tolerant of human activities in former agricultural habitats. Such areas provide marginal habitat for local wildlife species. Common birds such as

the house finch (*Carpodacus mexicanus*), black phoebe (*Sayornis nigricans*), American robin (*Turdus migratorius*), and mourning dove (*Zenaida macroura*) were observed in the Action Area. Mammals such as raccoon (*Procyon lotor*), skunk (*Mephitis mephitis*), jackrabbit (*Lepus californicus*), and house mouse (*Mus musculus*) are common in ruderal grassland environments. The trees located on the property are not likely to support raptor nests. All trees were evaluated during a time when leaves were off the trees and nests would be readily evident, however no stick nests were observed within 500 feet of the Action Area.

## 4.2 Regional Species and Habitats of Concern

The following table is a list of species that have the potential to occur within the Action Area and is composed of special-status species within the Healdsburg, Geyserville, Jintown, Mt. St. Helena, Guerneville, Mark West Springs, Camp Meeker, Sebastopol, and Santa Rosa 7.5-minute quadrangles, and Sonoma County. Species lists reviewed, and which are incorporated in the following table, including the CDFW, USFWS, and CNDDDB species list for the Sonoma County area. Species that have the potential to occur within the Action Area are based on an evaluation of suitable habitat to support these species, CNDDDB occurrences within a five mile radius of the Action Area and observations made during biological surveys. Not all species listed within the following table have the potential to occur within the Action Area based on unsuitable habitat and/or lack of recorded observations within a five-mile radius of the Action Area.

**Table 1. Evaluation of Listed and Proposed Species Potentially Occurring or Known to Occur in the Shiloh Crossing Project Action Area**

Species	Federal (USFWS) Status <sup>1</sup>	State (CDFG)/CNPS Status <sup>1</sup>	Habitat/Flowering	Potential for Occurrence
<b>Plants</b>				
<i>Astragalus claranus</i> , Clara Hunt's milk-vetch	E	T/1B.1	Cismontane woodland, valley and foothill grassland, chaparral.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Blennosperma bakeri</i> , Sonoma sunshine	E	E/1B.1	Valley and foothill grassland, vernal poos, wetlands	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Chorizanthe valida</i> , Sonoma spineflower	E	E/1B.1	Coastal prairies in sandy soils.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Clarkia imbricata</i> , Vine Hill clarkia	E	E/1B.1	Chaparral, valley & foothill grassland on acidic, sandy soil	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i> , Pennell's bird's-beak	E	Rare/1B.2	Closed-cone coniferous forest, chaparral, in open or disturbed areas on serpentine within forest or chaparral.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Delphinium bakeri</i> , Baker's larkspur	E	Rare/1B.2	Broadleaved upland forest, coastal scrub, valley and foothill grassland. Only site	<b>None:</b> There is no suitable habitat within or near the

			occurs on NW-facing slope, on decomposed shale.	property, and none observed during onsite surveys.
<i>Delphinium luteum</i> , golden larkspur	E	Rare/1B.1	Chaparral, coastal prairie, coastal scrub; north-facing rocky slopes	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Lasthenia burkei</i> , Burke's goldfields	E	Rare/1B.1	Meadow & seep, vernal pools, wetlands; most often in vernal pools and swales	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i> , Pitkin Marsh lily	E	E	Cismontane woodland, meadows and seeps, marshes and swamps; saturated, sandy soils with grasses and shrubs.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Limnanthes vincularis</i> , Sebastopol meadowfoam	E	E	Meadows and seeps, vernal pools, valley and foothill grassland; swales, wet meadows and marshy areas in valley oak savanna; on poorly drained soils of clays and sandy loam	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> , Baker's navarretia	None	None/1B.1	Vernal pools, cismontane woodland, meadows and seeps.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i> , Marsh checkerbloom.	None	None/1B.2	Meadows and seeps, riparian forest, wet soil of streambanks.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<b>Birds</b>				
<i>Strix occidentalis caurina</i> , Northern spotted owl	Delisted	E	Ocean shore, lake margins & rivers for both nesting and wintering, most nests within 1 mile of water.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<b>Amphibians and Reptiles</b>				
<i>Ambystoma californiense</i> , California salamander	T	T	Cismontane woodland, meadow & seep, riparian woodland, valley and foothill grassland, vernal pool; need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<i>Chelonia mydas</i> , Green sea turtle	T	None	Marine environments, marine bays	<b>None:</b> The subject property is located inland; no marine habitats present on the subject property.
<i>Rana draytonii</i> , California red-legged frog.	T	None/SCS	Lowlands & foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation.	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<b>Invertebrates</b>				

<i>Syncaris pacifica</i> , California freshwater shrimp	E	E	Low gradient streams where riparian cover is moderate to heavy; shallow pools away from main streamflow	<b>None:</b> There is no suitable habitat within or near the property, and none observed during onsite surveys.
<b>Mammals-none</b>				
<p>(1) Legal Status Codes:</p> <p>E = Federally or State listed as endangered  T = Federally or State listed as threatened  SCS = Federal or State special concern species  C = Candidate species for future listing as endangered or threatened  -- = No designation  1A = Plants presumed extinct in California  1B = CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere  2 = CNPS List 2: Plants rare, threatened or endangered in California, but more common elsewhere  3 = CNPS List 3: Plants about which we need more information – a review list</p> <p><b>SOURCES:</b>  CNPS. 2001. Inventory of Rare and Endangered Plants of California (sixth edition). David Tibor editor. California Native Plant Society. Sacramento, CA. California Natural Diversity Database (CNDDB) Rare Find program. Information dated May 1, 2016.</p>				

**Table 2. Impacts and Recommended Avoidance/Minimization Measures**

Target Species/ Communities	Impacts	Avoidance/ Minimization/ Mitigation Measures
<b>Natural Communities</b>	<b>None</b>	There are no natural communities within the Action Area. The entire Action Area consists of disturbed ruderal grasses and forbs. Plant surveys were conducted in early spring will all plants of concern would be easily identified.
<b>Special Status Avian Species</b>	<b>None</b>	There are no special status/avian species within the Action Area; the small number of ornamental trees present on site do not provide adequate nesting habitat for the Northern spotted owl or other species of concern.

## 5.0 RESULTS: PERMITS AND TECHNICAL STUDIES FOR SPECIAL LAWS OR CONDITIONS

### 5.1 Federal Endangered Species Act Consultation Summary

The USFWS was contacted during February, 2021, for a list of endangered, threatened, sensitive and rare species, and their habitats within the Action Area. The list was derived from special-status species that occur or have the potential to occur within the USGS Healdsburg 7.5" Quadrangle and Sonoma County. The list was referenced to determine appropriate biological and botanical surveys and potential species occurrence within the Action Area.

### 5.2 Federal Fisheries and Essential Fish Habitat Consultation Summary

Essential fish habitat (EFH) means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (*Magnuson-Stevens Fishery Conservation and Management Act (MSA)* §3). There is no habitat within the Action Area that provides "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity," or

special-status fish species managed under a fishery council (i.e. chinook and Coho). Therefore there is no EFH or the need for federal fisheries consultation.

### **5.3 California Endangered Species Act Consultation Summary**

The CDFW was consulted during February and March, 2021, for a list of endangered, threatened, sensitive and rare species, and their habitats within the Action Area. The list was derived from special-status species that occur or have the potential to occur within the USGS Healdsburg 7.5" Quadrangle and Sonoma County. The list was referenced to determine appropriate biological and botanical surveys and potential species occurrence within the Action Area.

### **5.4 Wetlands and Others Water Coordination Summary**

BA conducted a determination of Waters of the U.S. within the Action Area. Surveys were conducted during March, 2021 by BA's David H. Bole. The surveys involved an examination of botanical resources, soils, hydrological features, and determination of wetland characteristics based on the *United States Army Corps of Engineers Wetlands Delineation Manual (1987)*; the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (2008)*; the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook (2007)*; the *U.S. Army Corps of Engineers Ordinary High Flows and the Stage-Discharge Relationship in the Arid West Region (2011)*; and the *U.S. Army Corps of Engineers Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (2008)*.

### **5.5 Determination of Waters of the United States**

The intent of this determination is to identify wetlands and “Other Waters of the United States” that are present within the Action Area that could fall under the regulatory jurisdiction of the U. S. Army Corps of Engineers (Corps) pursuant to Section 404 of the Clean Water Act. The *1987 Corps of Engineers Wetlands Delineation Manual* identifies several methodologies and combinations of methodologies that can be utilized in making jurisdictional determinations. Marcus H. Bole & Associates has employed the Routine On-Site Determination methodology for this study (as supplemented by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region*, dated September 2008). The Routine On-Site Determination method uses a three-parameter approach (vegetation, soils and hydrology) to identify and delineate the boundaries of jurisdictional wetlands. To be considered a wetland, all three positive wetland parameters must be present. These parameters include (1) a dominance of wetland vegetation, (2) a presence of hydric soils, and (3) hydrologic conditions that result in periods of inundation or saturation on the surface from flooding or ponding. Further description of these parameters is provided below:

1) Vegetation. Wetland vegetation includes those plants that possess physiological traits that allow them to grow and persist in soils subject to inundation and anaerobic soil conditions. Plant species are classified according to their probability of being associated with wetlands. Obligate (OBL) wetland plant species almost always occur in wetlands (more than 99 percent of the time), facultative wetland (FACW) plant species occur in wetlands most of the time (67 to 99 percent),

and facultative (FAC) plant species have about an equal chance (33 to 66 percent) of occurring in wetlands as in uplands. For this study, vegetation was considered to meet the vegetation criteria if more than 50% of the vegetative cover was FAC or wetter. No wetland habitats were identified on or near the Action Area.

2) Hydric Soils. Hydric soils are saturated, flooded, or ponded in the upper stratum long enough during the growing season to develop anaerobic conditions and favor the growth of wetland plants. Hydric soils include gleyed soils (soils with gray colors), or usually display indicators such as low chroma values, redoximorphic features, iron, or manganese concretions, or a combination of these indicators. Low chroma values are generally defined as having a value of 2 or less using the Munsell Soil Notations (Munsell, 1994). For this study a soil was considered to meet the hydric soil criteria for color if it had a chroma value of one or a chroma of two with redoximorphic features, or if the soil exhibited iron or manganese concretions. Redoximorphic features (commonly referred to as mottles) are areas in the soils that have brighter (higher chroma) or grayer (lower chroma) colors than the soil matrix. Redoximorphic features are the result of the oxidation and reduction process that occurs under anaerobic conditions. Iron and manganese concretions form during the oxidation-reduction process, when iron and manganese in suspension are sometimes segregated as oxides into concretions or soft masses. These accumulations are usually black or dark brown. Concretions 2 mm in diameter occurring within 7.5 cm of the surface are evidence that the soil is saturated for long periods near the surface. Onsite soils were identified as Huichica loam, 0 to 5% slopes. These are not “hydric” soils and no indication of hydric soil conditions were observed within or near the Action Area.

3) Hydrology. Wetlands by definition are seasonally inundated or saturated at or near the surface. In order for an area to have wetland hydrology, it has to be inundated or saturated for 5% of the growing season (approximately 12 days) (USDA, 1967). Indicators include visual soil saturation, flooding, watermarks, drainage patterns, encrusted sediment and plant deposits, cryptogammic lichens, and algal mats. There are no natural hydrological features within the Action Area; a man-made storm water detention basin was noted along the eastern perimeter of the site. This feature is not considered a regulatory wetland feature.

## **Wetland Determination Results**

Using the methodologies described in the *1987 Wetland Delineation Manual*, Marcus H. Bole & Associates found no evidence of seasonal or perennial wetland habitats within the Action Area.

## **6.0 CONCLUSIONS AND RECOMMENDATIONS**

According to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) guidelines, a project is normally considered to have a significant impact on wildlife if it will interfere substantially with the movement of any resident or migratory fish or wildlife species; or substantially diminishes habitat quantity or quality for dependent wildlife and plant species. Impacts to special status species and their associated habitats are also considered significant if the impact would reduce or adversely modify a habitat of recognized value to a sensitive wildlife species or to an individual of such species. This guideline applies even to those species not formally listed as threatened, rare or endangered by the California Department of Fish & Wildlife and the United States Fish and Wildlife Service. Project implementation will



not result in impacts to resident or migratory wildlife, special status plant or wildlife species, or any associated protected habitat.

This concludes our Biological Assessment and Wetland Determination of the ±5.92-acre Action Area of former agricultural land located at 295 Shiloh Road, Winsor, Sonoma County, California. The Action Area is located on the U.S. Geological survey (USGS) Healdsburg 7.5-minute topographic quadrangle, Section 19, Township 8 North, Range 8 East. If you have any questions concerning our findings or recommendations please feel free to contact me directly at: Bole & Associates, Attn: David Bole, 6898 Penny Way, Browns Valley, CA 95918, phone 530-415-6623, fax 530-633-0119, email: davidhbole@yahoo.com.

Respectfully Submitted:



David H. Bole  
Senior Wildlife Biologist  
Bole & Associates

#### **LIST OF ATTACHMENTS:**

##### **APPENDIX A: MAPS & PHOTO PLATE**

##### **APPENDIX B: CNDDDB & IPaC DATABASES**

##### **APPENDIX C: SOIL DATA**

#### **7.0 REFERENCES**

Barbour, Michael G., and Jack Major. 1995. *Terrestrial Vegetation of California*. California Native Plant Society, University of California, Davis.

California Department of Fish and Game. 1992. Draft five year status report.  
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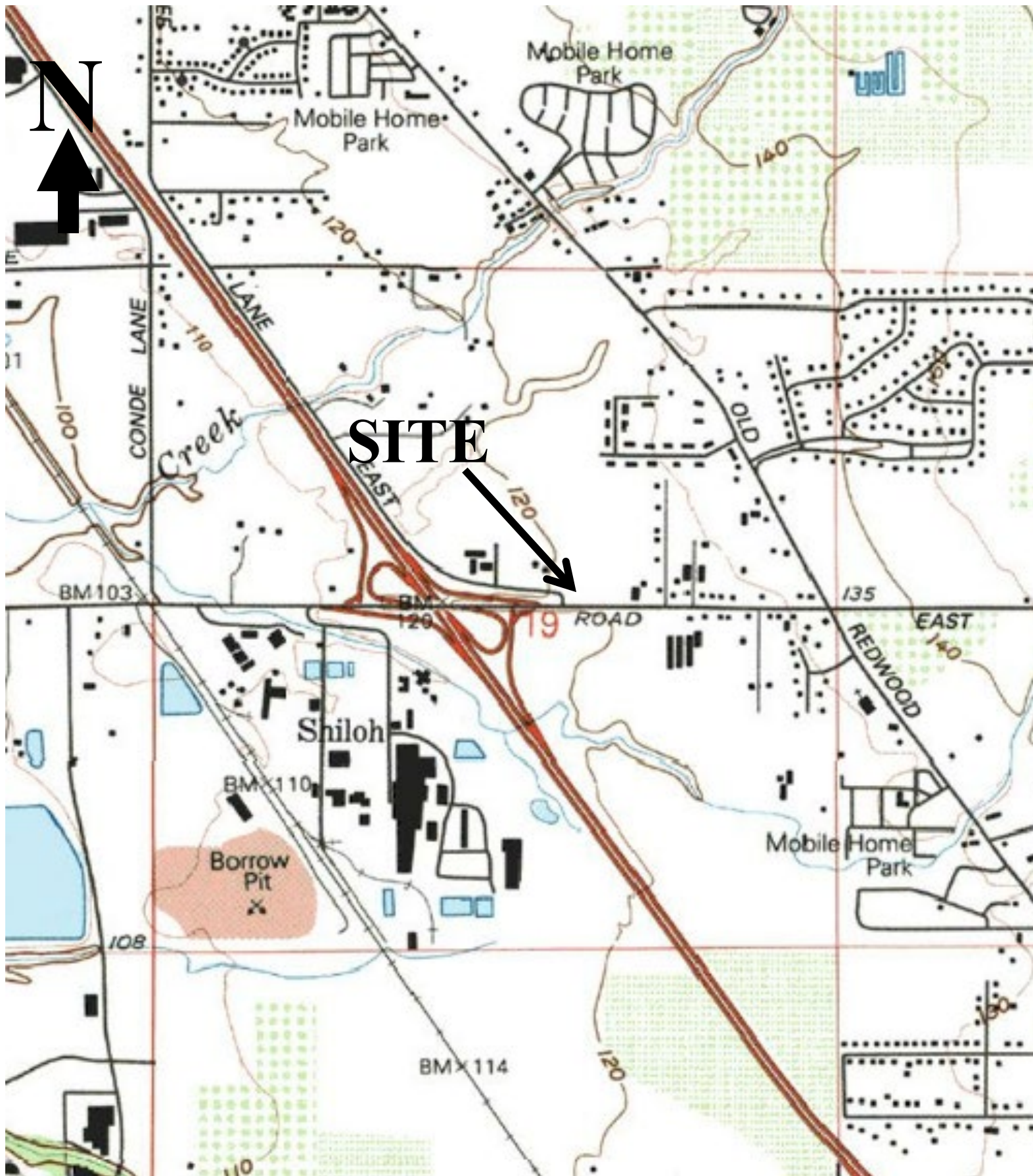
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**ENCLOSURE A: MAPS AND PHOTO PLATE**



**Site Location Map:** APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. Section 19, Township 8 North, Range 8 West, Healdsburg (1993) USGS Quadrangle.

**Figure 1**





**VicinityMap:** APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. Site is shown surrounded by a multiple-tenant business park, single-family residences, undeveloped/agricultural land, a gasoline station, and a Home Depot.

**Figure 2**





Storm water  
detention basin

Site of former  
Agricultural buildings



## BOLE & ASSOCIATES

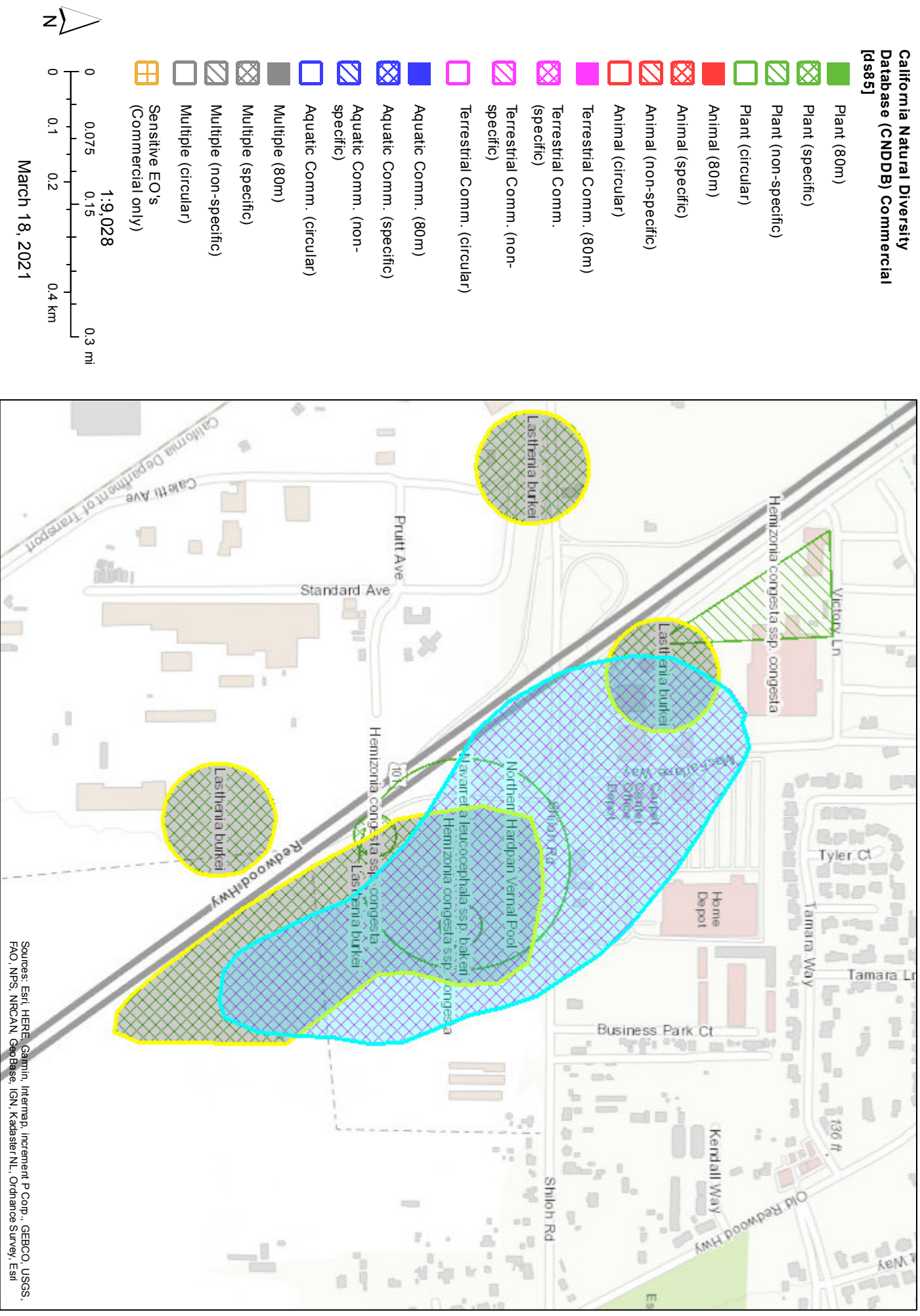
6898 Penny Way, Browns Valley, CA 95918  
(530) 415-6623, email: davidhbole@yahoo.com

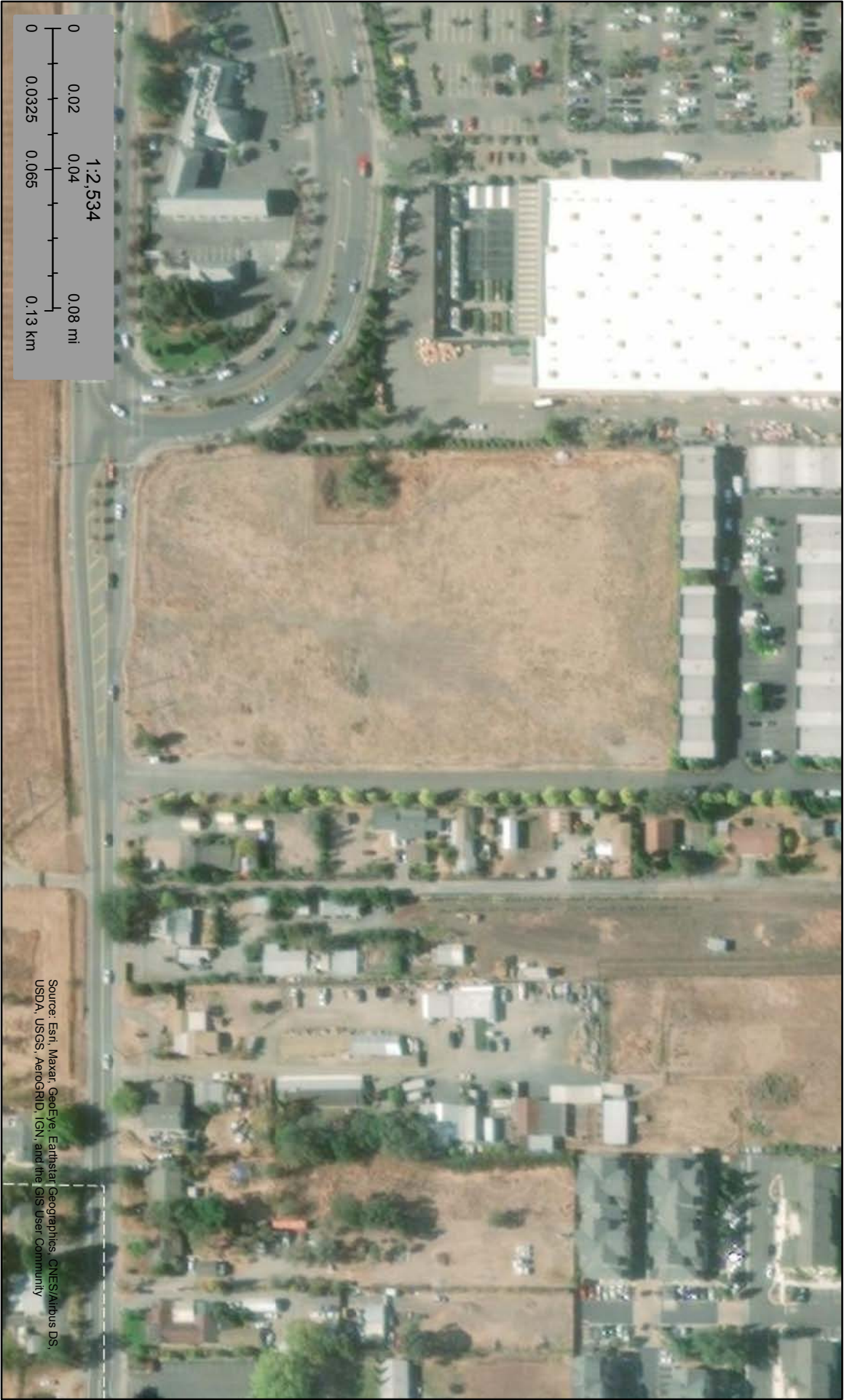
SITE: 295 SHILOH WAY, WINDSOR, CA 95492  
ITEM: SITE MAP- AERIAL OVERLAY

FIGURE 3



## Map of Project Area





March 18, 2021

**Wetlands**

- |  |                                |  |                                   |  |          |
|--|--------------------------------|--|-----------------------------------|--|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland       |  | Lake     |
|  | Estuarine and Marine Wetland   |  | Freshwater Forested/Shrub Wetland |  | Other    |
|  |                                |  | Freshwater Pond                   |  | Riverine |

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.





**View from SEC looking north**



**View from SWC looking east**



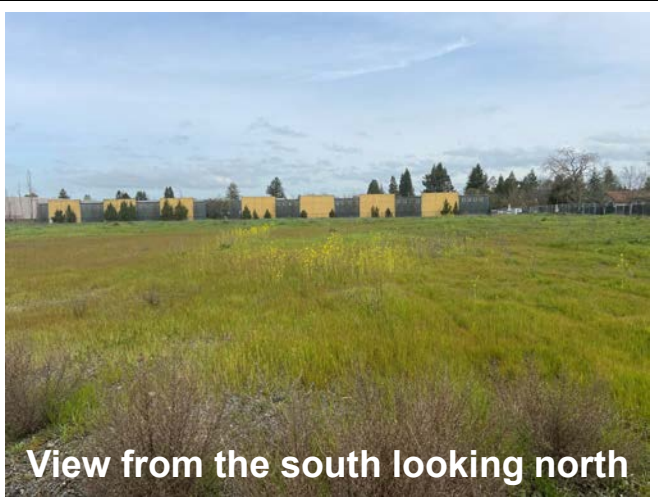
**Storm water detention basin**



**View from the north looking south**



**View from NEC looking west**



**View from the south looking north**

**BOLE & ASSOCIATES**  
6898 Penny Way, Browns Valley, CA 95918  
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**SITE: 295 SHILOH ROAD, WINDSOR, CA**  
**ITEM: SITE PHOTOS**  
**DATE: 3/17/2021** **PLATE: 1**

## **ENCLOSURE B: CNDDB AND IPaC DATABASES**



## Summary Table Report

### California Department of Fish and Wildlife

#### California Natural Diversity Database



#### Query Criteria:

Quads> IS </span>(Geyserville (3812268)> OR </span>Jintown (3812267)> OR </span>Mount St. Helena (3812266)> OR </span>Guerneville (3812256)> OR </span>Healdsburg (3812257)> OR </span>Mark West Springs (3812256)> OR </span>Camp Meeker (3812248)> OR </span>Sebastopol (3812247)> OR </span>Santa Rosa (3812246)> OR </span>Federal Listing Status> IS </span>(Endangered> OR </span>Threatened> OR </span>Proposed Endangered> OR </span>Candidate Threatened> OR </span>State Listing Status> IS </span>(Endangered> OR </span>Threatened> OR </span>Candidate Threatened> OR </span>Candidate Threatened)

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EOs	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extrap.	Extrap.
<b>Ambystoma californiense</b> California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW WL-Watch List IUCN_VU-Vulnerable	80 135	1336 S:53	7	18	13	4	1	10	2	51	52	1	0
<b>Astragalus claranus</b> Clara Hunt's milk-vetch	G1 S1	Endangered Threatened	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	770 1,165	6 S:2	0	1	0	0	0	1	0	2	2	0	0
<b>Blennosperma bakeri</b> Sonoma sunshine	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	70 140	24 S:16	0	6	3	1	3	3	5	11	13	2	1
<b>Chorizanthe valida</b> Sonoma spinnelower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	150 150	6 S:1	0	0	0	0	1	0	1	0	0	1	0
<b>Clarkia imbricata</b> Vine Hill clarkia	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	230 232	2 S:2	0	1	1	0	0	0	1	1	2	0	0
<b>Cordylanthus tenuis ssp. capillaris</b> Pennell's bird's-beak	G4G5T1 S1	Endangered Rare	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	300 700	4 S:4	0	3	0	0	0	1	1	3	4	0	0
<b>Delphinium bakeri</b> Baker's larkspur	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley	670 670	6 S:1	0	0	0	0	1	0	1	0	0	0	1



## Summary Table Report

### California Department of Fish and Wildlife

### California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extrp.	Extrp.
<b><i>Delphinium luteum</i></b> golden larkspur	G1 S1	Endangered Rare	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley		11 S:1	0	0	0	0	1	0	1	0	0	1	0
<b><i>Lasthenia burkei</i></b> Burke's goldfields	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	50 442	35 S:27	3	9	7	1	3	4	10	17	24	1	2
<b><i>Lilium pardalinum ssp. pikinense</i></b> Pikin Marsh lily	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_Berry/SB-Berry Seed Bank SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	150 200	4 S:2	0	1	0	0	0	1	2	0	2	0	0
<b><i>Limnanthes vinculans</i></b> Sebastopol meadowfoam	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	50 380	45 S:35	2	6	5	2	6	14	15	20	29	5	1
<b><i>Navarretia leucocephala ssp. pleantha</i></b> many-flowered navarretia	G4T1 S1	Endangered Endangered	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	110 850	8 S:2	0	2	0	0	0	0	1	1	2	0	0
<b><i>Oncorhynchus kisutch pop. 4</i></b> coho salmon - central California coast ESU	G5T2T3Q S2	Endangered Endangered	AFS_EN-Endangered	70 445	23 S:8	0	1	1	0	0	6	1	7	8	0	0
<b><i>Sidalcea oregana ssp. valida</i></b> Kenwood Marsh checkerbloom	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	380 380	2 S:1	0	0	1	0	0	0	1	0	1	0	0



## Summary Table Report

### California Department of Fish and Wildlife

#### California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b><i>Syncaris pacifica</i></b> California freshwater shrimp	G2 S2	Endangered Endangered	IUCN_EN-Endangered	80 540	20 S:4	0	4	0	0	0	0	1	3	4	0	0





## 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:  
Consultation Code: 08ESMF00-2021-SLI-1320  
Event Code: 08ESMF00-2021-E-03793  
Project Name: 295 Shiloh Road Development Project

February 26, 2021

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

<http://>

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

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## Project Summary

Consultation Code: 08ESMF00-2021-SLI-1320

Event Code: 08ESMF00-2021-E-03793

Project Name: 295 Shiloh Road Development Project

Project Type: DEVELOPMENT

Project Description: This project will involve the development of the project into residential housing.

Project Location:

Approximate location of the project can be viewed in Google Maps: [https://](https://www.google.com/maps/@38.5266942,-122.78487919162012,14z)

[www.google.com/maps/@38.5266942,-122.78487919162012,14z](https://www.google.com/maps/@38.5266942,-122.78487919162012,14z)



Counties: Sonoma County, California

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## Endangered Species Act Species

There is a total of 9 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 Fisheries<sup>1</sup>, 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.

### Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/1123">https://ecos.fws.gov/ecp/species/1123</a>	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: <a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>	Threatened

### Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (CA - Sonoma County) There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a>	Endangered

## Crustaceans

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

## Flowering Plants

NAME	STATUS
Burke's Goldfields <i>Lasthenia burkei</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4338">https://ecos.fws.gov/ecp/species/4338</a>	Endangered
Many-flowered Navarretia <i>Navarretia leucocephala ssp. plieantha</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/2491">https://ecos.fws.gov/ecp/species/2491</a>	Endangered
Sebastopol Meadowfoam <i>Limnanthes vinculans</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/404">https://ecos.fws.gov/ecp/species/404</a>	Endangered
Sonoma Sunshine <i>Blennosperma bakeri</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1260">https://ecos.fws.gov/ecp/species/1260</a>	Endangered

## Critical habitats



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

## **ENCLOSURE C: SOIL DATA**

Soil Map—Sonoma County, California  
(295 Shiloh Road Soils Map)



## MAP LEGEND

<b>Area of Interest (AOI)</b>		<b>Area of Interest (AOI)</b>		Spoil Area
<b>Soils</b>			Stony Spot	
			Very Stony Spot	
			Wet Spot	
			Other	
<b>Special Point Features</b>			Special Line Features	
			<b>Water Features</b>	
			Streams and Canals	
			<b>Transportation</b>	
			Rails	
			Interstate Highways	
			US Routes	
			Major Roads	
			Local Roads	
			<b>Background</b>	
			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: Jun 1, 2020—Oct 30, 2020

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HtA	Huichica loam, 0 to 2 percent slopes	4.9	89.2%
HwB	Huichica loam, shallow, ponded, 0 to 5 percent slopes	0.6	10.8%
<b>Totals for Area of Interest</b>		<b>5.5</b>	<b>100.0%</b>





**Bole & Associates**  
***An Environmental Consulting Firm***

March 18, 2022

Integrated Community Development  
Attn: Mr. Justin Hardt, Senior Vice President  
20750 Ventura Boulevard, Suite 155  
Ventura, CA 91364

**UPDATE MEMO FOR RECORD: EARLY SPRING BONTANICAL SURVEY FOR THE SHILOH CROSSING PROJECT, APN 163-171-039, 295 SHILOH ROAD, WINDSOR, SONOMA COUNTY, CA 95492. B&A FILE 0216-2021-2045.**

**1.0 INTRODUCTION**

On behalf of the Integrated Community Development Corporation, Bole & Associates (B&A) conducted a third botanical survey of the 5.92-acre Shiloh Crossing Project Study Area (Study Area), located at 295 Shiloh Road, Windsor, Sonoma County, CA 95492. This letter format report updates our previously submitted *Update: Biological Assessment and Wetland Determination* dated December 26, 2021. Initial botanical surveys were conducted during March and July of 2021. March 2022 surveys were conducted to capture the early blooming cycles for all plant species of concern. Reference sites were visited to confirm several special status plant species in bloom. However, it was too early in the blooming cycle for Burke's goldfields (*Lasthenia burkei*), Sebastopol meadowfoam (*Limnanthes vinculans*), or Sonoma sunshine (*Blennosperma bakeri*) (464 Horn Avenue Preserve, Alton Conservation Area, Hall property off Sanders Road in Windsor). Onsite surveys will be repeated in the late April, early May, 2022 time period.

**1.1 Study Area and Project Area Location**

The Study Area (property) is located within the "Healdsburg, California" 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1993). The approximate center of the Study Area is located at latitude 38.526697N and longitude -122.784890W (NAD27) within the Town of Windsor, Sonoma County, California, Hydrologic Unit 18010110. The terrain elevation within the Study Area is approximately 125 feet above mean sea level (msl).

**1.2 Purpose of this Botanical Survey**

The purpose of this botanical survey was to work towards completion of protocol botanical evaluations in accordance with the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain*, USFWS, and the CDFW *Protocols for surveying and evaluating impacts to special status native plant populations and sensitive natural communities*. March 20, 2018.



### **1.3 Project Description**

Shiloh Crossing is a 173 unit mixed income housing project. Shiloh Crossing fulfills the goals of the Shiloh Road Vision Plan by developing an infill site along Shiloh Road into a LEED Certified, high density, mixed use development.

### **2.0 Site Characteristics and Land Use**

The Study Area is situated at an elevation of approximately 125 feet above mean sea level (MSL) in Sonoma County, California. The Study Area is located in the Town of Windsor city limits, bordered on the south by Shiloh Road, on the east by residential properties, on the north by the Shiloh Business Center and Industrial Park businesses, and on the west by Industrial Park businesses (Home Depot). Along the western boundary of the Study Area is a 0.10-acre detention basin that serves the Industrial Park businesses to the west. The detention basin supports a sparse amount of wetland plant species and was inundated with approximately six inches of water during onsite surveys during March of 2022. Vegetation within the Study Area consists of disturbed non-native grasses and forbs (see Enclosure A).

### **3.0 Soils**

According to the *Web Soil Survey* (Natural Resources Conservation Service [NRCS] 2022), one soil type dominates the Study Area (*Natural Resources Conservation Service Soil Types*): Huichica loam, 0 to 2 percent slopes. The Huichica series consists of moderately well drained and somewhat poorly drained loams that have a clay subsoil. Onsite soils are significantly disturbed with a large area of the site being characterized as cut-and-fill. A rural residence & outbuildings with an extensive amount of gravel access driveways was removed from the property in approximately 2007. The property was disked with a significant amount of the gravel driveway being mixed with native soils. The property was subsequently planted in alfalfa and eventually reverted to ruderal non-native grasses and forbs. The result was a highly disturbed upper soil matrix with a mix of gravel and cobbles (see Enclosure B, Photo Plates).

### **4.0 Results**

#### **4.1 Non-Native Grasslands**

The non-native grasslands have been inventoried (see Enclosure A). No state or federal listed plant species or CNDDDB sensitive plant species were identified on site. Surveys will be repeated in the late April to early May 2022 time period.

## 4.2 Aquatic Features

The onsite detention basin contains a diverse variety of wetland plant species. The detention basin is an active basin that is fed via a 48" inlet pipe that drains storm water from the commercial/industrial businesses west of the subject property. The detention basin is actively used therefore any impact to the detention basin would have to be coordinated and permitted through the Regional Water Quality Control Board.

## 4.3 Evaluation of Special-Status Species

Based on an analysis of *Santa Rosa Plain Conservation Strategy* covered species, literature review, 9-Quad CNDDDB occurrences, USFWS listed species, profession expertise and observations in the field, a list of special-status plant species that have the potential to occur within the Study area was generated.

**Table 1. Evaluation of Listed and Proposed Plant Species Potentially Occurring or Known to Occur in the Shiloh Crossing Project Action Area**

Species	Federal (USFWS) Status <sup>1</sup>	State (CDFG)/CNPS Status <sup>1</sup>	Habitat	Potential for Occurrence
<i>Plants</i>				
<i>Astragalus claranus</i> , Clara Hunt's milk-vetch	E	T/1B.1	Cismontane woodland, valley and foothill grassland, chaparral. Open grassy hillsides especially on exposed shoulders in thin, volcanic or serpentine clay soils moist in spring. 95-333 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Blennosperma bakeri</i> , Sonoma sunshine	E	E/1B.1	Valley and foothill grassland, vernal pools and swales 10-290 M.	<b>Absent:</b> Numerous occurrences within 5 miles of Study area. Onsite soils and non-native grasslands, including the detention basin, do not provide suitable micro-habitat to support this species. Further surveys will be conducted in late spring.
<i>Centromadia parryi</i> ssp. <i>parryi</i> , Pappose tarplant	None	None/1B.2	Chaparral, coastal prairie, meadows and seeps, coastal salt marsh, vernal mesic, often alkaline sites.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Chorizanthe valida</i> , Sonoma spineflower	E	E/1B.1	Coastal prairies in sandy soils.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.

<i>Clarkia imbricata</i> , Vine Hill clarkia	E	E/1B.1	Chaparral, valley & foothill grassland on acidic, sandy soil	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i> , Pennell's bird's-beak	E	Rare/1B.2	Closed-cone coniferous forest, chaparral, in open or disturbed areas on serpentine within forest or chaparral.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Delphinium bakeri</i> , Baker's larkspur	E	Rare/1B.2	Broadleaved upland forest, coastal scrub, valley and foothill grassland. Only site occurs on NW-facing slope, on decomposed shale.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Delphinium luteum</i> , golden larkspur	E	Rare/1B.1	Chaparral, coastal prairie, coastal scrub; north-facing rocky slopes	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Hemizonia congesta</i> ssp. <i>congesta</i> , Congested-headed hayfield tarplant	None	None/1B.2	Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 20-560.	<b>Potential:</b> There is suitable habitat onsite. Numerous occurrences within ½ mile of Study area. On observed during March 2022 surveys. Additional surveys will be conducted in late spring 2022.
<i>Lasthenia burkei</i> , Burke's goldfields	E	Rare/1B.1	Meadow & seep, vernal pools, wetlands; most often in vernal pools and swales	<b>Absent:</b> Numerous occurrences within ½ mile of Study area. Onsite soils and non-native grasslands, including the detention basin, do not provide suitable micro-habitat to support this species. Further surveys will be conducted in late spring.
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i> , Pitkin Marsh lily	E	E	Cismontane woodland, meadows and seeps, marshes and swamps; saturated, sandy soils with grasses and shrubs.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Limnanthes vinculans</i> , Sebastopol meadowfoam	E	E	Meadows and seeps, vernal pools, valley and foothill grassland; swales, wet meadows and marshy areas in valley oak savanna; on poorly drained soils of clays and sandy loam	<b>Absent:</b> Onsite soils and non-native grasslands, including the detention basin, do not provide suitable micro-habitat to support this species. Further surveys will be conducted in late spring.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> , Baker's navarretia	None	None/1B.1	Vernal pools, cismontane woodland, meadows and seeps.	<b>Absent:</b> Onsite soils and non-native grasslands, including the detention basin, do not provide suitable micro-habitat to support this species. Further surveys will be conducted in late spring.
<i>Navarretia leucocephala</i> ssp. <i>pliantha</i> , Many- flowered <i>navarrentia</i>	E	E/1B.2	Vernal pools, volcanic ash flow vernal pools. 30-915 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i> , Marsh checkerbloom.	None	None/1B.2	Meadows and seeps, riparian forest, wet soil of streambanks.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.
<i>Sidalcea oregana</i> ssp. <i>valida</i> , Kenwood Marsh checkerbloom	E	E/1B1	Marshes and swamps. Edges of freshwater marshes. 115-125 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during Spring 2021 surveys.

(1) Legal Status Codes:				
E	=	Federally or State listed as endangered		
T	=	Federally or State listed as threatened		
SC	=	Federal or State special concern species		
S				
C	=	Candidate species for future listing as endangered or threatened		
--	=	No designation		
1A	=	Plants presumed extinct in California		
1B	=	CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere		
2	=	CNPS List 2: Plants rare, threatened or endangered in California, but more common elsewhere		
3	=	CNPS List 3: Plants about which we need more information – a review list		
<u>SOURCES:</u>				
CNPS Inventory of Rare and Endangered Plants of California (sixth edition). David Tibor editor. California Native Plant Society. Sacramento, CA. California Natural Diversity Database (CNDDDB) Rare Find program. .				

#### 4.6.1 Special-Status Plants

A total of 16 special-status plant species were evaluated as having the potential to occur in the Study Area. However, upon further analysis and after the early spring 2022 site visit, all 16 special-status plant species were considered to be absent from the Study Area due to the lack of suitable habitat. Additionally, a list of all CNPS sensitive plants within a 9-quadrant radius was requested from CNDDDB Rarefind (see Enclosure C). Each plant was researched and the property was evaluated for the potential to support these species. None of the plant species were observed onsite and the potential for their occurrence is rated very low due to the poor quality of the onsite soils, ruderal grasses and forbs. However, the current surveys were conducted during a very early blooming cycle. Protocol-level surveys will be completed following late April, early May, 2022 onsite botanical surveys.

This concludes our Memo for Record for the March 2022 onsite Botanical Surveys of the ±5.92-acre property of former rural residential and agricultural land located at 295 Shiloh Road, Winsor, Sonoma County, California. The property is located on the U.S. Geological survey (USGS) Healdsburg 7.5-minute topographic quadrangle, Section 19, Township 8 North, Range 8 East.

Respectfully Submitted:



Marcus H. Bole, M.S. Principal  
Senior Wildlife Biologist, Bole & Associates

#### Enclosures

- Enclosure A: March 2022 Plant List
- Enclosure B: 2006 Historic Aerial & Site Photos
- Enclosure C: CNDDDB database

## ENCLOSURE A: PLANT LIST – MARCH 2022

## WINSOR SITE PLANT LIST – MARCH 2022

### FAMILY SCIENTIFIC NAME/ COMMON NAME

*Achillea millefolium* common yarrow  
*Agapanthus praecox* blue lily  
*Ambrosia psilostachya* western ragweed  
*Avena barbata* wild oat  
*Baccharis pilularis* coyote brush  
*Brassica nigra* black mustard  
*Bromus madritensis ssp. rubens*  
*Bromus rigidus* ripgut brome  
*Carduus pycnocephalus* Italian thistle  
*Convolvulus arvensis* bindweed  
*Contonester horizontalis* wall cotoneaster  
*Cynodon dactylon* bermudagrass  
*Cyperus esculentus* yellow nutsedge\*  
*Carex nebrascensis* Nebraska sedge\*  
*Daucus pusillus* wild carrot  
*Distichlis spicata*, salt grass  
*Echinochloa crus-galli* barnyard grass  
*Eleocharis macrostachya* spikerush\*  
*Erodium botrys* broadleaf filaree  
*Festuca arundinacea*, tall fescue  
*Foeniculum vulgare* sweet fennel  
*Genista monspessulana* French broom  
*Helminthotheca echioides* bristly ox-tongue  
*Hordeum marinum ssp. gussoneanum* Mediterranean barley

*Hypochaeris radicata* hairy cat's-ear  
*Juncus spp.* rush\*  
*Lactuca serriola* prickly lettuce  
*Lepidium latifolium* pepperweed  
*Lupinus spp.* Lupine  
*Malva neglecta* common mallow  
*Matricaria discoidea* pineapple weed  
*Medicago sativa* alfalfa  
*Paspalum dilatatum* dallasgrass\*  
*Plantago major* broadleaf plantain  
*Polypogon monspeliensis* rabbitfoot grass  
*Populus nigra* black poplar  
*Raphanus sativus* wild radish  
*Rubus discolor* Himalayan blackberry\*  
*Rumex crispus* curley dock\*  
*Salsola iberica* Russian thistle  
*Salix sp.* willow\*  
*Senecio vulgaris* common groundsel  
*Silybum marianum* milk thistle  
*Taraxacum officinale* dandelion  
*Typha latifolia* cattails\*  
*Vicia villosa*, hairy vetch  
*Vulpia myuros* rattail fescue

\*Species predominately found only in detention basin

Plant nomenclature follows The Jepson Manual: Higher Plants of California. Second Edition.  
B.G. Baldwin (convening editor). University of California Press, Berkeley, CA.

ENCLOSURE B: 2006 AERIAL & PHOTO PLATES  
MARCH 2022





INQUIRY #: 6786972.1

YEAR: 2006

— = 500'







**MARCUS H. BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE: 295 Shiloh Road Property**  
**ITEM: Typical disturbed soil matrix**  
**DATE: 3/10/2022** **PLATE: 1**





**MARCUS H. BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE: 295 Shiloh Road Property**  
**ITEM: Onsite ruderal grasses & forbs**  
**DATE: 3/10/2022** **PLATE: 2**





**MARCUS H. BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE: 295 Shiloh Road Property**  
**ITEM: Detention Basin**  
**DATE: 3/10/2022**

**PLATE: 3**





**MARCUS H. BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE: 295 Shiloh Road Property**  
**ITEM: Basin Inlet, cut Basin Fence**  
**DATE: 3/10/2022** **PLATE: 4**



ENCLOSURE C: 9-QUAD CNDDB



# Summary Table Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



**Query Criteria:** Quad> IS </span>(Geyserville (3812268)> OR </span>Jimtown (3812267)> OR </span>Mount St. Helena (3812266)> OR </span>Guerneville (3812258)> OR </span>Healdsburg (3812257)> OR </span>Mark West Springs (3812256)> OR </span>Camp Meeker (3812248)> OR </span>Sebastopol (3812247)> OR </span>Santa Rosa (3812246)> AND </span>CNPS List> IS </span>(1A> OR </span>1B> OR </span>1B.1> OR </span>1B.2> OR </span>1B.3> OR </span>2A> OR </span>2B> OR </span>2B.1> OR </span>2B.2> OR </span>2B.3> OR </span>3> OR </span>3.1> OR </span>3.2> OR </span>3.3> OR </span>4> OR </span>4.1> OR </span>4.2> OR </span>4.3)

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Alopecurus aequalis</i> var. <i>sonomensis</i> Sonoma alopecurus	G5T1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	80 320	21 S:8	0	0	0	1	2	5	8	0	6	1	1
<i>Amorpha californica</i> var. <i>napensis</i> Napa false indigo	G4T2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	200 1,265	76 S:15	4	3	1	0	0	7	3	12	15	0	0
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley SB_UCSC-UC Santa Cruz		93 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Anomobryum julaceum</i> slender silver moss	G5? S2	None None	Rare Plant Rank - 4.2		13 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Arctostaphylos bakeri</i> ssp. <i>bakeri</i> Baker's manzanita	G2T1 S1	None Rare	Rare Plant Rank - 1B.1	250 800	3 S:3	0	2	0	0	0	1	2	1	3	0	0
<i>Arctostaphylos bakeri</i> ssp. <i>sublaevis</i> Cedars manzanita	G2T2 S2	None Rare	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,000 1,350	4 S:2	2	0	0	0	0	0	0	2	2	0	0
<i>Arctostaphylos densiflora</i> Vine Hill manzanita	G1 S1	None Endangered	Rare Plant Rank - 1B.1	200 240	2 S:2	0	0	1	1	0	0	1	1	2	0	0
<i>Arctostaphylos manzanita</i> ssp. <i>elegans</i> Konocti manzanita	G5T3 S3	None None	Rare Plant Rank - 1B.3	4,300 4,300	69 S:1	0	0	0	0	0	1	0	1	1	0	0



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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b>Arctostaphylos stanfordiana ssp. decumbens</b> Rincon Ridge manzanita	G3T1 S1	None None	Rare Plant Rank - 1B.1	300 1,220	12 S:8	0	1	1	1	1	4	6	2	7	0	1
<b>Astragalus claranus</b> Clara Hunt's milk-vetch	G1 S1	Endangered Threatened	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	770 1,165	6 S:2	0	1	0	0	0	1	0	2	2	0	0
<b>Astragalus rattanii var. jepsonianus</b> Jepson's milk-vetch	G4T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		53 S:1	0	0	0	0	0	1	1	0	1	0	0
<b>Balsamorhiza macrolepis</b> big-scale balsamroot	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	890 1,230	51 S:2	2	0	0	0	0	0	2	0	2	0	0
<b>Blennosperma bakeri</b> Sonoma sunshine	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	70 140	24 S:16	0	6	3	1	3	3	5	11	13	2	1
<b>Brodiaea leptandra</b> narrow-anthered brodiaea	G3? S3?	None None	Rare Plant Rank - 1B.2	100 1,000	39 S:10	0	1	1	0	0	8	8	2	10	0	0
<b>Calamagrostis crassiglumis</b> Thurber's reed grass	G3Q S2	None None	Rare Plant Rank - 2B.1	150 150	15 S:1	0	0	0	0	0	1	1	0	1	0	0
<b>Calochortus raichei</b> Cedars fairy-lantern	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	1,200 1,200	9 S:1	0	1	0	0	0	0	0	1	1	0	0
<b>Calystegia collina ssp. oxyphylla</b> Mt. Saint Helena morning-glory	G4T3 S3	None None	Rare Plant Rank - 4.2	1,150 2,250	9 S:2	1	0	0	0	0	1	2	0	2	0	0
<b>Campanula californica</b> swamp harebell	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	150 150	155 S:2	0	0	0	0	2	0	2	0	0	1	1
<b>Carex comosa</b> bristly sedge	G5 S2	None None	Rare Plant Rank - 2B.1 IUCN_LC-Least Concern	60 60	31 S:1	0	0	0	0	1	0	1	0	0	1	0
<b>Castilleja uliginosa</b> Pitkin Marsh paintbrush	GXQ SX	None Endangered	Rare Plant Rank - 1A	150 200	2 S:2	0	0	0	0	2	0	2	0	0	2	0



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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Ceanothus confusus</i> Rincon Ridge ceanothus	G1 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden	500 3,600	33 S:10	0	0	4	0	1	5	9	1	9	0	1
<i>Ceanothus divergens</i> Calistoga ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2	800 3,120	26 S:5	0	1	1	1	0	2	3	2	5	0	0
<i>Ceanothus foliosus var. vineatus</i> Vine Hill ceanothus	G3T1 S1	None None	Rare Plant Rank - 1B.1	150 250	6 S:4	0	0	1	0	0	3	2	2	4	0	0
<i>Ceanothus purpureus</i> holly-leaved ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2 SB_SBBG-Santa Barbara Botanic Garden	475 475	43 S:3	0	0	0	0	0	3	3	0	3	0	0
<i>Ceanothus sonomensis</i> Sonoma ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2 SB_SBBG-Santa Barbara Botanic Garden	475 475	30 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Centromadia parryi ssp. parryi</i> pappose tarplant	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	100 750	39 S:2	0	0	0	0	0	2	1	1	2	0	0
<i>Chorizanthe valida</i> Sonoma spineflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	150 150	6 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Clarkia imbricata</i> Vine Hill clarkia	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	230 232	2 S:2	0	1	1	0	0	0	1	1	2	0	0
<i>Cordylanthus tenuis ssp. capillaris</i> Pennell's bird's-beak	G4G5T1 S1	Endangered Rare	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	300 700	4 S:4	0	3	0	0	0	1	1	3	4	0	0
<i>Cryptantha dissita</i> serpentine cryptantha	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,966 1,966	23 S:1	0	1	0	0	0	0	0	1	1	0	0



# Summary Table Report

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Cuscuta obtusiflora</i> var. <i>glandulosa</i> Peruvian dodder	G5T4? SH	None None	Rare Plant Rank - 2B.2		6 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Delphinium bakeri</i> Baker's larkspur	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley	670 670	6 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Delphinium luteum</i> golden larkspur	G1 S1	Endangered Rare	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley		11 S:1	0	0	0	0	1	0	1	0	0	1	0
<i>Downingia pusilla</i> dwarf downingia	GU S2	None None	Rare Plant Rank - 2B.2	85 142	132 S:12	4	2	0	0	3	3	8	4	9	1	2
<i>Erigeron greenei</i> Greene's narrow-leaved daisy	G3 S3	None None	Rare Plant Rank - 1B.2	700 700	20 S:4	0	0	0	0	0	4	3	1	4	0	0
<i>Erigeron serpentinus</i> serpentine daisy	G2 S2	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	400 400	6 S:1	0	0	1	0	0	0	1	0	1	0	0
<i>Eriogonum nervulosum</i> Snow Mountain buckwheat	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden USFS_S-Sensitive	2,400 3,000	9 S:2	1	0	0	0	0	1	2	0	2	0	0
<i>Fritillaria liliacea</i> fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	150 800	82 S:9	0	3	2	0	2	2	4	5	7	2	0
<i>Gilia capitata</i> ssp. <i>tomentosa</i> woolly-headed gilia	G5T2 S2	None None	Rare Plant Rank - 1B.1	650 650	18 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Gratiola heterosepala</i> Boggs Lake hedge-hyssop	G2 S2	None Endangered	Rare Plant Rank - 1B.2 BLM_S-Sensitive		99 S:1	0	0	0	0	0	1	1	0	1	0	0





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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Hemizonia congesta ssp. congesta</i> congested-headed hayfield tarplant	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_UCBG-UC Botanical Garden at Berkeley	90 650	52 S:16	0	1	0	1	3	11	12	4	13	2	1
<i>Hesperolinon bicarpellatum</i> two-carpellate western flax	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	2,700 2,700	25 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Horkelia tenuiloba</i> thin-lobed horkelia	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	200 1,060	27 S:7	2	0	1	0	0	4	6	1	7	0	0
<i>Kopsiopsis hookeri</i> small groundcone	G4? S1S2	None None	Rare Plant Rank - 2B.3		21 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Lasthenia burkei</i> Burke's goldfields	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	50 442	36 S:28	3	11	7	1	3	3	10	18	25	1	2
<i>Lasthenia californica ssp. bakeri</i> Baker's goldfields	G3T1 S1	None None	Rare Plant Rank - 1B.2	125 125	19 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Layia septentrionalis</i> Colusa layia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley		69 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Legenere limosa</i> legenere	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley	90 90	83 S:1	0	0	1	0	0	0	1	0	1	0	0
<i>Leptosiphon jepsonii</i> Jepson's leptosiphon	G2G3 S2S3	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	400 1,360	51 S:13	1	2	0	0	0	10	4	9	13	0	0



# Summary Table Report

## California Department of Fish and Wildlife

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b><i>Lessingia arachnoidea</i></b> Crystal Springs lessingia	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	300 640	11 S:3	0	2	1	0	0	0	2	1	3	0	0
<b><i>Lilium pardalinum ssp. pitkinense</i></b> Pitkin Marsh lily	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	150 200	4 S:2	0	1	0	0	0	1	2	0	2	0	0
<b><i>Limnanthes vinculans</i></b> Sebastopol meadowfoam	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	50 380	45 S:35	2	6	5	2	6	14	15	20	29	5	1
<b><i>Lupinus sericatus</i></b> Cobb Mountain lupine	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	3,000 3,600	46 S:3	0	0	0	0	0	3	3	0	3	0	0
<b><i>Microseris paludosa</i></b> marsh microseris	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden SB_UCSC-UC Santa Cruz	80 100	38 S:3	0	0	0	0	0	3	3	0	3	0	0
<b><i>Navarretia leucocephala ssp. bakeri</i></b> Baker's navarretia	G4T2 S2	None None	Rare Plant Rank - 1B.1	50 740	64 S:14	1	0	0	0	5	8	12	2	9	2	3
<b><i>Navarretia leucocephala ssp. pliantha</i></b> many-flowered navarretia	G4T1 S1	Endangered Endangered	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	110 850	8 S:2	0	2	0	0	0	0	1	1	2	0	0
<b><i>Penstemon newberryi var. sonomensis</i></b> Sonoma beardtongue	G4T3 S3	None None	Rare Plant Rank - 1B.3 BLM_S-Sensitive	4,300 4,300	15 S:1	1	0	0	0	0	0	0	1	1	0	0



# Summary Table Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<b><i>Piperia candida</i></b> white-flowered rein orchid	G3 S3	None None	Rare Plant Rank - 1B.2	268 268	222 S:1	0	1	0	0	0	0	0	1	1	0	0
<b><i>Pleuropogon hooverianus</i></b> North Coast semaphore grass	G2 S2	None Threatened	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank SB_CalBG/RSABG- California/Rancho Santa Ana Botanic Garden	240 240	27 S:1	0	0	0	0	1	0	1	0	0	1	0
<b><i>Rhynchospora alba</i></b> white beaked-rush	G5 S2	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	200 200	11 S:1	0	1	0	0	0	0	1	0	1	0	0
<b><i>Rhynchospora californica</i></b> California beaked-rush	G1 S1	None None	Rare Plant Rank - 1B.1	150 150	9 S:2	0	0	0	0	1	1	2	0	1	0	1
<b><i>Rhynchospora capitellata</i></b> brownish beaked-rush	G5 S1	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	150 150	25 S:2	0	0	1	0	1	0	1	1	1	1	0
<b><i>Rhynchospora globularis</i></b> round-headed beaked-rush	G4 S1	None None	Rare Plant Rank - 2B.1	150 150	2 S:2	0	0	0	0	1	1	2	0	1	1	0
<b><i>Sidalcea oregana ssp. valida</i></b> Kenwood Marsh checkerbloom	G5T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG- California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	380 380	2 S:1	0	0	1	0	0	0	1	0	1	0	0
<b><i>Streptanthus brachiatus ssp. hoffmanii</i></b> Freed's jewelflower	G2T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1,900 3,400	13 S:7	3	4	0	0	0	0	6	1	7	0	0
<b><i>Streptanthus glandulosus ssp. hoffmanii</i></b> Hoffman's bristly jewelflower	G4T2 S2	None None	Rare Plant Rank - 1B.3 SB_UCSC-UC Santa Cruz	1,251 1,962	16 S:2	0	0	0	0	0	2	0	2	2	0	0
<b><i>Stuckenia filiformis ssp. alpina</i></b> northern slender pondweed	G5T5 S2S3	None None	Rare Plant Rank - 2B.2	600 600	21 S:1	0	0	0	0	0	1	1	0	1	0	0



# Summary Table Report

## California Department of Fish and Wildlife

### California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Trifolium amoenum</i> two-fork clover	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley SB_USDA-US Dept of Agriculture	160 1,020	26 S:5	0	1	0	0	0	4	5	0	5	0	0
<i>Trifolium buckwestiorum</i> Santa Cruz clover	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden SB_UCSC-UC Santa Cruz SB_USDA-US Dept of Agriculture		64 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Trifolium hydrophilum</i> saline clover	G2 S2	None None	Rare Plant Rank - 1B.2	75 100	56 S:5	0	1	0	0	2	2	4	1	3	1	1
<i>Triquetrella californica</i> coastal triquetrella	G2 S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	328 328	13 S:1	0	0	0	0	0	1	0	1	1	0	0
<i>Usnea longissima</i> Methuselah's beard lichen	G4 S4	None None	Rare Plant Rank - 4.2 BLM_S-Sensitive	200 800	206 S:3	0	0	2	0	0	1	1	2	3	0	0
<i>Viburnum ellipticum</i> oval-leaved viburnum	G4G5 S3?	None None	Rare Plant Rank - 2B.3	520 545	39 S:5	0	1	0	0	0	4	4	1	5	0	0



**Bole & Associates**  
***An Environmental Consulting Firm***

May 3, 2022

Integrated Community Development  
Attn: Mr. Justin Hardt, Senior Vice President  
20750 Ventura Boulevard, Suite 155  
Ventura, CA 91364

**SPRING 2022 UPDATE (SURVEY #3): BIOLOGICAL RESOURCES ASSESSMENT  
AND WETLAND DETERMINATION FOR THE SHILOH CROSSING PROJECT, APN  
163-171-039, 295 SHILOH ROAD, TOWN OF WINDSOR, SONOMA COUNTY, CA  
95492. B&A FILE 0216-2021-2045.**

**1.0 INTRODUCTION**

Bole & Associates began protocol level plant surveys of the 5.92-acre Shiloh Crossing Project Study Area in February 26- March 18 time period of 2021 (survey #1) to capture the early blooming cycles of all plants of concern. Survey #2 was conducted on March 10, 2022. This letter format report describes the results of onsite Survey #3 accomplished on April 26, 2022. Onsite surveys were accomplished following surveys conducted at the Alton Lane Conservation Bank located in Santa Rosa, California. Permission to conduct reference site surveys at the Alton Lane Conservation Bank was given by Mr. Harvey Rich, (415) 472-1086, tridevser@gmail.com. Alton Lane Conservation Bank California Tiger Salamander Breeding & Wetland Plant Occurrence Information was provided by Bank Biologist Sarah Gordon, (707) 480-8938, sarahpgordon@gmail.com. During the spring of 2022, all plants of concern addressed in the USFWS Programmatic Biological Opinions (November 9, 2007 & June 11, 2020) were in full bloom at the Alton Land Conservation Bank. Specifically the following plants were in full bloom: Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine, (*Blechnosperma bakeri*) and Sebastopol meadowfoam (*Limnanthes vinculans*). Protocol surveys were conducted using the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain* (modified from the September 23, 1996 Service *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants*). Additionally, surveys were conducted using *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities, State of California Natural Resources Agency Department of Fish & Wildlife*, March 20, 2018. Site surveys at the Alton Bank Conservation Bank included an extensive evaluation of the habitat characteristics associated with the California Tiger Salamander (*Ambystoma californiense*) (CTS). The Alton Lane Conservation Bank has excellent, fully occupied pools supporting CTS including pools 1-4, 6, 13, 16, 22, 23, 25, 27, 32, 33, and 51 (see Enclosure D).

## **1.1 Study Area and Project Area Location**

The Study Area is located within the “Healdsburg, California” 7.5-minute quadrangle (U.S. Geological Survey [USGS] 1993) (Enclosure A, Figure 1. *Study Area Location and Vicinity*). The approximate center of the Study Area is located at latitude 38.526697N and longitude - 122.784890W (NAD27) within Sonoma County, California, Hydrologic Unit 18010110. The terrain elevation within the Study Area is approximately 125 feet above mean sea level (msl).

## **1.2 Purpose of this Biological Resources Assessment**

The purpose of this BRA is to collect information on the biological resources present or with the potential to occur in the Study Area, to provide an analysis of potential Project impacts on these resources within the Project area, and to recommend mitigation measures. This BRA is intended to support preparation of environmental documents/potential permit applications and align project objectives with the Santa Rosa Plain Conservation Strategy (USFWS, 2005), the *Recovery Plan for the Santa Rosa Plain* (Recovery Plan) (Service 2016) and the United States Fish & Wildlife Service’s (USFWS) *Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers (Corps) Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California (Corps File Number 223420N)(2007 Programmatic Biological Opinion), (Service file number 81420-2008-F-0261.*

## **1.3 Project Description**

Shiloh Crossing is a proposed 173 unit mixed income housing project. Shiloh Crossing fulfills the goals of the Shiloh Road Vision Plan by developing an infill site along Shiloh Road into a LEED Certified, high density, mixed use development.

## **2.0 REGULATORY SETTING**

### **2.1 Federal Regulations**

#### **2.1.1 Endangered Species Act**

The Endangered Species Act (ESA) protects plants and animals that are listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Section 9 of ESA prohibits, without authorization, the taking of listed wildlife, where take is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant under federal jurisdiction and removing, cutting, digging up, damaging, or destroying any listed plant in any other area in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of ESA, federal agencies are required to consult with USFWS and/or NMFS if their actions, including permit approvals and funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, USFWS and NMFS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the



continued existence of the species. Section 10 of ESA provides for the issuance of Incidental Take Permits (ITPs) where no other federal actions are necessary provided a habitat conservation plan is developed.

## **Critical Habitat**

Critical Habitat is defined in Section 3 of ESA as:

1. The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and
2. The specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features essential to the conservation of the species (16 USC 1533). Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species (areas on which are found the primary constituent elements). Primary constituent elements are the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. These include but are not limited to the following:

1. Space for individual and population growth and for normal behavior;
2. Food, water, air, light, minerals, or other nutritional or physiological requirements
3. Sites for breeding, reproduction, or rearing (or development) of offspring; and
4. Habitats that are protected from disturbance or are representative of the historic, geographical, and ecological distributions of a species.

### **2.1.2 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized under the MBTA, USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of non-game birds in § 3800, migratory birds in § 3513, and birds of prey in § 3503.5 of the California Fish and Game Code.

### **2.1.3 Clean Water Act**

The purpose of the federal Clean Water Act (CWA) is to “restore and maintain the chemical, physical, and biological integrity of the nation’s waters.” Section 404 of the CWA prohibits the discharge of dredged or fill material into “Waters of the U.S.” without a permit from the U.S. Army Corps of Engineers (USACE). The Environmental Protection Agency (USEPA) and the USACE will assert jurisdiction over Waters of the U.S. according to the Supreme Court’s decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (Rapanos). In summary, Waters of the U.S. under Rapanos include traditional navigable waters (TNW), wetlands adjacent to TNW, non-navigable tributaries of TNW that are relatively permanent where the tributaries typically flow at least seasonally (e.g. typically three months), and wetlands that directly abut such tributaries. Pursuant to Rapanos, the USEPA and USACE will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water over the following: non-navigable tributaries that are not relatively permanent, wetlands adjacent to non-navigable tributaries that are not relatively permanent, and wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary (USEPA and USACE 2008). Wetlands are defined as those areas “that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3 7b). USEPA also has authority over wetlands, including the authority to veto permits issued by USACE under CWA Section 404.

Projects involving activities that have no more than minimal individual and cumulative adverse environmental effects may meet the conditions of one of the Nationwide Permits already issued by USACE (Federal Register 82:1860, January 6, 2017). If impacts on wetlands could be substantial, an individual permit is required. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions. This certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

## **2.2 State and Local Regulations**

### **2.2.1 California Endangered Species Act**

The California ESA (California Fish and Game Code §§ 2050-2116) protects species of fish, wildlife, and plants listed by the State as endangered or threatened. Species identified as candidates for listing may also receive protection. Section 2080 of the California ESA prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit. Take is defined in Section 86 of the California Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” The California ESA allows for take incidental to otherwise lawful projects under permits issued by California Department of Fish and Wildlife (CDFW).

#### **2.2.2. Fully Protected Species**

The State of California first began to designate species as “fully protected” prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to

provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. Fully protected species are identified in the California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish.

These sections of the California Fish and Game Code provide that fully protected species may not be taken or possessed at any time, including prohibition of CDFW from issuing ITPs for fully protected species under the California ESA. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit and may allow incidental take for lawful activities carried out under an approved NCCP within which such species are covered.

### **2.2.3 Native Plant Protection Act**

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code §§ 1900-1913) was established with the intent to “preserve, protect and enhance rare and endangered plants in this state.” The NPPA is administered by CDFW. The Fish and Game Commission has the authority to designate native plants as “endangered” or “rare”. The NPPA prohibits the take of plants listed under the NPPA, but the NPPA contains a number of exemptions to this prohibition that have not been clarified by regulation or judicial rule. In 1984, the California ESA brought under its protection all plants previously listed as endangered under NPPA. Plants listed as rare under NPPA are not protected under the California ESA, but are still protected under the provisions of NPPA. The Fish and Game Commission no longer lists plants under NPPA, reserving all listings to the California ESA.

### **2.2.4 California Fish and Game Code Special Protection of Birds**

In addition to protections contained within the California ESA and California Fish and Game Code § 3511 described above, the California Fish and Game Code includes a number of sections that specifically protect certain birds.

Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the California Fish and Game Commission or a mitigation plan approved by CDFW for mining operations.

Section 3503 prohibits the take, possession, or needless destruction of the nest or eggs of any bird.

Section 3503.5 protects birds of prey (which includes eagles, hawks, falcons, kites, ospreys, and owls) and prohibits the take, possession, or destruction of any birds and their nests

Section 3505 makes it unlawful to take, sell, or purchase egrets, ospreys, and several exotic nonnative species, or any part of these birds.

Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA.

### **2.2.5. Lake or Streambed Alteration Agreements**

Section 1600-1616 of the California Fish and Game Code requires individuals or agencies to provide a Notification of Lake or Streambed Alteration (LSA) to CDFW for “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW reviews the proposed actions and, if necessary, proposed measures to protect affected fish and wildlife resources. The final proposal mutually agreed upon by CDFW and the applicant is the LSA Agreement. There are no rivers, streams, or lakes associated with the Study Area. The stormwater detention basin has been dug in uplands for the specific function of temporarily holding stormwater and allowing it to percolate or allow sediments to settle out before discharged into the engineered stormwater discharge system. The stormwater basin is subject to the jurisdiction of the Regional Water Quality Control Board.

### **2.2.6 Porter-Cologne Water Quality Act**

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve “discharging waste, or proposing to discharge waste, with any region that could affect the water of the state” (Water Code 13260(a)). Waters of the State are defined as “any surface water or groundwater, including saline waters, within the boundaries of the state” (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirements for these activities.

### **2.2.7 California Environmental Quality Act Species Criteria**

In accordance with California Environmental Quality Act (CEQA) Guidelines § 15380 (Guidelines), a species or subspecies not specifically protected under the federal or California ESAs or NPPA may be considered endangered, rare, or threatened for CEQA review purposes if the species meets certain criteria specified in the Guidelines. These criteria include definitions similar to definitions used in ESA, the California ESA, and NPPA. Section 15380 was included in the CEQA Guidelines primarily to address situations in which a project under review may have a significant effect on a species that has not been listed under ESA, the California ESA, or NPPA, but that may meet the definition of endangered, rare, or threatened. Animal species identified as species of special concern (SSC) by CDFW, and plants identified by the California Native Plant Society (CNPS) as rare, threatened, or endangered may meet the CEQA definition of rare or endangered.

## **Species of Special Concern**

SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under ESA, the California ESA, or the California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role;
- The species is listed as federally (but not State) threatened or endangered, or meets the State definition of threatened or endangered but has not formally been listed;
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for State threatened or endangered status; and
- SSC are typically associated with habitats that are threatened.

Depending on the policy of the lead agency, projects that result in substantial impacts to SSC may be considered significant under CEQA.

## **USFWS Birds of Conservation Concern**

The 1988 amendment to the Fish and Wildlife Conservation Act mandates USFWS “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under ESA.” To meet this requirement, USFWS published a list of birds of conservation concern (BCC) (USFWS 2008) for the U.S. The list identifies the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS’s highest conservation priorities. Depending on the policy of the lead agency, projects that result in substantial impacts to BCC may be considered significant under CEQA.

## **Sensitive Natural Communities**

The CDFW maintains the California Natural Community List (CDFW 2021), which provides a list of vegetation alliances, associations, and special stands as defined in the *Manual of California Vegetation* (Sawyer et al. 2009), along with their respective State and global rarity ranks. Natural communities with a State rarity rank of 1, 2, or 3 are considered sensitive natural communities. Depending on the policy of the lead agency, impacts to sensitive natural communities may be considered significant under CEQA.

## **California Rare Plant Ranks**

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2021), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are

assigned to one of six California Rare Plant Ranks (CRPRs). The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and the CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere.  
Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere.  
Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere.  
Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere.  
Rare Plant Rank 3 – a review list of plants about which more information is needed.  
Rare Plant Rank 4 – a watch list of plants of limited distribution.

Additionally, CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

Threat Rank 0.1 – Seriously threatened in California (over 80 percent of occurrences threatened/high degree and immediacy of threat).  
Threat Rank 0.2 – Moderately threatened in California (20-80 percent of occurrences threatened/moderate degree and immediacy of threat).  
Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known).

Factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; differences in Threat Ranks do not constitute additional or different protection (CNPS 2021).

Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2, and 3 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 4 and at the discretion of the CEQA lead agency.

### **CEQA Significance Criteria**

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant. Generally, impacts to listed (rare, threatened, or endangered) species are considered significant. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, § 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental



effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant under CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population-wide or region-wide basis.

### **2.2.8 Town of Windsor 2040 General Plan**

The *City of Windsor General Plan Final Impact Report (EIR)* was prepared to evaluate and disclose significant environmental impacts associated with the implementation of the proposed General Plan Update (Rincon Consultants, Inc. 2018). The EIR was prepared in accordance with CEQA Guidelines. The EIR lists the following mitigation measures to address potential impacts to biological resources.

**BIO-1 Nesting Bird Protection Policy.** The following policy shall be added to the 2040 General Plan Environmental Element as Policy ER-6.12: The Town shall require project applicants to retain the services of a qualified biologist(s) to conduct a pre-construction nesting bird survey during the nesting season (February 1 through August 31) prior to all new development that may remove any trees or vegetation that may provide suitable nesting habitat for migratory birds or other special-status bird species. If nests are found the qualified biologist(s) shall identify appropriate avoidance measures.

**BIO-2 Wildlife Movement Corridors Protection Policy.** The 2040 General Plan Environmental Resources Element Policy ER-1.2 shall be updated to read: **Policy ER-1.2 Sensitive Habitat Preservation.** The Town shall encourage the preservation of sensitive environmental habitat areas, such as oak woodlands, productive farmlands, and riparian (creek side) corridors, and important wildlife movement corridors through measures such as clustering development and conservation easements.

Furthermore, the Town of Windsor is located in the **Santa Rosa Conservation Strategy** planning area that identifies areas in the Town of Windsor for plant conservation. Impacts to areas identified in the Santa Rosa Conservation Strategy would be protected by conservation strategies contained in goals and policies of the 2040 General Plan.

### **2.2.9 Santa Rosa Plain Conservation Strategy**

The purpose of the Conservation Strategy is threefold: (1) to establish a long-term conservation program sufficient to mitigate potential adverse effects of future development on the Plain, and to conserve and contribute to the recovery of the listed species and the conservation of their

sensitive habitat; (2) to accomplish the preceding in a fashion that protects stakeholders' (both public and private) land use interests, and (3) to support issuance of an authorization for incidental take of CTS and listed plants that may occur in the course of carrying out a broad range of activities on the Plain.

The Conservation Strategy is the biological framework upon which future regulatory actions will be based; the Strategy will not preserve the species unless implemented by the appropriate agencies. The Conservation Strategy provides the biological basis for a permitting process for projects that are in the potential range of listed species on the Plain. This is intended to provide consistency, timeliness and certainty for permitted activities. The Conservation Strategy study area is comprised of the potential CTS range and the listed plant range within the Plain. The Conservation Strategy establishes interim and long-term mitigation requirements and designates conservation areas where mitigation will occur. It describes how preserves will be established and managed. It also includes guidelines for translocation, management plans, adaptive management and funding. Finally, the document describes the implementation planning process.

FWS will prepare a programmatic biological opinion for CTS and listed plants based on the Conservation Strategy, and potentially a future implementation plan. FWS will also prepare a recovery plan for the Sonoma County distinct population segment of the CTS and listed plants as required by the ESA. The Conservation Strategy will be the foundation of the recovery plan; however, it does not preclude the obligation of FWS to develop a recovery plan. Other future actions that may occur include the preparation of a Habitat Conservation Plan or Plans.

## **2.2.10 Recovery Plan for the Santa Rosa Plain**

### **RECOVERY STRATEGY, GOAL, OBJECTIVES, CRITERIA AND ACTIONS NEEDED**

The species covered by this recovery plan, *Blennosperma bakeri*, *Lasthenia burkei*, *Limnanthes vinculans*, and the California tiger salamander Sonoma County Distinct Population Segment (*Ambystoma californiense*), have naturally limited geographic ranges, and are further constrained by inhabiting naturally rare habitat within that geographic range. Because the main cause of the decline and the main current threat to all species is the loss and degradation of habitat, the recovery strategy focuses upon this threat. The Plan will achieve recovery of these species by preserving high-quality habitat that provides essential connectivity, reduces fragmentation, and sufficiently buffers against encroaching development. Management of these preserved areas will provide additional protection to the habitat, and address non-habitat related threats. Surveys and habitat assessments (where data are lacking) will be conducted, as will essential research that refines current knowledge on the recovery needs of the species. Additionally, habitat restoration (and potentially reintroductions) is necessary to provide additional populations to protect unique genetic diversity.

## **3.0 METHODS**

For the purposes of this BRA, special-status species are defined as plants or animals that:

- are listed or are proposed for listing as threatened or endangered under the ESA;

- are candidates for future listing as threatened or endangered under the California ESA;
- are identified as an SSC by the CDFW;
- are considered by the CNPS with a CRPR of 1A, 1B, 2A, 2B, 3, or 4;
- are fully protected in California in accordance with the California Fish and Game Code, §§ 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes); or
- are Covered Species as defined by the Santa Rosa Plain Conservation Strategy

Species that are tracked by the CNDDDB, but have no other special status, are not considered to be special status species in this BRA.

This BRA reviews the potential for both Santa Rosa Plain Covered Species and all other remaining special status species, as defined above, that have potential to occur within the Study Area. Both methods are described in the following sections.

### **3.1 Analysis of the Santa Rosa Plain Conservation Strategy Covered Species**

Habitat assessments for Santa Rosa Plain Conservation Covered Species were conducted by Bole & Associates' Senior Biologist David H. Bole on March 17, 2021, and by Senior Biologist Marcus H. Bole and Senior Botanist Charlene J. Bole on March 10, 2022 and April 26, 2022. Information and observations from these habitat assessments were used to determine whether specific potential habitat features for Santa Rosa Plain Conservation Strategy Covered Species were present within the Study Area. Due to relatively small size of the Study Area (5.92-acres) transects spaced at three foot intervals were accomplished during ten hour evaluations. These extensive onsite surveys were conducted to determine the presence of listed plant and wildlife species and to create a plant list of species observed.

### **3.2 Analysis of Other Special-Status Species**

#### **3.2.1 Literature Review**

The following resources were queried to determine whether any special-status species/habitat other than Santa Rosa Plain Conservation Strategy Covered Species have potential to occur within the Study Area:

- CDFW CNDDDB record search for the "Healdsburg, California" 7.5-minute quadrangle and the eight surrounding USGS quadrangles (CDFW 2021, updated in 2022).
- USFWS Information, Planning, and Consultation System Resource Report List for the Study Area (USFWS 2021, updated in 2022).

- CNPS electronic Inventory of Rare and Endangered Plants of California for the “Healdsburg, California” 7.5-minute quadrangle and the eight surrounding USGS quadrangles (CNPS 2021, updated in 2022).

### 3.2.2 Field Assessment for Other Special-Status Species

All onsite surveys were conducted on foot. Topographic maps and aerial imagery were referenced. Biological communities occurring within the Study Area were characterized, and the following biological resource information was collected:

- protected trees occurring onsite;
- animal and plant species directly observed;
- habitat and vegetative communities; and,
- representative photos of the Study Area.

### 3.3 Evaluation of Special-Status Species

Based on the Santa Rosa Plain Conservation Strategy species accounts, species occurrence information from the literature review, and the field assessment, a list of special-status plant and animal species considered to have the potential to occur within the Study Area was generated.

Each of the species that were considered as potentially occurring within the Study Area or vicinity were evaluated based on the following criteria:

- **Present** – Species was observed during field surveys or is known to occur within the Study Area based on documented occurrences within the CNDDDB, the Santa Rosa Plain Conservation Strategy, other literature, and site assessments.
- **Potential to Occur** – Habitat (including soil and elevation requirements) for the species occurs within the Study Area based on site assessment, literature research, or Santa Rosa Plain Conservation Strategy modeled species habitat data.
- **Low Potential to Occur** – Marginal or limited amounts of habitat occur, and/or the species is not known to occur within the vicinity of the Study Area based on CNDDDB records other available documentation, and site assessments.
- **Absent** – No suitable habitat (including soils and elevation requirements) and/or the species is not known to occur within the vicinity of the Study Area based on CNDDDB records, Santa Rosa Plain Conservation Strategy, other documentation, and site assessments.

### 3.4 Preliminary Aquatic Resources Assessment

The boundaries of aquatic resources were estimated through aerial photograph interpretation and field reconnaissance. Color aerial photographs available on Google Earth were used to assist with field mapping. In addition, the California Aquatic Resources Inventory (CARI) was queried for previously mapped features on-site (San Francisco Estuary Institute [SFEI] 2017).

This assessment is intended for general planning purposes and not for detailed project planning and permitting. Onsite wetland assessments were performed in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008).

## **4.0 RESULTS**

### **4.1 Site Characteristics and Land Use**

The Study Area is situated at an elevation of approximately 125 feet above mean sea level (msl) in Sonoma County, California. The Study Area is located in the Town of Windsor City limits, bordered on the south by Shiloh Road, on the east by Business Park Court Street and residential properties, on the north by Business Park Court and Industrial Park businesses, and on the west by Industrial Park businesses (Home Depot). Along the western boundary of the Study Area is a 0.05-acre detention basin that serves the Industrial Park businesses to the west. The detention basin supports a sparse amount of wetland plant species and was inundated with approximately one foot of water during onsite surveys during March of 2021. During the site visit in March, 2022, the detention basin was observed to have approximately 6 inches of standing water. During onsite surveys in April of 2022 the detention basin was holding approximately 4 inches of water. Vegetation within the Study Area consists of disturbed non-native grasses and forbs. The only wetland plant species observed onsite were within an enclosed fence area that protects an approximately 0.05-acre detention basin. The Conservation Area Overview display identifies the Study Area as surrounded by “Already Developed” properties on the west, north and east, and “Outside of Potential Range of CTS” (see Figure 4, Enclosure D)

### **4.2 Soils**

According to the *Web Soil Survey* (Natural Resources Conservation Service [NRCS] 2021), one soil type dominates the Study Area (*Natural Resources Conservation Service Soil Types*): Huichica loam, shallow, 0 to 2 percent slopes (HtA) (Enclosure C). A small area of Huichica loam, shallow ponded, 0 to 5 percent slopes (HwB) was identified along the southern boundary of the Study Area. The Huichica series consists of moderately well drained loams that have a clay subsoil. Soil pits were excavated throughout the site to a depth of 24 inches. Soil matrix varied from a light brownish gray (10YR 6/2) to pale brown and brown (10YR 5/3). A significant number of soil pits exhibited a heavy cut-and-fill (gravel) surface to a depth of 6 inches. Historical aerial photos show the site with a network of gravel driveways and parking areas. It appears that these gravel driveways were disked into the topsoil following demolition of the onsite building structures (2006). Within the Huichica loam soils, a small amount (2%) of Clear Lake clay soils are listed as a “component” soil. Clear Lake clay is listed as a “hydric” soil type. No Clear Lake soil inclusions were found within the Study Area, and none of the soils outside of the detention basin showed hydric soil conditions.

### 4.3 Town of Windsor Plant Conservation Area

The Town of Windsor Plant Conservation Area is focused on listed plants and wetlands, but is located within the potential range of CTS. There are numerous occurrences of listed plants and wetlands in the Town of Windsor Plant Conservation Area; however, no CTS occurrences have been documented. The general land use of this region is a mixture of rural residential, airport lands, vineyards and intense urban development. The subject Project area is located north of the northern most identified conservation area in an area of intense urban development (see Enclosure D). The CNDDDB BIO display shows the Project area outside of known special plant species locations; however, within ¼ mile of mapped occurrences of Burke's goldfields, *Lasthenia burkei*.

### 4.4 Aquatic Features

Except for less than 0.05-acres of constructed detention basin, there are no aquatic features within the Project area. An aquatic resources delineation is not indicated as the detention basin falls within the definition of the "non-jurisdictional waters" in 33 CFR § 328.3 (10) *Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off*. Stormwater detention basins fall under the jurisdiction of the Regional Water Quality Control Board. The detention basin is actively used by the industrial park to the west; therefore, any impact to the detention basin would have to be coordinated and permitted through the Regional Water Quality Control Board.

### 4.5 Wildlife

Wildlife use of the Study Area is expected to be low due to the developed surroundings. However, the detention basin and overhanging trees provide habitat, including potential nesting, for some local bird species. Bird species observed during onsite surveys include the California scrub jay (*Aphelocoma californica*), Brewer's blackbird (*Euphagus cyanocephalus*), western bluebird (*Sialia mexicana*), house finch (*Haemorrhous mexicanus*), white-crowned sparrow (*Zonotrichia leucophrys*) and yellow-rumped warbler (*Setophana coronate*), among others. Urban-adapted wildlife typically found in this setting could include raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and brown rat (*Rattus norvegicus*). The site does not support vernal pools or vernal swales that characterize CTS habitat.

### 4.6 Evaluation of Special-Status Species

Based on an analysis of Santa Rosa Plain Conservation Strategy covered species, literature review, 9-Quad CNDDDB occurrences, USFWS listed species, profession expertise and observations in the field, a list of special-status plant and animal species that have the potential to occur within the Study area was generated. Each of these species' potential to occur onsite



was assessed using the criteria listed in Section 3.3.

**Table 1. Evaluation of Listed and Proposed Species Potentially Occurring or Known to Occur in the Shiloh Crossing Project Action Area**

Species	Federal (USFWS) Status <sup>1</sup>	State (CDFG)/CNPS Status <sup>1</sup>	Habitat	Potential for Occurrence
<b>Plants</b>				
<i>Astragalus claranus</i> , Clara Hunt's milk-vetch	E	T/1B.1	Cismontane woodland, valley and foothill grassland, chaparral. Open grassy hillsides especially on exposed shoulders in thin, volcanic or serpentine clay soils moist in spring. 95-333 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Blennosperma bakeri</i> , Sonoma sunshine	E	E/1B.1	Valley and foothill grassland, vernal pools and swales 10-290 M.	<b>Absent:</b> Numerous occurrences within 10 miles of Study area; however, the non-native grasslands and detention basin do not support this species. None observed during protocol level surveys. Alton Lane Conservation Bank used as reference site.
<i>Centromadia parryi</i> ssp. <i>parryi</i> , Papoose tarplant	None	None/1B.2	Chaparral, coastal prairie, meadows and seeps, coastal salt marsh, vernal mesic, often alkaline sites.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Chorizanthe valida</i> , Sonoma spineflower	E	E/1B.1	Coastal prairies in sandy soils.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Clarkia imbricata</i> , Vine Hill clarkia	E	E/1B.1	Chaparral, valley & foothill grassland on acidic, sandy soil	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Cordylanthus tenuis</i> ssp. <i>capillaris</i> , Pennell's bird's-beak	E	Rare/1B.2	Closed-cone coniferous forest, chaparral, in open or disturbed areas on serpentine within forest or chaparral.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Delphinium bakeri</i> , Baker's larkspur	E	Rare/1B.2	Broadleafed upland forest, coastal scrub, valley and foothill grassland. Only site occurs on NW-facing slope, on decomposed shale.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Delphinium luteum</i> , golden larkspur	E	Rare/1B.1	Chaparral, coastal prairie, coastal scrub; north-facing rocky slopes	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Hemizonia congesta</i> ssp. <i>congesta</i> , Congested-headed hayfield tarplant	None	None/1B.2	Grassy valleys and hills, often in fallow fields; sometimes along roadsides. 20-560.	<b>Absent:</b> Numerous occurrences within 10 miles of Study area; however, the non-native grasslands do not support this species. None found during

				protocol level surveys.
<i>Lasthenia burkei</i> , Burke's goldfields	E	Rare/1B.1	Meadow & seep, vernal pools, wetlands; most often in vernal pools and swales	<b>Absent:</b> Numerous occurrences within 10 miles of Study area; however, the non-native grasslands and detention basin do not support this species. None observed during protocol level surveys. Alton Lane Conservation Bank used as reference site.
<i>Lilium pardalinum</i> ssp. <i>pitkinense</i> , Pitkin Marsh lily	E	E	Cismontane woodland, meadows and seeps, marshes and swamps; saturated, sandy soils with grasses and shrubs.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Limnanthes vincularis</i> , Sebastopol meadowfoam	E	E	Meadows and seeps, vernal pools, valley and foothill grassland; swales, wet meadows and marshy areas in valley oak savanna; on poorly drained soils of clays and sandy loam	<b>Absent:</b> Numerous occurrences within 10 miles of Study area; however, the non-native grasslands and detention basin do not support this species. None observed during protocol level surveys. Alton Lane Conservation Bank used as reference site.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> , Baker's navarretia	None	None/1B.1	Vernal pools, cismontane woodland, meadows and seeps.	<b>Absent:</b> Numerous occurrences within 10 miles of Study area; however, the non-native grasslands and detention basin do not support this species. None observed during protocol level surveys. Alton Lane Conservation Bank used as reference site.
<i>Navarretia leucocephala</i> ssp. <i>pliantha</i> , Many-flowered navarretia	E	E/1B.2	Vernal pools, volcanic ash flow vernal pools. 30-915 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Sidalcea oregana</i> ssp. <i>hydrophila</i> , Marsh checkerbloom.	None	None/1B.2	Meadows and seeps, riparian forest, wet soil of streambanks.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<i>Sidalcea oregana</i> ssp. <i>valida</i> , Kenwood Marsh checkerbloom	E	E/1B1	Marshes and swamps. Edges of freshwater marshes. 115-125 M.	<b>Absent:</b> There is no suitable habitat onsite. None observed during protocol level surveys.
<b>Birds</b>				
<i>Strix occidentalis caurina</i> , Northern spotted owl	Delisted	E	Ocean shore, lake margins & rivers for both nesting and wintering, most nests within 1 mile of water.	<b>Absent:</b> There is no suitable habitat onsite. None observed during onsite surveys.
<i>Athene cunicularia</i> , burrowing owl	None	SC	Open, dry annual or perennial grasslands, deserts & scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably the California ground squirrel.	<b>Potential:</b> Although no listed occurrences within 9-quadrant search, the species may utilize the onsite grasslands on an opportunistic basis. Preconstruction surveys will be required.
<b>Amphibians and Reptiles</b>				
<i>Ambystoma californiense</i> , California tiger	T	T	Cismontane woodland, meadow & seep, riparian woodland, valley and	<b>Absent:</b> Nearest breeding pond (other than Alton Lane Conservation Bank) is over eight

salamander			foothill grassland, vernal pool; need underground refuges, especially ground squirrel burrows, and vernal pools or other seasonal water sources for breeding.	miles south of Study Area. The non-native grasslands and detention basin do not support suitable habitat for this species. None observed during onsite surveys. There is no suitable aquatic or upland habitat within or near the Study Area. The Study Area is considered to be "Out of Potential Range for CTS" in the Santa Rosa Plain Conservation Strategy (see Figure 2 of the Conservation Strategy; available online at <a href="https://www.fws.gov/sites/default/files/documents/2-Figures-1-to-5-Santa-Rosa-Plain-508.pdf">https://www.fws.gov/sites/default/files/documents/2-Figures-1-to-5-Santa-Rosa-Plain-508.pdf</a> . Also see Figure 4, Enclosure A.
<i>Chelonia mydas</i> , Green sea turtle	T	None	Marine environments, marine bays	<b>Absent:</b> There is no suitable habitat onsite.
<i>Rana draytonii</i> , California red-legged frog.	T	None/SCS	Lowlands & foothills in or near permanent sources of deep water with dense shrubby or emergent riparian vegetation.	<b>Absent:</b> There is no suitable habitat onsite. The non-native grasslands and detention basin do not support this species. None observed during onsite surveys.
<b>Invertebrates</b>				
<i>Syncaris pacifica</i> , California freshwater shrimp	E	E	Low gradient streams where riparian cover is moderate to heavy; shallow pools away from main streamflow	<b>Absent:</b> There is no suitable habitat onsite.
<b>Mammals-none</b>				
<p>(1) Legal Status Codes:</p> <p>E = Federally or State listed as endangered  T = Federally or State listed as threatened  SC = Federal or State special concern species  S  C = Candidate species for future listing as endangered or threatened  -- = No designation  1A = Plants presumed extinct in California  1B = CNPS List 1B: Plants rare, threatened or endangered in California and elsewhere  2 = CNPS List 2: Plants rare, threatened or endangered in California, but more common elsewhere  3 = CNPS List 3: Plants about which we need more information – a review list</p> <p><u>SOURCES:</u>  CNPS Inventory of Rare and Endangered Plants of California (sixth edition). David Tibor editor. California Native Plant Society. Sacramento, CA. California Natural Diversity Database (CNDDDB) Rare Find program. .</p>				

#### 4.6.1 Special-Status Plants

A total of 16 special-status plant species were evaluated as having the potential to occur in the Study Area. However, upon further analysis and after the three protocol-level surveys, all 16 special-status plant species were considered to be absent from the Study Area due to the lack of suitable habitat. Prior to this determination, extensive surveys were conducted at the Alton Lane Conservation Bank during the normal blooming cycles for the plant species below. All five were positively identified in bloom at the Conservation Bank. A copy of the plant list at the Alton Lane Conservation Bank may be obtained upon permission from Sarah Gordon, Bank Biologist.

### ***Blennosperma bakeri*, Sonoma sunshine**

Sonoma sunshine, *Blennosperma bakeri*, is a federal listed endangered species and a state listed threatened species. This species occurs only in Sonoma County ranging from near the Town of Windsor in the north to Rohnert Park in the south. *Blennosperma bakeri* grows in vernal pools, the grassy margins of swales (shallow channels that connect vernal pools), and seasonally wet grasslands at elevations ranging from 9 to 101 meters (m) in the Sonoma Valley and between 21 to 43 m on the Santa Rosa Plain. This species typically is more abundant in portions of vernal pools and swales which lack dense cover by non-native plants, matted leaf litter, or algal mats. *Blennosperma bakeri* primarily grows on Huichica loam soils north of Highway 12. Study area soils are predominately disturbed Huichica loam with a significant amount of cut-and-fill (gravel) from the demolition of the previous agricultural building and grounds on the Subject Property. Onsite surveys conducted during the normal blooming cycle of *Blennosperma bakeri* did not reveal the presence of this species.

### ***Hemizonia congesta ssp. congesta*, Congested-headed hayfield tarplant**

Congested-headed hayfield tarplant, *Hemizonia congesta ssp. congesta*, is not listed pursuant to either the federal or California ESAs, but is designated as a California Rare Plant Rank (CRPR) 1B.2 plant. *Hemizonia congesta ssp. congesta* is a spindly, thin-stemmed annual herb growing erect to 10-80 centimeters in height. Like other tarweeds the stem and foliage are glandular and have an odor reminiscent of tar. The CNDDDB lists numerous occurrences of this species within ½ mile of the Study area. Onsite surveys conducted during the normal blooming cycle of *Hemizonia congesta ssp. congesta* did not reveal the presence of this species.

### ***Lasthenia burkei*, Burke's goldfields**

Burke's goldfields, *Lasthenia burkei*, is a federal listed endangered species, a State Rare plant species and a CRPR 1B.1 plant. The primary habitats of *Lasthenia burkei* are shallow vernal pools and wet swales with valley grassland and oak woodland habitats. Onsite surveys conducted during the normal blooming cycle of *Lasthenia burkei* did not reveal the presence of this species.

### ***Limnanthes vinculans*, Sebastopol meadowfoam**

*Limnanthes vinculans*, Sebastopol meadowfoam, is a federal listed endangered species and a state endangered species of meadowfoam found in the Laguna de Santa Rosa and Cotati Valley of Sonoma County. Typically the herb is found in hydric soils associations, and is often found in joint occurrence with Burke's goldfields and Sonoma sunshine. Onsite surveys conducted during the normal blooming cycle of *Limnanthes vinculans* did not reveal the presence of this species.

### ***Navarretia leucocephala ssp. bakeri*, Baker's navarretia**

*Navarretia leucocephala ssp. bakeri* is not listed in either the federal or California ESAs, but is designated as a CRPR 1B.1 plant. CNDDDB lists the plant's habitat as vernal pools, cismontane woodland, meadows and seeps. Onsite surveys conducted during the normal blooming cycle of

*Navarretia leucocephala ssp. bakeri* did not reveal the presence of this species.

#### **4.6.2 Special-Status Invertebrates**

One special status invertebrate species was evaluated as having the potential to occur in the Study Area. *Syncaris pacifica*, California freshwater shrimp, is a federal endangered species and state endangered species inhabiting low gradient streams and shallow pools away from main streamflow. Upon further analysis and after three onsite surveys, this special-status invertebrate is considered to be absent due to lack of suitable habitat.

#### **4.6.3 Special-Status Amphibians & Reptiles**

Two special-status amphibians and one special-status reptile species were evaluated as having potential to occur in the Study Area. However, upon further analysis and after three onsite surveys, these species were considered to be absent from the Study Area due to the lack of suitable habitat.

#### **4.6.4 California tiger salamander**

##### ***Ambystoma californiense*, California tiger salamander**

The Sonoma County California tiger salamander (CTS) inhabits vernal pools and seasonal ponds, associated with grassland, and oak savannah plant communities below 60 m. Because this species spend most of their lives underground, California tiger salamanders are rarely encountered, even in areas where they are abundant. The onsite detention basin was thoroughly surveyed with no indication that the basin would provide suitable aquatic or upland CTS habitat. The Santa Rosa Plain Conservation Strategy describes project areas where the presence of CTS is not likely. Impact to CTS is not likely on some lands beyond 1.3 miles from breeding sites, or on lands that are surrounded by significant barriers or otherwise unsuitable CTS habitat. The Study Area has been identified by the Santa Rosa Conservation Strategy as “Out of Potential Range for CTS” (see Figure 4, Enclosure A). Significant barriers for CTS associated with this site include commercial/residential development on three sides and Shiloh Road which ranges up to 72 feet wide along the majority of the southern boundary of the property. Upon further analysis and after three protocol-level onsite surveys, there is no aquatic or upland habitat suitable to support this species within the Study Area.

#### **4.6.5. Special-Status Birds: *Athene cunicularia*, burrowing owl**

The burrowing owl, *Athene cunicularia*, is not listed pursuant to either the California or federal ESAs; however, it is designated as a bird of conservation concern by the USFWS, and a CDFW SSC. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds. This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Otospermophilus beecheyi*), but may use man-made structures such as cement culverts or pipes; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement. The breeding season typically occurs between February 1

and August 31. Onsite surveys for this species was conducted during their normal breeding season when their presence would be noticeable. There are few burrows capable of supporting the burrowing owl within the Study Area. Although the Study Area did not reveal the presence of the owl, preconstruction surveys will be required.

#### **4.7 Wildlife Movement/Corridors**

The Study Area is surrounded on three sides by industrial park businesses and on the south by Shiloh Road. As such, wildlife use is expected to be relatively low. The Study Area does not fall within an Essential Habitat Connectivity area mapped by the CDFW. The small diameter trees within the detention basin and those along the perimeter of the Study Area may support cover for local wildlife, but it is not expected to be significant due to the relative small size of the Survey Area.

#### **4.8 Sensitive Natural Communities**

One sensitive natural community, Northern Hardpan Vernal Pool habitat, has been identified southwest of the Study Area. Due to the developed nature of the surrounding properties and the past history of extensive past agricultural activities within the Study Area, there is little evidence that the Study Area would support this sensitive natural community. Upon further analysis and after three onsite surveys, Northern Hardpan Vernal Pools are absent from the Study Area.

#### **4.9 Trees**

The Study Area supports a detention basin with three small diameter willows and one small diameter cottonwood; however there does not appear to be any “street”, “landmark” or “heritage” trees within the Study Area. The Town of Windsor, Tree Technical Manual (Town of Windsor, 2003) strongly recommends that a preliminary tree inventory be prepared and submitted to the Town prior to submittal of a preliminary Tentative Map or site plan to determine what trees are present on the property.

#### **5.0 Impact Assessment and Proposed Mitigation Measures**

**BIO-1 Nesting Bird Protection.** The Town of Windsor shall require project applicants to retain the services of a qualified biologist(s) to conduct a pre-construction nesting bird survey during the nesting season (February 1 through August 31) prior to all new development that may remove any trees or vegetation that may provide suitable nesting habitat for migratory birds or other special-status bird species. Surveys should be conducted no earlier than 30 days before construction activities are scheduled. If nests are found the qualified biologist(s) shall identify appropriate avoidance measures.

#### **BIO-2 Listed Plant Species Preconstruction Surveys.**

Preconstruction surveys will be conducted to determine the presence of federal and/or state special status plant species. Surveys should be conducted no earlier than 30 days before construction activities are scheduled. If special status plant species are identified onsite, appropriate notification will be made to the USFWS and CDFW. A protection plan will be

submitted for agency review and action before special status plants are impacted.

### **BIO-3 Wetland Impact Analysis and Permits**

Except for less than 0.05-acres of constructed detention basin, there are no aquatic features within the Project area. An aquatic resources delineation is not indicated as the detention basin falls within the definition of the “non-jurisdictional waters” in accordance with 33 CFR § 328.3 (10) *Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off*. Stormwater detention basins fall within the jurisdiction of the Regional Water Quality Control Board. The detention basin is actively used by the industrial park to the west, therefore any impact to the detention basin would have to be coordinated and permitted through the Regional Water Quality Control Board.

### **BIO-4 Tree Protection and Preservation Plan**

A Town of Windsor approved arborist shall prepare a preliminary Tree Protection and Preservation Plan for submission with the Tentative Map or Site Plan. If the small diameter willow trees and one small diameter cottonwood in the detention basin do not qualify as a Regulated Tree, no further mitigation is required.

This concludes our third survey for the Biological Assessment and Wetland Determination of the ±5.92-acre Action Area of former agricultural land located at 295 Shiloh Road, Town of Winsor, Sonoma County, California. If you have any questions concerning our findings or recommendations please feel free to contact me directly at: Bole & Associates, Attn: Marcus Bole, phone 530-633-0117, and email: [marcus@mhbole.com](mailto:marcus@mhbole.com).

Respectfully Submitted:



Marcus H. Bole, M.S.  
Senior Wildlife Biologist  
Senior Wetland Scientist  
Bole & Associates

Enclosures

- Enclosure A: Maps & Photos
- Enclosure B: CNDDDB & IPaC Databases
- Enclosure C: Soil Data
- Enclosure D: Site Plant List and Alton Lane Conservation Bank Reference Site



## 6.0 References

- Baldwin, B.G; D.H. Goldman; D.J. Keil; R. Patterson; and T.J. Rosatti, editors. 2012. The Jepson Manual: Vascular Plants of California, Second Edition. University of California Press, Berkeley.
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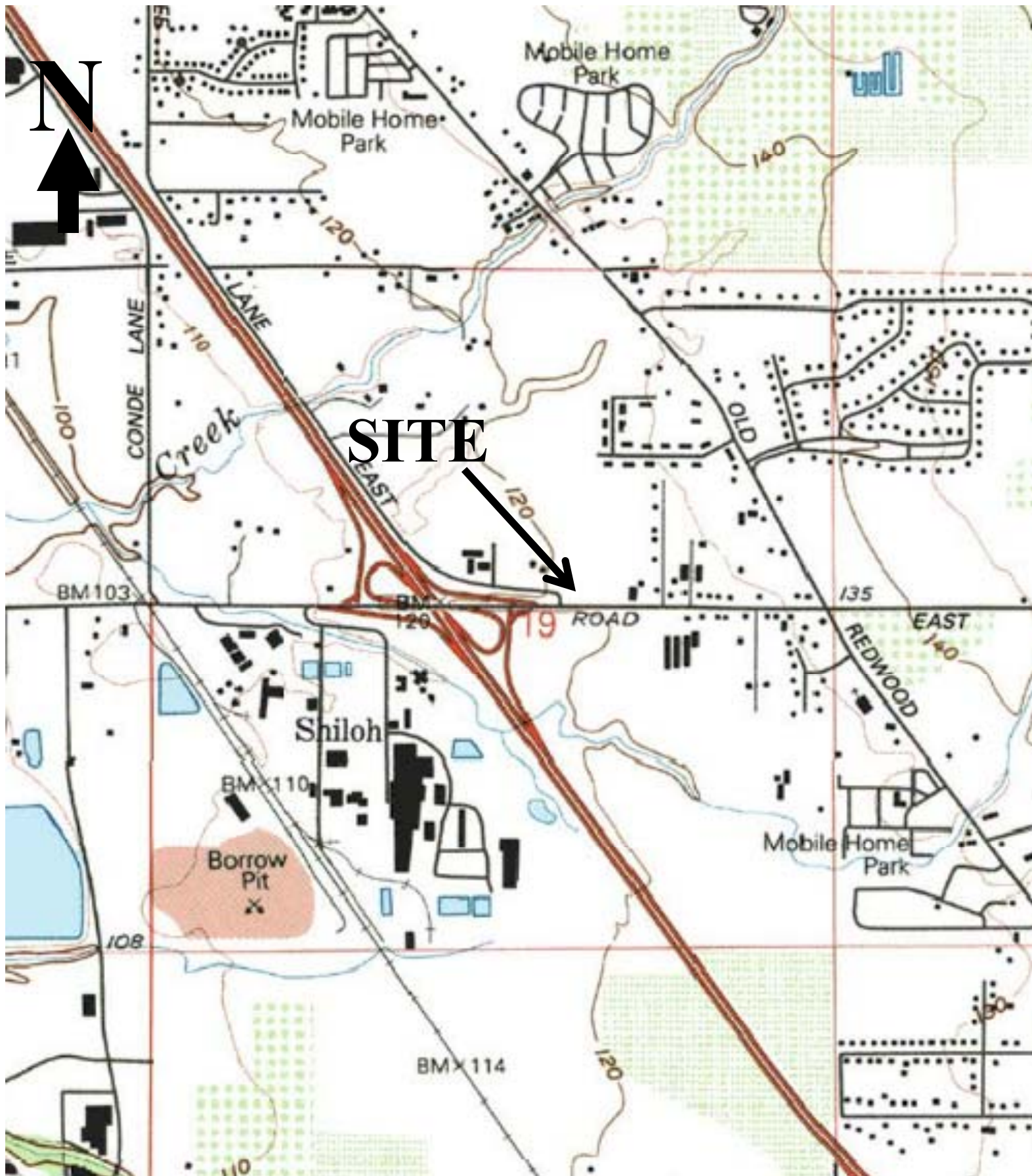
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## ENCLOSURE A: MAPS & SITE PHOTOS



**Site Location Map:** APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. Section 19, Township 8 North, Range 8 West, Healdsburg (1993) USGS Quadrangle.

**Figure 1**





**VicinityMap:** APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. Site is shown surrounded by a multiple-tenant business park, single-family residences, undeveloped/agricultural land, a gasoline station, and a Home Depot.

**Figure 2**



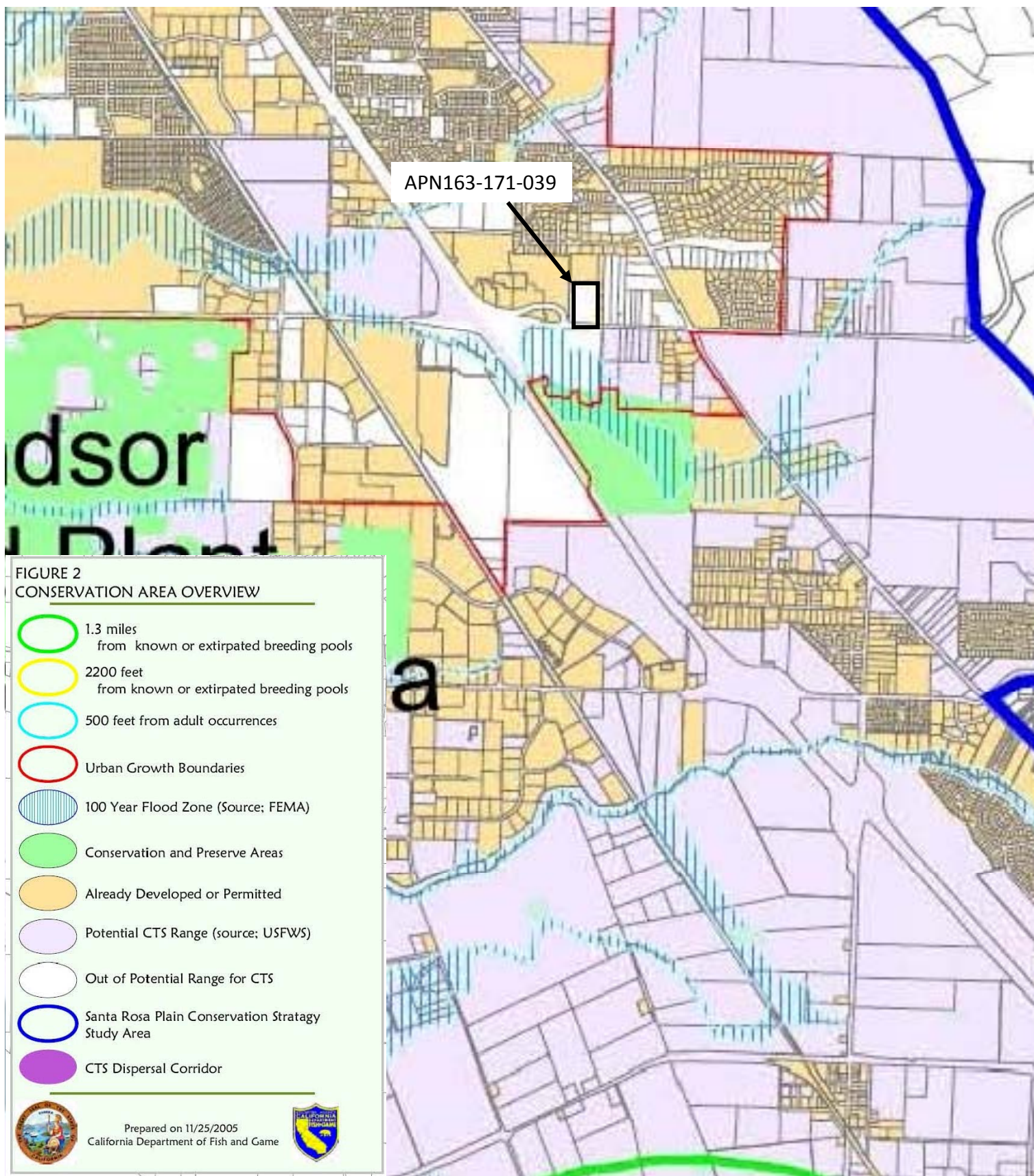


**BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: [marcus@mhbole.com](mailto:marcus@mhbole.com)

**SITE: 295 SHILOH WAY, WINDSOR, CA 95492**  
**ITEM: SITE MAP- AERIAL OVERLAY**

**FIGURE 3**





Excerpt from Figure 2: Conservation Area Overview. APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492 showing site located within Urban Growth Boundary, and outside of Potential Range for CTS. The site is surrounded by “Already Developed or Permitted” parcels.

See: <https://www.fws.gov/sites/default/files/documents/2-Figures-1-to-5-Santa-Rosa-Plain-508.pdf>

Figure 4





SITE: 295 SHILOH WAY, WINDSOR, CA 95492

ITEM: VEGETATION MAP

 NON-NATIVE GRASSLAND

FIGURE 5

**BOLE & ASSOCIATES**

104 Brock Drive, Wheatland, CA 95692

(530) 633-0117, email: [marcus@mhbole.com](mailto:marcus@mhbole.com)





163-171-039

INQUIRY #: 6786972.1

YEAR: 2016



= 500'





INQUIRY #: 6786972.1

YEAR: 2009

— = 500'







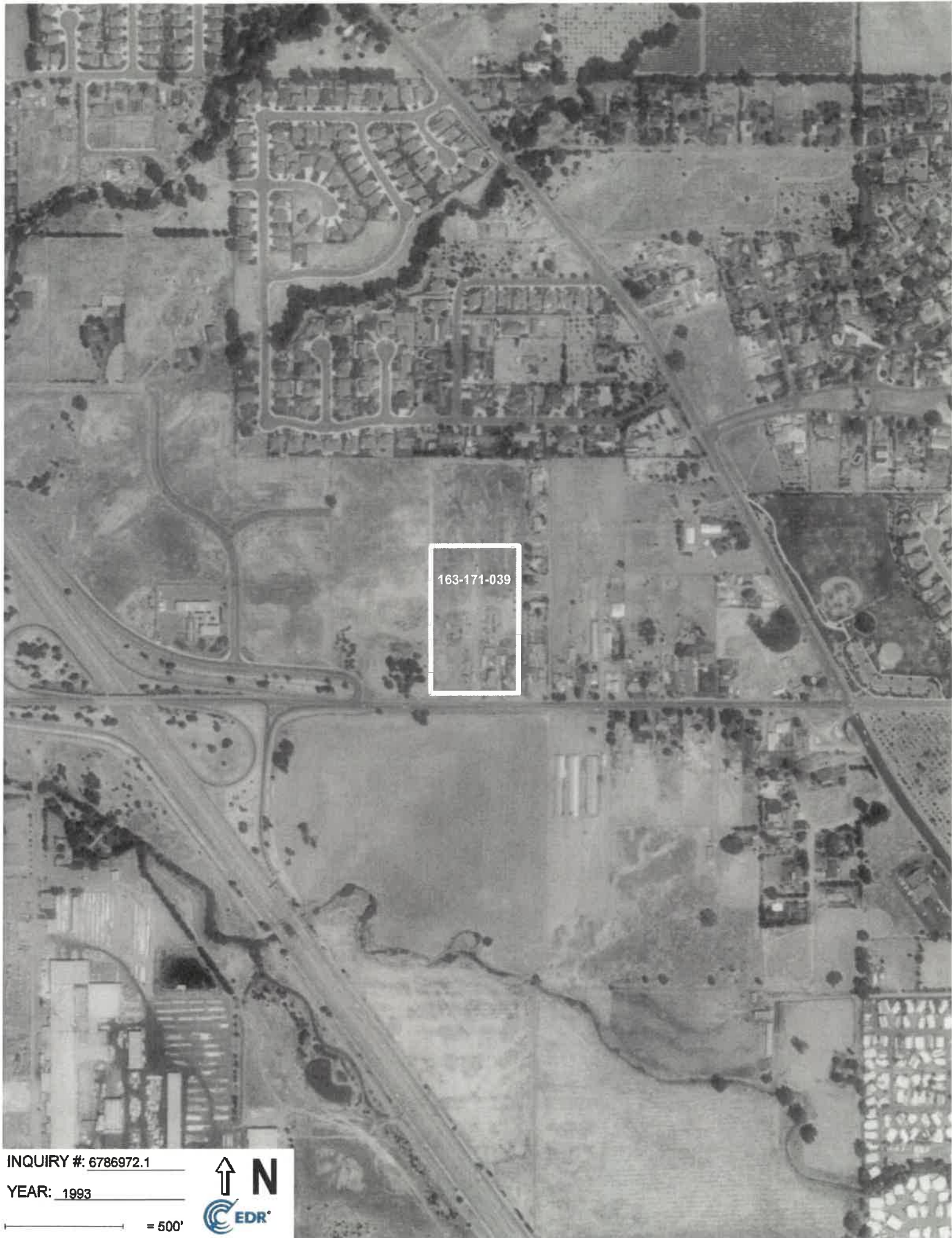
INQUIRY #: 6786972.1

YEAR: 2006

— = 500'







163-171-039

INQUIRY #: 6786972.1

YEAR: 1993



— = 500'





INQUIRY #: 6786972.1

YEAR: 1983

— = 500'







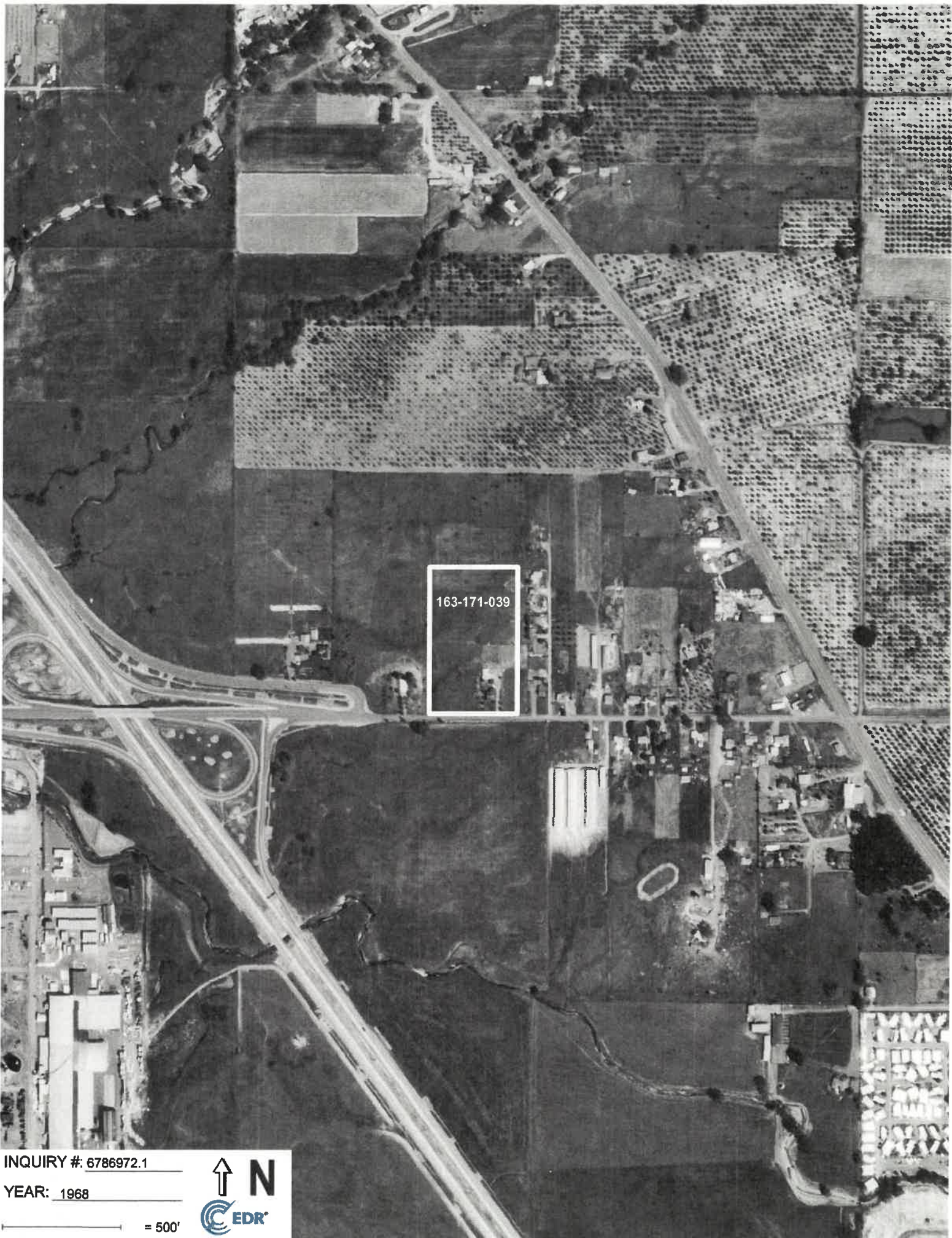
INQUIRY #: 6786972.1

YEAR: 1974

— = 500'







INQUIRY #: 6786972.1

YEAR: 1968

— = 500'







163-171-039

INQUIRY #: 6786972.1

YEAR: 1952

— = 500'







INQUIRY #: 6786972.1

YEAR: 1942

— = 500'







**BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE:** 295 Shiloh Road, Windsor, CA.  
**ITEM:** 0.05-acre detention basis  
**DATE:** 4/26/2022  
**PLATE:** 1





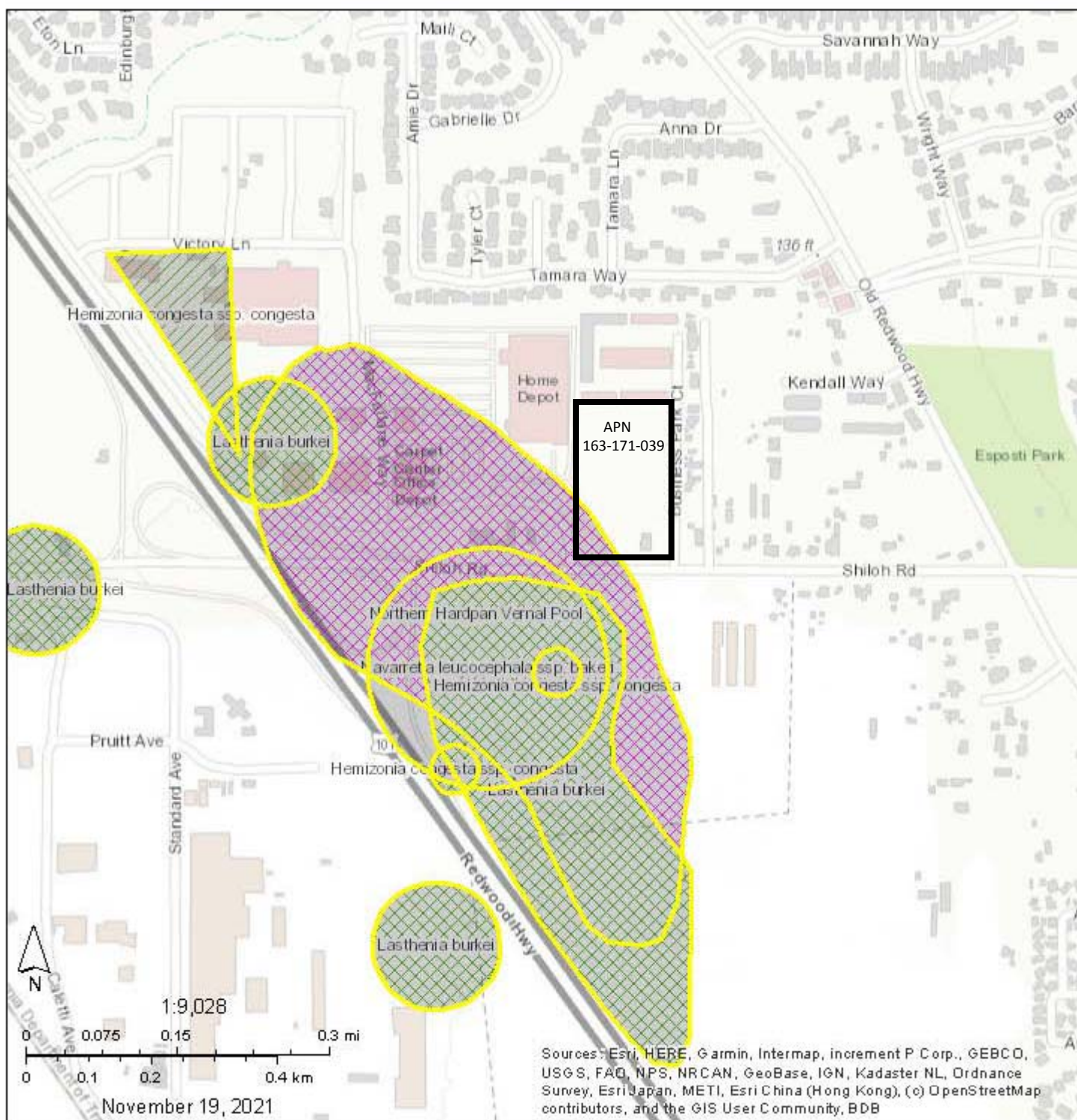
**MARCUS H. BOLE & ASSOCIATES**  
104 Brock Drive, Wheatland, CA 95692  
(530) 633-0117, email: mbole@aol.com

**SITE: 295 Shiloh Road, Windsor, CA.**  
**ITEM: Non-native grasses and forbs**  
**DATE: 4/26/2022** **PLATE: 2**

## ENCLOSURE B: CNDDB & IPAC DATABASES



# Map of Project Area



## California Natural Diversity Database (CNDDB) Commercial (ds85)

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)

- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (80m)
- Terrestrial Comm. (specific)
- Terrestrial Comm. (non-specific)
- Terrestrial Comm. (circular)

- Aquatic Comm. (80m)
- Aquatic Comm. (specific)
- Aquatic Comm. (non-specific)
- Aquatic Comm. (circular)
- Multiple (80m)
- Multiple (specific)
- Multiple (non-specific)

- Multiple (circular)
- Sensitive EO's (Commercial only)



## Selected Elements by Element Code

California Department of Fish and Wildlife

California Natural Diversity Database



**Query Criteria:** Quad</span> IS </span>(Geyserville (3812268)</span> OR </span>Jimtown (3812267)</span> OR </span>Mount St. Helena (3812266)</span> OR </span>Guerneville (3812258)</span> OR </span>Healdsburg (3812257)</span> OR </span>Mark West Springs (3812256)</span> OR </span>Camp Meeker (3812248)</span> OR </span>Sebastopol (3812247)</span> OR </span>Santa Rosa (3812246))</span> AND </span>(Federal Listing Status</span> IS </span>(Endangered</span> OR </span>Threatened</span> OR </span>Proposed Endangered</span> OR </span>Candidate)</span> OR </span>State Listing Status</span> IS </span>(Endangered</span> OR </span>Threatened</span> OR </span>Rare</span> OR </span>Candidate Endangered</span> OR </span>Candidate Threatened))

Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
AAAAA01183	<b><i>Ambystoma californiense pop. 3</i></b> California tiger salamander - Sonoma County DPS	Endangered	Threatened	G2G3T3	S2	WL
AAABH01022	<b><i>Rana draytonii</i></b> California red-legged frog	Threatened	None	G2G3	S2S3	SSC
AAABH01050	<b><i>Rana boylei</i></b> foothill yellow-legged frog	None	Endangered	G3	S3	SSC
ABPBXB0020	<b><i>Agelaius tricolor</i></b> tricolored blackbird	None	Threatened	G1G2	S1S2	SSC
AFCHA02034	<b><i>Oncorhynchus kisutch pop. 4</i></b> coho salmon - central California coast ESU	Endangered	Endangered	G5T2T3Q	S2	
AFCHA0209G	<b><i>Oncorhynchus mykiss irideus pop. 8</i></b> steelhead - central California coast DPS	Threatened	None	G5T2T3Q	S2S3	
ICMAL27010	<b><i>Syncaris pacifica</i></b> California freshwater shrimp	Endangered	Endangered	G2	S2	
PDAST1A010	<b><i>Blennosperma bakeri</i></b> Sonoma sunshine	Endangered	Endangered	G1	S1	1B.1
PDAST5L010	<b><i>Lasthenia burkei</i></b> Burke's goldfields	Endangered	Endangered	G1	S1	1B.1
PDERI040C0	<b><i>Arctostaphylos densiflora</i></b> Vine Hill manzanita	None	Endangered	G1	S1	1B.1
PDERI04221	<b><i>Arctostaphylos bakeri ssp. bakeri</i></b> Baker's manzanita	None	Rare	G2T1	S1	1B.1
PDERI04222	<b><i>Arctostaphylos bakeri ssp. sublaevis</i></b> Cedars manzanita	None	Rare	G2T2	S2	1B.2
PDFAB0F240	<b><i>Astragalus claranus</i></b> Clara Hunt's milk-vetch	Endangered	Endangered	G1	S1	1B.1
PDFAB40040	<b><i>Trifolium amoenum</i></b> two-fork clover	Endangered	None	G1	S1	1B.1
PDLIM02090	<b><i>Limnanthes vinculans</i></b> Sebastopol meadowfoam	Endangered	Endangered	G1	S1	1B.1
PDMAL110K5	<b><i>Sidalcea oregana ssp. valida</i></b> Kenwood Marsh checkerbloom	Endangered	Endangered	G5T1	S1	1B.1
PDONA050K0	<b><i>Clarkia imbricata</i></b> Vine Hill clarkia	Endangered	Endangered	G1	S1	1B.1





Selected Elements by Element Code  
California Department of Fish and Wildlife  
California Natural Diversity Database



Element Code	Species	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
PDPGN040V0	<b><i>Chorizanthe valida</i></b> Sonoma spineflower	Endangered	Endangered	G1	S1	1B.1
PDPLM0C0E5	<b><i>Navarretia leucocephala ssp. plieantha</i></b> many-flowered navarretia	Endangered	Endangered	G4T1	S1	1B.2
PDRAN0B050	<b><i>Delphinium bakeri</i></b> Baker's larkspur	Endangered	Endangered	G1	S1	1B.1
PDRAN0B0Z0	<b><i>Delphinium luteum</i></b> golden larkspur	Endangered	Rare	G1	S1	1B.1
PDSCR0D380	<b><i>Castilleja uliginosa</i></b> Pitkin Marsh paintbrush	None	Endangered	GXQ	SX	1A
PDSCR0J0S2	<b><i>Cordylanthus tenuis ssp. capillaris</i></b> Pennell's bird's-beak	Endangered	Rare	G4G5T1	S1	1B.2
PDSCR0R060	<b><i>Gratiola heterosepala</i></b> Boggs Lake hedge-hyssop	None	Endangered	G2	S2	1B.2
PMLIL1A0H3	<b><i>Lilium pardalinum ssp. pitkinense</i></b> Pitkin Marsh lily	Endangered	Endangered	G5T1	S1	1B.1
PMPOA07012	<b><i>Alopecurus aequalis var. sonomensis</i></b> Sonoma alopecurus	Endangered	None	G5T1	S1	1B.1
PMPOA4Y070	<b><i>Pleuropogon hooverianus</i></b> North Coast semaphore grass	None	Threatened	G2	S2	1B.1

Record Count: 27



## 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:

Project Code: 2022-0037710

Project Name: Shiloh Crossing Project

May 02, 2022

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, 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 U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

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>

**Migratory Birds:** In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

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 Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

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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

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## Project Summary

Project Code: 2022-0037710

Event Code: None

Project Name: Shiloh Crossing Project

Project Type: Commercial Development

Project Description: APN 163-171-039, City of Windsor, Sonoma County

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@38.526975300000004,-122.78524188462549,14z>



Counties: Sonoma County, California

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## Endangered Species Act Species

There is a total of 10 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 Fisheries<sup>1</sup>, 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.

## Birds

NAME	STATUS
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/1123">https://ecos.fws.gov/ecp/species/1123</a>	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: <a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>	Threatened

## Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a>	Threatened
California Tiger Salamander <i>Ambystoma californiense</i> Population: U.S.A. (CA - Sonoma County) There is <b>final</b> critical habitat for this species. The location of the critical habitat is not available. Species profile: <a href="https://ecos.fws.gov/ecp/species/2076">https://ecos.fws.gov/ecp/species/2076</a>	Endangered

## Insects

NAME	STATUS
<b>Monarch Butterfly</b> <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a>	Candidate

## Crustaceans

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

## Flowering Plants

NAME	STATUS
<b>Burke's Goldfields</b> <i>Lasthenia burkei</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/4338">https://ecos.fws.gov/ecp/species/4338</a>	Endangered
<b>Many-flowered Navarretia</b> <i>Navarretia leucocephala ssp. plieantha</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/2491">https://ecos.fws.gov/ecp/species/2491</a>	Endangered
<b>Sebastopol Meadowfoam</b> <i>Limnanthes vinculans</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/404">https://ecos.fws.gov/ecp/species/404</a>	Endangered
<b>Sonoma Sunshine</b> <i>Blennosperma bakeri</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1260">https://ecos.fws.gov/ecp/species/1260</a>	Endangered

## Critical habitats

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



## **IPaC User Contact Information**

Agency: Bole & Associates

Name: Marcus Bole

Address: 104 Brock Drive

City: Wheatland

State: CA

Zip: 95692

Email: mbole@aol.com

Phone: 5306330117















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## ENCLOSURE C: SOIL DATA

Soil Map—Sonoma County, California  
(295 Shiloh Road Soils Map)



## MAP LEGEND

<b>Area of Interest (AOI)</b>			Area of Interest (AOI)		Spoil Area
<b>Soils</b>		Soil Map Unit Polygons		Very Stony Spot	
		Soil Map Unit Lines		Wet Spot	
		Soil Map Unit Points		Other	
	<b>Special Point Features</b>				
	Blowout		Special Line Features		
<b>Water Features</b>					
	Borrow Pit		Streams and Canals		
	Clay Spot		Transportation		
	Closed Depression		Rails		
	Gravel Pit		Interstate Highways		
	Gravelly Spot		US Routes		
	Landfill		Major Roads		
	Lava Flow		Local Roads		
<b>Background</b>					
	Marsh or swamp		Aerial Photography		
	Mine or Quarry				
	Miscellaneous Water				
	Perennial Water				
	Rock Outcrop				
	Saline Spot				
	Sandy Spot				
	Severely Eroded Spot				
	Sinkhole				
	Slide or Slip				
	Sodic Spot				

## 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: Jun 1, 2020—Oct 30, 2020

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HtA	Huichica loam, 0 to 2 percent slopes	4.9	89.2%
HwB	Huichica loam, shallow, ponded, 0 to 5 percent slopes	0.6	10.8%
<b>Totals for Area of Interest</b>		<b>5.5</b>	<b>100.0%</b>

ENCLOSURE D: PLANT LIST AND  
REFERENCE SITE DATA

## 295 SHILOH ROAD PLANT LIST – APRIL, 2022

### FAMILY *SCIENTIFIC NAME* / COMMON NAME

*Achillea millefolium* common yarrow

*Achyrachaena mollis* blow wives

*Agapanthus praecox* blue lily

*Ambrosia psilostachya* western ragweed

*Avena barbata* wild oat

*Baccharis pilularis* coyote brush

*Brassica nigra* black mustard

*Bromus madritensis ssp. rubens* red brine

*Bromus rigidus* ripgut brome

*Carduus pycnocephalus* Italian thistle

*Convolvulus arvensis* bindweed

*Contonester horizontalis* wall cotoneaster

*Cynodon dactylon* bermudagrass

*Cyperus esculentus* yellow nutsedge\*

*Carex nebrascensis* Nebraska sedge\*

*Daucus pusillus* wild carrot

*Distichlis spicata*, salt grass

*Echinochloa crus-galli* barnyard grass

*Eleocharis macrostachya* spikerush\*

*Erodium botrys* broadleaf filaree

*Festuca arundinacea*, tall fescue

*Foeniculum vulgare* sweet fennel

*Genista monspessulana* French broom

*Helminthotheca echioides* bristly ox-tongue

*Hieracium longipilum* harry hawkweed

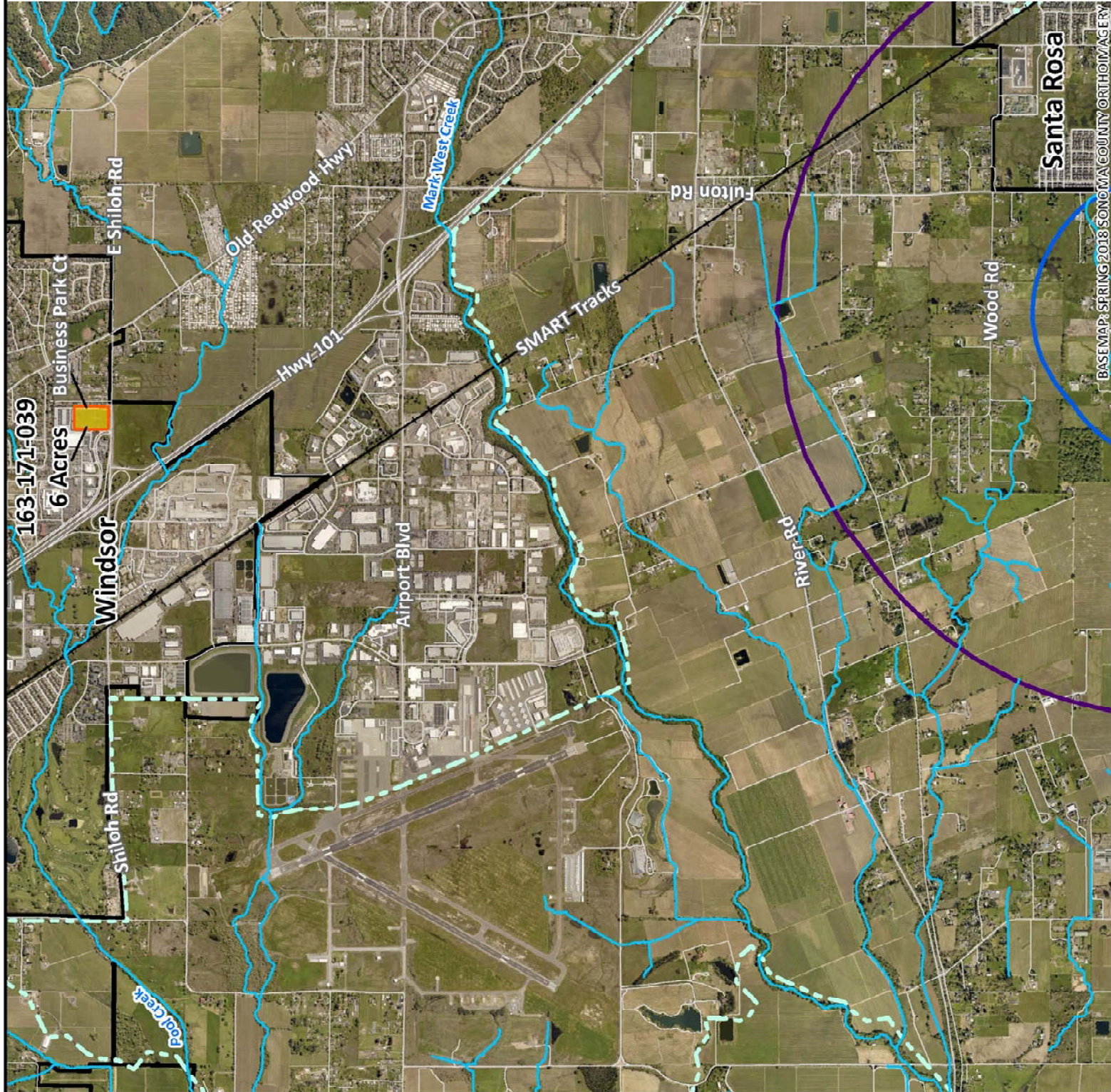
*Hordeum marinum ssp. gussoneanum* Mediterranean barley

*Hypochaeris radicata* hairy cat's-ear  
*Juncus spp.* rush\*  
*Lactuca serriola* prickly lettuce  
*Leontodon saxatilis* little hawkbit  
*Lepidium latifolium* pepperweed  
*Lupinus spp.* Lupine  
*Malva neglecta* common mallow  
*Matricaria discoidea* pineapple weed  
*Medicago sativa* alfalfa  
*Paspalum dilatatum* dallasgrass\*  
*Plantago major* broadleaf plantain  
*Polypogon monspeliensis* rabbitfoot grass  
*Populus nigra* black poplar  
*Raphanus sativus* wild radish  
*Rubus discolor* Himalayan blackberry\*  
*Rumex crispus* curley dock\*  
*Salsola iberica* Russian thistle  
*Salix sp.* willow\*  
*Senecio vulgaris* common groundsel  
*Silybum marianum* milk thistle  
*Taraxacum officinale* dandelion  
*Trifolium hirtum* rose clover  
*Typha latifolia* cattails\*  
*Vicia villosa*, hairy vetch  
*Vulpia myuros* rattail fescue

\*Species found only in detention basin

Plant nomenclature follows The Jepson Manual: Higher Plants of California. Second Edition. B.G. Baldwin (convening editor). University of California Press, Berkeley, CA.





# LEGEND

- PROJECT PARCEL
- CTS CRITICAL HABITAT
- STREAMS
- CITY LIMITS
- CTS HABITAT (RADIUS OF 500 FEET AROUND BREEDING POND) (3 : 1 MITIGATION AREA)
- CTS HABITAT (BETWEEN RADIUS OF 500 FEET & 2,200 FEET AROUND BREEDING POND) (2 : 1 MITIGATION AREA)
- CTS HABITAT (BETWEEN RADIUS OF 2,200 FEET & 1.3 MILES AROUND BREEDING POND) (1 : 1 MITIGATION AREA)
- CTS ADULT OCCURRENCE (RADIUS OF 500 FEET; APPLIES TO OCCURRENCES BEYOND 2,200 FEET OF A KNOWN BREEDING POND) (2 : 1 MITIGATION RATIO)
- CTS HABITAT BEYOND 1.3 MILES OF A BREEDING POND (0.2 : 1 MITIGATION RATIO)

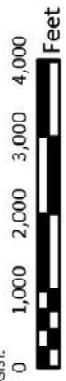
PROPERTY IS BEYOND THE CRITICAL HABITAT AREA BOUNDARY AND BEYOND THE RADIUS OF 1.3 MILES OF ANY KNOWN BREEDING PONDS, REQUIRING A 0.2 : 1 MITIGATION RATIO

# NOTES

THE INFORMATION PRESENTED ON THIS MAP REPRESENTS THE CURRENT CALIFORNIA TIGER SA ANADIGER (CTS) MITIGATION ZONES AND ASSOCIATED MITIGATION RATIO AS IDENTIFIED IN TABLE 2 AND EXHIBITED IN FIGURE 1 OF THE PROGRAM MAPPING BIOLOGICAL CHINION (PBO) ISSUED TO THE U.S. ARMY CORPS OF ENGINEERS BY THE U.S. FISH AND WILDLIFE SERVICE (USFWS), DATED JUNE 11, 2020. THE CTS MITIGATION ZONES AND ASSOCIATED MITIGATION RATIOS REPRESENTED ON THIS MAP MAY NOT, HOWEVER, REPRESENT THE CURRENT POSITION OF THE CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE (CDFW). THE CDFW SHOULD BE CONTACTED FOR THE LATEST POSITION ON THE CTS MITIGATION RATIO FOR THE SUBJECT PARCEL(S).

AREAS AND LOCATIONS SHOWN ON THIS MAP WERE COMPILED FROM NUMEROUS GIS DATA LAYERS WHICH ARE NOT SURVEY ACCURATE. TO ASSIST IN CONFIRMING THE ACTUAL MITIGATION RATIOS BEING APPLIED TO YOUR PROJECT PARCELS PLEASE REFER TO THE FOLLOWING: USFWS WEB MAPPING APPLICATION - POTENTIAL EFFECTS DETERMINATIONS (<https://fws.maps.arcgis.com/apps/webappviewer/index.html?id=2c4c8a1750d443827d7f10f1678788e1e11>), FIGURE 1 OF THE 2020 PBO, AND ENCLOSURE 1 OF THE 2007 PBO.

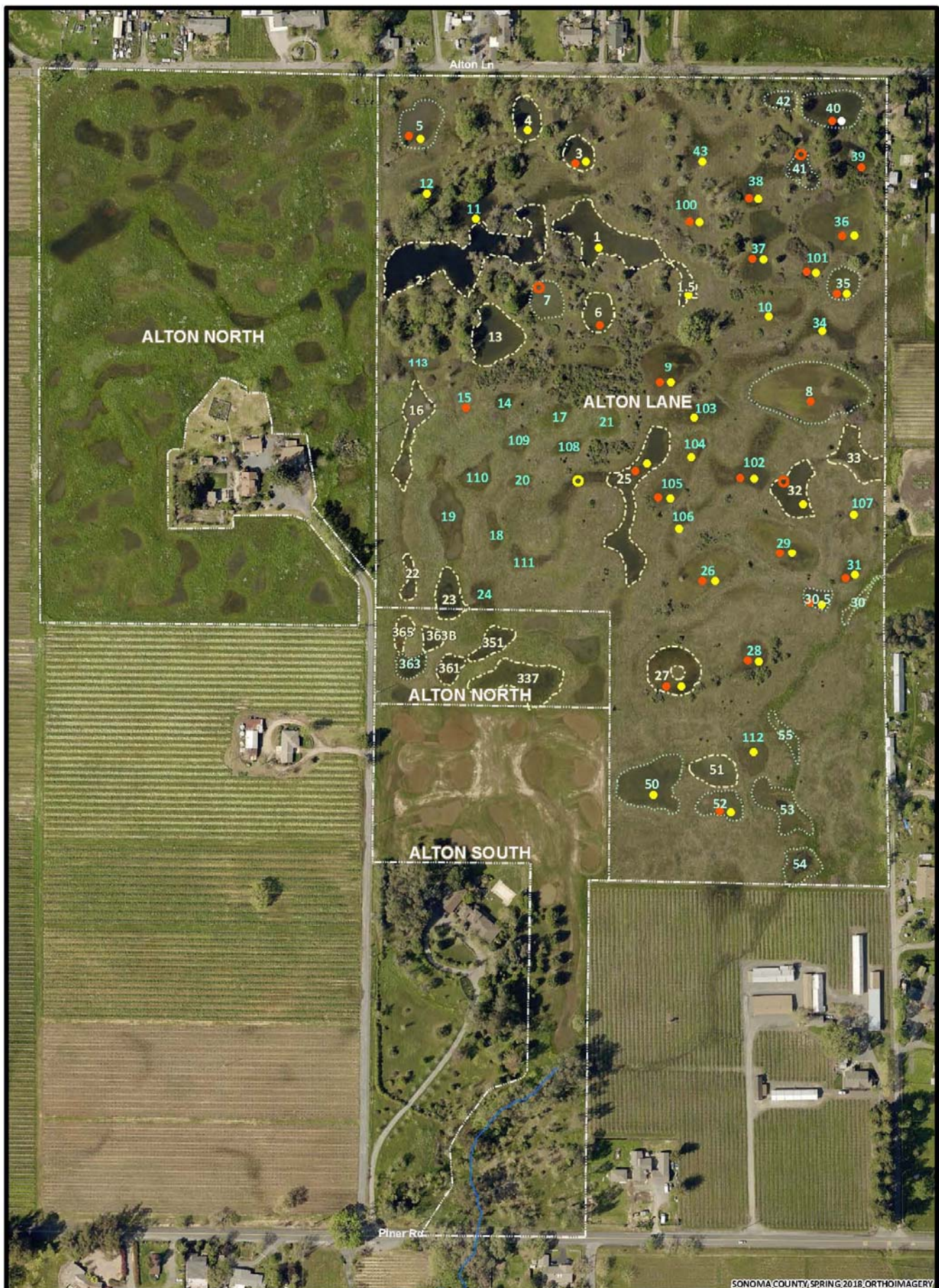
TO CONFIRM THE ACTUAL MITIGATION BEING APPLIED TO YOUR PROJECT PLEASE CONSULT WITH THE USFWS, CDFW, AND YOUR BIOLOGIST.



Job Name: <b>295 SHILOH RD, WINDSOR, CA</b>	
Description: <b>CTS HABITAT EXHIBIT (163-171-039)</b>	
Drawn By: JS	Checked By: JMD
Scale: 1:30,000	Date: 4/29/2022
Job Number: 5945-08	Sheet: 1 OF 1

CINGQUINT & FASSARINO, INC.  
LAND SURVEYING  
350 N. Dutton Ave., #150 Phone: (707) 942-4266  
Santa Rosa, CA 95401 Fax: (707) 942-2126  
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#### LEGEND

- POOLS WITH CTS BREEDING
- POOLS WITH NO RECORD OF CTS BREEDING
- POOLS WITH NO RECORD OF BREEDING (WITHOUT BOUNDARY)
- PERIMETER FENCES
- LOCATION OF PLANTS - SPRING 2020
- LOCATION OF PLANTS OBSERVED IN 2010 BUT NOT OBSERVED DURING 2020 SURVEYS
- STREAMS

● *Lasthenia burkei*  
 ● *Blennosperma bakeri*  
 ● *Limnanthes vincularis*

● *Lasthenia burkei*  
 ● *Blennosperma bakeri*



#### CINQUINI & PASSARINO, INC.

LAND SURVEYING

▲ BOUNDARY ▲ TOPOGRAPHIC  
 ▲ INFRASTRUCTURE ▲ DEVELOPMENT  
 ▲ LASER SCANNING ▲ RAILROAD

1360 N. Dutton Ave. Ste. 150  
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 Fax: (707) 542-2106  
 WWW.CINQUINIPASSARINO.COM

Job Name:	Alton Lane Conservation Bank	Drawn By: JS	Checked By: JMD
Description:	California Tiger Salamander Breeding & Wetland Plant Occurrence Information	Scale: 1 in = 200 ft	Date: 6/2/2020
		Job No: 5872-07	Sheet: 1 OF 1



## APPENDIX D

### **Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed Plants on the Santa Rosa Plain**

(modified from the September 23, 1996 Service Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants)

These guidelines describe protocols for conducting botanical surveys for federally listed plant species on the Santa Rosa Plain. They also describe minimum standards for reporting results of the surveys. The federally listed plant species occurring on the Santa Rosa Plain are Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*), Sebastopol meadowfoam (*Limnanthes vinculans*), and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*). The Service will use, in part, the information outlined below in determining whether the project under consideration may affect these plants, and in determining the direct, indirect, and cumulative effects.

Field inventories should be conducted by a qualified botanist in a manner that will locate listed species that may be present. With the exception of developed agricultural lands, the entire project area should be surveyed. Acceptable survey protocols are as follows:

1. A minimum of three visits must be made to the project site during the growing season. Site visits must correspond to times when at least one of the four Santa Rosa Plain listed plant species is accurately identifiable on a local reference site. Reference sites used must be acceptable to the Service. Site visits must span a period during which all four of the listed plants have been observed (not necessarily at the same time) and are identifiable on reference sites during a specific growing season. More visits to the site or the adjacent area may be needed to determine when each species is blooming in a given year. Inventories will include all potential habitats at the project site.
2. A minimum of two years of negative survey data performed according to the specifications in #1 is necessary to substantiate a negative finding for future permitting actions. For cases in which negative survey data do not conform to the standards outlined in these guidelines, the Service will make the assumption that all four listed plant species are present on the project site.
3. List every species observed and compile a comprehensive list of vascular plants for the entire project site. Vascular plants need to be identified to a taxonomic level which allows rarity to be determined.
4. Survey documentation must include:
  - a. identification of reference sites visited, which listed species were ,phenological stage of the listed species observed, and similarity of physiographic control between reference sites and surveyed sites (general water depth, extent of pooling, etc.)

## APPENDIX D

- b. a description of the biological setting at the project site, including plant community, topography, soils, potential habitat of target species, and environmental conditions, such as timing or quantity of rainfall, which may influence the performance and expression of target species
  - c. a map of project location showing scale, orientation, project boundaries, parcel size, and map quadrangle name
  - d. survey dates and survey methodology(ies)
  - e. a comprehensive list of all vascular plants occurring on the project site for each habitat type, to characterize and document site quality
  - f. a description of current and historical land uses of the habitat(s) and degree of project site alteration
  - g. a description of the presence of listed species off-site on adjacent parcels, if known
  - h. an assessment of the biological significance or ecological quality of the project site in a local and regional context
5. If listed species is (are) found on the project site, report results that additionally include:
- a. a map showing the distribution of the listed species distribution relative to the proposed project
  - b. a description of the direction and integrity of flow of surface hydrology. If listed species is (are) affected by adjacent off-site hydrological influences, describe these factors.
  - c. the listed species phenology and microhabitat, an estimate of the number of individuals of each listed species per unit area; identify areas of high, medium and low density of listed species over the project site, and provide acres of occupied habitat of listed species. Investigators should provide color slides, photos or color copies of photos of listed species or representative habitats to support information or descriptions contained in reports.
  - d. the degree of impact(s), if any, of the proposed project as it relates to the potential unoccupied habitat of listed species.
6. Document findings of target species by completing California Native Species Field Survey Form(s) and submit form(s) to the Natural Diversity Data Base. Documentation of determinations and/or voucher specimens may be useful in cases of taxonomic ambiguities, habitat or range extensions.



## **APPENDIX D**

7. Report as an addendum to the original survey, any change in abundance and distribution of listed plants in subsequent years. Project sites with inventories older than 3 years from the current date of project proposal submission will likely need additional survey. Investigators need to assess whether an additional survey(s) is (are) needed.
8. Guidance from California Department of Fish and Game (CDFG) regarding plant and plant community surveys can be found in Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities, 1984. Please contact the CDFG Regional Office for questions regarding the CDFG guidelines and for assistance in determining any applicable State regulatory requirements.



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office  
2800 Cottage Way, Room W-2605  
Sacramento, California 95825-1846



In Reply Refer To:  
81420-2008-F-0261

NOV 9 2007

Ms. Jane Hicks  
Regulatory Branch Chief  
San Francisco District  
U.S. Army Corps of Engineers  
1455 Market Street  
San Francisco, California 94103-1398

Subject: Programmatic Biological Opinion (Programmatic) for U.S. Army Corps of Engineers (Corps) Permitted Projects that May Affect California Tiger Salamander and Three Endangered Plant Species on the Santa Rosa Plain, California (Corps File Number 223420N)

Dear Ms. Hicks:

This is in response to your November 1, 2007, request to re-initiate formal consultation with the U.S. Fish and Wildlife Service (Service) for permits, enforcement actions and mitigation banks that are under the Corps jurisdiction. This document represents the Service's biological opinion on the effects of the action on the endangered Sonoma County Distinct Population Segment of the California tiger salamander (*Ambystoma californiense*), Burke's goldfields (*Lasthenia burkei*), Sonoma sunshine (*Blechnosperma bakeri*) and Sebastopol meadowfoam (*Limnanthes vinculans*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

This biological opinion is based on information provided by the following facts, communications and documents:

1. The November 1, 2007 letter from the Corps re-initiating formal consultation;
2. The December 1, 2005 Santa Rosa Plain Conservation Strategy;
3. The May 16, 2006 Interim Mitigation Guidelines authored by the Service and CDFG ([http://www.fws.gov/sacramento/es/santa\\_rosa\\_conservation.html](http://www.fws.gov/sacramento/es/santa_rosa_conservation.html));
4. References cited in this Biological Opinion; and
5. Other information available to the Service.



## Consultation History/Background

The Santa Rosa Plain is located in central Sonoma County and is characterized by vernal pools, seasonal wetlands, and associated grassland habitat, which support – among other flora and fauna – the endangered California tiger salamander and four endangered plant species: Burke's goldfields, Sonoma sunshine, Sebastopol meadowfoam, and many-flowered navarretia (*Navarretia leucocephala* ssp. *plieantha*) (listed plants). These listed plants grow only in vernal pools; the California tiger salamander uses seasonal wetlands and vernal pools for breeding and metamorphosis, and the surrounding uplands for dispersal, feeding, growth, maturation and maintenance of the juvenile and adult population (upland habitat). The distribution of Burke's goldfields, Sonoma sunshine, and Sebastopol meadowfoam is confined almost entirely to the Santa Rosa Plain. Many-flowered navarretia occurs mostly outside the Santa Rosa Plain, but its only Sonoma County population is present on the Santa Rosa Plain.

Urbanization and agricultural development on the Santa Rosa Plain has encroached into areas inhabited by the California tiger salamander and the listed plants discussed above. The loss of seasonal wetlands caused by development on the Santa Rosa Plain has led to declines in the populations of the listed plants and the California tiger salamander. Voters in the cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol, and the Town of Windsor have established urban growth boundaries (UGBs) for their communities. This is intended to accomplish the goal of city-centered growth, resulting in rural and agricultural land uses being maintained between the urbanized areas. Therefore, it can be reasonably expected that rural land uses will continue into the foreseeable future. There are also acreages of publicly owned property and preserves located in the Santa Rosa Plain, which will further contribute to conservation. Some of the areas within these UGBs, however, include lands inhabited by California tiger salamander and the listed plant species. Some agricultural practices have also disturbed and modified seasonal wetlands, California tiger salamander and listed plant habitat on the Santa Rosa Plain. Some agricultural practices, such as irrigated or grazed pasture, retain some California tiger salamander habitat value compared to more intensive development.

Burke's goldfields, Sonoma sunshine, and Sebastopol meadowfoam were federally listed as endangered on December 2, 1991. The many-flowered navarretia was listed on June 18, 1997. These plants are also listed as endangered by the State of California. A Programmatic Biological Opinion covering the four listed plants was issued on July 17, 1998. On July 22, 2002, the Service listed the Sonoma County distinct population segment of the California tiger salamander as endangered under an emergency basis. The final rule was issued on March 19, 2003. The Service listed the species as threatened throughout its range on August 4, 2004, including the former Sonoma County distinct population segment (Federal Register 69:47211-47248). The listing of the California tiger salamander has caused a level of uncertainty for local jurisdictions, landowners, and developers about how the listing would affect their activities. Private and local public interests met with the Service to discuss possible cooperative approaches to protecting the species, while allowing planned land uses to occur within the range of the animal. The result of these discussions was the formation of the Santa Rosa Plain Conservation Strategy Team (Team). The Team included the following members: Service, CDFG, Corps, Environmental Protection Agency, North Coast Regional Water Quality Control Board, local governments, the Laguna de Santa Rosa Foundation, the environmental community, and the private landowner community. It was agreed that the Team would develop a conservation strategy for the Santa

Rosa Plain that conserves and enhances the habitat for the California tiger salamander and the listed plants, while considering the need for development pursuant to the general plans of the local jurisdictions. The Team held its first meeting on March 30, 2004, and continued to meet through August 2005, to prepare a Draft Santa Rosa Plain Conservation Strategy. The Team held a public meeting on September 12, 2005, and received numerous comments on the draft through September 16, 2005. In addition, the Draft Santa Rosa Plain Conservation Strategy was peer reviewed. The Team reviewed and considered all comments received, made modifications to the Draft Santa Rosa Plain Conservation Strategy where appropriate, and produced the Final Santa Rosa Plain Conservation Strategy (Conservation Strategy).

The Sonoma County distinct population segment for the California tiger salamander was reinstated and re-designated as endangered by court order on August 19, 2005. On December 14, 2005, the Service made a final determination to not designate critical habitat for the Sonoma County distinct population segment of the California tiger salamander. The Service analyzed whether the benefits of designating critical habitat were outweighed by the benefits of not designating critical habitat. It was determined that the interim conservation strategies and measures being implemented by those local governing agencies with land use authority over the area outweighed the benefits of listing critical habitat at this time. The California tiger salamander is not listed under the California Endangered Species Act at this time. It is currently a state species of special concern.

#### Conservation Areas

The Conservation Strategy identifies areas within the Santa Rosa Plain that should be conserved to benefit both the California tiger salamander and listed plants. Designation of an individual property as being within a conservation area does not change that property's land use designation or zoning, or otherwise restrict the use of that property. In addition, a property in a conservation area is not automatically suitable for listed species conservation.

The purpose of the conservation areas is to insure that preservation occurs throughout the distribution of the species. The designation of conservation areas is based upon the following factors: 1) known distribution of the California tiger salamander; 2) the presence of suitable California tiger salamander habitat; 3) presence of large blocks of natural or restorable land; 4) proximity to existing Preserves; and 5) known location of the listed plants. The designation of conservation areas also generally attempted to avoid future development areas established by UGBs and city general plans. Areas which are in the Laguna de Santa Rosa floodplain, areas above approximately 300 feet in elevation and characterized by oak woodland, or are adjacent to or surrounded by significant urban areas, generally have been excluded from the boundaries of the conservation areas, however these areas may still require mitigation if endangered species are adversely affected. The Southwest Santa Rosa Preserve System is within the urban growth boundary of the City of Santa Rosa.

The conservation area boundaries identify areas where mitigation for project-related impacts to the listed species should be directed. The listed plants also occur in the identified conservation areas, with the exception of the southwest Cotati and southeast Cotati Conservation Areas. However, the many-flowered navarettia is only known from one site in the Santa Rosa Plain.



Figures 1 through 3 in the Conservation Strategy identify areas important for protection of the California tiger salamander and listed plants on the Santa Rosa Plain as well as other pertinent information. Figures 4 through 13 in the Conservation Strategy describe each conservation area in detail (Service web page: [http://www.fws.gov/sacramento/es/santa\\_rosa\\_conservation.html](http://www.fws.gov/sacramento/es/santa_rosa_conservation.html)). Some lands within the conservation areas are excluded based on existing development and on their small size or on other factors that would make them unsuitable for conservation of listed species. Complete descriptions of the conservation areas are in the Conservation Strategy.

## **Introduction**

The Conservation Strategy is the biological framework upon which this Programmatic is based. However, because the local agencies with interested stakeholders are currently developing mechanisms to implement the Conservation Strategy, this Programmatic will be based on the interim mitigation ratios described in the Conservation Strategy and described later in this opinion. This Programmatic will replace the July 17, 1998 programmatic biological opinion (Service, 1998) prepared for the listed plants. This Programmatic may be amended or a new one may be written after an Implementation Plan for the Conservation Strategy is completed by the local jurisdictions.

This Programmatic is issued to the Corps for permits, enforcement actions or mitigation banks (Project(s)) that are under their jurisdiction. Projects that are appended to this Programmatic will be provided individual take authorization. This Programmatic will not cover the many-flowered navarretia because of its limited distribution. Also, projects that will impact occupied sites supporting Burke's goldfields and Sonoma sunshine, where surveys have documented 2,000 plants or greater in any year in the past 10 years may not be appended to this Programmatic, but will be evaluated on a case by case basis. The number for 2,000 plants was derived from comments provided by numerous technical experts and the Service's review of projects impacting plant populations. This Programmatic will expedite the process for project approval provided all information listed in the next section is provided by the project applicants. This Programmatic provides the framework for mitigation, conservation, translocation, and appropriate minimization measures. The Service and CDFG will track Project impacts, mitigation and other pertinent information.

## **Procedures for Appending Projects to the Programmatic Biological Opinion**

The following information is required from the applicant and will be used by the Corps along with the California tiger salamander and Plant Designation Map (Enclosure 1) and Plant Mitigation Location Map (Enclosure 2) to evaluate whether a Project can be appended to this Programmatic:

- 1) Corps Permit Application including Assessors Parcel Number(s), UTM coordinates, and street address of the Project;
- 2) Corps-verified jurisdictional determination;
- 3) Biological Assessment including Service survey protocols (Survey protocols:

[http://www.fws.gov/sacramento/es/santa\\_rosa\\_conservation.html](http://www.fws.gov/sacramento/es/santa_rosa_conservation.html)) results, if needed, and proposed mitigation consistent with the ratios in this Programmatic;

4) Listed plant occurrence information on the Project and mitigation sites from the CDFG California Natural Diversity Database (<http://www.dfg.ca.gov/biogeodata/cnddb/>) and the 1994 report, *Seasonal Wetland Baseline Report for the Santa Rosa Plain, Sonoma County* ([http://www.fws.gov/sacramento/es/Santa\\_Rosa\\_strategy\\_COE\\_programmatic\\_BO.htm](http://www.fws.gov/sacramento/es/Santa_Rosa_strategy_COE_programmatic_BO.htm)) (Patterson *et al.* , 1994); and

5) Mitigation proposal including acres and location, credit sale receipt and any other pertinent information. If the proposed mitigation is a new Preserve, then the Preserve Establishment and Evaluation Criteria (Enclosure 3) will be used by the Applicants to provide the preliminary determination for Preserve selection.

The Corps will make one of the following determinations of effect for a project by reviewing Enclosure 1, Enclosure 2 and other information provided by the applicant and will take the identified action:

- No effect. No consultation with the Service is required for areas on Enclosure 1 identified as “No Effect”.
- May affect listed plants, but would not likely affect California tiger salamander. Consult with the Service for concurrence for areas on Enclosure 1 identified as “May affect listed plants, but would not likely affect California tiger salamander”. The Corps will forward to the Service all biological and other pertinent information and a letter requesting that the proposed Project to be appended to this Programmatic.
- May affect listed plants and would likely affect California tiger salamander. Consult with the Service for concurrence for areas on Enclosure 1 and Enclosure 2 identified as “May affect listed plants and would likely affect California tiger salamander”. The Corps will forward to the Service all biological and other pertinent information and a letter requesting that the proposed Project to be appended to this Programmatic.
- May affect California tiger salamander, but no effect to listed plants. Consult with the Service for concurrence for areas on Enclosure 1 and identified as “May affect California tiger salamander, but no effect to listed plants”. The Corps will forward to the Service all biological and other pertinent information and a letter requesting that the proposed project to be appended to this Programmatic.

The Service will review the proposed Project to evaluate whether it is appropriate to append the Project to this Programmatic based on the level of impacts, avoidance, minimization and mitigation measures. The Service may determine some projects require separate Section 7 consultation and will not be appended to this Programmatic. If the Service does not concur the project is appropriate to be appended to this Programmatic, the Service will notify the Corps in writing. Applicants who have had consultation initiated by the Corps prior to the date of this Programmatic may continue with that consultation or may request their Project be appended to this Programmatic.

## BIOLOGICAL OPINION

### Description of the Proposed Action

The proposed action is appending Projects to this Programmatic that are consistent with the Conservation Strategy and that the Service has determined to be appropriate for being appended to this Programmatic. For the purpose of this Programmatic, the action area is shown in Enclosure 1 as the "Santa Rosa Plain Conservation Strategy Study Area" (Study Area).

As stated above, Project sites where surveys have documented 2,000 plants or greater of Burke's goldfield or Sonoma sunshine in any year in the past 10 years may not be appended to this Programmatic. These sites may require an individual formal consultation. Certain linear projects as defined in the Conservation Strategy may be covered under this Programmatic if they follow the ratios described in this Programmatic. In addition, Projects in the Southwest Santa Rosa Preserve System (Conservation Strategy Team, 2005) will be evaluated individually and may not adhere to the ratios if the individual Project mitigation includes preserving corridors as described and shown on Figure 3 and Figure 12 in the Conservation Strategy. The corridors may not need to be exactly as depicted on Figure 3 and 12, but must provide similar or greater function as the Conservation Strategy intended.

### Preserves

A "Preserve" includes mitigation and conservation banks and other mitigation and conservation sites. Parcels proposed for preservation under this Programmatic provide habitat for the California tiger salamander and/or listed plants. The Service and CDFG will evaluate the Applicant's proposed Preserve to determine its suitability. Preserve establishment guidance and evaluation criteria is provided in Enclosure 3. Other required mitigation components include management plans, long-term endowments, and other necessary requirements, all of which must be complete and approved by the Service and CDFG. Preserve enhancement or management associated with permits and enforcement actions that are appended to this Programmatic will be provided individual take authorization. It is anticipated that ground work associated with enhancing a Preserve will generally have a net benefit to the California tiger salamander and/or listed plants and would not need to adhere to the mitigation ratios.

To meet the biological goals and objectives as described in the Conservation Strategy, the following measures will be applied:

- 1) Preserves must ultimately have the listed species present and within a reasonable timeframe.
- 2) There will be at least one California tiger salamander breeding pool for every 20 acres of Preserves unless otherwise determined by the Service and CDFG;
- 3) Each Preserve will have at least one created or existing California tiger salamander breeding site, as defined in the Conservation Strategy, or the presence of listed plants;

- 4) Generally, seasonal wetlands will not exceed 30-35% of a Preserve;
- 5) Generally, pool size of individual pools will be under 0.25 acres and
- 6) Site specific design plans will be reviewed and approved by the Service and CDFG.

### Mitigation

Mitigation ratios for the California tiger salamander were determined by considering the likely impacts to the species and its habitat. Adult California tiger salamanders have been observed up to 1.3 miles from breeding sites (S. Sweet, 1998). The graduated ratios were developed using an estimate of the amount of habitat needed to meet the required conservation goal based on the expected impacts of development projected to occur on the Santa Rosa Plain from 2005 through 2015. The graduated ratios were based on the proximity to known California tiger salamander breeding habitat and adult occurrences. These ratios will be used until the Conservation Strategy is implemented by the local jurisdictions. The expected impact areas and conservation areas were mapped by using existing land use plans, aerial photography, expert knowledge of the areas, and data on California tiger salamander and listed plants from the California Natural Diversity Database (CNDDB) and local experts.

Mitigation requirements will apply to the entire Project area, however, the mitigation requirement for Projects on parcels with existing hardscape will be removed from the calculation. Hardscape may include parking lots, compacted gravel surfaces, buildings, or other structures. In some cases, hardscape may provide some recognizable benefit to the species. Where the hardscape currently functions as a movement corridor between existing and/or proposed preserve habitat, measures must be included in the design of future development to maintain this function. For each Project, the Service and CDFG will determine if hardscape provides benefit to the species and if any mitigation is required.

Mitigation ratios and the Conservation Strategy are dependent on current information on both California tiger salamander distribution and development that is currently proposed. Reinitiation of this Programmatic may be required if the land use changes or if new information is discovered regarding the distribution of tiger salamander or listed plants within the Study Area. If new breeding sites or occurrences are found in the Study Area, then Enclosure 1 would be revised accordingly. Enclosure 1 will be updated at least annually by the Service and CDFG and will be provided to the Corps and posted on the Service's web page.

Mitigation for California tiger salamander or listed plants must be achieved at a Preserve which could include purchasing appropriate credits at a Service-approved bank or another type of Preserve as described above.

### California tiger salamander Mitigation Ratios

The following ratios for required area of mitigation to area of impact will be used for this Programmatic:



Mitigation of 3:1 – For projects that are within 500 feet of a known breeding site.

Mitigation of 2:1 – For projects that are greater than 500 feet and within 2,200 feet of a known breeding site, and for projects beyond 2,200 feet from a known breeding site, but within 500 feet of an adult occurrence.

Mitigation of 1:1 – For projects that are greater than 2,200 feet and within 1.3 miles of a known breeding site.

Mitigation of 0.2:1 – For projects that are greater than 1.3 miles from a known breeding site and greater than 500 feet from an adult occurrence, but excluding the “No Effect” areas shown on Enclosure 1.

#### California Tiger Salamander Minimization Measures

Projects and other activities will incorporate measures to minimize their potential direct and indirect effects on the California tiger salamander. Minimization measures may vary based on environmental factors and site location as determined by the Service and CDFG. No mitigation or conservation bank may receive translocated California tiger salamanders until all the bank's credits have been sold (See Enclosure 4 for translocation guidance). The following activities will require measures to minimize take for California tiger salamander:

- (1) An activity that impacts a California tiger salamander breeding site:

Prior to construction, salamanders will be collected and translocated (See Enclosure 4) to an appropriate breeding site as identified by the Service and CDFG.

- (2) An activity that impacts California tiger salamander upland habitat:

Prior to construction, fencing will be installed to exclude California tiger salamander from entering the project site. Fences with ramps may be required to allow any California tiger salamander onsite to move into an adjacent habitat offsite. In these instances translocation may occur and would be determined on a case-by-case basis.

- (3) An activity where wetlands are being established for listed plants, California tiger salamander breeding or for wetland mitigation that has an effect on California tiger salamander:

Prior to construction, fencing will be installed to exclude California tiger salamanders from entering the site.

The following minimization measures will be implemented unless otherwise waived by the Service in writing:

- a.) A Service approved biological monitor will be on site each day during wetland restoration and construction, and during initial site grading of development sites where

California tiger salamanders have been found.

- b.) The biological monitor will conduct a training session for all construction workers before work is started on the project.
- c.) Before the start of work each day, the biological monitor will check for animals under any equipment such as vehicles and stored pipes. The biological monitor will check all excavated steep-walled holes or trenches greater than one foot deep for any California tiger salamander. California tiger salamanders will be removed by the biological monitor and translocated as described in Enclosure 4 or as directed by the Service.
- d.) An erosion and sediment control plan will be implemented to prevent impacts of wetland restoration and construction on habitat outside the work areas.
- e.) Access routes, number and size of staging areas, and work areas, will be limited to the minimum necessary to achieve the project goals. Routes and boundaries of the roadwork will be clearly marked prior to initiating construction/grading.
- f.) All foods and food-related trash items will be enclosed in sealed trash containers at the end of each day, and removed from the site every three days.
- g.) No pets will be allowed on the project site.
- h.) No more than a maximum speed limit of 15 mph will be permitted.
- i.) All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils, or solvents.
- j.) Hazardous materials such as fuels, oils, solvents, etc., will be stored in sealable containers in a designated location that is at least 200 feet from aquatic habitats. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 200 feet from any aquatic habitat.
- k.) Grading and clearing will be conducted between April 15 and October 15, of any given year, depending on the level of rainfall and/or site conditions.
- l.) Project areas temporarily disturbed by construction activities will be re-vegetated with locally-occurring native plants.

#### Plant Mitigation and Establishment

Seasonal wetlands within the range of the listed plants on the Santa Rosa Plain are considered suitable habitat for the listed plants (See Enclosure 5). If surveys conducted following Service protocols ([http://www.fws.gov/sacramento/es/santa\\_rosa\\_conservation.html](http://www.fws.gov/sacramento/es/santa_rosa_conservation.html)) document listed plants on a site, or if the site had listed plants in the past, then the site is considered occupied.

If surveys have been conducted according to Service protocols and no listed plants have been found, the seasonal wetlands on-site will be treated as suitable habitat. This Programmatic addresses effects and mitigation for this habitat type where the listed plants have not yet been observed because a persistent seed bank may be present even if the plants have not been detected.

Plant establishment is defined as the introduction of listed plant seeds, inoculum or seed bank to a Preserve resulting in the persistence of the species on the site and having met the success criteria. Success criteria for plant establishment is available on the Service's web page at [http://www.fws.gov/sacramento/es/santa\\_rosa\\_conservation.html](http://www.fws.gov/sacramento/es/santa_rosa_conservation.html). Establishing plant populations may require translocation of seed, inoculum or other plant material, or a change of land management. Guidelines for plant translocation are described in Enclosure 4.

### Plant Mitigation Ratios

Mitigation for adverse effects to occupied or suitable habitat for listed plants is calculated by the impacted acres of seasonal wetlands. The following table provides the mitigation ratios for the listed plants.

**Table 1: Mitigation Ratios for the Listed Plants**

<b>Impact to:</b>	<b>Occupied Habitat Compensation</b>	<b>Suitable Habitat Compensation</b>
Burke's goldfields  OR  Sonoma sunshine	3:1 occupied or established habitat (any combination) with success criteria met <u>prior</u> to groundbreaking at project site	1:1 occupied or established habitat (any combination) with success criteria met <u>prior</u> to groundbreaking at project site  AND  0.5:1 established habitat with success criteria met <u>prior</u> to groundbreaking at project site
Sebastopol meadowfoam	2:1 occupied or established habitat (any combination) with success criteria met <u>prior</u> to groundbreaking at project site	1:1 occupied or established habitat (any combination) with success criteria met <u>prior</u> to groundbreaking at project site  AND  0.5:1 established habitat with success criteria met <u>prior</u> to groundbreaking at project site

The distribution of the three listed plants does not completely overlap. Sebastopol meadowfoam is generally found south of Santa Rosa Creek. Therefore, Sebastopol meadowfoam cannot be established north of Santa Rosa Creek. Burke's goldfields and Sonoma sunshine cannot be established south of the Laguna de Santa Rosa (Enclosure 2).

Preserves for listed plants may be located north of Highway 116 and within the Santa Rosa Plain study area to the north near Windsor (North Area and South Area) as depicted in Enclosure 2.

For impact sites with suitable habitat north of Santa Rosa Creek, the Preserve must support Burke's goldfields and/or Sonoma sunshine and must be in the North Area or South Area.

For impact sites with suitable habitat south of Santa Rosa Creek, the Preserve must support Sebastopol meadowfoam, Burke's goldfields, and/or Sonoma sunshine and must be in the North Area or South Area.

For impacts to occupied habitat supporting Burke's goldfields, Sonoma sunshine and/or Sebastopol meadowfoam, the wetlands at a Preserve must support the impacted species and must be in the North Area or South Area.

#### Minimization and Mitigation Measures For Plants Required Prior to Ground Disturbance

Ground disturbance at a project site may begin when the following criteria are deemed completed by the Service and CDFG:

- 1) Seed/soil collection and salvage at the project site has been completed at sites that have been determined by the Service and CDFG as being occupied by one or more of the listed plants (Enclosure 4);
- 2) The applicant has completed one of the following: a) purchased appropriate plant credits at a Service and CDFG approved bank; or b) conserved occupied and established plant habitat at a location and number of acres approved by the Service and CDFG. The conserved land must also have a Service and CDFG – approved management plan and non-wasting endowment fund. Mitigation sites proposed under option b will be evaluated on a case by case basis.

A single project that needs to preserve habitat for both listed plants and the California tiger salamander may mitigate at a single location, if a preserve meets the mitigation requirements for all the impacted listed species.

#### **Action Area**

The action area is shown on Enclosure 1 as the Santa Rosa Plain Conservation Strategy Study Area. The action area for this Programmatic includes the geographic range of the Sonoma County Distinct population of California tiger salamander and the listed plants.

#### **Status of the Species**

Descriptions of the Status of the Species below include *Listing History, Historical and Current Distribution, Description, Habitat and Life History, Reasons for Decline and Threats to Survival, and Recovery Actions*.



California Tiger Salamander

*Listing History.* The Sonoma County Distinct Population Segment of the California tiger salamander was emergency listed as endangered on July 22, 2002 (67 FR 47726). The salamander was listed as endangered on March 19, 2003 (68 FR 13497). The California tiger salamander was listed as threatened on August 4, 2004 (69 FR 47212). This latter listing changed the status of the Santa Barbara and Sonoma county populations from endangered to threatened. On August 10, 2004, the Service proposed 47 critical habitat units in 20 counties. No critical habitat was proposed for Sonoma County. On October 13, 2004, a complaint was filed in the U.S. District Court for the Northern District of California (Center for Biological Diversity and Environmental Defense Council v. U.S. Fish and Wildlife Service *et al.*). On February 3, 2005, the District Court required the Service to submit for publication in the **Federal Register**, a final determination on the proposed critical habitat designation on or before December 1, 2005. On August 2, 2005, the Service noticed in the **Federal Register** a proposed critical habitat designation (70 FR 44301). On August 19, 2005, a court order was filed on the above complaint, which upheld the section 4(d) rule exempting grazing from Section 9 prohibitions, but vacated the downlisting of the Santa Barbara and Sonoma populations and reinstated their endangered distinct population segment status. On December 14, 2005, (70 FR 74138), we made a final determination to designate and exclude approximately 17,418 acres (7,049 hectares) of critical habitat for the Sonoma population. All of critical habitat was excluded based on interim conservation strategies and measures being implemented by those local governing agencies with land use authority over the area and also as a result of economic exclusions authorized under section 4(b)(2) of the Act. Therefore, no critical habitat was designated for the Sonoma County Distinct Population Segment of the California tiger salamander in Sonoma County, California.

*Historical and Current Distribution.* Historically, the California tiger salamander inhabited low elevation grassland and oak savanna plant communities of the Central Valley, and adjacent foothills, and the inner coast ranges in California (Jennings and Hayes 1994; Storer 1925; Shaffer *et al.* 1993). The species has been recorded from near sea level to approximately 3,900 feet (1188.7 meters) in the coast ranges and to approximately 1,600 feet (487.7 meters) in the Sierra Nevada foothills (Shaffer *et al.* 2004). Along the coast ranges, the species occurred from the Santa Rosa area of Sonoma County, south to the vicinity of Buellton in Santa Barbara County. The historic distribution in the Central Valley and surrounding foothills included northern Yolo County southward to northwestern Kern County and northern Tulare County.

The Sonoma County Distinct Population Segment of the California tiger salamander is discrete in relation to the remainder of the species. The population is geographically isolated and separate from other California tiger salamanders. The Sonoma County population is widely separated geographically from the closest populations, which are located in Contra Costa, Yolo, and Solano counties. These populations are separated from the Sonoma County population by the Coast Range, Napa River, and the Carquinez Straits, at a minimum distance of approximately 45 miles (72 kilometers). There are no known records of the California tiger salamander in the intervening areas (D. Warenycia, California Department of Fish and Game, personal communication with the Service, 2002). We have no evidence of natural interchange of individuals between the Sonoma County population and other California tiger salamander

populations.

Sonoma County Distinct Population Segment of the California tiger salamander inhabits low-elevation (below 500 feet [152 meters]) vernal pools and seasonal ponds, associated grassland, and oak savannah plant communities. The historic range of the Sonoma County population also may have included the Petaluma River watershed, as there is one historic record of a specimen from the vicinity of Petaluma from the mid-1800s (Borland 1856, as cited in Storer 1925).

*Description.* The California tiger salamander is a large, stocky, terrestrial salamander with a broad, rounded snout. Adults may reach a total length of 8.2 inches (Petranka 1998). Tiger salamanders exhibit sexual dimorphism; males tend to be larger than females. The coloration of the California tiger salamander is white or yellowish markings against black. As adults, California tiger salamanders tend to have the creamy yellow to white spotting on the sides with much less on the dorsal surface of the animal, whereas other tiger salamander species have brighter yellow spotting that is heaviest on the dorsal surface. The larvae have yellowish gray bodies, broad flat heads, large feathery external gills, and broad dorsal fins extending well up their back and range in length from approximately 0.45 to 0.56 inches (1.14 to 1.42 centimeters) (Petranka 1998).

*Habitat and Life History.* The California tiger salamander has an obligate biphasic life cycle (Shaffer *et al.* 2004). Although the larvae salamanders develop in the vernal pools and ponds in which they were born, they are otherwise terrestrial salamanders and spend most of their postmetamorphic lives in widely dispersed underground retreats (Shaffer *et al.* 2004; Trenham *et al.* 2001). Subadult and adult California tiger salamanders spend the dry summer and fall months of the year in the burrows of small mammals, such as California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) (Storer 1925; Loredó and Van Vuren 1996; Petranka 1998; Trenham 1998a). Because they spend most of their lives underground, California tiger salamanders are rarely encountered, even in areas where they are abundant.

California tiger salamanders may also use landscape features such as leaf litter or desiccation cracks in the soil for upland refugia. Burrows often harbor camel crickets and other invertebrates that provide likely prey for California tiger salamanders. Underground refugia also provides protection from the sun and wind associated with the dry California climate that can cause excessive drying of amphibian skin. Although California tiger salamanders are members of a family of "burrowing" salamanders, they are not known to create their own burrows. This may be due to the hardness of soils in the California ecosystems in which they are found. Tiger salamanders typically use the burrows of ground squirrels and gophers (Loredó *et al.* 1996; Trenham 1998a). However, Dave Cook (Sonoma County Water Agency, personal communication with the Service, 2001) found that pocket gopher burrows are most often used by California tiger salamanders in Sonoma County. California tiger salamanders depend on persistent small mammal activity to create, maintain, and sustain sufficient underground refugia. Burrows are short lived without continued small mammal activity and typically collapse within approximately 18 months (Loredó *et al.* 1996).

Upland burrows inhabited by California tiger salamanders have often been referred to as

“estivation” sites. However, “estivation” implies a state of inactivity, while most evidence suggests that California tiger salamanders remain active in their underground dwellings. A recent study has found that California tiger salamanders move, feed, and remain active in their burrows (Van Hattem 2004). Because California tiger salamanders arrive at breeding ponds in good condition and are heavier when entering the pond than when leaving, researchers have long inferred that California tiger salamanders are feeding while underground. Recent direct observations have confirmed this (Trenham 2001; van Hattem 2004). Thus, “upland habitat” is a more accurate description of the terrestrial areas used by California tiger salamanders.

Once fall or winter rains begin, the salamanders emerge from the upland sites on rainy nights to feed and to migrate to the breeding ponds (Stebbins 1985, 1989; Shaffer *et al.* 1993). Adult salamanders mate in the breeding ponds, after which the females lay their eggs in the water (Twitty 1941; Shaffer *et al.* 1993; Petranka 1998). Historically, the California tiger salamander utilized vernal pools, but the animals also currently breed in livestock stockponds. Females attach their eggs singly, or in rare circumstances, in groups of two to four, to twigs, grass stems, vegetation, or debris (Storer 1925; Twitty 1941). In ponds with no or limited vegetation, they may be attached to objects, such as rocks and boards on the bottom (Jennings and Hayes 1994). After breeding, adults leave the pool and return to the small mammal burrows (Loredo *et al.* 1996; Trenham 1998a), although they may continue to come out nightly for approximately the next two weeks to feed (Shaffer *et al.* 1993). In drought years, the seasonal pools may not form and the adults can not breed (Barry and Shaffer 1994).

California tiger salamander larvae typically hatch within 10 to 24 days after eggs are laid (Storer 1925). The peak emergence of these metamorphs is typically between mid-June to mid-July (Loredo and Van Vuren 1996; Trenham *et al.* 2000) but in some areas as early as late February or early March. The larvae are totally aquatic. The larvae feed on zooplankton, small crustaceans, and aquatic insects for about six weeks after hatching, after which they switch to larger prey (J. Anderson 1968). Larger larvae have been known to consume the tadpoles of Pacific treefrogs (*Pseudacris regilla*), Western spadefoot toads (*Spea hammondi*), and California red-legged frogs (*Rana aurora draytonii*) (J. Anderson 1968; P. Anderson 1968). California tiger salamander larvae are among the top aquatic predators in seasonal pool ecosystems. When not feeding, they often rest on the bottom in shallow water but are also found throughout the water column in deeper water. Young salamanders are wary and typically escape into vegetation at the bottom of the pool when approached by potential predators (Storer 1925).

The larval stage of the California tiger salamander usually last three to six months, as most seasonal ponds and pools dry up during the summer (Petranka 1998). Amphibian larvae must grow to a critical minimum body size before they can metamorphose (change into a different physical form) to the terrestrial stage (Wilbur and Collins 1973). Individuals collected near Stockton in the Central Valley during April varied from 1.88 to 2.32 inches in length (Storer 1925). Feaver (1971) found that larvae metamorphosed and left the breeding pools 60 to 94 days after the eggs had been laid, with larvae developing faster in smaller, more rapidly drying pools. The longer the ponding duration, the larger the larvae and metamorphosed juveniles are able to grow, and the more likely they are to survive and reproduce (Pechmann *et al.* 1989; Semlitsch *et al.* 1988; Morey 1998; Trenham 1998b). The larvae will perish if a site dries before metamorphosis is complete (P. Anderson 1968; Feaver 1971). Pechmann *et al.* (1989) found a

strong positive correlation with ponding duration and total number of metamorphosing juveniles in five salamander species. In Madera County, Feaver (1971) found that only 11 of 30 pools sampled supported larval California tiger salamanders, and 5 of these dried before metamorphosis could occur. Therefore, out of the original 30 pools, only six (20 percent) provided suitable conditions for successful reproduction that year. Size at metamorphosis is positively correlated with stored body fat and survival of juvenile amphibians, and negatively correlated with age at first reproduction (Semlitsch *et al.* 1988; Scott 1994; Morey 1998). In the late spring or early summer, before the ponds dry completely, metamorphosed juveniles leave them and enter upland habitat. This emigration occurs in both wet and dry conditions (Loredo and Van Vuren 1996; Loredo *et al.* 1996). Unlike during their winter migration, the wet conditions that California tiger salamanders prefer do not generally occur during the months when their breeding ponds begin to dry. As a result, juveniles may be forced to leave their ponds on rainless nights. Under these conditions, they may move only short distances to find temporary upland sites for the dry summer months, waiting until the next winter's rains to move further into suitable upland refugia. Once juvenile California tiger salamanders leave their birth ponds for upland refugia, they typically do not return to ponds to breed for an average of 4 to 5 years. However, they remain active in the uplands, coming to the surface during rainfall events to disperse or forage (Trenham and Shaffer, 2005).

Lifetime reproductive success for California and other tiger salamanders is low. Trenham *et al.* (2000) found the average female bred 1.4 times and produced 8.5 young that survived to metamorphosis per reproductive effort. This resulted in roughly 11 metamorphic offspring over the lifetime of a female. Two reasons for the low reproductive success are the preliminary data suggests that most individuals of the California tiger salamanders require two years to become sexually mature, but some individuals may be slower to mature (Shaffer *et al.* 1993); and some animals do not breed until they are four to six years old. While individuals may survive for more than ten years, many breed only once, and in some populations, less than 5 percent of marked juveniles survive to become breeding adults (Trenham 1998b). With such low recruitment, isolated populations are susceptible to unusual, randomly occurring natural events as well as from human caused factors that reduce breeding success and individual survival. Factors that repeatedly lower breeding success in isolated pools can quickly extirpate a population. Dispersal and migration movements made by California tiger salamanders can be grouped into two main categories: (1) breeding migration; and (2) interpond dispersal. Breeding migration is the movement of salamanders to and from a pond from the surrounding upland habitat. After metamorphosis, juveniles move away from breeding ponds into the surrounding uplands, where they live continuously for several years. At a study in Monterey County, it was found that upon reaching sexual maturity, most individuals returned to their natal/ birth pond to breed, while 20 percent dispersed to other ponds (Trenham *et al.* 2001). Following breeding, adult California tiger salamanders return to upland habitats, where they may live for one or more years before breeding again (Trenham *et al.* 2000).

California tiger salamanders are known to travel large distances from breeding ponds or pools into upland habitats. Maximum distances moved are generally difficult to establish for any species, but California tiger salamanders in Santa Barbara County have been recorded to disperse 1.3 miles from breeding ponds (Sweet, *in litt.* 1998). California tiger salamanders are known to travel between breeding ponds; one study found that 20 to 25 percent of the individuals captured



at one pond were recaptured later at ponds approximately 1,900 and 2,200 feet away (Trenham *et al.* 2001). In addition to traveling long distances during migration to or dispersal from ponds, California tiger salamanders may reside in burrows that are far from ponds.

Although the observations above show that California tiger salamanders can travel far, typically they stay closer to breeding ponds. Evidence suggests that juvenile California tiger salamanders disperse further into upland habitats than adult California tiger salamanders. A trapping study conducted in Solano County during winter of 2002/2003 found that juveniles used upland habitats further from breeding ponds than adults (Trenham and Shaffer, 2005). More juvenile salamanders were captured at distances of 328, 656, and 1,312 feet from a breeding pond than at 164 feet. Large numbers, approximately 20 percent of total captures, were found 1,312 feet from a breeding pond. Fitting a distribution curve to the data revealed that 95 percent of juvenile salamanders could be found within 2,099 feet of the pond, with the remaining 5 percent being found at even greater distances. Results from the 2003-04 trapping efforts detected juvenile California tiger salamanders at even further distances, with a large proportion of the total salamanders caught at 2,297 feet from the breeding pond (Trenham and Shaffer, 2005). During post-breeding emigration, radio-equipped adult California tiger salamanders were tracked to burrows 62 to 813 feet from their breeding ponds (Trenham 2001). These reduced movements may be due to adult California tiger salamanders having depleted physical reserves post-breeding, or also due to the drier weather conditions that can occur during the period when adults leave the ponds.

In addition, rather than staying in a single burrow, most individuals used several successive burrows at increasing distances from the pond. Although the studies discussed above provide an approximation of the distances that California tiger salamanders regularly move from their breeding ponds, upland habitat features will drive the details of movements in a particular landscape. Trenham (2001) found that radio-tracked adults favored grasslands with scattered large oaks, over more densely wooded areas. Based on radio-tracked adults, there is no indication that certain habitat types are favored as corridors for terrestrial movements (Trenham 2001). In addition, at two ponds completely encircled by drift fences and pitfall traps, captures of arriving adults and dispersing new metamorphs were distributed roughly evenly around the ponds. Thus, it appears that dispersal into the terrestrial habitat occurs randomly with respect to direction and habitat types.

Several species have either been documented to prey or likely prey upon the California tiger salamanders including coyotes (*Canis latrans*), raccoons (*Procyon lotor*), opossums (*Didelphis virginiana*), egrets (*Egretta species*), great blue herons (*Ardea herodias*), crows (*Corvus brachyrhynchos*), ravens (*Corvus corax*), bullfrogs (*Rana catesbeiana*), mosquito fish (*Gambusia affinis*), and crayfish (*Procambarus species*).

*Reasons for Decline and Threats to Survival.* The California tiger salamanders are imperiled throughout its range by a variety of human activities (Service 2004). Current factors associated with declining populations of the salamander include continued degradation and loss of habitat due to agriculture and urbanization, hybridization with non-native eastern tiger salamanders (*Ambystoma tigrinum*) (Fitzpatrick and Shaffer 2004; Riley *et al.* 2003), and introduced predators. Hybridization with non-native eastern tiger salamanders has not yet been identified

within the Sonoma County population. Fragmentation of existing habitat and agricultural activities that degrade and/or eliminate breeding pools may represent the most significant current threats to California tiger salamanders, although populations are likely threatened by more than one factor. Isolation and fragmentation of habitats within many watersheds have precluded dispersal between sub-populations and jeopardized the viability of metapopulations (broadly defined as multiple subpopulations that occasionally exchange individuals through dispersal, and are capable of colonizing or “rescuing” extinct habitat patches). Other threats are predation and competition from introduced exotic species; disease; various chemical contaminants; road-crossing mortality; and certain unrestrictive mosquito and rodent control operations.

### Burke's Goldfields

*Listing History.* Burke's goldfields was federally listed as endangered on December 2, 1991 (56 FR 61173). No critical habitat has been designated for this species.

*Description.* Burke's goldfields is an annual herb in the aster family (Asteraceae). Plants are typically less than 11.8 inches (30 centimeters) in height (Hickman 1993) and usually branched (California Native Plant Society (CNPS) 1977). Leaves are opposite, less than two inches (5 centimeters) in length, and pinnately lobed. Yellow, daisy-like inflorescences with separate involucre bracts (leaf-like structures beneath the flower head) appear from approximately April through June (Skinner and Pavlik 1994). Fruits are achenes (dry, one-seeded fruits) less than 0.06 inch (1.5 millimeters) in length. The fruits of Burke's goldfields can be distinguished from those of other goldfields by the presence of one long awn (bristle and numerous short scales) (Hickman 1993). Individual Burke's goldfields plants may exhibit some geographic variation in morphology (McCarten 1985 as cited in CH2M Hill 1995, Patterson et al. 1994). Patterson *et al.* (1994) report robust specimens from the southern Santa Rosa Plain near the Laguna de Santa Rosa and variation in the number of awns from a Lake County population. Burke's goldfields can be distinguished from smooth goldfields (*Lasthenia glaberrima*) because smooth goldfields have partly fused involucre bracts and a pappus (ring of scale-like or hair-like projections at the crown of an achene) of numerous narrowed scales. The linear leaves without lobes distinguish common goldfields (*Lasthenia californica*) from Burke's goldfields (Hickman 1993).

*Historical and Current Distribution.* Burke's goldfields is endemic to the central California Coastal Range region and has been reported historically from Mendocino, Lake, and Sonoma counties (CNPS 1977, Patterson et al. 1994). The type locality of Burke's goldfields is the only known occurrence from Mendocino County and is possibly extirpated. Two California Natural Diversity Database (CNDDDB) occurrences are recorded from Lake County, at Manning Flat and at a winery on Highway 29. Both Lake County occurrences are presumed extant. The remaining occurrences are from Sonoma County (CNDDDB 1998). Within Sonoma County, one occurrence is known from north of Healdsburg (Patterson et al. 1994). On the Santa Rosa Plain, Burke's goldfields is distributed primarily in the northwestern and central areas with two additional occurrences south of Highway 12 near the Laguna de Santa Rosa (CH2M Hill 1995). The core of the current range of Burke's goldfields is in the Santa Rosa Plain.

*Habitat.* Burke's goldfields grow in vernal pools and swales below 500 meters (m) (Hickman 1993). At the Manning Flat occurrence in Lake County, Burke's goldfields is found in a series

of claypan vernal pools on volcanic ash soils (56 FR 61173, CNDDDB 1998). At this location, the species is associated with common goldfields and few-flowered navarretia (*Navarretia leucocephala pauciflora*) (CNDDDB 1998). In Sonoma County, the vernal pools containing Burke's goldfields are on nearly level to slightly sloping loams, clay loams, and clays. A clay layer or hardpan approximately two to three feet (0.6 to 0.9 meters) below the surface restricts downward movement of water (56 FR 61173). Huichica loam is the predominant soil series on which Burke's goldfields is found on the northern part of the Santa Rosa Plain (Patterson et al. 1994, CNDDDB 1998). Huichica loam is a fine textured clay loam over buried dense clay and cemented layers (Patterson et al. 1994). More southerly Burke's goldfields sites likely occur on Wright loam or Clear Lake clay (Patterson et al. 1994, CNDDDB 1998). Wright loam is a fine silty loam over buried dense clay and marine sediments. Clear Lake clay is hard dense clay from the surface to many feet thick (Patterson et al. 1994). Burke's goldfields sometimes occurs along with Sonoma sunshine and Sebastopol meadowfoam (*Limnanthes vinculans*). These three federally listed species are all associated with other plants that commonly grow in vernal pools on the Santa Rosa Plain, including Douglas' pogogyne (*Pogogyne douglasii* spp. *parviflora*), Lobb's aquatic buttercup (*Ranunculus lobbii*), smooth goldfields, California semaphore grass (*Pleuropogon californicus*), maroonspot downingia (*Downingia concolor*), and button-celery (*Eryngium* sp.) (CNDDDB 1998).

*Life History.* The flowers of Burke's goldfields are self-incompatible (Ornduff 1966, Crawford and Ornduff 1989) and insect-pollinated. Seed banks are of particular importance to annual plant species which are subject to uncertain or variable environmental conditions (Cohen 1966, 1967; Parker et al. 1989; Templeton and Levin 1979). Burke's goldfields fit this criterion; it is an annual species living in California's highly variable Mediterranean climate.

No information exists with respect to the seed life of Burke's goldfields. Circumstantial evidence suggests that Burke's goldfields successfully germinated from seed in soil collected from a previously developed portion of the Westwind Business Park (Building F) when the soil was translocated and deposited in created seasonal wetlands (C. Wilcox, CDFG, 2000 in litt.). As annual species, it is expected that Burke's goldfields and Sonoma sunshine will respond to environmental stochastic events, such as changes in vegetative composition, climate, and disturbance, by partial germination of its seed bank. Baskin and Baskin (1998) indicate that species (annuals) adapted to "risky environments" produce persistent seed banks to offset years of low reproductive success and to ensure the species can persist at a site without immigration. These characteristics can be attributed to Burke's goldfields. Considering the adaptations of these plants to a variable Mediterranean climate it is likely the seed of Burke's goldfields can persist as dormant embryos for an undetermined number of years. Therefore, it is likely that populations of these species may persist undetected for a period of years until conditions are favorable to allow germination. Although formal studies of seed viability have not been conducted for these species, it is reasonable to expect their seed banks may persist for extended periods without germination. Furthermore, it is not unlikely that the individual fruits of Burke's goldfields may be predisposed to variable germination requirements as a strategy for survival.

For species that develop long-lived seed banks, a census of plants growing above ground may not accurately reflect the total number of plants at the site (Rice 1989, Given 1994). Population sizes of California's vernal pool/swale annual plant species, including Burke's goldfields, may

fluctuate substantially between very high numbers in some years to very small numbers, or even absence in other years because of varying environmental conditions. Therefore, total extirpation cannot be assumed when above-ground plants of these species are not observed at a site. Furthermore, declines in population size over a few years may not necessarily indicate that habitat is unsuitable (Given 1994), merely that environmental conditions within a vernal pool or swale have not favored seed germination.

*Reasons for Decline and Threats to Survival.* Burke's goldfields is threatened with habitat loss, fragmentation, and degradation throughout all or part of its range by factors including urbanization, agricultural land use changes, alterations in hydrology, and erosion (CNPS 1977, 56 FR 61173, Patterson et al. 1994, CH2M Hill 1995, CNDDDB 1998). The only known Mendocino County occurrence is presumably extirpated (CH2M Hill 1995). The Manning Flat occurrence, located on private land in Lake County, is the largest known occurrence of the species and is threatened by extensive gully erosion that is destroying the habitat (CH2M Hill 1995, CNDDDB 1998). The second Lake County occurrence is on property owned by a winery. Recent reports suggest that some damage to this population has resulted from vineyard operations (R. Chan, University of California, Berkeley, 1998 in litt.). However, in the past the winery owners appeared willing to coordinate with the Service and the U.S. Army Corps of Engineers (Corps) to avoid and/or minimize further damage to the site (N. Haley, Corps, 1998 pers. comm.). On the Santa Rosa Plain, many Burke's goldfields locations have been extirpated due to urbanization and conversion of land to row crops. Formerly well-represented in the vicinity of Windsor, Burke's goldfields has now been nearly extirpated from the area (Patterson et al. 1994, CH2M Hill 1995).

Of the 48 known records of Burke's goldfields, 26 are presumed to remain extant, with a majority found on the Santa Rosa Plain. Four populations occur outside of the Santa Rosa Plain, of which only two populations, one in northern Healdsburg and one at the Ployes winery, are extant.

### Sonoma Sunshine

*Listing History.* Sonoma sunshine was federally listed as endangered on December 2, 1991 (56 FR 61173). No critical habitat has been designated for this species.

*Description.* Sonoma sunshine is an annual plant in the aster family. Plants are less than 11.8 inches (30 centimeters) tall with alternate, linear leaves (CNPS 1977, Hickman 1993). The lower leaves are entire, and the upper leaves have one to three lobes that are 0.4 to 1.2 inches (1 to 3 centimeters) deep (Hickman 1993). The daisy-like flower heads of Sonoma sunshine are yellow. The ray flowers have dark red stigmas. The disk flowers have white stigmas and white pollen but are otherwise yellow. Achenes are 0.1 to 0.15 inches (3 to 4 millimeters) long with small rounded or conic proturbences (papillate) and 4 to 6 strongly angled edges (CNPS 1977, Hickman 1993). Sonoma sunshine could be confused with common stickseed (*Blennosperma nanum*); however, Sonoma sunshine has longer and fewer lobes on the leaves and is more robust (CNPS 1977).

*Historical and Current Distribution.* Sonoma sunshine occurs only in Sonoma County. In the



Cotati Valley, the species ranges from near the community of Fulton in the north to Scenic Avenue between Santa Rosa and Cotati in the south. Additionally, the species extends or extended from near Glen Ellen to near the junction of State Routes 116 and 121 in the Sonoma Valley. During 2001, two new natural populations were identified north and south of the City of Santa Rosa, increasing the number of previously identified CNDDDB occurrences from 26 to 28. Of the 28 occurrences, 21 are presumed to be extant with a majority occurring on the Santa Rosa Plain and one occurring in Glen Ellen. In addition, Sonoma sunshine has been introduced to at least one site on Alton Lane during mitigation activities. Seven populations within or near the City of Santa Rosa have been extirpated.

*Habitat.* Sonoma sunshine grows in vernal pools and wet grasslands below 100 m (330 ft) (Hickman 1993). In the Sonoma and Cotati valleys, Sonoma sunshine occurs in vernal pools on nearly level to slightly sloping loams, clay loams, and clays, as described for Burke's goldfields (56 FR 61173). The two concentrations of Sonoma sunshine on the Santa Rosa Plain occur on different soil types (Patterson et al. 1994). Sonoma sunshine likely grows on Huichica loam north of Highway 12 and on Wright loam and Clear Lake clay south of Highway 12 (Patterson et al. 1994, CNDDDB 1998). These soil series are briefly described in the discussion of Burke's goldfields habitat above.

*Life History.* Sonoma sunshine flowers from March to April. The flowers of Sonoma sunshine are self-incompatible, meaning that they can set seed only when fertilized by pollen from a different plant. The extent to which pollination of the species covered in this Programmatic depends on host-specific or more generalist pollinators is currently unknown.

Seed banks are thought to be of particular importance in annual species subject to uncertain or variable environmental conditions (Cohen 1966, 1967; Parker *et al.* 1989; Templeton and Levin 1979). The Sonoma sunshine also fit these criteria; they are annual species (Hickman 1993) living in an uncertain vernal pool environment (Holland and Jain 1977). In the absence of data to suggest otherwise, the presence of substantial seed banks for these species is a reasonable assumption.

*Reasons for Decline and Threats to Survival.* Sonoma sunshine is threatened with habitat loss, fragmentation, and degradation throughout all or part of its range by factors including urbanization, agricultural land use changes, and alterations in hydrology (Patterson et al. 1994, CH2M Hill 1995, CNDDDB 1998). In the Sonoma Valley, two of five known occurrences have been extirpated. One was extirpated by habitat destruction in 1986, and the area is now a vineyard. At the second site, most habitat was destroyed by grading for home sites in 1980; the remainder was converted to vineyard or overtaken by weeds (CNDDDB 1998). Of the presumed extant Sonoma Valley occurrences, one locality has been largely developed. A small area was retained by CDFG when the development took place, but Sonoma sunshine has not been recorded from this area since the subdivision was developed (Service files). A second Sonoma Valley locale is currently pasture. A portion of the occurrence may have been disced, and the landowners of a second portion want to convert the locale to vineyard (C. Wilcox, 1998, pers. comm., Service files). The third Sonoma Valley occurrence is in Sonoma Valley Regional Park, which is not managed for conservation (CNDDDB 1998). On the Santa Rosa Plain, one locale has probably been extirpated by completion of a subdivision and one locale by major land alterations

on the locale (CNDDDB 1998). Of the presumed extant locales, some support severely degraded habitat, are threatened by development, or have not supported confirmed populations of Sonoma sunshine in recent years (CH2M Hill 1995, CNDDDB 1998).

### Sebastopol Meadowfoam

*Listing History.* Sebastopol meadowfoam was federally listed as endangered on December 2, 1991 (56 FR 61173). No critical habitat has been designated for this species.

*Description.* Sebastopol meadowfoam is an annual herb with weak, somewhat fleshy, decumbent stems up to 11.8 inches (30 centimeters) long. The seedlings are unusual among *Limnanthes* species in that they have entire leaves. Leaves of mature plants are up to 3.9 inches (10 centimeters) long and have 3 to 5 leaflets that are narrow and unlobed with rounded tips. The leaves are borne on long petioles; petiole length, like stem length, appears to be promoted by submergence. Sebastopol meadowfoam has fragrant, white flowers that are borne in the leaf axils during April and May. The flowers are bell-shaped or dish-shaped, with petals 0.47 to 0.71 inch (12 to 18 millimeters) long. The sepals are shorter than the petals. The petals turn outward as the nutlets mature. The nutlets are dark brown, 0.12 to 0.16 inch (3 to 4 millimeters) long, and covered with knobby pinkish tubercles (Patterson et al. 1994).

*Historical and Current Distribution.* Historically, Sebastopol meadowfoam was known from 40 occurrences in Sonoma County and one occurrence (occurrence #39) in Napa County, at the Napa River Ecological Reserve. In Sonoma County, all but two occurrences were found in the central and southern portions of the Santa Rosa Plain. Occurrence #20 occurred at Atascadero Creek Marsh west of Sebastopol, and the second (#40) occurred in the vicinity of Knights Valley northeast of Windsor (CNDDDB 2001).

The current condition of numerous Sebastopol meadowfoam occurrences is unclear, because many have not been visited in over 5 years. The southern cluster of occurrences extends 3 miles (5 kilometers) from Stoney Point Road west to the Laguna de Santa Rosa, and is bounded by Occidental Road to the north and Cotati to the south. The central cluster stretches 1.5 miles (2.41 kilometers) on either side of Fulton Road extending northwards from Occidental Road to River Road. Patterson et al. (1994) estimated that the Santa Rosa Plain occurrences represent only 10 hydrologically separate populations of Sebastopol meadowfoam. At least one occurrence (#21) has been extirpated from the Santa Rosa Plain (CNDDDB 2002). Recent field surveys found that all three occurrences outside of the Santa Rosa Plain have probably been extirpated (CNDDDB 2002).

*Life History.* The seeds of Sebastopol meadowfoam germinate after the first significant rains in fall, although late initiation of rains may delay seed germination. Sebastopol meadowfoam plants grow slowly underwater during the winter, and growth rates increase as the pools dry. Repeated drying and filling of pools in the spring favors development of large plants with many branches and long stems. Sebastopol meadowfoam begins flowering as the pools dry, typically in March or April. The largest plants can produce 20 or more flowers. Flowering may continue as late as mid-June, although in most years the plants have set seed and died back by then (Patterson et al. 1994). Each plant can produce up to 100 nutlets (Patterson et al. 1994).

Nutlets of Sebastopol meadowfoam likely remain dormant in the soil, as they do for other species of *Limnanthes* (Patterson et al. 1994). One case presents strong circumstantial evidence for persistent, long-lived seed banks in this species. In the late 1980's and early 1990's, a site in Cotati remote from other Sebastopol meadowfoam colonies was surveyed for several years by independent qualified botanists. None of these botanists identified flowering populations of Sebastopol meadowfoam on the project site. Conditions of the pools on the site were highly degraded by wallowing hogs (*Sus scrofa*) and subsequent eutrophication of the pools. Following several years of negative surveys 12 plants of Sebastopol meadowfoam emerged simultaneously in one pool in the first year following removal of hogs. The population expanded rapidly to 60 plants the next year and was larger in subsequent years (Geoff Monk, personal communication), all limited to one pool. Long-distance dispersal is an improbable explanation for the simultaneous emergence of multiple plants at one location, so seed banks are implicated in this case as well. This example also indicates that lack of Sebastopol meadowfoam during periods of adverse conditions (drought, heavy disturbance, etc.) does not necessarily mean the population is extirpated.

This species grows in Northern Basalt Flow and Northern Hardpan vernal pools (Sawyer and Keeler-Wolf 1995), wet swales and meadows, on the banks of streams, and in artificial habitats such as ditches (Wainwright 1984; CNDDDB 2002). The surrounding plant communities range from oak savanna, grassland, and marsh in Sonoma County to riparian woodland in Napa County (CNDDDB 2002). Sebastopol meadowfoam grows in both shallow and deep areas, but is most frequent in pools 10 to 20 inches (25 to 51 centimeters) deep (Patterson et al. 1994). The species is most abundant in the margin habitat at the edge of vernal pools or swales (Pavlik et al. 2000, 2001). Most confirmed occurrences of Sebastopol meadowfoam on the Santa Rosa Plain grow on Wright loam or Clear Lake clay soils (Patterson et al. 1994, CNDDDB 2002). A few occurrences are on other soil types, including Pajaro clay loam, Cotati fine sandy loam, Haire clay loam (Patterson et al. 1994) and Blucher fine sandy loam (Wainwright 1984).

*Reasons for Decline and Threats to Survival.* Like Burke's goldfields and Sonoma sunshine, Sebastopol meadowfoam has been and continues to be threatened by habitat loss, habitat degradation, and small population size. Causes of habitat loss include agricultural conversion, urbanization, and road maintenance. Habitat degradation is caused by excessive grazing by livestock, alterations in hydrology, and competition from non-native species (in some cases, exacerbated by removal of grazing), off-highway vehicle use, and dumping (56 FR 61173, Patterson et al. 1994, CH2M Hill 1995, CNDDDB 2002).

### Recovery Actions

As discussed in the Background section of this Programmatic, the Conservation Strategy was developed by the Team. The purpose of the Conservation Strategy is threefold: (1) to establish a long-term conservation program sufficient to compensate potential adverse effects of future development on the Santa Rosa Plain, and to conserve and contribute to the recovery of the California tiger salamander and a select group of listed plants (Sonoma sunshine, Burke's goldfields, Sebastopol meadowfoam, and many-flowered navarretia) and the conservation of their sensitive habitat; (2) to accomplish the preceding in a fashion that protects stakeholders' (both public and private) land use interests, and (3) to support issuance of an authorization for

incidental take of California tiger salamanders that may occur in the course of carrying out a broad range of activities on the Santa Rosa Plain. The Conservation Strategy will not preserve the species unless implemented by the appropriate agencies. The Conservation Strategy provides the biological basis for a permitting process for projects that are in the potential range of listed species on the Santa Rosa Plain. This is intended to provide consistency, timeliness and certainty for permitted activities. The Conservation Strategy study area is comprised of the potential California tiger salamander range and the listed plant range within the Santa Rosa Plain. The Conservation Strategy establishes interim and long-term mitigation requirements and designates conservation areas where mitigation will occur. It describes how preserves will be established and managed. It also includes guidelines for translocation, management plans, adaptive management and funding. Finally, the document describes the implementation planning process.

The County of Sonoma, the Cities of Santa Rosa, Cotati, Rohnert Park, the Town of Windsor, Service, and CDFG have commenced a process to develop a plan for implementing the Conservation Strategy. An implementation committee has been formed that is comprised of elected and staff representatives of the local jurisdictions and representatives of the agricultural, development, and environmental communities. Staff representatives from the Service and CDFG provide technical assistance to the implementation committee. The implementation plan is expected to provide a mechanism for applying the Conservation Strategy to cover public and private projects, agricultural activities, and residential and commercial development.

The Service and CDFG are implementing interim mitigation guidelines (Service and CDFG, 2006 *in litt.*) for Federal and non-federal actions. This Programmatic has integrated many of the guidelines in the Conservation Strategy and interim mitigation guidelines in the Description of the Proposed Action.

The Service will also prepare a recovery plan for the Sonoma County Distinct Population Segment of the California tiger salamander and listed plants as required by the Act. The Conservation Strategy will be the foundation of the recovery plan; however, it does not preclude the obligation of the Service to develop a recovery plan.

### **Environmental Baseline**

Prior to human settlement, it is believed the Santa Rosa Plain supported a vast network of seasonally wet swales and scattered pools within a matrix of grassland and oak savanna. The low-gradient terrain with underlying dense clay soil horizons and high clay soil surfaces, ample winter precipitation, and dry summer climate on the Santa Rosa Plain predisposed this area to the development of seasonal wetlands. The natural landscape historically consisted of numerous shallow depressions that would pond water during the rainy season (vernal pools), often connected by narrow swales. Much of the vernal pool ecosystem has since been lost or degraded through agricultural activities and development projects (Patterson *et al.* 1994, CH2M Hill 1995). The Santa Rosa Plain is believed to have historically supported approximately 7,000 acres of seasonal wetlands, an estimated 84 percent of which had been lost due to land conversion as of 1994. The approximately 1,000 acres of seasonal wetlands that remained on the Santa Rosa Plain in 1994 were composed of both vernal pools (ponded) and swales (non-ponded) in roughly



equal proportions, and the swales had largely been invaded by exotic species, therefore it is believed the actual amount of vernal pool acreage had been reduced to less than a few hundred acres (Patterson *et al.*, 1994). Because the vernal pool ecosystem was once extensive over the Santa Rosa Plain, it is not difficult to find parcels on which vernal pools have been "smeared" into the landscape, resulting in degraded seasonal wetlands that may still retain the necessary qualities for supporting one or more of the listed plant species but may require considerable restoration to ensure long-term species viability (Patterson *et al.* 1994, CH2M Hill 1995).

The loss of seasonal wetland habitat on the Santa Rosa Plain has largely resulted from urban and agricultural conversion (Patterson *et al.* 1994, CH2M Hill 1995, CNDDDB 1998). Of 28,000 acres of the Santa Rosa Plain studied by Waaland *et al.* (1990 as cited in Patterson *et al.* 1994), 12,000 acres had been converted to urban, cropland, orchard or vineyard uses. The conversion most severely affected oak woodland/savanna-vernal pool habitat.

In addition, seasonal wetlands on the Santa Rosa Plain have been heavily impacted through stream channelization, filling and draining of wetlands, livestock grazing, and irrigation (Patterson *et al.* 1994, CH2M Hill 1995, Keeler-Wolf *et al.* 1997, CNDDDB 1998). Each of these impacts is discussed briefly below.

Stream channelization for flood control, such as of Roseland and Colgan Creeks, has involved excavation through vernal pool terrain causing interruption of hydrological connections and filling of wetlands with dredge spoils. Pools have also been filled and drained for mosquito abatement and to create dry ground for livestock. Air photo analyses and reconnaissance surveys have revealed incidences of unauthorized low level backyard filling throughout the action area (Patterson *et al.* 1994).

Livestock grazing is another factor with historic and ongoing effects on the listed plant species of the Santa Rosa Plain. While light grazing may benefit habitat by reducing thatch and minimizing competitive grasses (this has been demonstrated to be an effective strategy for Burke's goldfields), heavier grazing can result in injurious trampling, direct plant consumption, local soil compaction, and detrimental effects resulting from the excessive contribution of manure (Patterson *et al.* 1994, 56 FR 61173).

Wastewater irrigation is a recently established factor affecting vernal pools on the Santa Rosa Plain. This practice began in the 1970s and has continued which has resulted in changing seasonal wetland plant composition. While the native seasonal wetland species are adapted to a summer-dry Mediterranean climate, summer irrigation results in perennial wetland conditions that are intolerable by native seasonal wetland species (Patterson *et al.* 1994). A 1996 draft Environmental Impact Report (EIR) addressed a proposed long-term wastewater project that would dispose of wastewater from the Laguna Wastewater Treatment Plant by irrigating fields on the Santa Rosa Plain. The draft EIR stated that wastewater irrigation would avoid impacts to sensitive biological resources (City of Santa Rosa and U.S. Army Corps of Engineers 1996). However, in February of 1998, the site supporting many-flowered navarretia had a sign stating wastewater was being used for irrigation on-site (Ellen Berryman, 1998 pers. obs.). Patterson *et al.* (1994) state, "the ongoing need to expand effluent irrigation acreage to keep pace with population growth will continue to jeopardize the existence of oak woodlands and vernal pools

on the Santa Rosa Plain unless other, less sensitive lands are found for irrigation or other means of disposal are found". The City has recently developed an EIR to look at additional wastewater storage and irrigation in the Santa Rosa Plain. The City of Santa Rosa is pursuing agreements with other wastewater facilities (Sonoma County Water Agency and Town of Windsor) to share irrigation and storage. The City of Santa Rosa is permitted to apply wastewater biosolids to lands within the Santa Rosa Plains. The RWQCB recently issued a renewed permit to Santa Rosa for wastewater discharges. The permit requires the City of Santa Rosa to study wastewater land application rates to ensure they are not over-irrigating. The permit recognized specific pollutants (including toxic pollutants) in the treated wastewater. The permit sets time schedules for these pollutants to be addressed prior to discharge to surface waters. Technically, the RWQCB regulations (Water Quality Control Plan for the North Coast Region) prohibit wastewater discharge to surface waters during the summer. The regulations however do not contemplate that wastewater would be used to irrigate vernal pools and other types of seasonal wetlands (J. Short, 2007 pers. comm.).

### Burke's goldfields

1991 to 1998. Patterson *et al.* (1994) evaluated known Burke's goldfields sites on the Santa Rosa Plain, categorizing them as (1) in public ownership, (2) presumed extant and privately owned, and (3) extirpated or largely destroyed. Their data indicate that 33 percent of the acreage of known Santa Rosa Plain Burke's goldfields sites has been severely degraded or extirpated. As of 1998, the Service was aware of at least a dozen specific instances where ditching, draining, discing or overgrazing occurred on parcels containing Burke's goldfields. In many cases, the number of plants at those sites declined after the disturbance took place. In addition, the Service was aware of at least four instances of unauthorized discing that triggered Corps enforcement actions for sites where Burke's goldfields grew. Because of typically small parcel size, development projects that have proceeded since listing, such as Cobblestone and TMD Brown, have mitigated Burke's goldfields losses entirely off site. The few sites where plants were avoided in the course of development have failed to sustain viable populations (Service files).

The most severely impacted portion of the range of Burke's goldfields has been the northwestern portion of the Plain. The majority of the known sites severely degraded or extirpated are in the Windsor area (Patterson *et al.* 1994, CH2M Hill 1995). Two of the largest known populations in the county occurred in this area and were considered extirpated by Patterson *et al.* (1994). The extirpations were thought to have resulted from urban and commercial development or agricultural land use changes. For example, one CNDDDB occurrence in the area contained 11 colonies in 1984; by 1993, only two were extant (CNDDDB 1998). A second occurrence had more than 20 vernal pools in 1985, but by 1994, only one colony of Burke's goldfields was present (CNDDDB 1998). This property once contained 50,000 plants, but after repeated discing only about 100 plants remain (B. Guggolz, CNPS, 1998 pers. comm.). Only a few stable Burke's goldfields sites still exist in the Windsor area, and these are threatened by development (Patterson *et al.* 1994). The City of Windsor has already developed, or designated development, on every Burke's goldfields site within their general planning area (B. Guggolz, 1998 pers. comm.). Only a few stable Burke's goldfields sites still exist in the Windsor area, and these are threatened by development (Patterson *et al.* 1994). The City of Windsor has already developed,

or designated development, on every Burke's goldfields site within their general planning area (B. Guggolz, 1998 pers. comm.).

Since the time Burke's goldfields was listed in 1991, the species has continued to experience dramatic loss. The Service used data from 1994 (Patterson *et al.* 1994) to examine how numbers of Burke's goldfields plants changed at particular sites between the time of listing and the most recent surveys that had been conducted after listing. A site, as defined by Patterson *et al.* (1994), may be all or part of a CNDDDB occurrence. After listing, the number of sites with many individuals decreased, and the number with very few individuals increased. Fifteen of the 28 sites for which we have both pre- and post-listing surveys decreased in size after the species was listed. The percentage of sites with fewer than 10 individuals increased by 30 percent, and the percentage of sites with 10,000 to 100,000 individuals decreased by 7 percent. As of 1994, no sites were recorded with more than 100,000 plants. Data from Patterson *et al.* (1994) also indicate that between the time of listing and 1994, 12 different sites were extirpated or largely destroyed. The data indicate large populations of Burke's goldfields are diminishing and nearly half of the sites may have populations either extirpated or are highly vulnerable to extirpation due to small population numbers (less than 10 individuals) (calculated from Patterson *et al.* 1994; CH2M Hill 1995).

Only about 15 percent of the acreage of Burke's goldfields sites on the Santa Rosa Plain had some preservation designation as of 1994 (calculated from data in Patterson *et al.* 1994). However, the species has not been observed since 1987 at Todd Road Preserve, the largest of the preservation sites (Patterson *et al.* 1994, CH2M Hill 1995). Excluding this site, the preserved acreage of Burke's goldfields sites is only 8 percent of acreage known in 1994 (calculated from data in Patterson *et al.* 1994). Since 1994, one preservation bank with Burke's goldfields has been established, but only a small portion of the site supports Burke's goldfields (Exhibit A, MOA for Wright Preservation Bank, 1997).

*1998 to present.* The 1998 programmatic consultation for the listed plants was designed to allow up to 50 acres of low-quality seasonal wetlands to be filled and no more than 30 acres could be occupied (or presumed to be occupied) by the listed plant species. Of the 30 impacted acres which are occupied or presumed occupied, no more than 6 acres would be on sites for which there are known records of the listed plants. Impacts to no more than 6 additional acres on sites for which there are known records of listed plants may be authorized under the 1998 programmatic consultation at the Service's discretion, based upon the Service's evaluation of the significance of impacts to the first 6 acres of known listed species habitat and / or upon substantial progress toward a comprehensive conservation program. Between the period of the 1998 programmatic consultation and the date of this Programmatic, less than 30 acres of low-quality seasonal wetlands were authorized to be filled under the 1998 programmatic. At this time, it is unknown how many of the 30 impacted wetland acres were occupied with one or more of the listed plants. The low-quality seasonal wetlands were to be mitigated for with preservation and creation of listed plant habitat as outlined in the 1998 programmatic.

### Sonoma sunshine

*1991 to 1998.* Patterson *et al.* (1994) estimated less than 12 biologically separate populations

remain. Of the sites they examined, 17 percent (nearly one-third) had been extirpated, and 17 percent (nearly one-sixth) had not been confirmed recently. An additional 17 percent (one-sixth) were believed to be extant but threatened by development as of 1994 (Patterson *et al.* 1994). A site, as defined by Patterson *et al.* (1994), may be all or part of a CNDDDB occurrence. At one CNDDDB occurrence, 12 Sonoma sunshine colonies were observed in 1989. By 1993, only six remained (CNDDDB 1998). The Service is aware of at least five specific Sonoma sunshine sites that have been developed or isolated by surrounding development or vineyards on the Santa Rosa Plain since the time of listing, including Cobblestone and TMD Brown. Other sites have been used as wastewater irrigated pastures, damaged by ORV use, heavily grazed, or been subject to land conversion activities (CNDDDB 1998, Service files). In addition, Sonoma sunshine is known from at least one of the Burke's goldfield sites mentioned above that were disced without authorization and that triggered Corps enforcement actions (Service files).

The Service used data from 1994 (Patterson *et al.* 1994) to examine how numbers of Sonoma sunshine plants at particular sites changed between the time of listing and the most current surveys that had been performed after listing. After listing, the number of sites with many individuals decreased, and the number with less than 10 individuals increased. The percentage of sites with fewer than 10 individuals increased by 15 percent between the time of listing and 1994.

Approximately 8 percent of the acreage of Sonoma sunshine sites known from the Santa Rosa Plain had some protection as of 1994 (calculated from data in Patterson *et al.* 1994). Of the 120 acres designated as preserve (excludes areas under conservation easement), the amount of habitat containing the species is estimated to be only 2 acres (Guggolz 1995 as cited in CH2M Hill 1995). Since 1994, one preservation bank with Sonoma sunshine has been established, but only 15 individual plants have been observed in recent surveys at the site (M. Waaland, 1998 pers. comm.).

*1998 to present.* The 1998 programmatic consultation was designed to allow up to 50 acres of low-quality seasonal wetlands to be filled and no more than 30 acres could be occupied (or presumed to be occupied) by the listed plant species. Of the 30 impacted acres which are occupied or presumed occupied, no more than 6 acres would be on sites for which there are known records of the listed plants. Impacts to no more than 6 additional acres on sites for which there are known records of listed plants may be authorized under the 1998 programmatic consultation at the Service's discretion, based upon the Service's evaluation of the significance of impacts to the first 6 acres of known listed species habitat and / or upon substantial progress toward a comprehensive conservation program. Between the period of the 1998 programmatic consultation and the date of this Programmatic, less than 30 acres of low-quality seasonal wetlands were authorized to be filled under the 1998 programmatic. At this time, it is unknown how many of the 30 impacted wetland acres were occupied with one or more of the listed plants. The low-quality seasonal wetlands were to be mitigated for with preservation and creation of listed plant habitat as outlined in the 1998 programmatic.

#### Sebastopol Meadowfoam

*1991 to 1998.* Patterson *et al.* (1994) estimated only 10 hydrologically separate populations of



Sebastopol meadowfoam exist. Of the sites they examined, nearly 10 percent were considered erroneous, 18 percent were extirpated, 18 percent were extant but threatened by development, and 36 percent were extant but may not be large enough to qualify as high-quality preserve lands (Patterson *et al.* 1994). A site, as defined by Patterson *et al.* (1994), may be all or part of a CNDDDB occurrence. According to Service records, significant Sebastopol meadowfoam sites are within southwest Santa Rosa. Other sites have been extensively fragmented by development, leaving parts of larger vernal pool complexes interspersed with homes. Repeated discing and land conversion activities have damaged some sites as well (Service files).

Excluding easements, eight Sebastopol meadowfoam sites comprising approximately 170 acres were preserved as of 1994 (Patterson *et al.* 1994). However, only a small portion of this acreage is considered actual Sebastopol meadowfoam habitat (CH2M Hill 1995). These eight sites comprised approximately 11 percent of the acreage of Sebastopol meadowfoam sites known from the Santa Rosa Plain in 1994 (calculated from data in Patterson *et al.* 1994). Since 1994, two preservation banks with Sebastopol meadowfoam have been established (MOA for Wright Preservation Bank 1997, MOA for Southwest Santa Rosa Vernal Pool Preservation Bank 1997).

*1998 to present.* The 1998 programmatic consultation was designed to allow up to 50 acres of low-quality seasonal wetlands to be filled and no more than 30 acres could be occupied (or presumed to be occupied) by the listed plant species. Of the 30 impacted acres which are occupied or presumed occupied, no more than 6 acres would be on sites for which there are known records of the listed plants. Impacts to no more than 6 additional acres on sites for which there are known records of listed plants may be authorized under the 1998 programmatic consultation at the Service's discretion, based upon the Service's evaluation of the significance of impacts to the first 6 acres of known listed species habitat and / or upon substantial progress toward a comprehensive conservation program. Between the period of the 1998 programmatic consultation and the date of this Programmatic, less than 30 acres of low-quality seasonal wetlands were authorized to be filled under the 1998 programmatic. At this time, it is unknown how many of the 30 impacted wetland acres were occupied with one or more of the listed plants. The low-quality seasonal wetlands were to be mitigated for with preservation and creation of listed plant habitat as outlined in the 1998 programmatic.

### California Tiger Salamander

*2001 to present.* Between 2001 and 2002, five breeding sites for Sonoma County Distinct Population Segment of the California tiger salamander were destroyed. Loss of real and potential salamander breeding sites, upland refugia, dispersal, and foraging habitat continues to occur in the Santa Rosa Plain. To date (prior to this biological opinion), there have been 21 biological opinions (*i.e.*, section 7 formal consultations) authorizing incidental take to all individuals inhabiting 493.222 acres of California tiger salamander habitat since the emergency listing on July 22, 2002. Three of these 21 biological opinions address adverse and beneficial effects associated with the construction of seasonal wetlands and creation of California tiger salamander breeding habitat and establishment of Burke's goldfields, Sebastopol meadowfoam and Sonoma sunshine populations. These three sites are known as the Hazel Mitigation Bank, Wright Preservation Bank and the Slippery Rock Conservation Bank. The temporary ground disturbance associated with these Banks includes approximately 149.06 acres; therefore there has

been 344.222 acres of permanent California tiger salamander habitat loss permitted by the Service through section 7 consultations. The other 18 biological opinions have integrated in their project proposals to conserve a total of 471.865 acres of California tiger salamander habitat at Service approved locations within Sonoma County via the purchase of mitigation or conservation credits, recording conservation easements, or offering fee title to the CDFG or another Service approved entity.

As of October 15, 2007, there are approximately 730 acres of *existing* Preserves that support occupied California tiger salamander habitat within conservation areas. Some of these existing preserves also support the listed plants. There are also approximately 165 acres (187 hectares) of *pending* Preserves within conservation areas that are anticipated to be protected in perpetuity.

### **Effects of the Proposed Action**

The following effects analysis is based on the effects of Projects to the California tiger salamander, Sebastopol meadowfoam, Sonoma sunshine and Burke's goldfields. This may encompass all types of projects in which the Corps issues permits, conducts enforcement actions and/or development of mitigation banks. These effects are expected to be in the form of direct and indirect effects as a result of urbanization and agricultural development related Project(s) and to a lesser degree restoration and enhancement of habitat. Project(s) appended to this Programmatic must adhere to the mitigation and minimization measures described in the *Description of the Proposed Action*. Implementation of the mitigation and minimization measures may have some adverse effects but will likely have greater beneficial effects as a result of creation, restoration and enhancement of habitat for these species.

### **California Tiger Salamander**

The effects analysis for the California tiger salamander is primarily based on the location of the Project(s) impacts relative to a known individual salamander observation and/or breeding site(s). Those effects based on distance are differentiated and classified in Table 2 below and assumes the permanent or temporary loss of habitat. The interim mitigation guidelines do not differentiate between temporary and permanent effects. The interim mitigation guidelines are described on page 46 of the Conservation Strategy (Conservation Strategy Team, 2005), in a letter from the Service and CDFG to the Santa Rosa Plain Conservation Strategy Implementation Committee (Service and CDFG, 2006 *in litt.*) and in the *Description of the Proposed Action* of this Programmatic.

The majority of anticipated effects to the California tiger salamander will likely be within the urban growth boundaries of the Cities of Santa Rosa, Cotati and Rohnert Park (shaded red in Figure 3 of the Conservation Strategy). These estimated acres are based on a ten year timeframe from December 2005 to December 2015. Some smaller amount of California tiger salamander impacts may occur outside of the urban growth boundaries within the Study Area (Figure 3 of the Conservation Strategy) in the form of agricultural, rural residential and ministerial projects as defined by Sonoma County. In addition, the Town of Windsor supports approximately 137 acres of potential California tiger salamander that may be adversely affected and may require approximately 27.4 acres of mitigation (i.e.  $137 \text{ acres} \times 0.2 = 27.4$ ).

**Table 2. Predicted Tiger Salamander Habitat Loss Within City Urban Growth Boundaries**

	<b>Santa Rosa (acres)</b>	<b>Cotati (acres)</b>	<b>Rhonert Park (acres)</b>	<b>Estimated Mitigation (acres)</b>
0 - 500 feet of a California tiger salamander breeding occurrence	190.4	21	0	634.2
501 - 2200 feet of a California tiger salamander breeding site	761.4	132.2	13.9	1815
2201 feet - 1.3 miles of a known California tiger salamander breeding site	411.7	6.7	166.6	585
500 feet of a California tiger salamander non-breeding occurrence	177	43.3	22.3	485.2
<b>Total</b>	<b>1540.5</b>	<b>203.2</b>	<b>202.8</b>	<b>3519.4</b>

Anticipated permanent acreage loss of California tiger salamander habitat within city UBG's within a 10 year timeframe was compared with the acreage needed to conserve habitat and maintain viable populations within identified conservation areas. This comparison was used to calculate the ratio of mitigation for project impacts in order to meet conservation goals in the conservation areas. Additional analysis of the Conservation Strategy took into account several assumptions which in part, support justification for the interim mitigation ratios. These assumptions are summarized in the following paragraphs.

Development of the Conservation Strategy was based on the following assumptions about expected development in a ten-year time frame: 1) the effect of that development on the species, 2) how the Preserves would offset those effects and 3) the compatibility of existing land uses with California tiger salamander and listed species conservation. In addition, there are other factors that were used in developing the conservation areas:

- Existing agricultural and rural land uses outside the UGBs will not change appreciably
- Urban development within the UGBs may occur based on general plans of the municipalities
- Limited urban development may occur outside of the UGBs based on the Sonoma County General Plan
- Voter-approved UGBs will remain in place for at least 10 years and will likely continue into the foreseeable future
- Based on aerial photography and site visits, potential habitat for the California tiger salamander exists in locations where surveys have not been conducted
- Urban development will eliminate some California tiger salamander habitat
- Small Preserves in an urban environment are difficult to manage, and will not likely sustain viable California tiger salamander populations

The analysis performed in the Conservation Strategy was used to develop appropriate mitigation ratios and is anticipated to aid in conserving appropriate levels of habitat to support viable populations of California tiger salamanders in perpetuity. The mitigation and minimization measures as described in this Programmatic is expected to contribute to recovery of the California tiger salamander by preserving occupied, restored and created habitat. Adaptive management and monitoring which will be supported with endowment funds is expected to assist in the maintenance of viable populations.

#### Sebastopol Meadowfoam, Sonoma Sunshine and Burke's Goldfields

As described in the Status of the Species and Environmental Baseline, above, habitat for the listed plant species has been severely impacted on the Santa Rosa Plain as a result of urban and agricultural development. These species, which are naturally rare, narrow endemics, have become extremely vulnerable due to decreases in population size, habitat fragmentation, and chronic habitat degradation. The long-term survival and recovery of these species requires the establishment of a viable regional preserve system that includes restoration of degraded habitat to enhance overall population size and viability.

Projects such as 404 permitting authorized under this Programmatic is expected to result in direct and indirect impacts to seasonal wetlands which may be occupied (or assumed occupied) by the listed plants. These impacts will further reduce the size and numbers of the listed plant populations, and could reduce the extent of the range for each of the listed plant species on the Santa Rosa Plain. Projects authorized under this consultation are also likely to result in fragmentation and edge effects to existing habitat. The loss of seasonal wetlands where the listed plants have not been found is expected to reduce opportunities for habitat restoration and enhancement of listed plant populations, thereby potentially affecting the species long-term survival and recovery.

Restoration projects as result of Corps enforcement actions or mitigation banks authorized under this Programmatic are expected to benefit the listed plants by restoring their destroyed or altered habitat by establishing endangered plant populations. Impacts to seasonal wetlands, both in habitat currently suitable for the listed plant species and in restorable habitat, will be limited and mitigated to allow for the species long-term survival and recovery.

Impacts to seasonal wetlands allowed under this Programmatic could result in loss of habitat where the plant species have not been detected for a number of years, but where viable seed banks persist on-site. However, any habitat with historic records of the species will be mitigated for in the same manner as habitat known to be currently occupied. This mitigation is expected to reduce the level of impacts to important suitable and restorable sites with historic records of listed plants by preserving currently occupied or established sites.

Impacts to occupied Burke's goldfields and Sonoma sunshine habitat will be mitigated through 3:1 of occupied or established habitat (any combination) with success criteria met prior to groundbreaking. Impacts to suitable Burke's goldfields and Sonoma sunshine habitat will be mitigated with 1:1 occupied or established habitat (any combination) with success criteria met AND 0.5:1 of established habitat prior to groundbreaking. The mitigation land will be preserved



and managed in perpetuity.

Impacts to occupied Sebastopol meadowfoam habitat will be mitigated with 2:1 occupied or established habitat (any combination) with success criteria met prior to groundbreaking. Impacts to suitable Sebastopol meadowfoam habitat will be mitigated with 1:1 occupied or established habitat (any combination) with success criteria met AND 0.5:1 of established habitat prior to groundbreaking. The mitigation land will be preserved and managed in perpetuity.

Mitigation for impacts to occupied and suitable habitat will be in the form of preserving occupied sites or established sites with the same impacted species. The location of the mitigation may be anywhere within the North Area or South Area as depicted in Enclosure 2 as long as the site supports the target endangered plant(s). Sites with suitable habitat are sites that have not been observed to flower during botanical surveys but may have viable seeds in the soil and have additional biological, hydrological and topographic attributes as described in Enclosure 5, *Description of Suitable Habitat*. Mitigation of impacts to suitable habitat must support one of the target species based on the location of the impacts. The species that must be mitigated for will be determined by the location of the project impacts to the suitable habitat. As described in the *Environmental Baseline*, the majority of Burke's goldfields and Sonoma sunshine populations are north of Santa Rosa Creek and the majority of Sebastopol meadowfoam populations are south of Santa Rosa Creek. Therefore, impacts to suitable habitat north of Santa Rosa Creek (i.e. North Area) will mitigate with occupied or established Burke's goldfields or Sonoma sunshine. Impacts to suitable habitat south of Santa Rosa Creek (i.e. South Area) will mitigate with Burke's goldfields, Sonoma sunshine or Sebastopol meadowfoam. Mitigation of occupied and suitable habitat will minimize the effects to the listed plants by ensuring sites will actually support the species. Adaptive management plans and endowment funding will also increase the probability of the plant populations to be viable in the long term and will be protected in perpetuity.

Projects that will impact occupied sites supporting Burke's goldfields and Sonoma sunshine, where surveys have documented 2,000 plants or greater in any year in the past 10 years may not be appended to this Programmatic, but will be evaluated on a case by case basis. The number for 2,000 plants was derived from comments provided by numerous technical experts and the Service's review of projects impacting plant populations.

The most common method of project proponents mitigating for their impacts will be by purchasing mitigation credits at Service and CDFG – approved Preserves. These Preserves often have extant natural populations of the plants and/or established or restored populations and are located within their historical range.

### **Cumulative Effects**

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Cumulative effects to the California tiger salamander include continuing and future conversion of suitable California tiger salamander breeding, foraging, sheltering, and dispersal habitat resulting from urban development. Additional urbanization can result in road widening and increased traffic on roads that bisect breeding and upland sites, thereby increasing road-kill while reducing in size and further fragmenting remaining habitats.

California tiger salamanders probably are exposed to a variety of pesticides and other chemicals throughout their range. California tiger salamanders also could die from starvation by the loss of their prey base. Hydrocarbon and other contamination from oil production and road runoff; the application of numerous chemicals for roadside maintenance; urban/suburban landscape maintenance; and rodent and vector control programs may all have negative effects on California tiger salamander populations. In addition, California tiger salamanders may be harmed through collection by local residents.

A commonly used method to control mosquitoes, used in Sonoma County (Marin/Sonoma Mosquito and Vector Control District, internet website 2002), is the application of methoprene, which increases the level of juvenile hormone in insect larvae and disrupts the molting process. Lawrenz (1984) found that methoprene (Altosid SR 10) retarded the development of selected crustacea that had the same molting hormones (*i.e.*, juvenile hormone) as insects, and anticipated that the same hormone may control metamorphosis in other arthropods. Because the success of many aquatic vertebrates relies on an abundance of invertebrates in temporary wetlands, any delay in insect growth could reduce the numbers and density of prey available (Lawrenz 1984).

Threats to Burke's goldfields, Sonoma sunshine, and Sebastopol meadowfoam such as unauthorized fill of wetlands, urbanization, increases in non-native species, and expanded irrigation of pastures with recycled wastewater discharge, are likely to continue with concomitant adverse effects on these species resulting in additional habitat loss and degradation; increasingly isolated populations (exacerbating the disruption of gene flow patterns); and further reductions in the reproduction, numbers, and distribution of these species which will decrease their ability to respond to stochastic events.

Some activities that do not require a 404 permit could occur that may negatively impact the listed plant species, including excessive grazing and wastewater irrigation. On-going grazing on the Santa Rosa Plain appears to be occurring at a low enough level that it may actually benefit the species by controlling competitive, non-native plant species, but grazing could increase to a detrimental level in the future. The cessation of grazing might also have a negative effect on the species, since non-native competitors have invaded the species' habitat and grazing may currently play an essential role in controlling these competitors.

As stated in the Conservation Strategy, urban and rural growth on the Santa Rosa Plain has taken place for over one hundred years, and for the past twenty years urban growth has encroached into areas inhabited by the California tiger salamander and the listed plants. The loss of seasonal wetlands caused by development on the Santa Rosa Plain has led to declines in the populations of California tiger salamander and the listed plants. Voters in the cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol, and the Town of Windsor have established urban growth boundaries for their communities. This is intended to accomplish the goal of city-centered growth, resulting

in rural and agricultural land uses being maintained between the urbanized areas. Therefore, it can be reasonably expected that rural land uses will continue into the foreseeable future. There are also areas of publicly owned property and preserves located in the Santa Rosa Plain, which will further protect against development. Some of the areas within these urban growth boundaries, however, include lands inhabited by California tiger salamanders and the listed plant species. Agricultural practices have also disturbed seasonal wetlands, California tiger salamanders and listed plant habitat on the Santa Rosa Plain. Some agricultural practices, such as irrigated or grazed pasture, have protected habitat from intensive development.

The Conservation Strategy was designed to plan for future cumulative effects from federal and non-federal actions to the California tiger salamander and listed plant habitat within the Santa Rosa Plain. The Conservation Strategy and the interim guidelines are intended to benefit the California tiger salamander and the listed plants by providing a consistent approach for mitigation vital to habitat preservation and the long-term conservation of the species. They are also intended to provide more certainty and efficiency in the project review process. The Conservation Strategy and the interim guidelines provide guidance to focus mitigation efforts on preventing further habitat fragmentation and to establish, to the maximum extent possible, a viable preserve system that will contribute to the long-term conservation and recovery of these listed species.

The County of Sonoma, the Cities of Santa Rosa, Cotati, Rohnert Park, the Town of Windsor, Service, and CDFG have commenced a process to develop a plan for implementing the Conservation Strategy. An implementation committee has been formed that is comprised of elected and staff representatives of the local jurisdictions, staff representatives of Service and CDFG, and representatives of the agricultural, development, and environmental communities. The implementation plan is expected to provide a mechanism for applying the Conservation Strategy to cover public and private projects, agricultural activities, and residential and commercial development. Eventual implementation of the Conservation Strategy by the local cities and Sonoma County is expected to reduce potential increases of these cumulative effects.

## Conclusion

After reviewing the current status of the species, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that projects which meet the qualifications for this Programmatic are not likely to jeopardize the continued existence of the California tiger salamander, Burke's goldfields, Sonoma sunshine or Sebastopol meadowfoam. This determination is based on the *Description of the Proposed Action*, Enclosures 3, 4 and 5 which provides numerous conservation measures that would be implemented to minimize adverse effects of Projects on the California tiger salamander and the three listed plants. Critical habitat has not been designated for these species, therefore, none will be affected.

## CONSERVATION RECOMMENDATIONS

Section 7 (a) (1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and

threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The recommendations provided here relate only to the proposed action and do not necessarily represent complete fulfillment of the agency's 7(a)(1) responsibilities for these species.

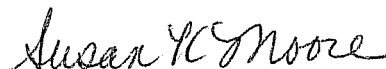
1. As the Santa Rosa Plain Recovery Plan is developed, the Corps should assist the Service in the implementation of the interim mitigation guidelines for projects on the Santa Rosa Plain.
2. The Corps should work with the Service to encourage the local jurisdictions of the Santa Rosa Plain to develop an implementation plan for the Conservation Strategy.
3. The Corps should work with the Service to identify grant opportunities to support restoration efforts, research, surveys and public outreach opportunities that aid in the recovery of the four species discussed in this Programmatic.

#### REINITIATION – CLOSING STATEMENT

This concludes formal consultation on the actions described in this opinion. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (2) the agency action is subsequently modified in a manner that causes an effect to listed species or critical habitat that was not considered in this opinion; or (3) a new species is listed or critical habitat is designated that may be affected by the action. If the Corps discovers that the conditions of the permit have not been followed, the Corps should review its responsibilities under section 7 of the Act and reinitiate formal consultation with the Service. We appreciate the cooperation and active participation of the Corps throughout this consultation process.

If you have any questions regarding this biological opinion, please contact Vincent Griego, Ryan Olah or Cay Goude of my staff at the letterhead address or (916) 414-6625.

Sincerely,



Susan K. Moore  
Field Supervisor



cc: Chuck Regalia, City of Santa Rosa, California  
David Woltering, City of Cotati, California  
Rob Bendorff, City of Rohnert Park, California  
Pete Chamberlin, Town of Windsor, California  
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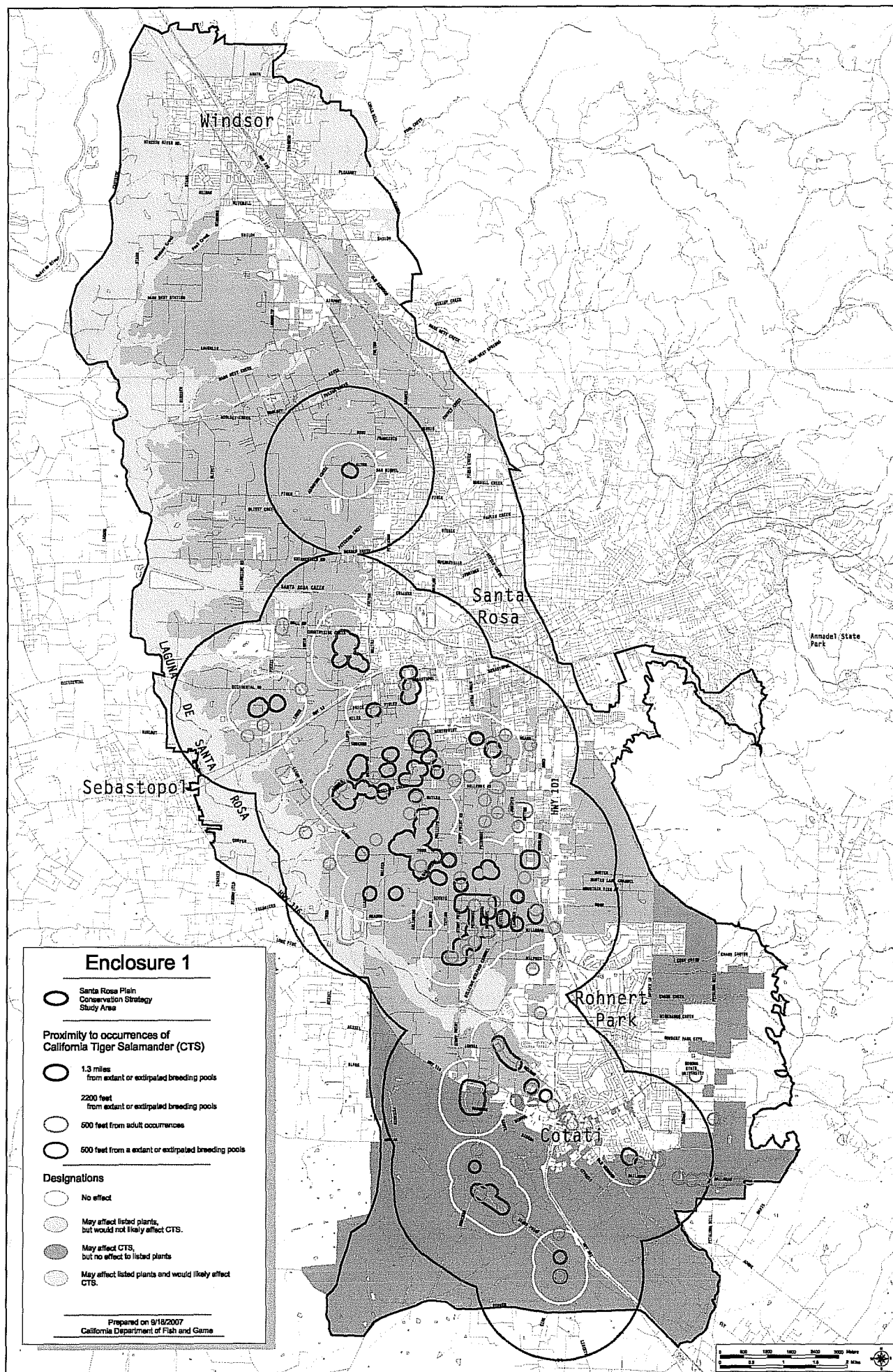
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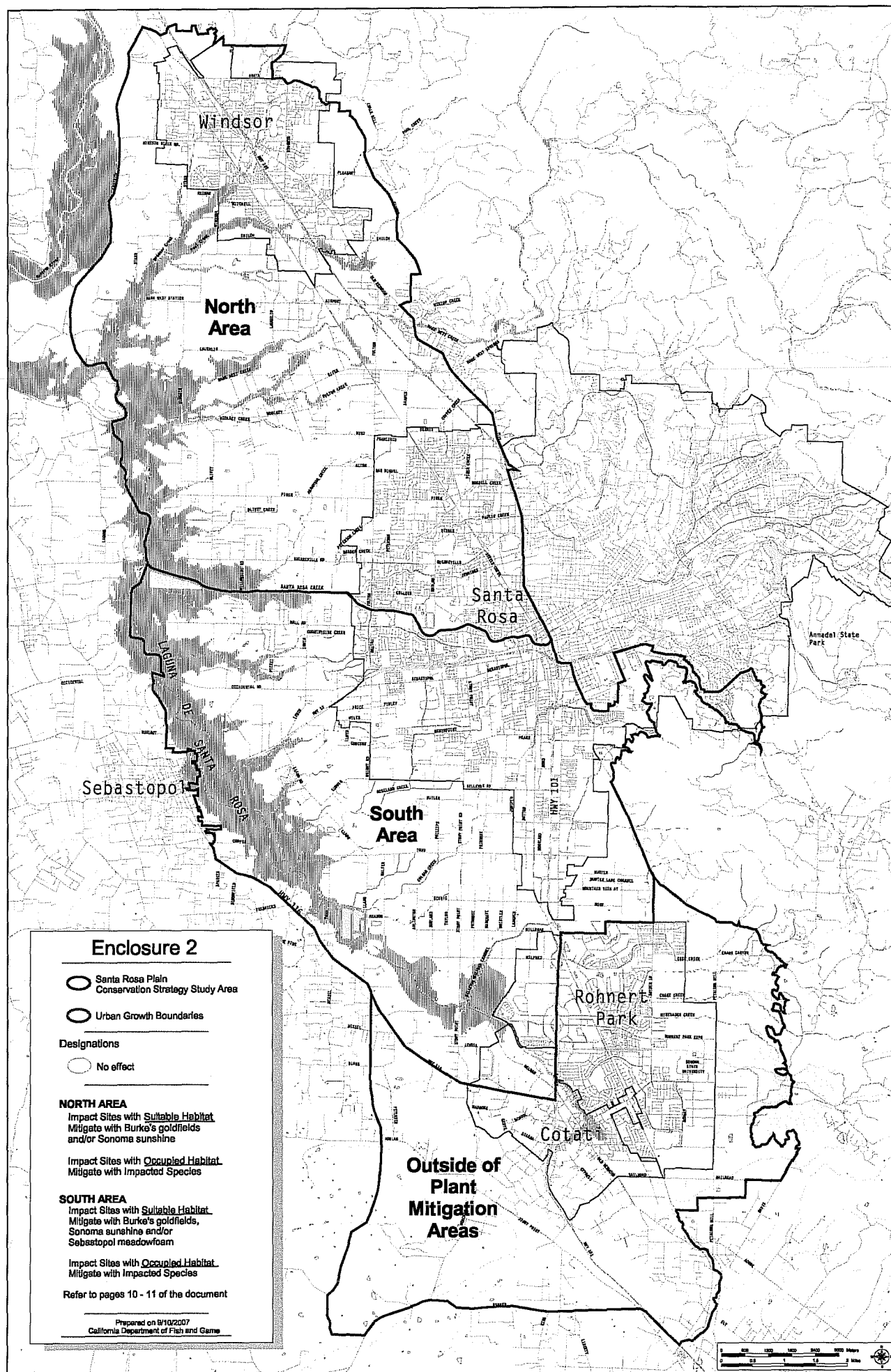
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### **Enclosure 3 - Preserve Establishment and Evaluation Criteria**

Preserves shall meet the following minimum requirements:

- The site must be preserved in perpetuity for the benefit of the affected species through dedication of fee title or a conservation easement to an appropriate resource management agency or organization.
- The site must have a habitat enhancement plan, if California tiger salamander and/or listed plant habitat is to be created, restored or established on the site.
- The site must have a management and monitoring plan including management actions necessary to manage, enhance, and protect the resources protected and created on the site, and monitoring actions to determine the success of created or restored wetlands and the status of the protected resources and effectiveness of specified management actions.
- The site must have a Service and CDFG – approved funding mechanism to assure long-term management and monitoring.

#### **Preserve Evaluation Criteria**

This Preserve Evaluation Criteria is used to determine if parcels proposed as Preserves provide suitable habitat for the California tiger salamander and/or listed plants. This describes the process for evaluating, and approving individual properties or parcels for preservation.

The preserve evaluation criteria will be used by the Service and CDFG in guiding both mitigation and mitigation bank development. These criteria are to aid and help expedite the selection of preserves.

To be considered acceptable as a preserve, a proposed property or properties must meet all the following criteria:

#### **For California tiger salamander:**

- (1) Be within the boundary of one of the Conservation Areas designated by the Conservation Strategy, unless otherwise approved by the Service and CDFG.
- (2) Contain known, occupied California tiger salamander breeding, upland, or dispersal habitat; or represent potential California tiger salamander habitat. With respect to potential California tiger salamander habitat, the site must exhibit, in the judgment of the Service and CDFG, reasonable potential for habitat restoration or enhancement. Preserves must ultimately have the listed species present within a reasonable time frame.
- (3) Be free of excessive land surface features such as roads, parking lots, other hardened surfaces, buildings or other structures, or extensive hardscape that cause a significant portion of the site to be unsuitable as California tiger salamander habitat. Generally, for purposes of this criterion, no more than 15% of the land surface of any potential preserve site may include or be covered by such features unless it is to be restored as part of the preservation action.

- (4) Not isolated from other nearby California tiger salamander habitats (preserve or non-preserve) by incompatible land uses (e.g., hardscape) or other significant barriers to California tiger salamander movement and dispersal, such as Highway 101.
- (5) Not inhabited by fish and bullfrogs or other non-native predatory species, unless, in the judgment of the Service and CDFG, such species can be effectively removed or eradicated.
- (6) Not within the Laguna de Santa Rosa 100-year floodplain.
- (7) Exhibit no history or evidence of the presence (storage or use) of hazardous materials on the surface of the site unless proof of removal or remediation can be provided.

For Burke's Goldfields, Sonoma sunshine, and Sebastopol meadowfoam

- (1) Preservation of the listed plant species in appropriate locations within the Plain, as previously described in *Plant Mitigation and Establishment* section of the *Description of the Proposed Action*.
- (2) Contain known population(s) of listed plants or represent potential plant habitat. With respect to potential plant habitat, the site must exhibit, in the judgment of the Service and CDFG, reasonable potential for habitat restoration, and establishment of listed plant population(s).
- (3) Be free of excessive land surface features such as roads, parking lots, other hardened surfaces, buildings or other structures, or extensive hardscape that cause a significant portion of the site to be unsuitable as plant habitat. Generally, for purposes of this criterion, no more than 15% of the land surface of any potential preserve site may include or be covered by such features unless it is to be restored as part of the preservation action.
- (4) If establishing populations of Sebastopol meadowfoam, the location is to be located south of Santa Rosa Creek. If establishing populations of Sonoma sunshine and/or Burke's goldfields, the location is to be north of the Laguna de Santa Rosa (See Enclosure 2).
- (5) Plant preserves should be a minimum of ten acres. Smaller plant preserves may be established to protect extant populations of Sonoma sunshine and Burke's goldfield, where the site characteristics would assure long-term viability or there is an opportunity to protect important population of these two species.
- (6) From a management perspective, preserves should include the entire watershed of the pool(s) and swale(s) being protected, and the ratio of perimeter to area should be minimized.
- (7) In general, establishment of plant population(s) should not occur in areas where preservation of any natural population(s) occur unless it can be demonstrated that no adverse effects would occur to the natural population(s) as a result of establishing plant populations.

## **Enclosure 4 - Translocation**

Listed plants and California tiger salamander adult, larvae and juveniles present within an area planned for development will be translocated by appropriate means as approved by the Service and CDFG. In all cases where translocation occurs, authorization must be given by the Service and CDFG.

Translocation would be undertaken for the following reasons:

- 1) Where salvage of species is required as a permit condition by the Service and CDFG when the removal of occupied habitat will occur (performance criteria and monitoring is required for the salvage and translocation) and/or;
- 2) To establish or enhance a new population or an existing population where all the conditions are present (including a management and monitoring program) to achieve success of the population. Such collections would be accomplished in a manner as to not adversely impact an existing population.

### **California tiger salamander Translocation**

The following guidelines apply to required California tiger salamander translocations.

- No mitigation or conservation bank may receive translocated California tiger salamanders until all the bank's credits have been sold and California tiger salamander credits will not be provided as a result of California tiger salamander translocation.
- California tiger salamanders will be translocated to receptor sites that are within the same conservation area as the donor site or, where this is not possible, to the nearest conservation area.
- California tiger salamanders will be translocated only to sites with suitable California tiger salamander breeding habitat.
- California tiger salamander larvae will not be translocated where resulting larval densities would exceed one per square meter.
- The costs of translocation will be the responsibility of the project proponent.
- Translocation will occur only to conservation areas and will not create any new mitigation obligations beyond what already exists.

### **Plant Translocation**

Prior to collection of seeds, approval of the Service and CDFG to address site-specific conditions is required.



### Collection at an impact site with occupied habitat

Collection of seeds shall occur from all occupied sites prior to development of the Project. Collection methodology must be approved by the Service and CDFG. The seeds must be translocated to a Service and CDFG--approved Preserve with successful establishment according to Service and CDFG – approved performance, management and monitoring criteria. If a suitable Preserve is not available to accept translocated seeds within one year, the seeds must be deposited at a Service and CDFG – approved seed storage facility for future translocation to a Preserve.

If a project proponent is attempting to establish plants at a mitigation site but is unsuccessful, then remediation would be necessary or an alternative site must be selected and must have successful establishment. If additional seeds are needed to reach performance criteria, they may be salvaged from a Service and CDFG – approved site and/or be obtained from a Service and CDFG – approved seed storage facility with prior written authorization from the Service.

### Collection at an impact site with suitable habitat

Collection of seeds may be warranted depending on site conditions including the native plant components.

### Collection at a Preserve

Collection is limited to a portion of the population that would not affect population viability. Generally not more than 5% of the plant population at a preserve could be collected. Seed and soil removal shall occur only when pools are dry.

The following guidelines apply to plant translocation:

1. The establishment location will be as close to the collection site as possible.
2. The establishment location must have suitable or occupied habitat.
3. Collect seeds after seeds have set or collect the seed bank after seeds have set and when there is no standing water.
4. Establishment will occur when seasonal wetlands are dry and before the rainy season begins.
5. Material will be used within 1 year. Seeds must be stored inside in a dry and cool place.
6. If seeds cannot be used within 1 year, the seeds must be submitted to a Service and CDFG – approved storage facility.

## **Enclosure 5 - Description of Suitable Habitat for Sebastopol Meadowfoam, Sonoma Sunshine and Burke's Goldfields**

Suitable habitat for the listed plant species can be characterized as having the following topographic, hydrologic, and geographic conditions.

### Topographic and Hydrologic Conditions

- A) One or more of the following topographic or hydrologic conditions must exist for the site to be considered suitable habitat:
1. The wetland contains surface (standing or flowing) water during the rainy season in a normal rainfall year for 7 or more consecutive days.
  2. The wetland has an outlet barrier (is a pool) or occurs in depressional terrain (i.e. is a swale or drainage feature).
- B) The following conditions indicate that a site is not suitable habitat:
1. The wetland occurs on sloping ground (not the slopes of a swale or pond) and is not a swale or swale-related drainage feature, such that no ponding or flooding occurs.
  2. The wetland is irrigated, and contains standing water of natural or artificial origin, and the soils are saturated, for more than 60 days between June 1 and October 1.

### Geographic Conditions

The site is located within the North Area or South Area as depicted in Enclosure 2.



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July 13, 2022

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### **RE: California Tiger Salamander Analysis, 295 Shiloh Road, Windsor, Sonoma County**

Dear Jake,

This letter report provides my analysis of the potential for California tiger salamander (*Ambystoma californiense*) to occur on the 5.92-acre parcel located at 295 Shiloh Road (APN 163-171-039), Windsor, Sonoma County. The California tiger salamander is listed by the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife (USFWS) (CDFG 2010; USFWS 2003) with a Critical Habitat designation (USFWS 2011) and a draft Recovery Plan (USFWS 2014). In addition, there is a Conservation Strategy Plan (USFWS 2005) as well as a Reinitiation of an existing Biological Opinion (USFWS 2020) that applies to this distinct population in California. I also reviewed previous biological reports prepared for this parcel and have provided comments on specific reports.

My qualifications are a general ecologist, with an emphasis on special status amphibians, birds, and mammals, being a holder of both a CDFW Scientific Collecting permit, since 1992, and a 10(A)1(a) USFWS permit, since 1998, to conduct research on the federally listed Threatened California red-legged frog (*Rana draytonii*) and the Sonoma County population of the California tiger salamander.

### **Methods**

I reviewed the previous biological documentation for the parcel, including the following:

- Bole & Associates. 2022a. Spring 2022 Update (Survey #3): Biological Resources Assessment and Wetland Determination for the Shiloh Crossing Project, APN 163-171-039, 295 Shiloh Road, Town of Windsor, Sonoma County, CA 94592. B&A File 0216-2021-2045. May 3. 61 pp.
- Bole & Associates. 2022b. Update Memo for Record: Early Spring Botanical Survey for the Shiloh Crossing Project, APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045. March 18. 23 pp.
- Bole & Associates. 2022c. Response to Town of Windsor Comments and Recommendations Concerning the Updated Biological Resources Assessment and Wetland Determination for the Shiloh Crossing Project, APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045. February 20. 5 pp.
- Bole & Associates. 2021a. Update: Biological Resources Assessment and Wetland Determination for the Shiloh Crossing Project, APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045. December 6. 53 pp.

- Bole & Associates. 2021b. Biological Resources Assessment and Wetland Determination for the Shiloh Crossing Project, APN 163-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045. March 18. 53 pp.
- Golden Bear BioStudies. 2005. Letter Report Biological Assessment of the Shiloh Sustainable Village Site. November 4. 7 pp.

I conducted a site visit on July 12, 2022, with Jane Valerius, botanist and wetland specialist of Jane Valerius Environmental, and we met Sean O’Keefe with Integrated Community Development. The weather was cool (~65 – 72 Fahrenheit) and calm. Together Jane and I walked the area of the detention basin and the upland portion of the parcel.

### Site Conditions

As described in previous reports, the site is a non-native grassland upland habitat (Fig. 1). Evidence of Botta’s pocket gopher (*Thomomys bottae*) was observed as well as raccoon (*Procyon lotor*), a common predator in observed in areas of rural development.

The detention basin is located on the west side of the parcel, along the western boundary (Fig. 2). The square basin is approximately 10 feet below grade, with a floor basin of approximately 30 feet in width and the top of the basin 60 feet in width. A plastic corrugated 36-inch culvert is located in the northwest corner and directs water into the basin. The elevation of this culvert is 116.32 feet. A 30-inch cement culvert is located in the central portion of the basin and it is at 116.18 feet in elevation. There is a less than one foot of difference between the two pipes. Water may be detained before flowing out of the basin but it will not remain in the basin for any duration. There was water present in the corrugated culvert at the time of the survey but it did not extend 12 inches beyond into the basin. The water appeared to be of low quality and was grayish in color and may have contained street runoff from the development to the north.

### California Tiger Salamander (CTS)

*Status:* In 2003, the USFWS listed the Sonoma County Distinct Population Segment of CTS as an endangered species (USFWS 2003), due to habitat destruction, degradation, and fragmentation, collection, invasive exotic species, and inadequate regulatory mechanisms due to development on the Santa Rosa Plain, which extends from Cotati north to Windsor (USFWS 2002). The *Santa Rosa Plain Conservation Strategy* (Conservation Strategy) was created in 2005 to mitigate potential adverse effects on listed species on the Plain (USFWS 2005). These goals and actions were continued in the *Reinitiation of Formal Consultation on Issuance of Clean Water Act, Section 404 Permits by the U.S. Army Corps of Engineers (Corps) on the Santa Rosa Plain, Sonoma County, California* (USFWS 2020).

The State listed the species Threatened throughout its range in 2010 (CDFG 2010). In 2011, Critical Habitat for CTS was finalized in Sonoma County (USFWS 2011) and a Recovery Plan finalized in 2014 (USFWS 2014). The area in the Recovery Plan generally constitutes the same geographic footprint reflected by the final critical habitat designation but extends farther to the southwest of Cotati to include parts of the Americano Creek and the Stemple Creek watersheds, where new occurrences of Sonoma County California tiger salamander was documented in 2013 (USFWS 2014).

Based on the knowledge of the life history, biology, and ecology of the species and the requirements of the habitat to sustain the essential life-history functions of the species, the Service (USFWS 2011) determined that the primary constituent elements (PCE) for the California tiger salamander in Sonoma County are:

- (1) Standing bodies of fresh water (including natural and manmade (e.g., stock) ponds, vernal pools and other ephemeral or permanent water bodies that typically support inundation during



winter/early spring and hold water for a minimum of 12 consecutive weeks in a year of average rainfall).

- (2) Upland habitats adjacent and accessible to and from breeding ponds that contain small mammal burrows or other underground refugia that California tiger salamanders depend upon for food, shelter, and protection from the elements and predation.
- (3) Accessible upland dispersal habitat between occupied locations that allow for movement between such sites.

*General Ecology and Distribution:* California tiger salamanders spend most of the year underground in the burrows of California ground squirrels (*Spermophilus beecheyi*) and Botta's pocket gophers (*Thomomys bottae*), feeding on insects (Loredo, et al. 1996; Van Hattum 2004). Within Sonoma County, pocket gophers provide the majority of subterranean habitat for CTS. In general, gopher burrow systems consist of a main tunnel, generally 4 to 18 inches below the soil surface, and a variable number of lateral burrows extending from the main (Romanach et al. 2005). A burrow system may be linear to highly branched, may contain up to 200 yards of tunnels, and may have a hundred or more mounds. There is no correlation between the number of mounds observed above ground and the length of tunnels underground. Except during the breeding season (spring), only one gopher occupies one burrow system. In Monterey County, CTS were removed from burrows at depths between 8 inches and 3 feet (Trenham 2001). Upland terrestrial habitat for Ambystomids usually occurs within 300 meters of aquatic breeding sites, but movements have been reported as far away as 800 meters (Trenham 2001, Madison and Farrand 1998). Following heavy winter rains (normally December-March) adults emerge briefly to lay their eggs in ponds, preferring vernal pools, alkali sinks or cattle troughs that have muddy bottoms or contain some algal growth in the water for hiding in, but are devoid of fish. Although no studies have been conducted on the water quality requirements of CTS, it has been noted that turbid water is preferred (reduces predation), and water quality can prevent the transformation into the adult stage.

During the short breeding season, salamanders can be observed moving to temporary rain pools, ponds, and lakes nocturnally. Eggs are usually laid singly or may be in small clusters attached to vegetation in shallower water (Thomson et al. 2016). Larvae live in ponds until early or mid-summer, when they metamorphose into adults and emigrate from the pond during a summer storm (Dunn 1940, Loredo et al. 1996, Loredo and Van Vuren 1996; Holland, et al. 1990).

*On-Site Habitats:* Although the site supports non-native grasslands and pocket gophers, which would meet the PCE#2, the site is located outside the occupied range of the species (USFWS 2005, 2020). See below for more details.

The detention basin appears to receive water runoff from the business park located to the north. However, the basin detains water, it does not retain it at a suitable depth (at least 16 inches) for at least 12 weeks. In addition, the presence of raccoon, a known predator of amphibian larvae and adults, would have easy access to any larvae in such a shallow water body. As a result, the detention basin does not provide suitable breeding habitat for CTS and the PCE #1 is not met.

*Project Area Occurrence:* The closest reported sighting of California tiger salamander is at Alton Lane, Santa Rosa, approximately 3.6 miles SSW (CNDDB 2022). There are no recorded occurrences, past or present, of California tiger salamander north of Mark West Creek, located approximately 1.3 miles south of the project site or on the east side of Highway 101 north of the City of Santa Rosa (USFWS 2005, 2020). There are no movement corridors between known locations and the project site. Highway 101 would be considered a barrier to movement from west to east. As a result, PCE #3 is not met.

I agree with the statements in Section 4.6.4 of the Bole & Assoc. 2022a report. The Conservation Strategy (USFS 2005) identifies this area as within the Town of Windsor and although the range of CTS

encompasses this area of the Town, the site is not identified as providing habitat for CTS (Figure 1, Conservation Strategy). As shown in Figure 4 of the Bole & Assoc. 2002a report, and as Figure 2 of the Conservation Strategy, the site is shown as “Presence of CTS is not likely” (USFWS 2005). As stated in the Conservation Strategy, under Section 5.3.3.3 Projects Where Presence of CTS is Not Likely, “Impact to CTS is not likely on some lands beyond 1.3 miles from breeding sites, or on lands within 1.3 miles from breeding sites that are surrounded by significant barriers or are otherwise unsuitable CTS habitat (see Figure 3). Neither surveys nor mitigation would be required for projects on these properties.” As a result, we agree with the statements in Section 4.6.4 of the Bole & Assoc. 2002a report.

Although not applicable to this project because no wetlands will be impacted, the *Reinitiation* Figure 1, on page 17, does show the project area being inside the Conservation Strategy Area, but the project site is identified as already developed or no effect to endangered species (USFWS 2020). **As a result, the 0.2:1 mitigation ratio often applied to parcels beyond the 1.3-mile proximity to breeding habitat does not apply to this parcel. As a result, no further analysis is required.**

*Critical Habitat:* The proposed action is located outside the California tiger salamander Critical Habitat unit SON 1 (Sonoma County) (USFWS 2011). No further analysis is required.

*Recovery Plan:* The proposed action is not located within the Recovery Plan area for the Sonoma County Distinct Population Segment of California tiger salamander (USFWS 2014). No further analysis is required.

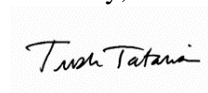
Please refer to Table 1 for a synopsis of the plans that affect this project location.

**Table 1**  
**Proposed Project and the Plans Pertaining to the California Tiger Salamander**

	Is Project Area Within the Boundaries of this Document?
USFWS	No
CDFW	No
Conservation Strategy	Yes, but not for CTS
Critical Habitat	No
Recovery Plan	Yes, but not for CTS

Based on my professional experience, this analysis and review of previous reports, project site is located outside the species range development of the subject parcel is not likely to adversely affect CTS and no mitigation is required.

Sincerely,



Trish Tatarian

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Figure 1: Non-native grassland looking northeast across parcel.



Figure 2: Detention basin and associated vegetation.



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July 13, 2022

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**RE: Shiloh Crossing Project, 295 Shiloh Road, Windsor, CA, APN 163-171-039**

This letter report presents my findings based on a one-time site visit on July 12, 2022 to the proposed Shiloh Crossing Project located at 295 Shiloh Road in the Town of Windsor, Sonoma County, CA and on a review of documents provided by Integrated Community Development regarding the biological resources assessment for the project. The purpose of the site visit was to determine if there is any potential suitable habitat for the three listed vernal pool plants known to occur on the Santa Rosa Plain: Sonoma sunshine (*Blennosperma bakeri*), Burke's goldfields (*Lasthenia burkei*), and Sebastopol meadowfoam (*Limnanthes vinculans*).

## **METHODS**

Jane Valerius, botanist and wetland ecologist, visited the site at 295 Shiloh Road, Windsor on July 12, 2022. The site visit focused on the detention basin located along the western property boundary as this site has potential wetland habitat. The entire site was also walked to review the upland area and determine if any potential suitable habitat for the three listed vernal pool plants could occur on the parcel. A list of plant species observed is provided in Attachment A, however the site visit was not designed to be a protocol level survey for special status plants.

Prior to the site visit I reviewed the following documents prepared by Bole & Associates which you provided:

- Spring 2022 Update (Survey #3): Biological Resources Assessment and Wetland Determination for the Shiloh Crossing Project , APN 161-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045 dated May 3, 2022.
- Update Memo for Record: Early Spring Botanical Survey for The Shiloh Crossing Project, APN 161-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045 dated March 18, 2022.
- Response to Town of Windsor Comments and Recommendations Concerning the Updated Biological resources Assessment and Wetland Determination for the Shiloh Crossing Project, APN 161-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045 dated February 20, 2022.
- Update: Biological Resources Assessment and Wetland Determination for the Shiloh Crossing Project , APN 161-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045 dated December 26, 2021.



- Biological Assessment and Wetland Determination for the Shiloh Crossing Project, APN 161-171-039, 295 Shiloh Road, Windsor, Sonoma County, CA 95492. B&A File 0216-2021-2045 dated March 18, 2021.

I also reviewed the messages sent to you by Kim Voge with the Town of Windsor dated March 8, 2022 and February 15, 2022, as well as the Peer Review Memorandum by First Carbon Solutions to the Town of Windsor dated November 15, 2021.

Lastly, I reviewed the *Letter Report Biological Assessment of the Shiloh Sustainable Village Site* prepared by Marco Waaland with Golden Bear Biostudies dated November 4, 2005 for Mr. Ron Hodges with Carlile Macy which covered the same property.

Photographs of the site showing the upland habitat and detention basin are provided at the end of the text.

## RESULTS

The 5.92 acre Shiloh Crossing Project parcel is comprised of upland vegetation dominated by upland non-native grasses and weedy forbs and a stormwater detention basin located along the western property boundary. At the time of the July 12, 2022 survey the dominant grass was wild oats (*Avena barbata*) and included Harding grass (*Phalaris aquatica*) and other non-native grasses and forbs (Photo 1) described in the Bole & Associates and Golden Bear Biostudies reports. The upland area does not support any potential suitable habitat for the three listed vernal pool plants known to occur on the Santa Rosa Plain. There is a lack of plants associated with vernal pools, or any type of wetland, and there are also no depressions that would hold water and provide the type of hydrology needed to create a seasonal wetland that would provide suitable habitat for the listed species or other wetland plants. This observation is corroborated by the Bole & Associates and Golden Bear Biostudies reports.

The stormwater detention basin on the western property boundary does support a wetland plant community consisting of a perennial emergent marsh type vegetation dominated by cattails (*Typha latifolia*), soft rush (*Juncus effusus*), spike rush (*Eleocharis macrostachya*), tall flat sedge (*Cyperus* sp.), mannagrass (*Glyceria* sp.), pennyroyal (*Mentha pulegium*), Bermuda grass (*Cynodon dactylon*) and Himalayan blackberry (*Rubus armeniacus*) (Photos 2 and 3). In addition, there is a small grove of arroyo willows (*Salix lasiolepis*) and one small cottonwood (*Populus* sp.) along with numerous, small valley oak (*Quercus lobata*) seedlings. This wetland habitat is not considered to be potential suitable habitat for the listed vernal pool plants for the following reasons:

- The hydrology for the site is a perennial hydrology and artificially supported by runoff from the adjacent business development. The hydrology supports a perennial wetland and not a seasonal wetland type, such as a vernal pool. The detention basin was designed to hold stormwater that also likely contains many contaminants from runoff from the adjacent commercial development. The water goes off-site and is connected to the Town's stormwater system.
- The plant species that occur in the wetland associated with the detention basin are not plants associated with vernal pools, primarily due to the prolonged hydrologic period, but also because the detention basin is an excavated area, approximately 10 feet lower than the rest of the property, and likely does not have a hardpan or claypan layer that would also be associated with a vernal pool type wetland.
- The detention basin, as mentioned, was constructed specifically for the purpose of processing the runoff from the business park. Gil Falcone with the North Coast Regional Water Quality Control

Board (RWQCB) has stated in an email to David Noren with EBA Engineering that the State would not take jurisdiction over this site because: "...*Our regulations state that an artificial wetland that has been "constructed and is currently used and maintained, primarily for the following purposes... are not waters of the state..." Section II.3.d. includes: iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation... under a stormwater program.*"

- There is a maintenance agreement for the detention basin that could potentially require that vegetation be periodically removed from the site to provide sufficient storage, which would further preclude this area as potential suitable habitat.

## CONCLUSION

**The property does not provide any potential suitable habitat for the three listed vernal pool plants known to occur on the Santa Rosa Plain. Given the lack of suitable habitat and lack of any seasonal wetland habitat there is no need for the 2 years of protocol surveys required by the USFWS for the listed species and there is no requirement to provide mitigation as there is no loss of habitat for the species.** This is supported by the 2021 and 2022 reports provided by Bole & Associates and by the 2005 report prepared by Golden Bear Biostudies. It should be noted that Marco Waaland, owner of Golden Bear Biostudies, authored many of the studies used in the Vernal Pool Task Force that was created in the 1990's and also the Santa Rosa Plain Conservation Plan and the Programmatic Biological Consultation with between the U.S. Fish and Wildlife Service (USFWS) and the U.S. Army Corps of Engineers. Although his study was conducted in 2005 his conclusion still holds that there are no wetlands on the property that would support the listed vernal pool plants.

I have also attached my qualifications statement. I have lived in Sonoma County since 1995 and have conducted numerous botanical surveys using the USFWS 2-year protocol, including sites in Windsor. I have extensive knowledge of the rules and regulations for vernal pool plants in the Santa Rosa Plain and have worked with many of the other botanists knowledgeable in the area.

I hope this information was helpful. Please let me know if you have any questions.

Sincerely,



Jane Valerius  
Botanist/Wetland Specialist

Attachments

**SITE PHOTOGRAPHS TAKEN JULY 12, 2022**



Photo 1: Upland non-native grassland habitat on the majority of the parcel.



Photo 2: Detention basin showing willows, cattails and rushes looking easterly.





Photo 3: Detention basin looking westerly showing perennial marsh wetland vegetation and willows.

# ATTACHMENT A: Plant species observed on July 12, 2022

Scientific Name	Common Name
<i>Avena barbata</i>	Wild oats*
<i>Baccharis pilularis</i>	Coyote brush
<i>Brassica nigra</i>	Black mustard*
<i>Bromus hordeaceus</i>	Soft chess*
<i>Carduus pycnocephalus</i>	Italian thistle*
<i>Centaurea solstitialis</i>	Yellow star thistle*
<i>Cichorium intybus</i>	Chicory*
<i>Convolvulus arvensis</i>	Bindweed*
<i>Cynodon dactylon</i>	Bermuda grass*
<i>Daucus carota</i>	Queen Anne's lace*
<i>Eleocharis macrostachya</i>	Spike rush
<i>Epilobium brachycarpum</i>	Willow herb
<i>Epilobium</i> sp.	Willow herb
<i>Festuca perennis</i>	Ryegrass*
<i>Foeniculum vulgare</i>	Fennel*
<i>Glyceria</i> sp.	Mannagrass*
<i>Helminthotheca echioides</i>	Bristly ox-tongue*
<i>Hemizonia pungens</i>	Common tarplant
<i>Hordeum marinum</i> ssp. <i>gussoneanum</i>	Mediterranean barley*
<i>Hordeum murinum</i> ssp. <i>leporinum</i>	Hare barley*
<i>Hypochaeris radicata</i>	Rough cat's-ear*
<i>Juncus effusus</i>	Soft rush
<i>Lactuca serriola</i>	Prickly lettuce*
<i>Leontodon saxatilis</i>	Little hawkbit*
<i>Lotus corniculatus</i>	Birds-foot trefoil*
<i>Mentha pulegium</i>	Pennyroyal*
<i>Parentucellia viscosum</i>	Parentucellia*
<i>Paspalum dilitatum</i>	Dallis grass*
<i>Phalaris aquatica</i>	Harding grass*
<i>Plantago lanceolata</i>	English plantain*
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass*
<i>Populus</i> sp.	Cottonwood
<i>Quercus lobata</i>	Valley oak
<i>Raphanus sativus</i>	Wild radish*
<i>Rubus armeniacus</i>	Himalayan blackberry*
<i>Rumex crispus</i>	Curly dock*
<i>Salix lasiolepis</i>	Arroyo willow
<i>Trifolium hirtum</i>	Rose clover*
<i>Typha latifolia</i>	Cattails
<i>Vicia</i> spp.	Vetch*

Species with an \* are non-native species



## JANE VALERIUS QUALIFICATIONS

**Jane Valerius** is a plant ecologist and wetlands specialist with more than 40 years of highly professional experience both in conducting field studies and in managing projects. Ms. Valerius is proficient in conducting vegetation and biotic surveys, rare plant surveys, and wetland delineations. Ms. Valerius has designed mitigation monitoring plans for wetlands, habitat restoration plans for endangered species and prepared environmental impact assessments to support development of public works projects, residential communities, landfill and mining expansion, and energy and water resource facilities.

Jane lives and works in Sonoma County and has been a resident of Sonoma County since 1995. She has been an independent consultant with her own sole proprietorship business since 1998. She has conducted numerous protocol level botanical surveys in the Santa Rosa Plain area of Sonoma County and is familiar with the listed species associated with the vernal pools in the Santa Rosa Plain. She has also worked with the resource agencies, specifically the U.S. Army Corps of Engineers (USACE), the U.S. Fish & Wildlife Service (USFWS), the North Coast Regional Water Quality Control Board (RWQCB) and the California Department of Fish & Wildlife (CDFW) on numerous projects in the area. She is familiar with the rules and regulations regarding the listed vernal pool plants and has conducted many surveys, including visits to the local mitigations banks that are used as reference sites.

- ⇒ Master of Science, Range Ecology, Colorado State University, Fort Collins, CO, May 1982 with emphasis in plant taxonomy, plant ecology and mined land reclamation
- ⇒ Bachelor of Arts, Environmental Biology, University of Colorado, Boulder, CO, December 1977 with classes in plant taxonomy and plant ecology.

### **EMPLOYMENT HISTORY**

<i>Principal</i>	1/10/98-present	Jane Valerius, Environmental Consulting Penngrove, CA
<i>Senior Consultant/ Project Manager</i>	1995-1/9/98	Resource Management International, Inc. San Rafael, CA
<i>Botanist/Project Manager</i>	1991-1995	Western Ecological Services Company, Inc. Novato, California
<i>Environmental Specialist</i>	11/1989-1991	U. S. Army Corps of Engineers, Environmental Branch, San Francisco, CA
<i>Technician</i>	9/1989-11/1989	LSA & Associates, Pt. Richmond, CA
<i>Senior Env. Specialist</i>	1986-1989	Wyoming Dept. of Environmental Quality Lander and Cheyenne, Wyoming
<i>Research Associate</i>	1979-1986	Keammerer Ecological Consultants, Inc. Boulder, Colorado

- ◆ Conducted ecological, botanical and wetland studies in California, Oregon, Nevada, Idaho, Colorado, Wyoming, Utah, Arizona, and North Dakota.
- ◆ Extensive experience with wetland delineations, permitting, mitigation plans, creation and construction of wetlands, including vernal pools.
- ◆ Work with the San Francisco, Sacramento and Los Angeles U. S. Army Corps of Engineers districts. Experience with NEPA/CEQA.
- ◆ Prepare restoration, revegetation, and reclamation plans. Prepare exotic pest plant control plans.
- ◆ Monitor environmental compliance of mining operations, transmission line, and residential development projects.
- ◆ Active in professional organizations including past Director-at-Large for the Society for Ecological Restoration (1994-1997), member of the California Native Plant Society.



Jake Lingo &lt;jlingo@icdemail.com&gt;

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**FW: 295 Shiloh Road, Windsor**

1 message

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**Falcone, Gil@Waterboards** <Gil.Falcone@waterboards.ca.gov>

Tue, Jul 5, 2022 at 12:06 PM

To: "dnoren@ebagroup.com" &lt;dnoren@ebagroup.com&gt;

Cc: Jake Lingo &lt;jlingo@icdemail.com&gt;, "King, Kaete@Waterboards" &lt;Kaete.King@waterboards.ca.gov&gt;

Hi David,

Thanks for consulting the Water Quality Certification Unit at the Regional Water Board regarding this jurisdictional determination. From the documentation that you have shared (attached here), photos and my knowledge of the site, the land feature in question (fenced area in photos at [295 Shiloh Rd. Windsor, CA](#)) would not be considered a jurisdictional water of the state by our regulations.

The 2019 State Wetland Definition and dredge and fill procedures to waters of the state (found [here](#)) lays out a jurisdictional framework for wetlands throughout California. This feature meets the exemptions and tests so that it is not considered a state jurisdictional wetland or water of the state requiring permitting for dredge and fill activities. Our regulations state that an artificial wetland that has been "constructed and is currently used and maintained, primarily for the following purposes... are not waters of the state..." Section II.3.d. includes: iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation... under a stormwater program.

The documentation (Deed Easement and Maintenance Agreement) that you have included demonstrate that this facility was constructed and is maintained for the purposes of detaining, treating and infiltrating stormwater from an adjacent parcel. These stormwater facilities have been required by our state stormwater regulations associated with authorizing development projects such as those on the adjacent parcel where the stormwater is generated by impervious surfaces. The photos show (attached) show that this facility is currently maintained for the purpose described.

This stormwater facility would not be considered a water of the state requiring dredge and fill permitting if it were to be filled or excavated. However, the facility is serving a required stormwater regulatory function as designed for stormwater attenuation and pollutant control for the adjacent site so any changes in location or nature of the facility would need to comply with stormwater regulations to appropriately address stormwater pollutants on the adjacent site. Additionally, current post-construction stormwater BMP designs that capture and treat stormwater pollutants should be created and maintained such that they do not create jurisdictional wetlands and or contain standing water for periods of time that create vector control issues.

Thanks again for contacting us and let us know if you have any further questions about this jurisdictional determination or our stormwater regulations for this or other projects.

Regards,

Gil

**Gil Falcone**

Sr. Environmental Scientist, M.S.

Supervisor Southern 401 Certification Unit

North Coast Regional Water Quality Control Board

5550 Skylane Blvd., Suite A

Santa Rosa, CA 95403-1072

Voice (707) 576-2830

<https://www.waterboards.ca.gov/northcoast/>

\*\*\*The Water Boards are continuing day-to-day work protecting public health, safety, and the environment. However, staff are mostly working remotely and we continue to check email and voicemail regularly. Thank you and stay healthy and safe.\*\*\*

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**From:** David Noren <[dnoren@ebagroup.com](mailto:dnoren@ebagroup.com)>

**Sent:** Thursday, June 30, 2022 4:03 PM

**To:** Falcone, Gil@Waterboards <[Gil.Falcone@waterboards.ca.gov](mailto:Gil.Falcone@waterboards.ca.gov)>; Jake Lingo <[jlinfo@icdemail.com](mailto:jlinfo@icdemail.com)>

**Subject:** 295 Shiloh Road, Windsor

**EXTERNAL:**

Gil: I left you a phone message and thought that I would also follow up with an email. Please recall that the property located at 295 Shiloh Road has had a stormwater BMP at the property for many years to treat stormwater from a neighboring property. Please see attached Easement Grant Deed recorded in 2000 that describes the BMP as "A private

storm drainage easement for the construction and maintenance of an earthen swale and sedimentation basin for the conveyance of stormwater runoff..." d

The structure has been consistently maintained for that use. Please see attached maintenance agreement and photos of the basin. The property is now being redeveloped as a high density, affordable housing development by Integrated Community Development (ICD). The development plans include moving the basin and continuing to use it to treat stormwater for the neighboring property.

There is a Mitigated Negative Declaration being prepared for the development by First Carbon Solutions for the Town of Windsor that will be circulated for public review very soon. It is reported that the MND is assuming that the structure is a jurisdictional wetland unless deemed not by the NCRWQCB. There is a biologist working on the project who I understand has presented findings that the structure is not a jurisdictional wetland.

I would ask for a discussion of how we can get ahead of this as it would seem that the determination would come from the NCRWQCB. We had talked previously about meeting onsite to look at the structure which I can do any time. Please let me know if you have a moment to discuss.

David Noren

--

David Noren, Vice President

EBA Engineering

[825 Sonoma Avenue, Suite C](#)

[Santa Rosa, California 95404](#)

707.544.0784


[dnoren@ebagroup.com](mailto:dnoren@ebagroup.com)





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#### 5 attachments

 **Easement Grant Deed.pdf**  
58K

 **Maintenance Agreement.pdf**  
1402K

 **IMG\_0894.pdf**  
6506K

 **IMG\_0896.pdf**  
7092K

 **IMG\_0895.pdf**  
7297K



## Arborist Report

January 25, 2022

**Zach Lingo,**

**Integrated Community Development**

295 Shiloh Rd

Windsor, CA 95492

### **Definition of assignment:**

Inspect a single oak tree at 295 Shiloh Rd in Windsor, California, and identify the tree's species, size, and health to determine mitigation requirements in accordance with the Tree Preservation and Protection Ordinance.

### **Observations:**

The tree in question is a Valley oak (*Quercus lobata*), located at the southeast corner of the property. The tree measures 11" DBH (diameter at breast height), with an approximate height of 20 feet and an approximate crown spread diameter of 8 feet.

The tree appears to be in good health when viewed during winter dormancy as evidenced by the many viable buds that will grow new foliage in spring. The tree has no obvious structural defects, and shows little evidence of pruning maintenance with the exception of raising the canopy by removing the lower tree limbs.

### **Assumptions and Limiting Conditions**

1. Any legal description provided to the consultant/appraiser is assumed to be correct. Any titles and ownerships to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character.
2. It is assumed that property is not in violation of any applicable codes, ordinances, statutes or other governmental regulations.
3. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant/appraiser can neither guarantee nor be responsible for the accuracy of information provided by others.



4. The consultant/appraiser shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.
5. This report and any values expressed herein represent the opinion of the consultant/appraiser, and the consultant/appraisers fee for this report is in no way contingent upon the reporting of a specified value, a stipulated result, nor upon any finding to be reported.
6. Unless expressed otherwise: 1) the information in this report covers only the items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee expressed or implied that problems or deficiencies of the plants or property in question may not arise in the future.
7. Loss or alteration of any part of this report invalidates the entire report.

Sincerely,

A handwritten signature in cursive script that reads "Kamala Dionne".

**Kamala Dionne,**  
**Vintage Tree Care**  
Certified Arborist WE-103918A

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